

**ADVISORY COMMITTEE
ON
RULES OF EVIDENCE**

**Boston, MA
October 26-27, 2017**

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ADVISORY COMMITTEE ON EVIDENCE RULES

AGENDA FOR COMMITTEE MEETING

Boston, Massachusetts

October 26, 2017

I. Opening Business

Opening business includes:

- Approval of the minutes of the Spring, 2017 meeting.
- A report on the June, 2017 meeting of the Standing Committee.
- A tribute to Judge Sessions.
- Welcoming new members and liaisons.

II. Proposed Amendment to Rule 807, the Residual Exception

The Committee's proposed amendment to Rule 807 was approved by the Standing Committee for release for public comment. The proposal as released is included behind Tab 2. The Reporter will report on any comments received by the day of the meeting.

III. Proposed Amendment to Rule 801(d)(1)(A)

Over the last five meetings the Committee has been working on a possible change to Rule 801(d)(1)(A) that would provide for broader substantive admissibility of prior inconsistent statements. The current working draft would allow substantive admission of a witness's prior inconsistent statement if it was recorded by audiovisual means. At the last meeting, the Committee decided to seek outside input before getting approval for release for public comment. The memo behind Tab 3 describes the outreach that has occurred. Also behind Tab 3 are two surveys prepared by the FJC that are going to be sent to practitioners and judges.

IV. Consideration of a Possible Amendment to Rule 606(b) In Response to a Supreme Court Decision

In *Pena-Rodriguez v. Colorado*, the Supreme Court held that the bar posed by Rule 606(b) on juror testimony about jury deliberations was unconstitutional to the extent it excluded testimony about racist statements made during the deliberations. The Committee decided not to propose any amendment to Rule 606(b), but to keep apprised of case law developments. The Reporter's memorandum behind Tab 4 describes those case law developments.

V. Consideration of Possible Changes to Rule 404(b)

The Committee has resolved to consider possible amendments to Rule 404(b) that would resolve conflicts in the case law, provide more protection for criminal defendants, and improve the notice requirement. The Reporter's memo on the subject is behind Tab 5, along with Professor Richter's memo on state law variations.

VI. Proposal to Amend Rule 106

Judge Paul Grimm has asked the Committee to consider a proposal to amend Rule 106, the rule of completeness, for two purposes: 1. to specify that completing evidence is not barred by the hearsay rule; and 2. to extend its coverage to oral statements. The Reporter's memorandum on the subject is behind Tab 6.

VII. Proposal to Eliminate Rule 609(a)(1)

Magistrate Judge Tim Rice has asked the Committee to consider a proposal to eliminate Rule 609(a)(1), i.e., to bar impeachment with prior convictions that do not involve dishonesty or false statement. The Reporter's memorandum on the subject, as well as Judge Rice's article, are behind Tab 7.

VIII. Proposal to Adopt a Rule on the Use of Illustrative Aids

Two members of the public have written an article proposing that the Advisory Committee consider an amendment that would add a rule governing the use of illustrative aids (as opposed to demonstrative evidence). Maine Rule 616 is such a rule. The Reporter's memorandum on this subject, and the article setting forth the proposal, are behind Tab 8.

IX. Conference on Rule 702

The Committee is sponsoring a Conference on Rule 702 to coincide with the Committee's fall meeting. The Conference agenda will include a discussion of a number of recent developments regarding expert testimony, with the goal of determining whether any changes to Rule 702 are

necessary to accommodate these developments. There will be two panels. Panel One will discuss recent challenges to forensic expert testimony and the role of rulemaking in establishing reforms; and 2) other problems in applying the *Daubert* standards in civil and criminal cases.

Behind Tab 9 are the following: 1) a Reporter's memo on the Conference, including a list of speakers and their topics, and a draft rule on forensic evidence; 2) speaker bios; and 3) a report by the President's Council of Advisors on Science and Technology (PCAST) on forensic evidence.

X. Crawford Outline

The Reporter's updated outline on cases applying the Supreme Court's Confrontation Clause jurisprudence is behind Tab 10.

TAB 1

TAB 1A

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Advisory Committee on Evidence Rules

Minutes of the Meeting of April 21, 2017

Washington, D.C

The Judicial Conference Advisory Committee on the Federal Rules of Evidence (the “Committee”) met on April 21, 2017 at the Thurgood Marshall Building in Washington, D.C.

The following members of the Committee were present:

Hon. William K. Sessions, III, Chair
Hon. James P. Bassett
Hon. Debra Ann Livingston
Hon. John T. Marten (by phone)
Hon. John A. Woodcock, Jr.
Daniel P. Collins, Esq.
Traci Lovitt, Esq.
A.J. Kramer, Esq., Public Defender
Elizabeth J. Shapiro, Esq., Department of Justice

Also present were:

Hon. David G. Campbell, Chair of the Committee on Rules of Practice and Procedure
Hon. Solomon Oliver, Liaison from the Civil Rules Committee
Hon. James C. Deaver, III, Liaison from the Criminal Rules Committee
Professor Daniel J. Capra, Reporter to the Committee
Professor Daniel Coquillette, Reporter to the Standing Committee
Professor Liesa Richter, Consultant to the Committee
Professor Kenneth Broun, Former Consultant to the Committee
Timothy Lau, Federal Judicial Center
Rebecca A. Womeldorf, Chief, Rules Committee Support Office
Shelly Cox, Rules Committee Support Office
Bridget Healy, Rules Committee Support Office
Lauren Gailey, Rules Committee Law Clerk
Michael Shepard, Hogan Lovells, American College of Trial Lawyers
Susan Steinman, American Association of Justice

I. Opening Business

Announcements

Judge Sessions welcomed attendees to the meeting and announced that the Fall Advisory Committee meeting will be held at Boston College on October 27, at which the Committee will sponsor a Conference on Rule 702, which would be discussed later in the meeting. Judge Sessions also announced that Professor Liesa Richter will serve as the academic consultant to the Advisory Committee with the departure of Professor Ken Broun. Judge Sessions reported that Judge Woodcock will be leaving the Committee and acknowledged his invaluable service to the Committee.

Judge Sessions also informed the Committee that Judge Livingston has been selected to be the Chair of the Advisory Committee. He noted that it had been an honor to serve as Chair and that he was grateful for the support he has received from the Reporter, from Judge Campbell, and from the Rules Committee Support Office. Judge Sessions remarked that Judge Livingston is a thoughtful, experienced evidence expert whose supportive style will make her a perfect Chair. Judge Livingston noted her appreciation for Judge Sessions' incredible service to the Committee.

The Reporter announced that Professor Ken Broun had asked to step down as academic consultant to the Committee after more than 20 years of service to the Committee. The Reporter noted that Professor Broun was a Committee member for several years before becoming the academic consultant, and that Professor Broun had performed invaluable research for the Advisory Committee --- particularly in connection with the extensive privilege project, and with the development of Rule 502. The Reporter stated that Professor Broun has been a loyal and supportive member of the Committee and that all are sad to see him depart. Judge Sessions stated that Professor Broun had been an incredible contributor to the Committee, who brought a stable and thoughtful perspective that helped the Committee navigate difficult issues. Professor Broun stated that serving the Advisory Committee was the highlight of his professional career and that he was grateful to his many incredible Chairs, especially Judge Sessions. He also expressed his gratitude to the Reporter for his work on behalf of the Committee.

Approval of Minutes

The minutes of the October 2016 meeting at Pepperdine Law School were approved.

January Meeting of the Standing Committee

The Reporter made a short presentation on the January, 2017 meeting of the Standing Committee. There were no action items from the Evidence Committee for the January meeting. The Reporter informed the Standing Committee of ongoing projects, including potential amendments to the Rule 807 residual exception to the hearsay rule; proposals to amend Rule 801(d)(1)(A) governing prior inconsistent statements by testifying witnesses; and a review of the operation of Rule 404(b) governing prior bad acts and potential proposals to improve the Rule.

He noted that the Standing Committee was very enthusiastic about the upcoming fall conference on forensic evidence and Federal Rule of Evidence 702. In addition, the Standing Committee was interested in Rule 404(b) proposals and thought it was important to review the Rule whether or not amendments are proposed.

II. Proposal to Amend the Residual Exception

At previous meetings the Committee has had some preliminary discussion on whether Rule 807 --- the residual exception to the hearsay rule --- should be amended. Part of the original motivation for an amendment was to consider expanding its coverage, because a comprehensive review of the case law over the last ten years provides some indication that reliable hearsay has been excluded. But another reason for an amendment was the Committee's determination that the Rule could be improved to make the court's task of assessing trustworthiness easier and more uniform; to eliminate confusion and unnecessary effort by deleting superfluous language; and to provide improvements to the notice provision.

Amendments to the notice provision were unanimously approved at the Spring 2016 meeting, but have been held back while the Committee has been considering changes to the substantive provisions of Rule 807. With regard to substantive changes, the Committee, after substantial discussion at prior meetings, has preliminarily agreed on the following principles regarding Rule 807:

- The requirement that the court find trustworthiness "equivalent" to the circumstantial guarantees in the Rule 803 and 804 exceptions should be deleted --- without regard to expansion of the residual exception. That standard is exceedingly difficult to apply, because there is no unitary standard of trustworthiness in the Rule 803 and 804 exceptions. It is common ground that statements falling within the Rule 804 exceptions are not as reliable as those admissible under Rule 803; and it is also clear that the bases of reliability differ from exception to exception. Moreover, one of the exceptions subject to "equivalence" review --- Rule 804(b)(6) forfeiture --- is not based on reliability at all. Given the difficulty of the "equivalence" standard, a better approach is simply to require the judge to find that the hearsay offered under Rule 807 is trustworthy. This is especially so because a review of the case law indicates that the "equivalence" standard has not fulfilled the intent of the drafters to limit the discretion of the trial court. Given the wide spectrum of reliability found in the hearsay exceptions, it is not difficult to find a statement reliable by comparing it to a weak exception, or to find it unreliable by comparing it to a strong one.

- Trustworthiness can best be defined in the Rule as requiring an evaluation of both 1) circumstantial guarantees surrounding the making of the statement, and 2) corroborating evidence. Most courts find corroborating evidence to be relevant to the reliability enquiry, but some do not. An amendment would be useful to provide uniformity in the approach to evaluating trustworthiness under the residual exception --- and substantively, that amendment should specifically allow the court to consider corroborating evidence, as corroboration is a typical source for assuring that a statement is reliable. Adding a requirement that the court consider

corroboration is an improvement to the rule independent of any decision to expand the residual exception.

- The requirements in Rule 807 that the residual hearsay must be proof of a “material fact” and that admission of residual hearsay be in “the interests of justice” and consistent with the “purpose of the rules” have not served any good purpose. The inclusion of the language “material fact” is in conflict with the studious avoidance of the term “materiality” in Rule 403 --- and that avoidance was well-reasoned, because the term “material” is so fuzzy. The courts have essentially held that “material” means “relevant” --- and so nothing is added to Rule 807 by including it there. Likewise nothing is added to Rule 807 by referring to the interests of justice and the purpose of the rules because that guidance is already provided by Rule 102.
- The requirement in the residual exception that the hearsay statement must be “more probative than any other evidence that the proponent can obtain through reasonable efforts” should be retained. This will preserve the principle that proponents cannot use the residual exception unless they need it. And it will send a signal that the changes proposed are modest --- there is no attempt to allow the residual exception to swallow the categorical exceptions, or even to permit the use of the residual exception if the categorical exceptions are available.

At the Spring meeting, Judge Sessions noted that the question before the Committee was whether to forward a proposed amendment to Rule 807 to the Standing Committee with a recommendation that it be published for public comment. The Reporter presented the following working draft of proposed changes to Rule 807 for the Committee’s consideration:

Rule 807. Residual Exception

(a) **In General.** Under the following conditions, circumstances, a hearsay statement is not excluded by the rule against hearsay; ~~even if~~

(1) the statement is not specifically covered by a hearsay exception in Rule 803 or 804;:

~~(1 2)~~ ~~the statement has equivalent circumstantial guarantees of trustworthiness~~ the court determines that it is trustworthy, after considering the totality of circumstances under which it was made, [the presence or absence of] any corroborating evidence, [and the opponent’s ability or inability to cross-examine the declarant]; and

~~(2)~~ ~~it is offered as evidence of a material fact;~~

(3) it is more probative on the point for which it is offered than any other evidence that the proponent can obtain through reasonable efforts; ~~and~~

~~(4) — admitting it will best serve the purposes of these rules and the interests of justice.~~

(b) Notice. The statement is admissible only if, ~~before the trial or hearing~~ the proponent gives an adverse party reasonable written notice of ~~the~~ an intent to offer the statement ~~and its particulars, including the declarant's name and address, -- including its substance and the declarant's name --~~ so that the party has a fair opportunity to meet it. The notice must be provided before the trial or hearing -- or during trial or hearing if the court, for good cause, excuses a lack of earlier notice.

The Reporter noted that the objective of the proposed amendment to Rule 807 had changed over the course of the Committee's research into Rule 807 and as a result of the Fall 2016 conference at the Pepperdine University School of Law, that brought together noted experts and litigators to discuss potential amendments to Rule 807. Although the Committee originally considered amendments to Rule 807 in order to expand the scope of the Rule and permit more liberal admission of hearsay through the residual exception, the Committee's current working draft is not intended to expand the coverage of the Rule. Instead, the goal of the working draft is to engage in good rulemaking that assists courts in applying the trustworthiness standard and resolves conflicts among the courts with respect to the evidence to be considered in evaluating admissibility. The Reporter emphasized that sound rulemaking based on exhaustive research and broad input often results in changed goals over time.

The Reporter stated that a slight expansion of the residual exception might occur through a Committee Note, if the Note were written to express an intent that the changes be read in a manner that would expand judicial discretion; or the Note might state that the original legislative history of the Rule --- which emphasized that it could be used only in "rare and exceptional" cases --- cannot be found in the text of the Rule as amended. To that end, the Reporter prepared two Committee Notes for the Committee to consider: the first describing the changes as simply good rulemaking, resolving conflicts and making the Rule more user-friendly; the second expressing an intent to apply the amended Rule somewhat more broadly.

The Committee's discussion of the working draft and of the two versions of the proposed Notes proceeded as follows:

- The DOJ representative questioned whether the Committee wanted to abandon the objective of expanding Rule 807. She noted that consideration of the amendment began in connection with public comment on the proposal to abrogate the Ancient Documents exception to the hearsay rule, in response to comments suggesting that courts are extremely reluctant to utilize Rule 807 to admit even highly reliable hearsay. She noted that the Department prefers a Committee Note to the proposed amendment that would signal expansion of Rule 807. Several Committee members, however, expressed a preference for a good rulemaking proposal that foregoes expansion of the Rule. Other Committee members articulated concern about a Committee Note that could be construed

to alter the meaning of the rule text. The Committee ultimately concluded that any proposed amendment would be accompanied by a Committee Note emphasizing that the intent of the amendment is to clarify the trustworthiness analysis, resolve conflicts, and make other minor improvements --- and not to expand the residual exception.

- One Committee member suggested that the removal of the “materiality” and “interests of justice” requirements in existing Rule 807 could be construed to expand admissibility under Rule 807 if indeed those requirements served as “tone-setters” that cautioned against frequent resort to Rule 807. Courts might interpret their abrogation as a signal to admit hearsay more freely under an amended Rule 807. Judge Sessions and Professor Capra both noted that the proposed Committee Note that would accompany the proposal expressly provides that the “materiality” and “interests of justice” requirements were removed only because they were “superfluous” and not with the intent of expanding access to Rule 807. Moreover, there is plenty in the amendment that cautions against frequent resort to Rule 807 --- including retention of the “more probative” requirement, and the required finding that the hearsay is not admissible under any other exception before the residual exception may be invoked.
- Another Committee member expressed concern about the language in Rule 807 that permits admission of hearsay through Rule 807 only if “it is not specifically covered by a hearsay exception in Rule 803 or 804.” That Committee member feared that this language could be interpreted to exclude any hearsay within subject areas covered by the Rule 803 and Rule 804 exceptions, thus making Rule 807 more restrictive than it is currently. The Reporter noted that this language is in the original Rule --- the amendment just places that language as a specific admissibility requirement rather than a description in an opening clause, as it is currently. The Reporter conceded that under the current Rule, there is some dispute concerning what to do about “near-misses” --- hearsay that fails to meet all the admissibility requirements for a particular exception, but is nonetheless reliable enough to qualify as residual hearsay. He stated that a minority of courts have opted to exclude “near-misses” that approach too closely to an established exception, but that most courts are loathe to exclude such a statement if it is actually found to be trustworthy. He further explained that the “near-miss” issue would be difficult to resolve through rulemaking and that the working draft of the proposed amendment to Rule 807 did not intend to address that issue. He noted that the public comment process might provide valuable insights into how best to tackle the “near-miss” issue. One Committee member suggested that good rulemaking should aim to resolve ambiguities in the case law and proposed that the language in the draft rule could be changed from hearsay “not specifically covered” by a Rule 803 or 804 exception to hearsay “not specifically admissible through a Rule 803 or 804 exception” --- in order to avoid any suggestion of a “near-miss” prohibition and to codify the approach of the majority of courts. Although Committee members agreed that this language could work, the consensus was to retain the “covered” language through the comment period to see what input might be forthcoming from the public on the issue. The Committee did resolve to delete a sentence in the Committee note accompanying the proposed Rule that read: “It [the amendment] is not intended to be a device to erode or evade the standard

exceptions” to avoid any suggestion that the amendment intends to disqualify “near-miss” hearsay from being admitted pursuant to Rule 807.

- One Committee member concluded that courts do have trouble with the equivalence standard, and that there is a demonstrated conflict on whether corroborating evidence is to be considered in the trustworthiness inquiry. So these are good, rulemaking-based reasons for the change. The member expressed concern, however, about language in the draft Rule allowing hearsay to be admitted through Rule 807 “if the court determines that it is trustworthy.” This Committee member observed that other evidence rules reference indicia of trustworthiness or circumstantial guarantees of trustworthiness, focusing a trial judge more on the presence of factors and circumstances that add trustworthiness, rather than on the trial judge’s inherent belief in the trustworthiness of the evidence. Concern was expressed that this instruction to determine whether the hearsay “is trustworthy” could be viewed as a higher standard that could restrict admissibility more than current Rule 807. Judge Campbell noted that the trial judge should focus on whether the hearsay is trustworthy enough to be admitted more than on his or her own view of the evidence. The Committee unanimously agreed to modify the language in the working draft to provide that a hearsay statement may be admitted if: “the court determines that it is supported by sufficient guarantees of trustworthiness --- after considering the totality of the circumstances under which it was made and any evidence corroborating the statement.” The draft Committee Note was changed to hew to the change in the Rule’s text.
- The Committee also discussed amendments to the notice provisions of Rule 807. Judge Campbell noted that the draft Rule required “written” notice, but that the Committee Note explained that notice need not be written if provided at trial after a finding of good cause. Judge Campbell suggested that the Rule text ought to excuse the writing requirement in good cause circumstances rather than leaving that to the Note. The Committee agreed with these comments, and modified the working draft to clarify that the notice could be in “any form” during the trial or hearing where the judge excuses pretrial notice for good cause. Changes were also made to the Committee Note to conform to the added rule text. Judge Campbell also expressed concern about language in the Committee Note suggesting that courts excusing pretrial notice should consider protective measures, such as a continuance, “to assure that the opponent has time to prepare for the particularized argument that is necessary to counter hearsay offered under the residual exception.” Judge Campbell noted that there could be other reasons that an opponent of a hearsay statement offered pursuant to Rule 807 might need protective measures. After discussion, the Committee agreed that there could be many reasons to consider protective measures and that seeking to spell them out in the Note could risk being under-inclusive. Therefore, Committee members agreed to delete the language in the Note describing the reasons justifying protective measures, leaving such considerations to the discretion of the trial judge.
- Committee members all agreed that requiring the court to consider corroborating evidence was useful to resolve a split in the courts, and that it was important to include corroboration in the trustworthiness inquiry because its presence or absence is highly

relevant to a consideration of whether the hearsay statement is accurate. One Committee member suggested adding language instructing courts to consider evidence corroborating “the statement” to avoid any suggestion that the credibility of a witness relating a hearsay statement should be considered. Committee members agreed with that change, and with language in the Committee Note instructing that the reliability of the in-court witness is not to be considered in the trustworthiness inquiry.

- All Committee members agreed that it was unnecessary to direct a trial court to consider both the presence or absence of corroboration, noting that courts will appreciate the importance of both, as well as of the quality of the corroboration without any express language to that effect.
- One Committee member described a state residual exception allowing admissibility of hearsay so trustworthy “that adversarial testing would add little.” Some members noted that, while the ability to cross-examine a declarant-witness at trial might militate in favor of admissibility, the absence of cross-examination should in no way counsel against admissibility because it is the hearsay of absent and unavailable declarants that is most often admitted through Rule 807. The Committee agreed to delete any express reference in the text to cross-examination, given that trial judges will understand the importance of cross in considering the admissibility of hearsay statements through Rule 807.

After further discussion, a motion was made and seconded to approve the proposed amendments to Rule 807 and a Committee Note, both as revised at the meeting, with the recommendation to the Standing Committee that the Rule and Note be released for public comment. The Rule and Note, as sent to the Standing Committee, provide as follows:

Rule 807. Residual Exception

(a) **In General.** Under the following conditions, circumstances, a hearsay statement is not excluded by the rule against hearsay; ~~even if~~

(1) the statement is not specifically covered by a hearsay exception in Rule 803 or 804;

~~(1 2) the statement has equivalent circumstantial guarantees of trustworthiness~~ the court determines that it is supported by sufficient guarantees of trustworthiness --- after considering the totality of circumstances under which it was made and any evidence corroborating the statement; and

~~(2) — it is offered as evidence of a material fact;~~

(3) it is more probative on the point for which it is offered than any other evidence that the proponent can obtain through reasonable efforts; ~~and~~

~~(4) — admitting it will best serve the purposes of these rules and the interests of justice.~~

(b) **Notice.** The statement is admissible only if ~~before the trial or hearing~~ the proponent gives an adverse party reasonable notice of ~~the~~ an intent to offer the statement ~~and its particulars, including the declarant's name and address, -- including its substance and the declarant's name --~~ so that the party has a fair opportunity to meet it. The notice must be provided in writing before the trial or hearing -- or in any form during the trial or hearing if the court, for good cause, excuses a lack of earlier notice.

Committee Note

Rule 807 has been amended to fix a number of problems that the courts have encountered in applying it.

Courts have had difficulty with the requirement that the proffered hearsay carry “equivalent” circumstantial guarantees of trustworthiness. The “equivalence” standard is difficult to apply, given the different types of guarantees of reliability, of varying strength, found among the categorical exceptions (as well as the fact that some hearsay exceptions, e.g., Rule 804(b)(6), are not based on reliability at all). The “equivalence” standard has not served to limit a court’s discretion to admit hearsay, because the court is free to choose among a spectrum of exceptions for comparison. Moreover, experience has shown that some statements offered as residual hearsay cannot be compared usefully to any of the categorical exceptions and yet might well be trustworthy. Thus the requirement of an equivalence analysis has been eliminated. Under the amendment, the court is to proceed directly to a determination of whether the hearsay is supported by guarantees making it more likely than not that the statement is trustworthy.

The amendment specifically allows the court to consider corroborating evidence in the trustworthiness enquiry. Most courts have required the consideration of corroborating evidence, though some courts have disagreed. The rule now provides for a uniform approach, and recognizes that the existence or absence of corroboration is in fact relevant to whether a statement is accurate. Of course, the court must not only consider the existence of corroborating evidence but also the strength and quality of that evidence.

The change to the trustworthiness clause does not at all mean that parties may proceed directly to the residual exception, without considering admissibility of the hearsay under Rules 803 and 804. Indeed Rule 807(a)(1) now requires the proponent to establish that the proffered hearsay is a statement that “is not specifically covered by a hearsay exception in Rule 803 or 804.” Thus Rule 807 remains an exception to be invoked only when necessary.

In deciding whether the statement is supported by sufficient guarantees of trustworthiness, the court should not consider the credibility of any witness who relates

the declarant's hearsay statement in court. The credibility of an in-court witness does not present a hearsay question. To base admission or exclusion of a hearsay statement on the witness's credibility would usurp the jury's role of determining the credibility of testifying witnesses. The rule provides that the focus for trustworthiness is on circumstantial guarantees surrounding the making of the statement itself, as well as any independent evidence corroborating the statement. The credibility of the witness relating the statement is not a part of either enquiry.

The Committee decided to retain the requirement that the proponent must show that the hearsay statement is more probative than any other evidence that the proponent can reasonably obtain. This necessity requirement will continue to serve to prevent the residual exception from being used as a device to erode the categorical exceptions.

The requirements that residual hearsay must be evidence of a material fact and that its admission will best serve the purposes of these rules and the interests of justice have been deleted. These requirements have proved to be superfluous in that they are already found in other rules (*see*, Rules 102, 401).

The notice provision has been amended to make three changes in the operation of the Rule:

- First, the rule requires the proponent to disclose the "substance" of the statement. This term is intended to require a description that is sufficiently specific under the circumstances to allow the opponent a fair opportunity to meet the evidence. Cf. Rule 103(a)(2) (requiring the party making an offer of proof to inform the court of the "substance" of the evidence). Prior case law on the obligation to disclose the "particulars" of the hearsay statement may be instructive, but not dispositive, of the proponent's obligation to disclose the "substance" of the statement under the rule as amended. The prior requirement that the declarant's address must be disclosed has been deleted; that requirement was nonsensical when the declarant was unavailable, and unnecessary in the many cases in which the declarant's address was known or easily obtainable. If prior disclosure of the declarant's address is critical and cannot be obtained by the opponent through other means, then the opponent can seek relief from the court.
- Second, the rule now requires that the pretrial notice be in writing --- which is satisfied by notice in electronic form. See Rule 101(b)(6). Requiring the notice to be in writing provides certainty and reduces arguments about whether notice was actually provided.
- Finally, the pretrial notice provision has been amended to provide for a good cause exception --- the same exception found in Rule 404(b). Most courts have applied a good cause exception under Rule 807 even though it was not specifically provided for in the original rule, while some courts have read the original rule as it was written. Experience under the residual exception has shown that a good cause exception is necessary in certain limited situations. For

example, the proponent may not become aware of the existence of the hearsay statement until after the trial begins; or the proponent may plan to call a witness who without warning becomes unavailable during trial, and the proponent might then need to resort to residual hearsay. Where notice is provided during the trial, the general requirement that notice must be in writing need not be met.

The rule retains the requirement that the opponent receive notice in a way that provides a fair opportunity to meet the evidence. When notice is provided during trial after a finding of good cause, the court may need to consider protective measures, such as a continuance, to assure that the opponent is not prejudiced.

III. Proposal to Amend Rule 801(d)(1)(A)

Over the last several meetings, the Committee has been considering the possibility of expanding substantive admissibility of certain prior statements of testifying witnesses under Rule 801(d)(1) --- the rationale of that expansion being that unlike other forms of hearsay, the declarant who made the statement is subject to cross-examination about that statement. Since beginning its review of Rule 801(d)(1), the Committee has narrowed its focus. Here is a synopsis of the Committee's prior determinations:

- While there is a good argument that prior witness statements should not be treated as hearsay at all, amending the hearsay rule itself (Rule 801(a)-(c)) is not justified. That rule is iconic, and amending it to exclude prior witness statements will be difficult and awkward. Therefore any amendment should focus on broadening the exemption provided by Rule 801(d)(1).

- The focus on Rule 801(d)(1) should be narrowed further to the subdivision on prior inconsistent statements: Rule 801(d)(1)(A). The current provision on prior consistent statements --- Rule 801(d)(1)(B) --- was only recently amended, and that amendment properly captures the statements that should be admissible for their truth. Any expansion of Rule 801(d)(1)(B) would untether the rule from its grounding in rehabilitating the witness, and would allow parties to strategically create evidence for trial. Likewise, the current provision of prior statements of identification --- Rule 801(d)(1)(C) --- has worked well and is not controversial; there is no reason, or even a supporting theory, to expand admissibility of such statements.

- Currently Rule 801(d)(1)(A) provides for substantive admissibility only in unusual cases --- where the declarant made the prior statement under oath at a formal proceeding. Two possibilities for expansion are: 1) allowing for substantive admissibility of *all* prior inconsistent statements, as is the case in California, Wisconsin, and a number of other states; and 2) allowing substantive admissibility only when there is proof ---

other than a witness's statement --- that the prior statement was actually made, as is the procedure in Connecticut, Illinois, and several other states. The Committee quickly determined that it would not propose an amendment that would provide for substantive admissibility of all prior inconsistent statements. The Committee was concerned about the possibility that a prior inconsistent statement could be used as critical substantive proof even if the witness denied ever making it and there was a substantial dispute about whether it was ever made. In such circumstances, it would be difficult to cross-examine the witness about a statement he denies making; and it would often be costly and distracting to have to prove whether a prior inconsistent statement was made if there is no reliable record of it.

- Addressing the basic concern about whether the statement was ever made, a majority of Committee members have concluded that this concern could be answered by a requirement that the statement be recorded by audiovisual means. That expansion could lead to more statements being videotaped in expectation that they might be useful substantively --- which is a good result even beyond its evidentiary consequences. Moreover, expansion of substantive admissibility would ameliorate one of the major costs of the current rule --- which is that a confounding limiting instruction must be given whenever a prior inconsistent statement is admissible for impeachment purposes but not for its substantive effect. That cost may be justified when there is doubt that a prior statement was fairly made, but it may well be unjustified when the prior statement is audiovisually recorded --- as there is easy proof of the statement and its circumstances if the witness denies making it or tries to explain it away. Finally, beyond assuring that a witness could not deny the statement, audiovisual recording would promote an effective opportunity for cross-examination and a meaningful evaluation of the prior statement by the jury.

The Committee developed a tentative working draft of an amendment that would allow substantive admissibility for audiovisually-recorded prior inconsistent statements --- but the Committee is not in agreement on whether substantive admissibility under Rule 801(d)(1)(A) should be expanded.

In light of discussion at the previous meeting, the working draft was modified for the Spring meeting to adopt a further ground for substantive admissibility --- if the witness acknowledges having made the prior inconsistent statement. This additional ground of admissibility was proposed by the Justice Department, the reason being that acknowledgment of the witness eliminates any concern that the prior statement was never made. The Committee was made aware, however, of research that Professor Richter conducted on the Illinois evidence rule that allows acknowledged prior inconsistent statements to be admitted for their truth. This research suggests that providing for substantive admissibility for acknowledged statements can raise difficult questions of whether the statement is truly acknowledged by the witness --- the witness might waffle, or acknowledge reluctantly, or provide only a partial acknowledgment, etc. The Reporter suggested that it would be best to forward any proposed amendment with an acknowledgement provision in brackets that could be considered a subject of separate comment.

Thus, the working draft of Rule 801(d)(1)(B) and a Committee Note, reviewed by the Committee at the Spring meeting provided as follows:

(d) Statements That Are Not Hearsay. A statement that meets the following conditions is not hearsay:

(1) A Declarant-Witness's Prior Statement. The declarant testifies and is subject to cross-examination about a prior statement, and the statement:

(A) is inconsistent with the declarant's testimony and ~~was~~;

(i) was given under penalty of perjury at a trial, hearing, or other proceeding or in a deposition;

(ii) was recorded by audiovisual means, and the recording is available for presentation at trial; or

[(iii) is acknowledged by the declarant, while testifying at the trial or hearing, as the declarant's own statement; or]

A working draft of the Committee Note provides as follows:

The amendment provides for greater substantive admissibility of inconsistent statements of a testifying witness, which is appropriate because the declarant is by definition testifying under oath and is subject to cross-examination about the statement. The requirement that the statement be made under oath at a former proceeding is unnecessarily restrictive. That requirement stemmed mainly from a concern that it was necessary to regulate the possibility that the prior statement was never made or that its presentation in court is inaccurate --- because it may be difficult to cross-examine a declarant about a prior statement that the declarant plausibly denies making. But as shown in the practice of some states, there is a less onerous alternative --- not widely available at the time the rule was drafted --- to assure that what is introduced is what the witness actually said. The best proof of what the witness said, and that the witness said it, is when the statement is made in an audiovisual record. That is the safeguard provided by the amendment. Given this important safeguard, there is good reason to dispense with the confusing jury instruction that seeks to distinguish between substantive and impeachment uses for prior inconsistent statements.

The amendment expands substantive admissibility for prior inconsistent statements only if there is no dispute that the witness actually made the statement. Subdivision (A)(ii) requires a statement to be recorded by

“audiovisual” means. So to be substantively admissible, it must be clear that the witness made the statement on both audio and video. “Off-camera” statements are not substantively admissible under the amendment.

It may arise that a prior inconsistent statement, even though made in an audiovisual record, is challenged for being unreliable --- for example that the witness was subject to undue influence, or impaired by alcohol at the time the statement was made. These reliability questions are generally for the trier of fact, and they will be relatively easy to assess given the existence of an audiovisual recording and testimony at trial by the person who made the statement.

Questions may arise when the recording is partial, or subject to technical glitches. Courts in deciding the analogous question of authenticity under Rule 901 have held that deficiencies in the recording process do not bar admissibility unless they “render the recording as a whole untrustworthy.” *United States v. Adams*, 722 F.3d 788, 822 (6th Cir. 2013). *See also United States v. Cejas*, 761 F.3d 717 (7th Cir. 2014) (intermittent skips in video recording did not render recordings untrustworthy). Courts can usefully apply that standard in assessing the witness’s prior statement for substantive admissibility.

There is overlap between subdivisions (A)(i) and (A)(ii). For example, audiovisual recording of a deposition is potentially admissible under both provisions. But the Committee decided to retain the longstanding original provision, as it has been the subject of extensive case law that should not be discarded. Rather than replace the original ground of substantive admissibility, the decision has been made to add a new, if somewhat overlapping, ground.

[New Subdivision (A)(iii) provides for an additional, limited ground of substantive admissibility: where the declarant acknowledges having made the prior statement while testifying at the trial or hearing. Acknowledgment by the witness eliminates the concern that the statement was never made, so the acknowledging witness can be fairly cross-examined about the statement. It is for the court in its discretion to determine under the circumstances whether the witness has, in testifying, sufficiently acknowledged making the statement that is offered as inconsistent. There is no requirement that the court undertake a line-by-line assessment.]

While the amendment allows for somewhat broader substantive admissibility of prior inconsistent statements, it does not affect the use of any prior inconsistent statement for impeachment purposes. A party may wish to introduce an inconsistent statement not to show that the witness’s testimony is false and prior statement is true, but rather to show that neither is true. Rule 801(d)(1)(A) is inapplicable if the proponent is not offering the prior inconsistent statement for its truth. If the proponent is offering the statement solely for impeachment and because it was false, it does not fit the definition of hearsay under Rule 801(c), and so Rule 801(d)(1)(A) never comes into play.

At the Spring meeting, the Committee engaged in a substantial and detailed discussion of the proposed amendment to Rule 801(d)(1)(A). The Committee recognized the potential benefits and costs of the proposal, which could be summarized as follows:

Potential Benefits

- Admissibility of audiovisually recorded statements could incentivize law enforcement officers and others to record more interrogations and interviews, which could be an improvement on current practices and a net positive in the creation of additional available evidence to ascertain the truth.
- Prosecutors and plaintiffs could get to a jury in additional cases with the help of audiovisual statements by waffling and turncoat witnesses.
- Incomprehensible limiting instructions cautioning the jury against substantive use of audio-visually recorded statements would be eliminated.
- Summary judgment practice on the civil side could be impacted by the availability of audio-visually recorded statements, which could be a net positive to the extent that there is additional evidence for the court to consider.

Potential Costs

- The substantive admissibility of audio-visually recorded statements could lead to manipulation and gamesmanship in videos for tactical use, both by law enforcement officers and by civil parties who could now make audiovisual recordings of witnesses likely to turn against them at trial. In addition, corporations could be motivated to make audiovisual recordings in anticipation of litigation for fear of witnesses giving unfavorable testimony at trial. Many of these statements may be made without reflection, or subject to persuasion, and so may not be reliable.
- An amendment that permits substantive admissibility of audiovisual recordings that are inconsistent with a witness's trial testimony could serve to advantage the powerful, such as prosecutors and corporations with incentives to record and a systemized approach to the creation of evidence.
- The proliferation of video recording outside an interrogation or interview setting, such as by police body or dash cameras, could raise difficult questions about the admissibility of off-camera statements or of on-camera statements completed and contextualized by statements made off-camera in a chaotic and rapidly evolving situation.
- Audiovisual recordings on Facebook or YouTube could present difficult issues of reliability.
- Admitting "acknowledged" witness statements could require a laborious and inefficient process of acknowledgment that could hinder trial efficiency.

- Summary judgment practice could be negatively affected if possibly unreliable recorded statements are generated after an event and then the declarant testifies inconsistently (but accurately) at a deposition. If the recorded statement can be used substantively, then summary judgment may be denied in some case where perhaps it should be, and would otherwise be, granted.

Two Committee members posed the question whether audiovisually recorded statements will enjoy the same reliability possessed by prior statements under oath in a trial, hearing proceeding or deposition, noting the necessary involvement of lawyers and potential perjury consequences that may make witnesses in that environment think twice about lying. The Reporter noted that Rule 801(d)(1)(A) is not primarily about the reliability of a statement at the time it is made, but is rather about the fact that the witness who made the statement is on the stand, subject to cross-examination --- and that audiovisual recording will ensure that the fact-finder will be able to view and weigh the circumstances surrounding the statement, in addition to observing in-court cross-examination. One Committee member emphasized that any amendment to Rule 801(d)(1)(A) should avoid inefficient reliability hearings prevalent in some state jurisdictions with more expansive admissibility of prior inconsistent statements. Another Committee member remarked that practices under the current rule do aim to ensure reliability through the oath and prior proceeding requirements and that the availability of cross at trial does not fully capture the purpose of the current rule. Conversely, the Department of Justice representative noted that it would be irrational to restrict the amendment to audiovisual statements, because acknowledged statements carry the same guarantee that the statement was made.

Finally, one Committee member noted the possibly problematic timing of a rule providing for more admissibility of recorded statements, especially given the increase in recordings of police-citizen interactions, and the more prevalent use of police body cameras. The suggestion was made that the Committee should seek to insure that a broadened rule would not have unintended consequences with regard to such recordings.

As a result of the extensive discussion, the Committee resolved that more research should be conducted into the consequences of a rule change that would grant substantive admissibility to audiovisual recordings that are inconsistent with a witness's testimony. The Reporter noted that he could inquire with the ABA, the AAJ and other groups prior to publication of the proposal for formal comment. Another Committee member suggested consultation with the Innocence Project concerning potential consequences of such an amendment, because it has been exploring improvement of police practices through measures like increased audiovisual recording. Another suggestion was to solicit feedback from lawyers and judges in states that currently allow recorded prior inconsistent statements to be admitted for their truth. The Reporter also noted that the Committee had previously conducted a survey in conjunction with the Federal Judicial Center prior to publishing a proposed amendment to Rule 801(d)(1)(B) governing prior consistent statements, and that such a survey could be crafted and circulated prior to recommending publication of a proposed amendment to Rule 801(d)(1)(A). The FJC representative agreed to work on preparing such a survey. Judge Campbell noted that recent changes to the Federal Rules of Civil Procedure were criticized for a lack of sufficient study and

foundation, and that additional research could demonstrate that the Committee has done its due diligence before issuing the amendment for public comment.

At the end of the discussion, the Chair asked the Committee to vote on what next step should be taken. Two options were presented: 1. Hold back the rule proposal and conduct more research; and 2. Recommend that the working draft and Committee Note be released for public comment. The Committee voted 5-4 in favor of gathering additional information and in favor of conducting a survey about proposed changes to Rule 801(d)(1)(A), before sending any proposal to the Standing Committee for release for public comment.

IV. Possible Amendment to Rule 606(b)

Federal Rule of Evidence 606(b) prohibits juror testimony concerning juror deliberations when offered to attack the validity of a verdict, but permits proof of outside influence or extraneous prejudicial information. The Supreme Court recently held, in *Pena-Rodriguez v. Colorado*, 137 S.Ct. 855 (2017), that the Colorado counterpart to Rule 606(b) violated a criminal defendant's Sixth Amendment rights to the extent that it excluded testimony about statements demonstrating clear racial bias by a juror during deliberations. The Reporter noted the likelihood that counsel will seek to expand the *Pena-Rodriguez* holding to other constitutional violations in the jury room, such as jurors drawing an unconstitutional adverse inference as a result of defendant's failure to testify. He also noted that the holding could impact civil cases through the Due Process Clause, as signaled by the Supreme Court's 2014 decision in *Warger v. Shauers*, 135 S.Ct. 521 (2016), in which the Court intimated that racist statements of jurors in civil cases might demand a constitutional exception to the Rule 606(b) exclusion.

The Committee recognized that after *Pena-Rodriguez*, Rule 606(b) is unconstitutional as applied at least to racist statements made by jurors while deliberating in criminal cases. The Reporter observed that the Evidence Rules Committee has always strived to ensure that the Evidence Rules will not be subject to unconstitutional application. Although it is conceivable that an evidence rule might violate the constitution in an unusual case, the practice of the Committee has been to amend a rule where an unconstitutional application is specifically foreseeable as a result of a Supreme Court case. Both Rules 412 and 803(10) were amended to account for constitutional concerns.

The Committee discussed whether to propose an amendment to Rule 606(b) to eliminate the possibility of an unconstitutional application. The Reporter outlined three potential amendments:

- The Committee could amend Rule 606(b) to codify the specific holding of *Pena-Rodriguez*, creating an exception to the prohibition on juror testimony to impeach a verdict in cases involving statements of racial bias only. The problem with this potential

amendment would be that expansion of the *Pena-Rodriguez* holding to other types of juror conduct would necessitate yet another amendment to the Rule.

- The Committee could amend Rule 606(b) to expand on the *Pena-Rodriguez* holding and to permit juror testimony about the full range of conduct and statements that may implicate a defendant's constitutional rights. An expansive amendment obviously would involve the Committee in significant policy decisions and would require extensive time and research, and could end up undermining Rule 606(b) itself --- a rule that is essential to preserve the finality of verdicts, the privacy interests of jurors, and the integrity of jury deliberations.
- The Committee could include a generic exception to the Rule 606(b) prohibition of juror testimony, allowing such testimony whenever it is "required by the constitution." This potential amendment would be intended to capture only the right announced in *Pena-Rodriguez* for now, but would adapt to any future expansion of that right in later cases. While this amendment would not alter the status quo (in that Rule 606(b) is necessarily already displaced to the extent of *Pena-Rodriguez*), it would avoid a trap for the unwary and provide a signal in rule text for lawyers that juror testimony may be constitutionally mandated. This approach is consistent with the approach taken in other evidence rules like Rule 412 that conditions exclusion on satisfaction of a defendant's constitutional rights.

The Reporter suggested that an amendment employing a generic reference to constitutional rights was likely the best option for responding to the *Pena-Rodriguez* holding, if any response is to be made. Such an amendment would not extend beyond the Supreme Court's holding, but would allow for potential future expansion by the Supreme Court. Some Committee members in support of such a rule change favored a Committee Note emphasizing that an amendment was not intended to retreat from the important policies underlying the general rule prohibiting juror testimony. Several Committee members, however, expressed concern that an amendment to Rule 606(b) adding a generic reference to allowing juror testimony "required by the Constitution" could be interpreted to permit juror testimony about any type of juror misconduct or statement that could be argued to violate the Constitution. One member of the Committee advocated the first alternative, codifying the specific holding of *Pena-Rodriguez*.

Ultimately, the consensus of the Committee was that any amendment at this time could suggest expected expansion and potentially contribute to it. Therefore, the Committee resolved to postpone consideration of an amendment to Rule 606(b) in favor of monitoring the cases following *Pena-Rodriguez*. The Reporter agreed to monitor the cases and to keep the Committee apprised.

V. Consideration of Possible Changes to Rule 404(b)

The next topic for discussion was Rule 404(b), governing admissibility of other crimes, wrongs, or acts. The Reporter began the discussion of Rule 404(b) by noting that there was no action item concerning the Rule before the Committee, but that the Rule was the subject of intensive discussion at the Pepperdine Conference and the Committee has expressed an interest in, at the very least, monitoring developments in the case law on Rule 404(b). The Committee's review, and discussion at the Pepperdine Conference, has shown problems in the application of the Rule. In some cases, it seems that the prosecutor is allowed to admit other act evidence against a criminal defendant simply by reciting the list of permissible purposes from Rule 404(b)(2), without demonstrating how the other act evidence is relevant for a non-propensity purpose. In other cases, courts seem to be abusing the "inextricably intertwined" doctrine, admitting other acts as part of a charged offense exempt from the limits of Rule 404(b) altogether. Recently a few Circuits have issued opinions seeking to eliminate propensity uses and the overly broad application of the "inextricably intertwined" doctrine permitted in other Circuits. Over the past two meetings, the Committee has been exploring whether the problems in the application of Rule 404(b) revealed by the cases can be resolved or ameliorated by an amendment to Rule 404(b).

The Reporter noted that there are several possibilities for amending the Rule. First, the Reporter prepared a draft for the Committee's consideration that would:

- Change the placement of "other" to modify crimes and wrongs.
- Specify that the rule applies to all evidence that indirectly proves the disputed event and so is fairly characterized as "other act" evidence.
- Add a requirement that the proper purpose articulated for the evidence must be an issue that is actively contested by the opponent.
- Include a substantive provision requiring the probative value for the articulated proper purpose to proceed through a non-propensity inference.
- Eliminate the requirement that the criminal defendant request notice before it must be provided --- a proposal that has already been unanimously accepted by the Committee, but is being held back while the Committee is considering other amendments to Rule 404(b).
- Delete from the notice requirement the provision that the notice need only provide the "general nature" of the Rule 404(b) evidence, and replacing it either with nothing or with "substance of".
- Require articulation in the notice of the proper purpose for which the evidence is offered, and the chain of reasoning supporting the proper purpose.
- Rearrange the notice provision so that the good cause exception applies not only to providing notice about the evidence but also to the articulation requirements.

- Require notice to be provided at least 14 days before trial.

Second, the Reporter presented an amendment proposed by another Committee member that would eliminate the list of permitted purposes currently in Rule 404(b)(2) in favor of a four-step test that would require: 1) an other crime, wrong or act to be relevant to “a specific purpose other than propensity;” 2) the proponent to establish that the relevance of the act does not rely on a character inference; 3) a Rule 403 analysis taking into account the extent to which the non-propensity purpose is “in issue;” and 4) a limiting instruction upon request. The Committee member who proposed this amendment noted that eliminating the time-honored Rule 404(b)(2) list of purposes would cause consternation, but opined that rewriting the Rule to set forth a step-by-step analysis would ensure that any possible propensity use for the evidence would be miniscule.

Third, the Reporter outlined a proposal to amend Rule 404(b) by requiring a more exclusionary balancing test for other crimes, wrongs, or acts offered against a criminal defendant --- more protective than the Rule 403 test, under which the prejudicial effect must substantially outweigh the probative value. The test could require the probative value of the other crime, wrong, or act to “substantially outweigh” (or to “outweigh”) the unfair prejudice to the defendant from a potential propensity use. Such an amendment would ensure admissibility of other act evidence when the point for which it is offered is actively contested, but would not foreclose the government’s ability to argue for admissibility in the absence of such an active contest. There is precedent for providing such protection to a criminal defendant in Rule 609, governing impeachment of testifying witnesses with prior convictions. All witnesses other than a criminal defendant are protected by a Rule 403 balancing test, but a criminal defendant may be impeached with a prior felony conviction only if its probative value outweighs the propensity prejudice to the defendant. The Reporter suggested that this proposal would be an elegant solution that would parallel Rule 609 and that would avoid adding significant and possibly problematic new language and standards to Rule 404(b) regarding “propensity” and “active contest.” This amendment could be accompanied by changes to the Notice provision if the Committee so desired. This potential amendment would make the “inextricably intertwined” issue more meaningful because other acts offered against a criminal defendant would have to survive a heightened balancing, whereas inextricably intertwined acts would need to clear only the lower Rule 403 balancing. Additional amendments could be explored to resolve this concern.

Thereafter, the Department of Justice representative addressed the Committee’s concerns about the use of Rule 404(b) in criminal cases and discussed potential amendments. First, the representative explained that the Department of Justice does not accept that there is a problem in the application of Rule 404(b) in criminal cases. While many appellate cases may seem to give superficial treatment to Rule 404(b) evidence, examination of trial court records reveals careful and thorough consideration of these issues. To the extent that there are concerns about the application of Rule 404(b), Circuits like the Third and Seventh are taking a closer look to ensure that the Rule is operating properly. Second, the Department of Justice representative opined that adding an “active contest” requirement to Rule 404(b) would be unworkable and unfair. She first noted that the requirement would contradict the Supreme Court’s statement in *Old Chief v.*

United States that the government has a right to seek admission of Rule 404(b) evidence regardless of active contest by the defendant. Further, the Department believes that such a requirement would invite gamesmanship by the defense in seeking to avoid other act evidence that should properly be admitted. The Department representative opined that a “reverse 403 balancing” amendment would result in fewer other acts admitted, would be contrary to legislative history favoring admissibility of Rule 404(b) evidence, and could attract Congressional attention. Finally, the Department opposed any amendment to require specificity in a Rule 404(b) pre-trial notice because such a requirement would not account for the fluidity of trial and the need for a trial judge to manage such evidence as the case progresses. The Department of Justice does not oppose an amendment that would eliminate a defendant’s obligation to demand notice of Rule 404(b) evidence, however.

The representative for the Federal Public Defender expressed a different view of Rule 404(b) practice at the trial level, noting that prosecutors offer such evidence in almost every criminal case. He explained that the government’s Rule 404(b) notice often simply lists all the “permitted purposes” authorized by Rule 404(b)(2) and often seeks to admit four or five other crimes, wrongs, or acts by the defendant. Trial judges may take a “split the baby” approach to the multiple other acts, allowing two or three and excluding others, almost assuring affirmance under the forgiving Rule 403 test and abuse of discretion review. The defense often receives no report or other description to assist in identifying the alleged other act evidence the government seeks to offer. The representative of the Federal Public Defender argued that everyone understands that the prosecution wants to admit this evidence because it is so prejudicial, and that the government is often overt in arguing that a defendant “did it before” so he probably had “intent” this time. When the evidence is admitted, the jury instructions seeking to protect the defendant from a propensity inference are incomprehensible to jurors. According to the representative for the Federal Public Defender, Rule 404(b)(2) needs to be rewritten to resolve these problems, and amending the notice provision alone cannot offer a complete solution.

Other Committee members weighed in on the many potential amendments to Rule 404(b). One member suggested that the notice provisions could be improved by requiring more specificity to assist the trial judge in determining admissibility in advance of trial. Committee members agreed that a change to the notice provisions alone could not resolve all the concerns about the admissibility of Rule 404(b) evidence because such a change would not alter the current standard for admitting Rule 404(b) evidence. Still, greater specificity could assist the defense and the trial judge in considering such evidence.

Committee members also discussed whether there is a “Circuit-split” with respect to the admissibility of Rule 404(b) evidence that could be resolved by an amendment to the Rule. The representative for the Department of Justice noted that the Solicitor General has taken the position before the Supreme Court that there is no genuine Circuit-split with respect to Rule 404(b) evidence. The Reporter noted that the cases in the Seventh and Third Circuits --- that prohibit any other act evidence relying on a propensity inference --- do depart from decisions in other Circuits that permit such inferences, and could reasonably be seen as creating a “split.”

At the conclusion of the discussion, Judge Sessions noted that the question for the Committee was whether to continue consideration of Rule 404(b) at the Fall meeting or whether

to abandon efforts to improve the operation of the Rule for the time being. The consensus of the Committee was that Rule 404(b) is one of the most important and most litigated evidence rules and that the issues it raises merit further consideration. The Committee members agreed that adding an “active contest” requirement to the Rule was ill-advised, but resolved to devote more attention to the issues of the “inextricably intertwined doctrine,” the division in courts about proper articulation of non-propensity inferences, and the Rule 404(b) notice requirements. The Reporter stated that he would provide the Committee with a Rule 404(b) case outline for its Fall meeting, including district court opinions, to help determine the level of care applied to Rule 404(b) rulings in criminal cases. One Committee member suggested that the Committee, at the very least, could rely on the case digest to formulate a best practices manual for Rule 404(b) evidence, should the Committee decide not to proceed with amendments to the Rule.

V. Conference on Expert Evidence

The Reporter gave the Committee an update on preparations for the Conference on expert evidence, to take place on the morning of the Fall Advisory Committee meeting, October 27, at Boston College Law School. The Reporter stated that the Conference will address the admissibility of forensic evidence, as well as other issues under Rule 702, including problems applying *Daubert* to various practice areas, problems with non-forensic expert testimony in criminal cases, and inconsistent applications in the courts. The Reporter informed the Committee that he had already secured the participation of noted experts in the field of forensic evidence, as well as Judge St. Eve to speak on *Daubert* as applied to soft-science, and Judge Grimm to comment on criminal cases. He invited the Committee to offer suggestions for invitees, as well as other Rule 702 topics for discussion. The Reporter announced that a transcript of the Conference, as well as supporting articles by participants, will be published in the Fordham Law Review.

VI. Closing Matters

The Reporter referred the Committee to case law digests on Confrontation Clause jurisprudence and on the purported need for a recent perceptions exception to the rule against hearsay. These digests are maintained and updated to assist the Committee in monitoring case law developments as they might bear on the need to propose rule amendments in these important areas.

Finally, once again Committee members expressed their deep gratitude to Judge Sessions for his stellar leadership as Chair of the Committee.

VII. Next Meeting

The Fall, 2017 meeting of the Evidence Rules Committee --- together with a Conference on Expert Evidence --- will be held at Boston College Law School, on Friday, October 27.

Respectfully submitted,

Daniel J. Capra
Liesa L. Richter

TAB 1B

MINUTES
COMMITTEE ON RULES OF PRACTICE AND PROCEDURE
Meeting of June 12-13, 2017 | Washington, D.C.

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ATTENDANCE

The Judicial Conference Committee on Rules of Practice and Procedure (“Standing Committee”) held its fall meeting at the Thurgood Marshall Federal Judiciary Building in Washington, D.C., on June 12-13, 2017. The following members participated:

Judge David G. Campbell, Chair
Judge Jesse M. Furman
Gregory G. Garre, Esq.
Daniel C. Girard, Esq.
Judge Susan P. Graber
Judge Frank Mays Hull

Peter D. Keisler, Esq.
Professor William K. Kelley
Judge Amy St. Eve
Professor Larry D. Thompson
Judge Richard C. Wesley
Judge Jack Zouhary

The advisory committees were represented by their chairs and reporters:

Advisory Committee on Appellate Rules –
Judge Michael A. Chagares, Chair
Professor Gregory E. Maggs, Reporter

Advisory Committee on Criminal Rules –
Judge Donald W. Molloy, Chair
Professor Sara Sun Beale, Reporter
Professor Nancy J. King, Associate
Reporter

Advisory Committee on Bankruptcy Rules –
Judge Sandra Segal Ikuta, Chair
Professor S. Elizabeth Gibson, Reporter

Advisory Committee on Evidence Rules –
Judge William K. Sessions III, Chair
Professor Daniel J. Capra, Reporter

Advisory Committee on Civil Rules –
Judge John D. Bates, Chair
Professor Edward H. Cooper, Reporter
Professor Richard L. Marcus, Associate
Reporter

Deputy Attorney General Rod J. Rosenstein represented the Department of Justice along with Elizabeth J. Shapiro, Deputy Director of the DOJ’s Civil Division.

Present to provide support to the Committee:

Professor Daniel R. Coquillette	Reporter, Standing Committee
Professor Bryan A. Garner	Style Consultant, Standing Committee
Professor R. Joseph Kimble	Style Consultant, Standing Committee
Rebecca A. Womeldorf	Secretary, Standing Committee
Bridget Healy	Attorney Advisor, RCS
Scott Myers	Attorney Advisor, RCS
Julie Wilson	Attorney Advisor, RCS
Dr. Emery G. Lee III	Senior Research Associate, FJC
Dr. Tim Reagan	Senior Research Associate, FJC
Lauren Gailey	Law Clerk, Standing Committee

OPENING BUSINESS

Judge Campbell called the meeting to order and welcomed the participants. He announced this as the final meeting for Judge Wesley, Professor Thompson, and Greg Garre, who have been “invaluable contributors” to the rules committees. Judge Wesley called his appointment to the Committee an “incredible assignment” and thanked Judge Campbell and his predecessor, Judge Jeffrey S. Sutton, for their leadership. Mr. Garre expressed thanks for the “great privilege” of serving on the Committee. Professor Thompson thanked his fellow Standing Committee members, especially the judges, for their service, and was “happy to be just a small part” of the Committee’s work.

Judge Campbell acknowledged a number of other recent and impending departures. He thanked Judge Sessions, whose term as Chair of the Evidence Rules Advisory Committee is coming to an end, for his “quiet but very effective leadership.” Judge Campbell explained that former Standing Committee member Justice Robert P. Young recently stepped down from the bench to accept a position in private practice, and Bankruptcy Judge Michelle Harner left her position as Associate Reporter to the Bankruptcy Rules Advisory Committee upon her appointment to the bench. Another notable departure is that of Associate Justice Neil M. Gorsuch of the United States Supreme Court, who left his position as Chair of the Appellate Rules Advisory Committee upon his confirmation in April 2017.

Judge Campbell introduced Deputy Attorney General Rod Rosenstein, who was also confirmed in April 2017. DAG Rosenstein expressed his “deep appreciation” for the judiciary and thanked his colleague Betsy Shapiro, a career DOJ attorney whose duties for a number of years have included attending and participating in rules committee meetings, for her contributions.

Rebecca Womeldorf reported on the Judicial Conference session held on March 14, 2017, in Washington, D.C. Typically, the Standing Committee submits proposed rules amendments to the Judicial Conference for final approval at its September session. Approved rules are then submitted to the Supreme Court for consideration. Rules that the Court adopts are transmitted to

Congress by May 1 of the following year. Absent any action by Congress, the amendments go into effect on December 1 of that year.

This year, a “special circumstance”—the Bankruptcy Rules Advisory Committee’s rules package implementing the new national Chapter 13 plan form—necessitated a different timetable. The Standing Committee decided to expedite the approval of the Chapter 13 rules package so it could go into effect at the same time as the proposed changes approved at the Judicial Conference’s September 2016 session, which affect Bankruptcy Rules 1001, 1006(b), and 1015(b) and Evidence Rules 803(16) (the “ancient document” rule) and 902 (concerning self-authenticating evidence) (see Agenda Book Tab 1B).

At its January 2017 meeting, the Standing Committee approved the Chapter 13 package, consisting of proposed amendments to Bankruptcy Rules 2002, 3002, 3007, 3012, 3015, 4003, 5009, 7001, and 9009; new Rule 3015.1; and new Official Form 113. The Judicial Conference approved those amendments at its March 2017 session, along with technical amendments to Appellate Rule 4(a)(4)(B) and Civil Rule 4(m). The proposed amendments were submitted to the Supreme Court, which approved them on an expedited basis and transmitted them to Congress on April 27, 2017. If Congress does not take action, these amendments will take effect on December 1, 2017.

APPROVAL OF THE MINUTES OF THE PREVIOUS MEETING

Upon motion by a member, seconded by another, and on a voice vote: **The Standing Committee approved the minutes of the January 3, 2017 meeting (see Agenda Book Tab 1A).**

INTER-COMMITTEE COORDINATION

Many provisions of the four procedural rule sets use near-identical language to address similar issues. For that reason when an advisory committee proposes an amendment to a rule with analogous provisions in other rule sets, and the other advisory committees determine that it is practical and worthwhile to make a parallel amendment, the advisory committees attempt to use identical or similar language unless issues specific to a rule set would justify diverging. The Standing Committee considered a number of these coordination items at the June 2017 meeting (see Agenda Book Tab 7B), including: electronic service and filing, stays of execution, disclosure rules, and redaction of personal identifiers.

Electronic Service and Filing:

Civil Rule 5, Appellate Rule 25, Bankruptcy Rules 5005 & 8011, and Criminal Rules 45 & 49

The Appellate, Bankruptcy, Civil, and Criminal Rules contain a number of similar provisions addressing service and filing, many of which needed to be updated to account for the use of electronic technology. Professor Cooper added that the number of interrelated provisions involved made for “a lot of moving parts,” but the advisory committees worked together to achieve “maximum desirable uniformity” in their amendments. Any remaining differences in “structure and expression” can be attributed to “the context of the individual rule set.”

Civil Rule 5. Professor Cooper presented the proposed changes to Civil Rule 5, which governs service and filing in civil cases (see Agenda Book Tab 4A, pp. 416-30).

Current Civil Rule 5(b)(2)(E) requires the written consent of the person to be served if a paper is to be served electronically. The proposed amended version would permit a paper to be served by filing it with the court's electronic filing system ("CM/ECF"), which automatically sends an electronic copy to the registered users associated with that particular case, without consent. Consent in writing would still be required for methods of electronic service other than CM/ECF. This amended rule would abrogate Civil Rule 5(b)(3), which permits use of the court's facilities to file and serve via CM/ECF if applicable local rules allow. These proposed amendments generated "very little comment." In response to a concern raised by a clerk of court, a sentence was added to the committee note to clarify that the court is not required to notify the filer in the event that an attempted CM/ECF transmission fails.

Although the current version of Civil Rule 5(d)(1) requires a certificate of service, the proposed amendments would lift this requirement in part. The published version provided that, for documents filed through CM/ECF, the automatically-generated notice of electronic filing would constitute a certificate of service. Professor Cooper explained that after publication, the Civil Rules Advisory Committee followed the Appellate Rules Advisory Committee's lead in revising Rule 5(d)(1)(B) to provide "simply that no certificate of service is required" for papers served through CM/ECF. For other papers, amended Rule 5(d)(1)(B) also addresses whether a certificate of service must be filed. "[T]he committees . . . are in accord" that if a paper is filed nonelectronically, "a certificate of service must be filed with it or within a reasonable time after service." In civil practice, however, many papers, including "a very large share of discovery papers," are exchanged among the parties but not filed. "Unique to Civil Rule 5," therefore, is the "separate provision" stating that if a paper is not filed, a certificate of service generally need not be filed.

The proposed amendment to Civil Rule 5(d)(3) would make electronic filing mandatory for parties represented by counsel, except when nonelectronic filing is allowed or required by local rule or permitted by order for good cause. The proposed amendment would continue to give courts discretion to permit electronic filing by pro se parties, as long as the order or local rule allows for reasonable exceptions. The Civil Rules Advisory Committee elected not to require pro se parties to file electronically; while many pro se parties are willing and able to use CM/ECF, the Advisory Committee had "some anxiety" about the possibility of effectively denying access to those who are not. The Advisory Committee declined, in response to a public comment, to grant pro se litigants a right to file electronically.

A proposed new subparagraph, Civil Rule 5(d)(3)(C), establishes a uniform national signature provision. As published, the rule provided that "[t]he user name and password of an attorney of record, together with the attorney's name on a signature block, serves as the attorney's signature." During the public comment period, concerns were raised that the first clause, read literally, required attorneys to place their usernames and passwords in the signature block. The advisory committees worked together to clarify the language, replacing that clause with, "An authorized filing made through a person's electronic filing account."

Initially, the Bankruptcy Rules Advisory Committee omitted the word “authorized” from its version, citing an ambiguity as to whether the court was to authorize the filing, or “the attorney was authorizing someone else to do the filing” (the intended reading). The Appellate Rules Advisory Committee was inclined to omit the term as well. Because their concerns were not unique to a particular rule set, and “merely a question of wording,” Judge Campbell encouraged the advisory committees to adopt a uniform, mutually-agreeable solution at the Standing Committee meeting. The Standing Committee, advisory committee chairs and reporters, and style consultants worked together to refine the language, settling on, “A filing made through a person’s electronic-filing account and authorized by that person, together with that person’s name on a signature block, constitutes the person’s signature.” The Standing Committee agreed to use this language in the parallel provisions of all four rule sets.

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously decided to recommend to the Judicial Conference for approval the proposed amendments to Civil Rule 5, with the revisions made during the meeting.**

Appellate Rules 25 and 26. Judge Chagares and Professor Maggs presented the proposed changes to appellate e-filing and service under Appellate Rule 25 (see Agenda Book Tab 2A, pp. 89-95; Agenda Book Supplemental Materials, pp. 2-3, 5-17).

Proposed amended Appellate Rule 25(a)(2)(B)(i) requires represented persons to file papers electronically but allows exceptions for good cause and by local rule. Appellate Rule 25(a)(2)(B)(iii), addressing electronic signatures, incorporates the uniform national signature provision developed in consultation with the other advisory committees (see discussion of Civil Rule 5(d)(3)(C), *supra*). Like the analogous Civil Rules provisions concerning electronic service, Appellate Rule 25(c)(2) has been amended to permit electronic service through the court’s CM/ECF system, or by other electronic means that the person to be served consented to in writing. The proposed amendment to Appellate Rule 25(d)(1) also omits the requirement of a certificate of service for papers filed via CM/ECF (see discussion of Civil Rule 5(d)(1)(B), *supra*).

The Advisory Committee made a number of revisions in response to public comments. Some criticized the proposed electronic signature provision, which subsequently incorporated the language drafted during the Standing Committee meeting (see discussion of Civil Rule 5(d)(3)(C), *supra*). To clarify that there are two available methods of electronic service under proposed Appellate Rule 25(c)(2), the Advisory Committee placed them in separate clauses: a paper can be served electronically by “(A) by sending it to a registered user by filing it with the court’s electronic-filing system or (B) by sending it by other electronic means that the person to be served consented to in writing.” Like the other advisory committees, the Appellate Rules Advisory Committee discussed but declined to make changes in response to a comment suggesting that pro se parties should have a right to file electronically.

The proposed amendment to Appellate Rule 25(a)(2)(C), which addresses inmate filings, was revised to incorporate amendments that took effect in December 2016. Professor Maggs added that the amended rules’ subheadings have also been altered to match the Civil Rules’ subheadings.

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously decided to recommend to the Judicial Conference for approval the proposed amendments to Appellate Rule 25, with the revisions made during the meeting.**

After the Standing Committee meeting, the Advisory Committee recognized the need for technical and conforming changes to Appellate Rule 26(a)(4)(C), which contains references to Rules 25(a)(2)(B) and 25(a)(2)(C), and Appellate Form 7, which contains a note referring to Rule 25(a)(2)(C). The proposed amendments discussed above renumbered subparagraphs (B) and (C) as Rule 25(a)(2)(A)(ii) and 25(a)(2)(A)(iii), respectively, and the Advisory Committee recommended updating the references in Rule 26 and Form 7 accordingly. The Standing Committee approved the proposed amendments.

Bankruptcy Rules 5005 and 8011. Judge Ikuta presented the proposed amendments to Bankruptcy Rules 5005(a)(2) and 8011, governing electronic filing and signing in bankruptcy cases (see Agenda Book Tab 3A, pp. 192-94, 204).

The proposed amendments to Bankruptcy Rule 5005 generally track the proposed amendments to Civil Rule 5 (see discussion *supra*). When proposed amended Rule 5005 was published, most of the comments concerned the wording of new subparagraph (a)(2)(C), the electronic signature provision. Despite the Bankruptcy Rules Advisory Committee’s initial concern about the term “authorized filing,” it adopted the revised text drafted by the Standing Committee, which clarified that the attorney, not the court, is to authorize the filing (see discussion of Civil Rule 5(d)(3)(C), *supra*). Another comment opposed the presumption against electronic filing by pro se litigants, but, like the other advisory committees, the Bankruptcy Rules Advisory Committee declined to give pro se parties the right to e-file.

When the Advisory Committee recommended publication of proposed amendments to Bankruptcy Rule 5005, it overlooked the need for similar amendments to Rule 8011, its bankruptcy appellate counterpart. Accordingly, the Advisory Committee subsequently recommended amendments conforming Bankruptcy Rule 8011 to Civil Rule 5 and Appellate Rule 25 without publication, so all of the e-filing amendments can take effect at the same time. For consistency with the other rules, minor changes will be made to Rule 8011’s captions as originally drafted. Revisions will also be made to the committee notes.

The proposed amendments to the Bankruptcy Rules regarding electronic filing and service are not identical to the other rule sets’ parallel provisions. Beyond bankruptcy-specific language derived from the Bankruptcy Code—e.g., use of the term “individual” rather than “person,” and “entity” to describe a litigant represented by counsel—the amendments phrase their incomplete-service provisions differently. Instead of deeming electronic service complete unless the sender or filer “learns” or “is notified” that the paper was not received, the Bankruptcy Rules use the phrase “receives notice” to prevent litigants from “purposely ignor[ing] notice” to avoid “learning . . . that the document was not received.” Because these linguistic disparities have existed since the various rule sets were adopted, the reporters agreed the provisions did not need to be reconciled.

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously decided to recommend to the Judicial Conference for approval the proposed amendments to Bankruptcy Rules 5005 and 8011, with the revisions made during the meeting.**

Criminal Rules 45 and 49. Professor Beale explained that the inter-committee effort to develop rules for electronic filing, service, and notice necessitated more substantial changes to Criminal Rule 49 (see Agenda Book Tab 5A, pp. 652-53, Tab 5B, pp. 665-80). The proposed amendments to Civil Rule 5 mandating electronic filing directly affect Criminal Rule 49(b) and (d) (service and filing must be done in the manner “provided for a civil action”) and Criminal Rule 49(e) (locals rule may require electronic filing only if reasonable exceptions are allowed). Although, as Professor King said, the Advisory Committee “worked diligently” to track the changes to the Civil Rules where possible, it concluded that the proposed default rule requiring represented parties to file and serve electronically could be problematic in criminal cases, where prisoners and unrepresented defendants often lack access to CM/ECF. In light of these differences, the Advisory Committee decided to draft and publish a stand-alone Criminal Rule to address electronic filing and service. Professor Beale explained that because the Advisory Committee would essentially be starting from scratch, it decided to take the opportunity “to more fully specify how [electronic filing and service were] going to work.”

There are a number of substantive differences between proposed Criminal Rule 49 and proposed Civil Rule 5. Instead of allowing courts to require by order or local rule (with reasonable exceptions) unrepresented parties to e-file, proposed Criminal Rule 49(b)(3)(B) requires them to file *nonelectronically*, unless permitted to e-file. Proposed subsection (c) also makes nonelectronic filing the default rule for all nonparties, whether they are represented or not. Proposed Criminal Rule 49(b)(4) borrows language from the signature provision of Civil Rule 11(a), and the text of Civil Rule 77(d)(1) regarding the clerk’s duty to serve notice of orders replaces current Criminal Rule 49(c)’s direction that the clerk serve notice “in a manner provided for in a civil action.” A conforming amendment to Criminal Rule 45 would update its cross-references accordingly (see Agenda Book Tab 5B, pp. 681-82).

The changes were not controversial. The Criminal Rules Advisory Committee considered a comment regarding extending electronic filing privileges to pro se parties (other than inmates, as well as inmates and nonparties) but, like the other advisory committees, declined to do so.

Following the public comment period, the Advisory Committee replaced the phrase “within a reasonable time after service” in Criminal Rule 49(b)(1) with “*no later than a reasonable time after service,*” to make clear that certain papers may be filed before they are served. Similarly, text addressing papers served by means other than CM/ECF now requires a certificate of service to “be filed with [the paper] or within a reasonable time after service or filing.” Paragraph (b)(1) was also revised to state explicitly that no certificate of service is required for papers served via CM/ECF. Like the Civil Rules Advisory Committee, the Criminal Rules Advisory Committee added a sentence to the committee note to Rule 49(a)(3) and (4) to make clear that the court is not responsible for notifying the filer that an attempted CM/ECF transmission failed (see discussion of Civil Rule 5(b), *supra*). The Advisory Committee adopted

the revisions made at the Standing Committee meeting to its electronic signature provision in proposed Criminal Rule 49(b)(2), with conforming changes to the committee note (see discussion of Civil Rule 5(d)(3)(C), *supra*).

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously decided to recommend to the Judicial Conference for approval the proposed amendments to Criminal Rule 49 and conforming amendment to Criminal Rule 45, with the revisions made during the meeting.**

Stays of Execution:

*Civil Rules 62 & 65.1; Appellate Rules 8, 11, & 39; and
Bankruptcy Rules 7062, 8007, 8010, 8021, & 9025*

Civil Rules 62 and 65.1. The proposed amendments to Civil Rule 62, which governs stays of proceedings to enforce judgments, are the product of a joint subcommittee of the Civil Rules and Appellate Rules Advisory Committees known as the “Civil/Appellate Subcommittee.”

The proposed amendments make three changes (see Agenda Book Tab 4A, pp. 524-27). First, the automatic stay period is extended to eliminate a gap in the current rule between the length of the current automatic-stay period under Rule 62(a) and the length of a stay pending disposition of a post-judgment motion under Rule 62(b). This discrepancy arose when the Time Computation Project set the expiration of an automatic stay under Civil Rule 62(a) at 14 days after entry of judgment, and the time for filing a post-judgment motion under Rules 50, 52, or 59 at 28 days after entry of judgment. The unintended result was a “gap”: the automatic stay expires halfway through the time allowed to make a post-judgment motion. The proposed amendment to Civil Rule 62(a) addresses this gap by extending the automatic stay period to 30 days and providing that the automatic stay takes effect “unless the court orders otherwise.” In response to a judge member’s question, Judge Bates confirmed that the court has discretion to extend the stay beyond 30 days.

Second, the proposed amendments make clear that a judgment debtor can secure a stay that lasts from termination of the automatic stay through final disposition on appeal by posting a continuing security, whether as a bond or another form (see discussion of Appellate Rules 8(a), 11(g), and 39(e), *infra*). The amendments allow the security to be provided before the appeal is taken, and permit any party, not just the appellant, to obtain the stay. Third, subdivisions (a) through (d) have been rearranged, carrying forward with only a minor change the current provisions for staying a judgment in an action for an injunction or a receivership, or directing an accounting in a patent infringement action.

The proposed amendment to Civil Rule 65.1 reflects the expansion of Civil Rule 62 to include forms of security other than a bond (see Agenda Book Tab 4A, pp. 524, 528-29). Following the comment period, the Advisory Committee made additional changes to Civil Rule 65.1 for consistency with the proposed amendments to parallel Appellate Rule 8(b), substituting the terms “security” and “security provider” for “bond,” “undertaking,” and “surety” (see discussion *infra*). The Advisory Committee decided shortly before the Standing Committee

meeting to change the word “mail” in the last sentence to “send,” and will adopt the parallel Appellate Rule’s committee note language.

Judge Campbell noted that the proposed amendments to Civil Rules 62 and 65.1 represent “a real improvement” by eliminating the gap, replacing “arcane language,” and clarifying the structure. He thanked the Civil/Appellate Subcommittee, chaired by Judge Scott M. Matheson, Jr. of the Civil Rules Advisory Committee, for its efforts.

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously decided to recommend to the Judicial Conference for approval the proposed amendments to Civil Rules 62 and 65.1.**

Appellate Rules 8, 11, and 39. Judge Chagares and Professor Maggs presented the Appellate Rules Advisory Committee’s proposed amendments to Appellate Rules 8 (stays or injunctions pending appeal), 11 (forwarding the record), and 39 (costs) (see Agenda Book Tab 2A, pp. 83-86). Also developed by the Civil/Appellate Subcommittee, they would conform Appellate Rules 8(a), 11(g), and 39(e) to proposed amended Civil Rule 62 by eliminating the “antiquated” term “supersedeas bond,” instead allowing an appellant to provide “a bond or other security.” The Advisory Committee also replaced “surety” with “security provider” and “a bond, a stipulation, or other undertaking” with the generic term “security”—the same changes made to proposed amended Civil Rule 65.1 (see discussion *supra*). The Advisory Committee also changed the word “mail” to “send” to conform Rule 8(b) to the proposed amendments to Appellate Rule 25. The committee note has been modified accordingly.

A judge member noted that the amended rule is consistent with current practice, as “other forms of security,” such as letters of credit, have long been used to secure stays or injunctions pending appeal. Another judge member pointed out that the proposed amendments use the phrase “gives security,” while “*provides* security” is used in practice and elsewhere in the rules. Professor Maggs explained that the Advisory Committee deliberately decided not to use “provides security” to avoid implying that a security provider—as opposed to a party—must provide the security.

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously decided to recommend to the Judicial Conference for approval the proposed amendments to Appellate Rules 8, 11, and 39.**

Bankruptcy Rules 7062, 8007, 8010, 8021, and 9025. Judge Ikuta presented the Bankruptcy Rules Advisory Committee’s proposed conforming amendments to Rules 7062 (stays of proceedings to enforce judgments), 8007 (stays pending appeal), 8010 (transmitting the record), 8021 (costs), and 9025 (proceedings against sureties). Consistent with proposed amendments to Civil Rules 62 and 65.1 and Appellate Rules 8, 11, and 39, the proposed conforming amendments to the Bankruptcy Rules would broaden and modernize the terms “supersedeas bond” and “surety” by replacing them with “bond or other security” (see Agenda Book Tab 3A, pp. 204-06).

Because Bankruptcy Rule 7062 currently incorporates all of Civil Rule 62 by reference, this new terminology will automatically apply in bankruptcy adversary proceedings when Rule 62 goes into effect. However, the Bankruptcy Rules Advisory Committee did not adopt the amendment to Civil Rule 62(a) that lengthens the automatic stay period from 14 to 30 days (see discussion of Civil Rule 62, *supra*). As a judge member pointed out, the deadline for filing post-judgment motions in bankruptcy is 14 days, not 28—there is “no gap.” Accordingly, amended Rule 7062 would continue to incorporate Civil Rule 62, “except that proceedings to enforce a judgment are stayed for 14 days after its entry.”

Publication was deemed unnecessary because, as Professor Gibson explained, the proposed amendments simply adopt other rule sets’ terminology changes and “maintain[] the status quo” with respect to automatic stays in the bankruptcy courts.

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously decided to recommend to the Judicial Conference for final approval without publication the proposed conforming amendments to Bankruptcy Rules 7062, 8007, 8010, 8021, and 9025.**

Disclosure Rules:

Criminal Rule 12.4 and Appellate Rules 26.1, 28, & 32

Criminal Rule 12.4. Criminal Rule 12.4 governs disclosure statements. Judge Molloy explained that when the rule was adopted in 2002, the committee note stated that it was intended “to assist judges in determining whether they must recuse themselves because of a ‘financial interest in the subject matter in controversy.’” The note quoted a provision of the 1972 judicial ethics code that treated all victims entitled to restitution as “parties” for the purpose of recusal. This is no longer the case. As amended in 2009, the Code of Conduct for United States Judges now requires disclosure only when a judge has an “interest that could be affected substantially by the outcome of the proceeding.”

In response to a suggestion from the DOJ, the proposed amendment to Criminal Rule 12.4(a) would align the scope of the required disclosures with the 2009 amendments to the Code by relieving the government of its obligation to make the required disclosures upon a showing of “good cause” (see Agenda Book Tab 5A, pp. 653-54, Tab 5B, pp. 683-86). In essence, the revised rule allows the court to use “common sense” to decline to require burdensome disclosures when numerous organizational victims exist, but the impact of the crime on each is relatively small. Criminal Rule 12.4(b) would also be amended, to specify in paragraph (b)(1) that the disclosures must be made within 28 days after the defendant’s initial appearance, and to replace paragraph (b)(2)’s references to “supplemental” filings with “later” filings. The final version of Rule 12.4(b)(2), which is modeled after language used in Civil Rule 7.1(b)(2), requires certain parties to “promptly file a later statement if any required information changes.”

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously decided to recommend to the Judicial Conference for approval the proposed amendments to Criminal Rule 12.4.**

Appellate Rules 26.1, 28, and 32. Under Appellate Rule 26.1, corporate parties and amici curiae must file disclosure statements to assist judges in determining whether they have an interest in a related corporate entity that would disqualify them from hearing an appeal. Because some local rules require more information to be disclosed than Appellate Rule 26.1 does, the Advisory Committee considered whether the federal rule should be similarly amended and sought approval to publish proposed amendments for public comment.

The Advisory Committee proposed adding a new subdivision (b) to require disclosure of organizational victims in criminal cases (see Agenda Book Tab 2A, pp. 102-06), generally conforming Appellate Rule 26.1 to the amended version of Criminal Rule 12.4(a)(2). New subdivision (c) would require disclosure of the name(s) of the debtor(s) in a bankruptcy appeal if not included in the caption (as in some appeals from adversary proceedings, such as disputes among the debtor’s creditors). New subdivision (d) would require a “person who wants to intervene” to make the same disclosures as parties. At the Standing Committee meeting, the committee note was also revised to require “persons who want to intervene,” rather than “intervenor,” to “make the same disclosures as parties.”

The Advisory Committee moved current subdivisions (b) and (c), which address supplemental filings and the number of copies, to the end and re-designated them (e) and (f) to clarify that they apply to all of the preceding disclosure requirements. Because proposed new subdivision (d) makes the rule applicable to those seeking to intervene as well as parties, the Standing Committee rephrased subdivisions (e) and (f) in the passive voice to account for the possibility that non-parties may also be required to file disclosure statements. In addition to these revisions to subdivisions (d), (e), and (f), the Standing Committee made minor wording changes to proposed subdivision (c).

Current Appellate Rule 26.1(b) (redesignated (e)), like Criminal Rule 12.4(b), uses the term “supplemental filings.” The Appellate Rules Advisory Committee, aware that the Criminal Rules Advisory Committee was revising Rule 12.4(b) (see *supra*), considered amending Rule 26.1 to conform to a preliminary draft. The Criminal Rules Advisory Committee, however, informed the Appellate Rules Advisory Committee of its intention to scale back its draft amendments to Rule 12.4(b) and recommended no conforming changes to Appellate Rule 26.1(b).

The proposed change of Appellate Rule 26.1’s heading from “Corporate Disclosure Statement” to “Disclosure Statement” will require additional minor conforming amendments to Appellate Rules 28(a)(1) (cross-appeals) and 32(f) (formal requirements for briefs and other papers) and accompanying notes.

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously approved for publication in August 2017 the proposed amendments to Appellate Rules 26.1, 28(a)(1), and 32(f), subject to the revisions made during the meeting.**

Bankruptcy Rule 8012. Scott Myers (RCS) reported that the Bankruptcy Rules Advisory Committee will examine Bankruptcy Appellate Rule 8012, which governs disclosures in bankruptcy appeals, to

determine whether conforming changes are necessary in light of the proposed amendments to Appellate Rule 26.1.

*Redacting Personal Identifiers:
Bankruptcy Rule 9037*

The Bankruptcy Rules Advisory Committee sought approval to publish for comment proposed new Bankruptcy Rule 9037(h), which would provide a procedure for redacting personal identifiers in documents that were not properly redacted prior to filing (see Agenda Book Tab 3A, pp. 213-15). In response to a suggestion from the CACM Committee, new subdivision (h) lays out the steps a moving party must take to identify a document that needs to be redacted under Rule 9037(a) and for providing a redacted version (see Agenda Book Tab 3B, App'x B, pp. 385-88). When such a motion is filed, the court would immediately restrict access to the original document pending determination of the motion. If the motion is granted, the court would permanently restrict public access to the original filed document and provide access to the redacted version in its place.

The other advisory committees considered but declined to adopt similar privacy rules. A reporter explained that CACM's suggestion was specifically directed toward bankruptcy filings, which pose "a problem of a different order of magnitude." For example, when improperly-redacted documents are filed in a civil case, the filer and the clerk's office typically work together to address the problem "quickly" and "effectively." In bankruptcy cases, however, creditors often "make multiple filings, sometimes in different courts." Professor Gibson added that, although the other advisory committees were willing to add privacy rules for the sake of uniformity, they ultimately decided that bankruptcy's special circumstances warranted different treatment.

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously approved for publication in August 2017 the proposed amendment to Bankruptcy Rule 9037.**

REPORT OF THE ADVISORY COMMITTEE ON CRIMINAL RULES

Judge Molloy and Professors Beale and King provided the report of the Advisory Committee on Criminal Rules, which met on April 28, 2017, in Washington, D.C. In addition to final approval of inter-committee amendments to three rules, the Advisory Committee sought permission to publish a new rule and proposed amendments to two others. It also presented two information items.

Action Items

Inter-Committee Amendments. The Standing Committee approved for submission to the Judicial Conference amendments to three Criminal Rules with inter-committee implications: Criminal Rules 12.4, 45, and 49 (see "Inter-Committee Coordination," *supra*).

New Criminal Rule 16.1 – Disclosures and Discovery. Proposed new Criminal Rule 16.1 would set forth a procedure for disclosures and discovery in criminal cases. It originated from a suggestion submitted by two criminal defense bar organizations to amend Criminal Rule 16, which currently governs the parties' respective duties to disclose, to address cases involving voluminous information and electronically stored information ("ESI"). The Rule 16.1 Subcommittee was formed to consider this suggestion, but determined that the "lengthy" and "complicated" original proposal, which focused on district judges' procedures, was unworkable.

The Subcommittee concluded, however, that a need might exist for a narrower, more targeted amendment. "[A]fter a great deal of discussion" at the fall 2016 meeting, the Advisory Committee decided at Judge Campbell's suggestion to hold a mini-conference to obtain the views of various stakeholders on the problems and "complexities" posed by large volumes of digital information. The mini-conference was held in Washington, D.C. on February 7, 2017. Participants included criminal defense attorneys from large and small firms, public defenders, prosecutors, DOJ attorneys, discovery experts, and judges.

All participants agreed that (1) ESI discovery problems can arise in both small and large cases, (2) these issues are handled very differently between districts, and (3) most criminal cases now include ESI. In 2012, the DOJ, AO, and the Joint Working Group on Electronic Technology in the Criminal Justice System developed a set of "Recommendations for Electronically Stored Information (ESI) Discovery Production in Federal Criminal Cases," known as the "ESI Protocol." The defense attorneys and prosecutors at the mini-conference reached a consensus that there is a general lack of awareness of the ESI Protocol, and more training on it would be useful.

The major initial point of disagreement at the mini-conference was whether a rule amendment was necessary and desirable. The prosecutors were not convinced of the need for a rule change. The defense attorneys strongly favored one, but acknowledged problematic threshold questions: Would the rule only apply in "complex" cases? And if so, what *is* a complex case? For example, even "the simplest" criminal case can become "complicated" when it involves electronic evidence such as cell-phone tower location information. None of the attendees supported a rule that would require defining or specifying a "type" of case. A consensus emerged that any rule the Subcommittee might draft should (1) be simple and place the principal responsibility for implementation on the lawyers rather than the court, and (2) encourage use of the ESI Protocol. The prosecutors and DOJ felt strongly that the rule must be flexible in order to address variation between cases.

Guided by the "really helpful information and perspective" shared at the mini-conference, as well as existing local rules and orders addressing ESI discovery, the Subcommittee drafted and the Advisory Committee unanimously approved proposed new Criminal Rule 16.1 (Pretrial Discovery Conference and Modification) (see Agenda Book Tab 5A, pp. 654-56, Tab 5C, pp. 689-90). Subdivision (a) requires that, in every case, counsel must confer no more than 14 days after the arraignment and "try to agree" on the timing and procedures for disclosure. Subdivision (b) emphasizes that the parties may seek a modification from the court to facilitate preparation. Because technology changes rapidly, proposed Rule 16.1 does not attempt to specify standards for the manner or timing of disclosure. Rather, it provides a process that

encourages the parties to confer early in the case to determine whether the standard discovery procedures should be modified and neither “alter[s] local rules nor take[s] discretion away from the court.” So far, the proposal has been “satisfactory” to all, including the groups who made the initial suggestion.

Judge members asked why the new language has been added as a proposed stand-alone rule rather than an addition to Rule 16. Professors Beale and King responded that, while Rule 16 specifies *what* must be disclosed, Rule 16.1 concerns the timing of and procedures for disclosure. Whereas Rule 16 is a discovery rule, the new rule addresses activity that occurs prior to discovery. Judge Molloy added that, unlike Rule 16(d), the new rule governs the behavior of lawyers, not judges.

Several members wondered whether the rule’s directive that the parties confer “in person or by telephone” excluded other “equally effective” modes of communication, such as live videoconferencing, that are either currently in use or will come into use as technology progresses. Judge Molloy responded that the rules define “telephone” broadly enough to encompass other means of live electronic communication, and Professors Beale and King explained that the Subcommittee consciously chose that language in order to promote live interaction. A reporter noted that removing the language would more closely track parallel Civil Rule 26(f), and Judge Campbell added that the term “confer” already implies real-time communication. A judge member moved to delete the phrase “in person or by telephone” from the proposed rule, the motion was seconded, and the Standing Committee unanimously voted in favor of the motion. The Advisory Committee and Standing Committee will pay attention to this issue during the public comment period.

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously approved for publication in August 2017 proposed new Criminal Rule 16.1, as modified by the Standing Committee.**

Rules 5 of the Section 2254 and Section 2255 Rules – Right To File a Reply. In response to a conflict in the case law identified by Judge Wesley, the Advisory Committee proposed an amendment to Rule 5(d) of the Rules Governing Section 2255 Proceedings for the United States District Courts to make clear that a petitioner has the right to file a reply. The Advisory Committee also proposed amending the parallel provision in Rule 5(e) of the Rules Governing Section 2254 Cases in the United States District Courts (see Agenda Book Tab 5A, pp. 657-58, Tab 5C, pp. 691, 693).

The current text of those rules provides that the petitioner or moving party “may submit a reply . . . within a time period fixed by the judge.” Although this language was intended to create a right to file a reply, a significant number of district courts have read “fixed by the judge” to allow a reply only if the judge determines that a reply is warranted and sets a time for filing. Reasoning that this particular reading was unlikely to be corrected by appellate review, the Subcommittee formed to study the issue proposed an amendment that would confirm that the moving party has a right to file a reply by placing the provision concerning the time for filing in a separate sentence: “The moving party may file a reply to the respondent’s answer or other pleading. The judge must set the time to file, unless the time is already set by local rule.” The

proposal does not set a presumptive time for filing, recognizing that practice varies by court, and the time for filing is sometimes set by local rule.

The word “may” was retained because it used in many other rules, and the Advisory Committee did not want to cast doubt on its meaning. However, to prevent the word “may” from being misread, the following sentence was added to the committee note: “We retain the word ‘may,’ which is used throughout the federal rules to mean ‘is permitted to’ or ‘has a right to.’”

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously approved for publication in August 2017 the proposed amendments to Rule 5(e) of the Rules Governing Section 2254 Cases in the United States District Courts and Rule 5(d) of the Rules Governing Section 2255 Proceedings for the United States District Courts.**

Information Items

Manual on Complex Criminal Litigation. The FJC has confirmed that it has received approval to publish a manual for trial judges on complex criminal litigation (see Agenda Book Tab 5A, p. 662). The Advisory Committee has formed a subcommittee to determine which subjects to include.

Cooperators. In response to an FJC study concluding that hundreds of criminal defendants had been harmed after court documents revealed that they had cooperated with the government, the Judicial Conference Committee on Court Administration and Case Management (“CACM”) in 2016 released “interim guidance” to the district courts on managing cooperation information. The CACM guidance requires, for example, every plea agreement to include a sealed addendum for cooperation information and a bench conference to be held to discuss cooperation during every plea hearing, whether or not the defendant is actually cooperating.

Judge Jeffrey S. Sutton, then Chair of the Standing Committee, directed the Criminal Rules Advisory Committee to consider rules changes that would implement the recommendations in the CACM guidance, before making a normative recommendation as to whether some, all, or none, of those changes should be adopted. Recognizing the breadth of the cooperator-harm issue, Judge Sutton encouraged that other stakeholders, such as the DOJ and Bureau of Prisons, be included in the discussion. In response, Director James C. Duff of the Administrative Office of the U.S. Courts (“AO”) created a Task Force on Protecting Cooperators, consisting of CACM and Criminal Rules Advisory Committee members, as well as a variety of experts and advisors.

The Advisory Committee has since formed a Cooperator Subcommittee, which continues to explore possible rules amendments to mitigate the risks that access to information in case files poses to cooperating witnesses. In addition to rules that would implement the CACM guidance, the Subcommittee is also considering alternative approaches. The Subcommittee intends to present its work to the full Advisory Committee at the fall 2017 meeting. The Advisory Committee will then make its recommendation to the Task Force, which plans to issue its report and recommendations—including any amendments to the Criminal Rules—in 2018 (see Agenda

Book Tab 5A, pp. 658-62).

REPORT OF THE ADVISORY COMMITTEE ON APPELLATE RULES

Judge Chagares and Professor Maggs provided the report of the Advisory Committee on Appellate Rules, which met on May 2, 2017, in Washington, D.C. Judge Chagares succeeded Justice Gorsuch as chair in April 2017. The Advisory Committee sought approval of several action items and presented a list of information items.

Action Items

Inter-Committee Amendments. The Standing Committee approved for submission to the Judicial Conference proposed amendments to Appellate Rules 25 (electronic filing and signing), 8, 11, and 39 (stays and injunctions pending appeal), and approved proposed amendments to Appellate Rules 26.1, 28, and 32 (disclosures) for publication in August 2017 (see “Inter-Committee Coordination,” *supra*).

Appellate Rules 28.1 and 31 – Time To File a Reply Brief. Rules 28.1(f)(4) and 31(a)(1) currently set the time to file a reply brief at 14 days after service of the response brief. Until the 2016 amendments eliminated the “three day rule” for papers served electronically, however, parties effectively had 17 days because Appellate Rule 26(c) allowed three additional days when a deadline ran from service that was not accomplished same-day as well as service completed electronically. The Advisory Committee concluded that “shortening” this period from 17 days to 14 could hinder the preparation of useful reply briefs. Accordingly, the Advisory Committee proposed extending the time to file a reply to 21 days, the next seven-day increment (see Agenda Book Tab 2A, pp. 81-82). The Advisory Committee received two comments in support of the published amendments and recommended approval without further changes.

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously decided to recommend to the Judicial Conference for approval the proposed amendments to Appellate Rules 28.1 and 31.**

Appellate Form 4. Question 12 of Appellate Form 4 currently asks litigants seeking permission to proceed in forma pauperis to provide the last four digits of their social security numbers. Due to privacy and security concerns, the Advisory Committee asked its clerk representative to investigate whether this information was necessary for administrative purposes. When the clerks who were surveyed reported that it was not, the Advisory Committee recommended deleting the question (see Agenda Book Tab 2A, pp. 82-83). The proposed amendment received two positive comments when it was published, and the Advisory Committee recommended no further changes.

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously decided to recommend to the Judicial Conference for approval the proposed amendments to Appellate Form 4.**

Appellate Rule 29 – Limitations on Amicus Briefs Filed by Party Consent. Appellate Rule 29(a) currently permits an amicus curiae to file a brief either with leave of the court or with the parties' consent. Several courts of appeals, however, have adopted local rules forbidding the filing of an amicus brief that could result in the recusal of a judge. Of particular concern is the use of "gamesmanship" to try to affect the court's decision by forcing particular judges to recuse themselves. Given the arguable merit of these local rules, the Advisory Committee proposed adding an exception to Appellate Rule 29(a) providing "that a court of appeals may strike or prohibit the filing of an amicus brief that would result in a judge's disqualification" (see Agenda Book Tab 2A, pp. 87-89).

The Advisory Committee received six comments opposing the proposed amendment. The commenters argued that the proposed amendment is unnecessary because amicus briefs that force the recusal of a judge are rare. In any event, the amicus curiae could not be expected to predict who the panel judges would be at the time the brief is filed and would have no recourse if the court strikes the brief—wasting time and money through no fault of the amicus curiae or its counsel. The Advisory Committee considered these comments, but determined that the interests in preventing gamesmanship and resolving the conflict among local rules outweighed the concerns.

The Advisory Committee made two revisions at its May 2017 meeting. First, to match the 2016 amendments renumbering Rule 29's subparts and adding new rules governing amicus briefs at the rehearing stage, the Advisory Committee moved the exception from the former subdivision (a) to new paragraph (a)(2) and added the exception to the new paragraph (b)(2) regarding rehearing. Second, the Advisory Committee rephrased the exception from "strike or prohibit the filing of" to "prohibit the filing of or . . . strike" to make it more chronological without changing its meaning or function.

Discussion during the Standing Committee meeting was robust. An attorney member recommended deleting from paragraph (b)(2) the proposed language regarding prohibiting or striking briefs at the rehearing stage, reasoning that the court already had discretion to do so, existing local rules would continue to stand under either version of the proposal, and republication would not be required. A judge member disagreed, arguing that the language in (b)(2) would at least give an amicus curiae an indication as to why its brief had been barred. The Standing Committee reached a compromise: the language would be deleted from (b)(2), but the committee note would explain that the court already has discretion to strike an amicus brief at the rehearing stage if it could cause recusal, and confirm that local rules and orders allowing such briefs to be barred are permissible. The language "such as those previously adopted in some circuits" would be deleted from the note.

The Standing Committee accepted a style consultant's recommendation to replace "except that" with "but" in paragraph (a)(2). A member repeated a commenter's suggestion to change the phrase "amicus brief" to "amicus-curiae brief" for accuracy, but the Advisory Committee and style consultants preferred to continue to use "amicus" as an adjective and "amicus curiae" as a noun for consistency with the other rules.

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously decided to recommend to the Judicial Conference for approval the proposed amendments to Appellate Rule 29, subject to the revisions made during the meeting.**

Appellate Rule 41 – Stays of the Mandate. The Advisory Committee proposed amendments to Appellate Rule 41, which governs the contents, issuance, effective date, and stays of the mandate. Among other changes, the Advisory Committee initially added a sentence to Rule 41(b) permitting the court to extend the time to issue the mandate “only in extraordinary circumstances” (see Agenda Book Tab 2A, pp. 95-99).

The proposed amendments were published in August 2016, and the Advisory Committee made several revisions to account for the five comments received. In response to observations that a court might wish to extend the time for good cause in circumstances that are not “extraordinary,” the Advisory Committee deleted the proposed sentence from Rule 41(b). The Advisory Committee also added subheadings, renumbered subparagraph (d)(2)(B) as (d)(2), and, in response to a comment warning of a potential gap in the rule, added a clause that would extend a stay automatically if a Supreme Court Justice extends the time for filing a petition for certiorari. The Advisory Committee made further revisions after its May 2017 meeting (see Agenda Book Supplemental Materials, pp. 3-4, 18-24).

As shown here, at the Standing Committee meeting the style consultants and an attorney member suggested additional changes to Appellate Rule 41(d)(2)(B) ((d)(2) as amended), which prohibits a stay from exceeding 90 days unless “the party who obtained the stay ~~files a petition for the writ and so~~ notifies the circuit clerk in writing within the period of the stay: (i) that the time for filing a petition ~~for a writ of certiorari in the Supreme Court~~ has been extended, in which case the stay continues for the extended period; or (ii) that the petition has been filed, in which case the stay continues until the Supreme Court’s final disposition.”

Three appellate judge members pointed out that unlike most courts of appeals, which circulate opinions to the full court prior to publication, their courts instead have the option to place a “hold” on the mandate while the full court reviews a panel’s decision and considers whether to rehear the case en banc. They disagreed among themselves as to whether Rule 41(b)’s new provision allowing the court to extend the time to file the mandate “by order” was an appropriate solution, as it was unclear whether a standing order or clerk’s order (as opposed to an order issued by an individual judge) would suffice. Satisfied that it would, and that the rule did not impose a time limit for issuing the order, the Standing Committee approved the rule as modified. Accordingly, the first sentence of the committee note would be revised as follows: “Subdivision (b) is revised to clarify that an order is required for a stay of the mandate ~~and to specify the standard for such stays.~~”

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously decided to recommend to the Judicial Conference for approval the proposed amendments to Appellate Rule 41, subject to the revisions made during the meeting.**

Technical Amendments to Rules 3(d) and 13 – References to “Mail.” In light of the proposed changes to Appellate Rule 25 to account for electronic filing and service (see “Inter-

Committee Coordination,” *supra*), the Advisory Committee recommended eliminating the term “mail” from other provisions (see Agenda Book Tab 2A, pp. 100-02).

Appellate Rule 3(d) concerns the clerk’s service of the notice of appeal. The Advisory Committee changed “mailing” and “mails” to “sending” and “sends” in paragraphs (d)(1) and (3), and eliminated the mailing requirement from the portion of paragraph (d)(1) that directs the clerk to serve a criminal defendant “either by personal service or by mail addressed to the defendant.” Instead, the clerk will determine whether to serve a notice of appeal electronically or nonelectronically based on the principles of revised Rule 25. The Standing Committee modified the committee note as follows: “Amendments to Subdivision (d) change the words ‘mailing’ and ‘mails’ to ‘sending’ and ‘sends,’ and delete language requiring certain forms of service, to make allow electronic service possible.”

Amended Rule 13, which governs appeals from the Tax Court, currently uses the word “mail” in its first and second sentences. The Advisory Committee recommended changing the reference in the first sentence to allow an appellant to send a notice of appeal to the Tax Court clerk by means other than mail, but not the second sentence, which expresses a rule that applies to notices sent by mail.

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously approved for publication in August 2017 the proposed amendments to Appellate Rules 3(d) and 13, subject to the revisions to the committee note made during the meeting.**

Information Items

At its spring 2017 meeting, the Advisory Committee declined to move forward with several unrelated suggestions: (1) amending Appellate Rules 32.1 and 35 to require courts to designate orders granting or denying rehearing as “published” decisions, (2) adding a provision similar to Appellate Rule 28(j) to the Civil Rules, (3) addressing certain types of subpoenas in Appellate Rules 4 and 27, and (4) prescribing in Appellate Rule 28 the manner of stating questions presented in appellate briefs.

REPORT OF THE ADVISORY COMMITTEE ON BANKRUPTCY RULES

Judge Ikuta and Professor Gibson presented the report of the Advisory Committee on Bankruptcy Rules, which met on April 6-7, 2017, in Nashville, Tennessee. The Advisory Committee sought approval of thirteen action items and shared two information items.

Action Items

Inter-Committee Amendments. The Standing Committee approved for submission to the Judicial Conference proposed amendments to Bankruptcy Rules 5005 and 8011 (electronic filing and signing) and 7062, 8007, 8010, 8021, and 9025 (stays and injunctions pending appeal), and approved for publication in August 2017 a proposed new subdivision to Rule 9037 (redaction of

personal identifiers) (see “Inter-Committee Coordination,” *supra*).

Bankruptcy Rule 3002.1 – Home Mortgage Claims in Chapter 13 Cases. In chapter 13 cases in which a creditor has a security interest in a debtor’s home, Bankruptcy Rule 3002.1(b) and (e) imposes noticing requirements on the creditor that enable the debtor or trustee to make mortgage payments in the correct amount while the bankruptcy case is pending (see Agenda Book Tab 3A, pp. 191-92). The proposed amendments to subdivisions (b) and (e) create flexibility regarding a notice of payment change for home equity lines of credit; create a procedure for objecting to a notice of payment change; and expand the category of parties who can seek a determination of fees, expenses, and charges owed at the end of the case.

The proposed amendments were published in August 2016. A comment noted that, although the amendments purported to prevent a proposed payment change from taking effect in the event of a timely objection, under the time-counting rules the deadline for filing the objection would actually be later than the payment change’s scheduled effective date. The Advisory Committee revised the proposed amendment to eliminate this possibility and clarify that “if a party wants to stop a payment change from going into effect, it must file an objection *before* the change goes into effect” (see Agenda Book Tab 3B, App’x A, pp. 223-24).

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously approved for submission to the Judicial Conference for approval the proposed amendments to Bankruptcy Rule 3002.1.**

Conforming Amendments to the Bankruptcy Part VIII Appellate Rules and Related Forms. The proposed amendments to Bankruptcy Part VIII Appellate Rules 8002, 8011, 8013, 8015, 8016, 8017, and 8022; Official Forms 417A and 417C; and the new Part VIII Appendix conform the Bankruptcy Rules to the December 1, 2016 Appellate Rules amendments (see Agenda Book Tab 3A, pp. 194-97). Because the Bankruptcy Appellate Rules generally follow the Appellate Rules, the Advisory Committee tracked the Appellate Rules absent a bankruptcy-specific reason not to.

Bankruptcy Rule 8002(b) and its counterpart, Appellate Rule 4(a)(4), list the post-judgment motions that toll the time for filing an appeal. The 2016 amendment to Appellate Rule 4(a)(4) added an express requirement that, in order to toll this deadline, the motion must be filed within the time period the rule the motion is made under specifies. The Bankruptcy Rules Advisory Committee published a similar amendment to Rule 8002(b) in August 2016 and received no comments.

Bankruptcy Rules 8002(c) (time to file a notice of appeal) and 8011(a)(2)(C) (filing, signing, and service) contain inmate-filing provisions virtually identical to the parallel provisions of Appellate Rule 4(c) and rule currently numbered Appellate Rule 25(a)(2)(C). The proposed amendments would conform to those rules by treating inmates’ notices of appeal and other papers as timely filed if they are deposited in the institution’s internal mail system on or before the last day for filing. The new inmate-declaration form designed to effectuate this rule is replicated by a director’s form for bankruptcy appeals, and an amendment to Official Form 417A would direct inmate filers to the director’s form.

The 2016 Appellate Rules amendments also affected the length limits in Bankruptcy Rules 8013, 8015, 8016, and 8022 and Official Form 417C, and necessitated the new Part VIII Appendix. Amended Appellate Rules 5, 21, 27, 35, and 40 converted page limits to word-count limits for documents prepared using a computer and reduced the existing word limits for briefs under Appellate Rules 28.1 (cross-appeals) and 32 (principal, response, and reply briefs). Appellate Form 6, the model certificate of compliance, was amended accordingly. Amended Appellate Rule 32(e) authorizes the court to vary the federal rules' length limits by order or local rule, Rule 32(f) lists the items that may be excluded from the length computation, and a new appendix collecting all of the length limits in one chart was added. The Bankruptcy Rules Advisory Committee proposed parallel amendments to Rules 8013(f) (motions), 8015(a)(7) and (f) (briefs), 8016(d) (cross-appeals), and 8022(b) (rehearing), along with Official Form 417C (model certificate of compliance). It also proposed an appendix to Part VIII similar to the Appellate Rules appendix.

Bankruptcy Rule 8017, addressing amicus filings, is the bankruptcy counterpart to Appellate Rule 29, which was amended in 2016 to address for the first time amicus briefs filed in connection with petitions for rehearing. The 2016 amendment does not require courts to accept amicus briefs at the rehearing stage, but provides guidelines for briefs that *are* permitted. In August 2016, the Appellate Rules Advisory Committee published an additional amendment to Appellate Rule 29(a) that would authorize a court of appeals to prohibit the filing of or strike an amicus brief that could cause the recusal of a judge (see discussion *supra*). To maintain consistency, the Bankruptcy Rules Advisory Committee proposed and published a parallel amendment to Rule 8017.

A commenter pointed out that, because amicus briefs are usually filed before a panel is assigned, an amicus curiae could not possibly predict whether its brief could lead to a recusal. The Advisory Committee rejected this comment because the proposed amendment does not *require*, but merely permits, the brief to be struck. Another comment suggested a more extensive and detailed rewrite that was beyond the scope of the proposed amendment. The Bankruptcy Rules amendments and committee note will be conformed to the revisions made to Appellate Rule 29 at the Standing Committee meeting (see discussion *supra*).

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously approved for submission to the Judicial Conference for approval the proposed amendments to Bankruptcy Rules 8002, 8011, 8013, 8015, 8016, 8017, and 8022; Official Forms 417A and 417C; and the new Part VIII Appendix; subject to the conforming revisions to Bankruptcy Rule 8017 made during the meeting.**

Additional Bankruptcy Appellate Rules Amendments: Rules 8002, 8006, and proposed new Rule 8018.1. In addition to the conforming amendments to the Part VIII rules, amendments to Bankruptcy Appellate Rules 8002, 8006, and 8023 and new Bankruptcy Appellate Rule 8018.1 were published in August 2016 and received no comments. Following discussion of these amendments at the spring 2017 meeting, the Advisory Committee recommended final approval of Rules 8002, 8006, and 8018.1 as published (see Agenda Book Tab 3A, pp. 197-200), but sent Rule 8023 back to a subcommittee for further consideration (see Information Items,

infra).

Bankruptcy Rule 8002(a) generally requires a notice of appeal to be filed within 14 days of the entry of judgment. The proposed amendment would add a new paragraph (a)(5), which defines “entry of judgment” for this purpose. It would also clarify that, in contested matters and adversary proceedings where Civil Rule 58 does not require the entry of judgment to be filed as a separate document, the time for filing the notice of appeal begins to run when the judgment, order, or decree is entered on the docket (see Agenda Book Tab 3B, App’x A, pp. 237-43). In adversary proceedings where Civil Rule 58(a) *does* require a separate document, the time for filing a notice of appeal generally runs from when the judgment, order, or decree is docketed as a separate document or, if no separate document is prepared, 150 days from docket entry.

Bankruptcy Rule 8006 implements 28 U.S.C. § 158(d)(2)(A), which permits all parties to jointly certify a proceeding for direct appeal to the court of appeals. Because, as Professor Gibson explained, this “somewhat odd procedure” gives the parties the option to certify an appeal, new paragraph 8006(c)(2) authorizes the bankruptcy court, district court, or Bankruptcy Appellate Panel to, Judge Ikuta reported, “provide its views about the merits of such a certification to the court of appeals” (see Agenda Book Tab 3B, App’x A, pp. 245-46). Professor Gibson added that the proposed amendment was intended as “the counterpart” to existing rules that allow the parties to file a statement when the judge certifies an appeal: “If the parties get to comment on the judge’s certification, the judge ought to be able to comment on the parties’ [certification].” The judge would not be required to do so, and the court of appeals still has discretion to decide whether to accept the appeal.

Proposed new Rule 8018.1 addresses district court review of a judgment that the bankruptcy court lacked constitutional authority to enter under *Stern v. Marshall*, 564 U.S. 462 (2011), which held that certain claims, now dubbed “*Stern* claims,” must be decided by an Article III court rather than a bankruptcy court. In *Executive Benefits Insurance Agency v. Arkison*, 134 S. Ct. 2165 (2014), the U.S. Supreme Court held that bankruptcy judges may hear *Stern* claims and submit proposed findings of fact and conclusions of law, but they lack the authority to enter judgment on them; the district court is empowered to enter judgment after a de novo review. Under the existing rules, when a district court that determines that the bankruptcy court has entered final judgment in a *Stern* claim despite its lack of constitutional authority to do so, the case must be remanded to the bankruptcy court so the judgment can be recharacterized as proposed findings of fact and conclusions of law. New Bankruptcy Rule 8018.1 would bypass this process by authorizing the district court to simply treat the bankruptcy court’s judgment as proposed findings and conclusions that it can review de novo (see Agenda Book Tab 3B, App’x A, pp. 289-90).

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously approved for submission to the Judicial Conference for approval the proposed amendments to Bankruptcy Rules 8002 and 8006 and new Bankruptcy Rule 8018.1.**

Official Form 309F – Notice of Chapter 11 Bankruptcy Case (Corporations and Partnerships). The instructions at line 8 of Form 309F currently require a creditor seeking to

have its claim excepted from the discharge under § 1141(d)(6)(A) of the Bankruptcy Code to file a complaint by the stated deadline. But because the applicability of the deadline is unclear in some circumstances, the proposed revision to the instructions would allow the creditor to decide whether the deadline applies to its claims. When the proposed amendment was published in August 2016, a commenter pointed out that it necessitated a similar change to line 11 of the form (see Agenda Book Tab 3A, pp. 200-02). Accordingly, the Advisory Committee amended the last sentence of line 11 in a manner similar to the amendment to line 8 and recommended both changes for final approval.

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously approved for submission to the Judicial Conference for approval the proposed amendments to Official Form 309F.**

Official Forms 25A, 25B, 25C, and 26 – Chapter 11 Small Business Debtor Forms and Periodic Report. Most bankruptcy forms have been modernized over the past several years through the Forms Modernization Project, but the Advisory Committee deferred consideration of Official Forms 25A, 25B, 25C, and 26, which relate to chapter 11 cases. The Advisory Committee has now reviewed these forms extensively, revised and renumbered them, and published them for comment in August 2016 (see Agenda Book Tab 3A, pp. 202-04).

The small business debtor forms, Forms 25A, 25B, and 25C, are renumbered as Official Forms 425A, 425B, and 425C (see Agenda Book Tab 3B, App'x A, pp. 315-59). Official Forms 425A and 425B contain an illustrative form plan of reorganization and a disclosure statement, respectively, for chapter 11 small business debtors. Official Form 425C is the monthly operating report that small business debtors must file with the court and serve on the U.S. Trustee. Official Form 26, renumbered as Official Form 426 and rewritten and formatted in the modernized form style, requires periodic disclosures by chapter 11 debtors concerning the value, operations, and profitability of entities in which they hold a substantial or controlling interest (see Agenda Book Tab 3B, App'x A, pp. 361-73).

The Advisory Committee made “minor, non-substantive” changes in response to the three comments received, the “most substantial” of which was to add a section to Form 425A where the parties can address whether the bankruptcy will retain jurisdiction of certain matters after the plan goes into effect (see Agenda Book Tab 3B, App'x A, p. 318).

Upon motion, seconded by a member, and by voice vote: **The Standing Committee unanimously approved for submission to the Judicial Conference for approval the proposed amendments to Official Forms 25A, 25B, 25C, and 26 (renumbered respectively as 425A, 425B, 425C and 426).**

Conforming Amendments to Official Forms 309G, 309H, and 309I – Notices to Creditors in Chapter 12 and 13 Cases. Bankruptcy Rule 3015 governs the filing, confirmation, and modification of chapter 12 and chapter 13 plans. Absent contrary congressional action, as of December 1, 2017, an amendment to Rule 3015 adopted as part of the chapter 13 plan form package will no longer authorize a debtor to serve a plan summary, rather than a copy of the plan itself, on the trustee and creditors. This change will affect Official Forms 309G, 309H, and 309I,

the form notices sent to creditors to inform them of the hearing date for confirmation of the chapter 12 or 13 plan and the associated objection deadlines. The current versions of the forms also indicate whether a plan summary or the full plan is included with the notice. In accordance with the pending changes to Bankruptcy Rule 3015, the proposed amendments to Official Forms 309G, 309H, and 309I remove references to a “plan summary,” which will no longer be an available option (see Agenda Book Tab 3A, p. 206, Tab 3B, App’x A, pp. 301-08). The Advisory Committee recommended approval of these conforming changes without publication so that they can take effect at the same time as the pending change to Rule 3015.

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously approved for submission to the Judicial Conference for approval without publication the proposed conforming amendments to Official Forms 309G, 309H, and 309I.**

Bankruptcy Rule 4001 – Obtaining Credit. Bankruptcy Rule 4001(c) governs the process by which a debtor in possession or a trustee can obtain credit outside the ordinary course of business while a bankruptcy case is pending. Among other things, the rule outlines eleven different elements of post-petition financing that a motion for approval of a post-petition credit agreement must address. These detailed disclosure requirements, which are intended supply the kind of specific information necessary for credit approval in chapter 11 business cases, are unhelpful and unduly burdensome in chapter 13 consumer bankruptcy cases, where typical post-petition credit agreements involve loans for items such as personal automobiles or household appliances. Accordingly, the Advisory Committee sought approval to publish for public comment a new paragraph to Rule 4001(c) that would make the disclosure provision inapplicable in chapter 13 cases (see Agenda Book Tab 3A, pp. 207-08, Tab 3B, App’x B, p. 379). Judge Ikuta reported that “many bankruptcy courts have already adopted [similar] local rules that impose less of a burden on chapter 13 debtors.”

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously approved for publication in August 2017 the proposed amendments to Bankruptcy Rule 4001.**

Bankruptcy Rules 2002 & 9036 and Official Form 410 – Electronic Noticing. The proposed amendments to Bankruptcy Rules 2002(g) (Addressing Notices) and 9036 (Notice by Electronic Transmission) and Official Form 410 (Proof of Claim) are part of the Advisory Committee’s effort to reduce the cost and burden of notice. Section 342 of the Bankruptcy Code gives creditors in chapter 7 and chapter 13 cases the right to designate an address to receive service. As part of the rules committees’ efforts to ensure that the rules are consistent with modern technology, the Advisory Committee originally considered an opt-out provision under which electronic notice would be the default, but rejected it due to concerns that it might run afoul of § 342 or be incompatible with creditors’ existing systems for processing notice by mail.

Instead, the proposed amendments make three changes that would allow creditors to opt in to electronic notice. First, a box has been added to Official Form 410, the proof-of-claim form, that creditors who are not CM/ECF users can check to receive notices electronically (see Agenda Book Tab 3B, App’x B, p. 389). Second, the proposed change to Rule 2002(g) would expand the rule’s references to “mail” to include other means of delivery and delete “mailing”

before “address” so creditors can receive notices by email (see Agenda Book Tab 3B, App’x B, pp. 377-78). Third, amended Rule 9036 would allow registered users to be served via the court’s CM/ECF system, and non-CM/ECF users by email if they consent in writing (see Agenda Book Tab 3B, App’x B, pp. 383-84).

A judge member wondered whether it was appropriate for the rules to refer to documents sent electronically as “papers.” The Standing Committee determined to continue to use the term “papers,” which is generic and is already used throughout the rules with respect to both electronic and hard-copy documents.

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously approved for publication in August 2017 the proposed amendments to Bankruptcy Rules 2002 and 9036 and Official Form 410.**

Bankruptcy Rule 6007 – Motions To Abandon Property. Under § 554(a) and (b) of the Bankruptcy Code, only the trustee or debtor in possession has authority to abandon property of the estate. A hearing is not mandatory if the abandonment notice or motion provides sufficient information concerning the proposed abandonment; is properly served; and neither the trustee, debtor, nor any other party in interest objects. Bankruptcy Rule 6007, which concerns the service of abandonment papers under § 554, treats notices to abandon property filed by the trustee under subdivision (a) and motions filed by the parties in interest to compel the trustee to abandon property under subdivision (b) inconsistently (see Agenda Book Tab 3A, pp. 211-13). Specifically, Rule 6007(a) identifies the parties the trustee is required to serve with its notice to abandon, but Rule 6007(b) is silent regarding the service of a motion to compel abandonment.

“So that the procedures are essentially the same in both cases,” the proposed amendment to Rule 6007(b) would specify the parties to be served with the motion to abandon and any notice of the motion, and establish an objection deadline. The proposed amendment would also make clear that, if the motion to abandon is granted, the abandonment is effected without further notice, unless the court directs otherwise (see Agenda Book Tab 3B, App’x B, pp. 381-82).

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously approved for publication in August 2017 the proposed amendments to Bankruptcy Rule 6007.**

Information Items

Bankruptcy Rule 2002 – Noticing in Chapter 13 Cases. The current version of Bankruptcy Rule 2002(f)(7) requires the clerk to give notice to the debtor and all creditors of the “entry of an order confirming a chapter 9, 11, or 12 plan,” but not a chapter 13 plan. The committee note identifies no reason for treating chapter 13 plans differently, and the Advisory Committee’s meeting minutes are silent as to why it rejected a 1988 effort to make Rule 2002(f) applicable to a plan under any chapter. Seeing no reason to continue to exclude chapter 13 plans, the Advisory Committee intends to propose an amendment to Bankruptcy Rule 2002(f) (see Agenda Book Tab 3A, pp. 215-16).

Similarly, the Advisory Committee will propose an amendment expanding to chapter 13 cases the exception to Rule 2002(a)'s general noticing requirements. Current Rule 2002(h) allows a court to limit notice in a chapter 7 case to, among others, creditors holding claims for which proofs of claim have been filed. The Advisory Committee has concluded that the cost and time savings generated by limiting notices under Rule 2002(h) in chapter 13 cases support an amendment (see Agenda Book Tab 3A, p. 216).

Because the time provisions of Rule 2002(f)(7) will also need to be amended when a pending 2017 amendment to Rule 3002 changes the deadline for filing a proof of claim, the Advisory Committee decided to wait to publish the amendments to the noticing provisions in subdivisions (f) and (h) so that they can be proposed as a package along with the timing changes in 2018.

Bankruptcy Rule 8023 – Voluntary Dismissal. In response to a comment submitted after the publication of the Part VIII amendments (see *supra*), the Advisory Committee proposed an amendment to Bankruptcy Appellate Rule 8023 that would add a cross-reference to Bankruptcy Rule 9019, which provides a procedure for obtaining court approval of settlements. The amendment was intended as a reminder that, when dismissal of an appeal is sought as the result of a settlement, Rule 9019 might require the settlement to be approved by the bankruptcy court (see Agenda Book Tab 3A, pp. 216-17).

No comments were submitted when the proposed amendment to Rule 8023 was published in August 2016. At the spring 2017 meeting, the Advisory Committee's new DOJ representative raised a concern that, although Rule 9019 is generally interpreted to require court approval of a settlement only when a trustee or debtor in possession is a party to it, amended Rule 8023 can be read to suggest that no voluntary dismissal of a bankruptcy appeal in the district court or BAP may be taken without the bankruptcy court's approval. Other Advisory Committee members wondered whether amended Rule 8023's reference to Rule 9019 could be read to require district and BAP clerks to make a legal determination as to whether Rule 9019 applies to a particular voluntary dismissal and, if so, whether the bankruptcy court has jurisdiction to consider the settlement while the appeal is pending. A question was also raised about whether the current version of Rule 8023, which does not state that it is subject to Rule 9019, has caused any problems. After discussing these issues, the Advisory Committee decided to send the Rule 8023 amendment "back to the drawing board" for further consideration by a subcommittee. The Advisory Committee expects to "suggest[] a different change" and will discuss the matter further at its fall 2017 meeting.

REPORT OF THE ADVISORY COMMITTEE ON CIVIL RULES

Judge Bates and Professors Cooper and Marcus provided the report of the Advisory Committee on Civil Rules, which met on Tuesday, August 25, in Austin, Texas. In addition to two sets of inter-committee amendments, the Advisory Committee sought approval of one action item—proposed amendments to Civil Rule 23—and presented two information items.

Action Items

Inter-Committee Amendments. The Advisory Committee submitted proposed amendments to Civil Rules 5 (electronic filing and signing) and 62 and 65.1 (stays and injunctions pending appeal) for final approval. The Standing Committee approved the amendments for transmission to the Judicial Conference, subject to the revisions made during the meeting (see “Inter-Committee Coordination,” *supra*).

Civil Rule 23 – Class Actions. The proposed amendments to Civil Rule 23 (see Agenda Book Tab 4A, pp. 431-51) are the product of more than five years of study and consideration by the Civil Rules Advisory Committee and its Rule 23 Subcommittee. The effort was motivated by a number of factors: (1) the passage of time since Rule 23 was last amended in 2009; (2) the development of a body of case law on class action practice; and (3) recurring interest in Congress, including the 2005 adoption of the Class Action Fairness Act. In developing the proposed amendments, members of the Subcommittee attended nearly two dozen meetings and bar conferences and held a mini-conference in September 2015 to gather additional feedback from a variety of stakeholders.

After extensive consideration and study, the Subcommittee narrowed the list of issues to be addressed and published these proposed amendments (see Agenda Book Tab 4A, pp. 431-41):

- Rule 23(c)(2) has been updated to recognize contemporary means of providing notice to individual class members in Rule 23(b)(3) class actions.
- The amendments to Rule 23(e)(1) clarify that the parties must supply information to the court to enable it to decide whether to notify the class of a proposed settlement, that the court must direct notice if it is likely to be able to approve the proposal and certify the class, and that class notice triggers the opt-out period in Rule 23(b)(3) class actions.
- Amended Rule 23(e)(2) identifies substantive and procedural “core concerns”—as opposed to a “long list of factors” like those some courts use—for the parties to address and the court to consider in deciding whether to approve a settlement proposal.
- Rule 23(e)(5) has been amended to address “bad faith” class-action objectors. Specifically, the proposed amendments require that specific grounds for the objection be provided to the court, the person on whose behalf the objection is being made be identified, and the court approve payment or other consideration received in exchange for withdrawing an objection.
- Amended Rule 23(f) makes clear that there is no interlocutory appeal of a decision to send class notice under Rule 23(e)(1).
- At the suggestion of the DOJ, the amendments to Rule 23(f) extend to 45 days the time to seek permission for an interlocutory appeal when the United States is a party.

The Advisory Committee considered but declined to address other topics, such as issue classes and ascertainability.

Almost all of the comments received during the August 2016 public comment period concerned the Rule 23 proposals. Most addressed the modernization of notice methods under Rule 23(c)(2) and the handling of objections to proposed settlements. Some comments proposed additional topics, while others urged reconsideration of topics the Subcommittee had decided not to pursue. After carefully considering the comments, the Advisory Committee and Subcommittee made minor changes to the proposed rule text and clarified and shortened the committee note. The Advisory Committee has concluded that “the community is very satisfied” with the proposed amendments, which are “important improvements” but “not dramatic changes.”

A judge member asked whether a litigant could argue that the court had not adequately reviewed the settlement proposal if it did not consider one of the “core concerns” under Rule 23(e)(2). Professor Marcus explained that the Subcommittee initially considered requiring the court to find that each factor was satisfied, but ultimately decided “to introduce the considerations” but not *require* the court to find each one in order to approve the settlement. The rule does not require the trial judge to “make findings” or address each factor on the record—the judge need only “consider” the information the parties supply under Rule 23(e)(1)(A) and any objections under Rule 23(e)(5). A judge member added that district courts should be given broad discretion to review these factors.

Another judge member raised the possibility of adding a “catchall” category to those listed in Rule 23(e)(2) and (e)(2)(C). Professor Marcus clarified that the list is not intended to require a judge to ignore important factors that should obviously be considered in a given situation, and the judge member agreed that the current language allows sufficient flexibility. A different judge member added that the four general categories set out in the amended rule are a “good compromise” between the need to add structure and guidance to the settlement-approval process on one hand, and the “long lists of factors” identified by the courts of appeals on the other.

Judge Campbell commended the Rule 23 Subcommittee, chaired by Judge Robert M. Dow, Jr., for its work.

Upon motion, seconded by a member, and on a voice vote: **The Committee unanimously voted to recommend the proposed amendments to Civil Rule 23 to the Judicial Conference for approval.**

Information Items

Social Security Disability Review Cases. The Administrative Conference of the United States (“ACUS”) recently submitted a suggestion to the Judicial Conference that a uniform set of procedural rules be developed for district court review of final administrative decisions in Social Security cases under 42 U.S.C. § 405(g), which provides that an individual may obtain review of a final decision of the Commissioner of Social Security “by a civil action.” The suggestion was referred to the Civil Rules Advisory Committee, which is responsible for studying and recommending rules governing civil actions in the district courts (see Agenda Book Tab 4A, pp. 532-50).

More than 17,000 Social Security review cases are brought in the district courts every year, accounting for “a fairly large numerical proportion”—about seven percent—of civil filings. The national average remand rate is approximately forty-five percent, ranging from twenty percent in some districts to seventy percent in others—sometimes even within a single circuit. Different districts use a variety of procedures and standards in reviewing these actions.

The Advisory Committee first discussed the ACUS suggestion at the spring 2017 meeting. Although judges might be apprehensive about the possibility of a “special set of rules” for Social Security cases, the Advisory Committee will explore “whether, and if so, how” rule changes could address the problems that have been identified: the high remand rate, delays in the process, and a lack of uniformity among the district courts. The Advisory Committee plans to gather more information and form a subcommittee to fully consider various options, including a new Civil Rule addressing these types of cases or even a separate set of rules.

Professor Cooper welcomed input from the members of the Standing Committee. Judge members suggested examining circuit law and local rules addressing Social Security issues. Another judge proposed asking the DOJ to formulate a position as to whether district court review procedures should be modified. Although some members felt that more uniformity in the rules might help to reduce variance among the remand rates, a professor member cautioned that the variance might be attributable to the substantive law (such as the treating physician rule, a judge noted), rather than differences in the rules. A reporter added that a change in district court review procedures would be unlikely to affect how administrative law judges review Social Security cases. There was a general consensus that the rules committees should not attempt to “fix the [Social Security] system generally.” The Civil Rules Advisory Committee will continue to study and discuss these issues.

Civil Rule 30(b)(6) – Organizational Depositions. In April 2016, the Advisory Committee formed a Rule 30(b)(6) Subcommittee chaired by Judge Joan N. Ericksen to consider whether reported problems with Rule 30(b)(6) depositions can be addressed by rule amendment (see Agenda Book Tab 4A, pp. 555-86). The Subcommittee initially focused on drafting provisions that might address the problems attorneys claim to encounter. Guided by feedback from the Advisory Committee and Standing Committee, and equipped with additional legal research, the Subcommittee continues to narrow the issues that could feasibly be remedied by rule amendment.

Specifically, the Subcommittee has solicited comment about six potential amendment ideas through a posting on the federal judiciary’s rulemaking website (see Agenda Book Tab 4A, pp. 557-59): (1) including Rule 30(b)(6) depositions among the topics for discussion at the Rule 26(f) conference and in the Rule 16 report, (2) confirming that a 30(b)(6) deponent’s statements do not function as “judicial admissions” (an issue which, a judge member added, is a source of much of the “angst” surrounding these depositions), (3) requiring and permitting supplementation of Rule 30(b)(6) testimony, (4) forbidding contention questions, (5) adding a provision for objections, and (6) addressing the applicability to Rule 30(b)(6) of limits on the duration and number of depositions. Members of the Subcommittee continue to gather feedback by participating in bar conferences around the country.

When a district judge observed that litigants do not frequently approach him with Rule 30(b)(6) disputes, another judge added that active case management cures many of the problems that do arise. An attorney member who finds the current version of the rule useful cautioned the Advisory Committee not to change Rule 30(b)(6) so much that the problem it was designed to resolve—“hiding the ball”—has room to recur. Professor Marcus, reporter to the Rule 30(b)(6) Subcommittee, explained that the old problem of “bandying” has been replaced by a new one: 30(b)(6) notices listing numerous deposition topics are sent at the last minute, just before the close of discovery, to “imped[e] preparation for trial.” The potential for abuse of the Rule 30(b)(6) process can therefore cut in both directions, and although case management may be the only workable solution, the subcommittee will continue to explore possible rule changes.

Pilot Projects Update. Judge Bates updated the Standing Committee on the Civil Rules Advisory Committee’s two ongoing pilot projects, Mandatory Initial Discovery Pilot (“MIDP”) and Expedited Procedures Pilot (“EPP”) (see Agenda Book Tab 4A, pp. 587-89). The MIDP, which is designed to explore whether mandating the production of robust discovery prior to traditional discovery will reduce costs, burdens, and delays in civil litigation, is “well underway” in two districts and expects to add another one to two courts. Judge Campbell reported that the MIDP began in the District of Arizona on May 1, 2017, and Dr. Emery Lee and the FJC were already monitoring 170 cases filed on or after that date. The district’s judges have all agreed to participate and will become personally involved at the case management conference stage. The MIDP began in the Northern District of Illinois one month later, on June 1.

The EPP, which is intended to confirm the benefits of active judicial management of civil cases, “has hit a few roadblocks.” At this time, only the U.S. District Court for the Eastern District of Kentucky has agreed to participate; vacancies, workloads, and other factors have hindered efforts to recruit participating courts. If more courts do not join despite renewed recruitment efforts, the Eastern District of Kentucky will be moved to the MIDP, and the EPP will be delayed.

Judge Campbell thanked Judge Paul W. Grimm, Chair of the Pilot Projects Working Group and a former member of the Civil Rules Advisory Committee, for his “tremendous effort,” and the FJC and Rules Committee Support Office for their contributions.

REPORT OF THE ADVISORY COMMITTEE ON EVIDENCE RULES

Judge Sessions and Professor Capra delivered the report of the Advisory Committee on Evidence Rules, which met on April 21, 2017, in Washington, D.C. The Advisory Committee presented one action item and two information items.

Action Item

Evidence Rule 807 – Residual Exception. The Advisory Committee has considered possible changes to Evidence Rule 807, the residual exception to the hearsay rule, for two years. One approach would involve broadening the residual exception, which is invoked “narrowly and

infrequently.” After extensive deliberation the Advisory Committee decided to pursue a more “conservative,” less “dramatic” approach that does not expand the hearsay exception.

Instead, the proposed amendment is intended to “improve[]” current Rule 807 in a number of ways (see Agenda Book Tab 6A, pp. 736-41, Tab 6B, pp. 749-54). First, it no longer defines “trustworthiness” in terms of the “equivalent circumstantial guarantees” of the Rule 803 and 804 exceptions; because those rules contain no such “circumstantial guarantees,” there is “no unitary standard” of trustworthiness. Under amended Rule 807, the court would simply determine whether the residual hearsay is supported by sufficient guarantees of trustworthiness. Second, the proposed amendment resolves a conflict among the courts by making clear that corroborating evidence may be considered in determining trustworthiness. Third, current Rule 807(a)’s requirements that the residual hearsay relate to a “material fact” and “serve the purposes of the[] rules and the interests of justice” have proved “meaningless” and will be deleted. “[I]nterests of justice” has been particularly troublesome, as some courts have relied on it to expand their discretion to admit hearsay evidence under Rule 807. Removing the phrase reinforces that the Advisory Committee does not “advocat[e for] the use of 807 more broadly.”

“Most important” was the Advisory Committee’s decision to continue to require under Rule 807(a)(3) that the residual hearsay be “more probative . . . than any other evidence” the proponent can reasonably obtain. The “more probative” requirement ensures that the rule will be used only when necessary, reinforcing the Advisory Committee’s intent to refine but not broaden the residual exception. The Advisory Committee has made clear in amended subdivision (a)(1) that the proponent cannot invoke the residual exception unless the proffered hearsay is not otherwise admissible under any of the Rule 803 or 804 exceptions.

The Advisory Committee has also proposed “significant” amendments to Rule 807’s notice requirement. Currently, Rule 807(b) does not include a good-cause exception for untimely notice, creating a conflict as to whether courts may excuse notice when a proponent has acted in good faith. Adding a good-cause provision would authorize district judges to admit evidence under these circumstances during trial, as well as conform Rule 807 to the Evidence Rules’ other notice provisions. Other changes include replacing the confusing word “particulars” with “substance,” requiring notice to be given in writing, and deleting the requirement that the proponent provide the declarant’s address.

A judge member warned that the language of proposed amended Rule 807(a)(1) describing the hearsay statement as “not specifically covered by a hearsay exception in Rule 803 or 804” could be interpreted as requiring the judge to make a finding of inadmissibility under Rules 803 and 804. Professor Capra argued that the language is not new, but has merely “dropp[ed] down” from its existing position in the current version of the rule. In any event, some courts have interpreted the *current* text to require such a finding. Professor Capra explained that the amended language was simply intended “to get the parties to explain to the court why they’re not using 803 and 804.” Another judge member wondered whether removing the provision now would inadvertently “signal” to district judges that the analysis under Rules 803 and 804 is unimportant when, in fact, “the whole point of this provision is to get them to look [to Rules 803 and 804] first.” The Advisory Committee will pay attention to this issue during the public comment period and will consider addressing it in the committee note.

A judge member asked whether the language, “after considering . . . any evidence corroborating the statement,” in revised paragraph (a)(2) was intended to require courts to “heavily weigh” corroborating evidence, thus “effectively narrow[ing]” the rule. She proposed instead, “evidence, if any, corroborating the statement”—language the DOJ and U.S. Attorneys had supported during the drafting process. Professor Capra reported that the Advisory Committee had considered “the existence or absence of any” corroborating evidence, but were satisfied with that the word “any” in the current draft, coupled with the committee note, made sufficiently clear that “you don’t have to have [corroborating evidence], but it’s good to have.” Judge Sessions and Professor Capra agreed to add “if any” to the published version of the proposed amendments. Another judge member asked whether the amended rule implied that the corroborating evidence must be admitted at trial; Professor Capra clarified that it did not, and will consider making that clear in the note. The Advisory Committee will continue to discuss the topic of corroborating evidence in the future.

A reporter wondered what “negative implications” removing the term “material,” or equating materiality with relevance, could have for other rules. Professor Capra explained that Rule 807’s use of “material,” which does not appear anywhere else in the Evidence Rules, is a historical anomaly: Congress added paragraph (a)(2) when the Evidence Rules were first enacted, despite the Advisory Committee’s deliberate decision not to use the word “material.” Courts struggled to define the term, finally equating materiality with relevance for the purposes of Rule 807. In Professor Capra’s opinion, these complications were “all the better reason to take it out.”

On the subject of the notice provision, a judge member emphasized that lawyers and judges would “*vastly* prefer” the residual hearsay to be proffered before—rather than during—trial to give the court adequate time to rule on its admissibility. She suggested that the Advisory Committee make clear in the committee note that use of “the good-cause exception will be unusual or rare.” Although, as Judge Sessions added, the timing of the proffer is a factor “inherent within good cause,” the Advisory Committee will consider emphasizing the importance of timely notice in reducing surprise and promoting early resolution of the issue.

Two members raised issues related to deleting the requirement of the declarant’s address from the notice provision. Citing privacy concerns, an academic member proposed removing the requirement of the declarant’s name as well. Judge Sessions and Professor Capra felt that this would not give sufficient notice; whereas a known declarant’s address is easily obtainable from other sources, the declarant would be virtually impossible to identify without a name. And in any event, a protective order can be sought in the event of security concerns. An attorney member wondered whether removing the address requirement, which forces the proponent to exercise care in confirming the declarant’s identity, might create practical problems. He suggested soliciting input from attorneys as to potential unintended consequences. Professor Capra said that the Advisory Committee had already done so in the New York area and had not received any negative feedback, but will monitor the issue during the comment period. He added that the committee note makes clear that an attorney in need of an address can seek it through the court.

Upon motion, seconded by a member, and on a voice vote: **The Standing Committee unanimously approved for publication in August 2017 the proposed amendments to Evidence Rule 807, subject to the modification made during the meeting.**

Information Items

Evidence Rule 801(d)(1)(A) – Audio-Visual Recordings of Prior Inconsistent Statements. Evidence Rule 801(d)(1) exempts certain out-of-court statements from the rule against hearsay—making them admissible as substantive evidence rather than for impeachment only—when the witness is present and subject to cross-examination. Prior inconsistent statements, which raise reliability concerns, are deemed “not hearsay” under Rule 801(d)(1)(A) if they were made “under penalty of perjury at a trial, hearing, or other proceeding or in a deposition.”

The Advisory Committee is considering whether to expand Rule 801(d)(1)(A)’s exemption for prior inconsistent statements beyond those made under oath during a legal proceeding (see Agenda Book Tab 6A, pp. 741-42). The Advisory Committee has already rejected one approach used in some states—admitting *all* prior inconsistent statements—due to concerns that, absent more, there is no way to ensure their reliability. Instead, it is considering a more “modest,” “conservative” approach: broadening Rule 801(d)(1)(A) to include prior inconsistent statements recorded audio-visually. The advantages of this approach are that the audio-visual record confirms that the statement was, in fact, made, and the possibility of using statements as substantive evidence should encourage law enforcement to record interactions with suspects. The DOJ has also proposed making prior inconsistent statements admissible substantively when the witness acknowledges having made the statement. The Advisory Committee is in the process of seeking comments from stakeholders on the practical effect of more liberal admission of prior inconsistent statements and will continue to discuss the issue.

Evidence Rule 606(b) – Juror Testimony after Peña-Rodriguez. Evidence Rule 606(b) generally prohibits jurors from testifying about “any statement made or incident that occurred during the jury’s deliberations,” subject to limited exceptions. On March 6, 2017, the U.S. Supreme Court held in *Peña-Rodriguez v. Colorado*, 137 S. Ct. 855 (2017), that an analogous state rule had to yield so the trial court could consider the Sixth Amendment implications of a juror’s “clear statement” that he “relied on racial stereotypes or animus to convict [the] criminal defendant.” The Advisory Committee is considering whether and how to amend Evidence Rule 606(b) in light of *Peña-Rodriguez* (see Agenda Book Tab 6A, pp. 742-43).

Evidence Rule 404(b) – “Bad Acts” Evidence. The current version of Rule 404(b)(2) requires the prosecution to give reasonable notice of evidence of crimes, wrongs, or other “bad acts” that will be introduced at trial—but only if the defendant so requests. Because this requirement disproportionately affects inmates with less competent counsel, “all sides agree” that it should be revisited (see Agenda Book Tab 6A, pp. 743-44). “More controversial,” especially for the DOJ, is a proposal that would require the proponent of propensity evidence to set forth in a notice the chain of inferences showing that the evidence is admissible for a permissible purpose under Rule 404(b)(2). This issue will be considered at future meetings.

Upcoming Symposium – Rule 702 and Expert Evidence. In conjunction with its fall 2017 meeting, the Advisory Committee will host a symposium on scientific and technological developments regarding expert testimony, including challenges raised in the last few years to forensic expert evidence, which might justify amending Evidence Rule 702 (see Agenda Book Tab 6A, pp. 744-45). The symposium will take place on Friday, October 27, 2017, at Boston College Law School.

Judge Sessions reminded the Standing Committee that this meeting would be his last as chair and that he would be succeeded by Judge Debra A. Livingston, a current member of the Advisory Committee. Professor Capra and the members of the Standing Committee commended Judge Sessions for his work.

LEGISLATIVE REPORT

Julie Wilson delivered the Legislative Report, which summarized RCS’s efforts to track legislation implicating the federal rules. The 115th Congress has introduced a number of bills that would either directly or effectively amend the Civil Rules, Criminal Rules, and Section 2254 Rules (see Agenda Book Supplemental Materials, pp. 30-35). The Standing Committee discussed two bills that have already passed the House of Representatives, the *Lawsuit Abuse Reduction Act of 2017* (“LARA”) and the *Fairness in Class Action Litigation and Furthering Asbestos Claim Transparency Act of 2017*.

CONCLUDING REMARKS

Judge Campbell thanked the Standing Committee members and other attendees for their preparation and their contributions to the discussion before adjourning the meeting. The Standing Committee will next meet on January 4-5, 2018, in Phoenix, Arizona.

Respectfully submitted,

Rebecca A. Womeldorf
Secretary, Standing Committee

TAB 2

TAB 2A

FORDHAM

University School of Law

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Daniel J. Capra
Philip Reed Professor of Law

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Memorandum To: Advisory Committee on Evidence Rules
From: Daniel J. Capra, Reporter
Re: Amendments to Rule 807, released for public comment.
Date: October 1, 2017

At the last meeting, the Committee approved a proposed amendment to Rule 807 for release for a period of public comment. The Standing Committee unanimously approved the Advisory Committee's proposal. The public comment period began in August and runs until February 15, 2018. The text and Committee Note as released for public comment are attached as a separate document behind this memo (in order to preserve its formatting).

We have already received a few comments on the proposed amendment. (Historically, most comments on Evidence Rules amendments have been received in February.) What follows is a summary of the comments received:

Aniello Ceretto, (EV-2017-002), opposes the amendment insofar as it adds a good cause exception to the pretrial notice requirement. He states that it is "going to lead to many more adjournment requests OR if not, then bad court decisions undermining public confidence in the reliability of court decisions based on hearsay."

Reporter's Comment: It should be noted that the good cause exception is already being applied in the majority of the courts (though without textual support); and also that a good cause exception is found in other notice provisions, such as Rule 404(b).

Daniel Church of Morris, Wilnauer Church (EV-2017-003), supports the amendment because it “would reduce the surprise element to an adversary and gives the court the discretion needed to make an informed ruling.”

Brian Roth (EV-2017-004), supports the amendment as being “more clearly worded” than the original.

Karl Romberger (EV-2017-005), supports the Committee's proposed changes, and “endorse[s] the observations about how best to assess the trustworthiness of residual hearsay.” He concludes that “[t]he Committee's efforts should improve legal practices in all fora where evidence is received.”

Sara Lessard (EV-2017-007), believes that the proposed amendment “is an amazing opportunity for ordinary people to understand the rule better.”

TAB 2B

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**PROPOSED AMENDMENTS TO THE
FEDERAL RULES OF EVIDENCE¹**

Rule 807. Residual Exception

- 1 **(a) In General.** Under the following
2 circumstances~~conditions~~, a hearsay statement is not
3 excluded by the rule against hearsay: ~~even if~~
4 (1) the statement is not specifically covered by a
5 hearsay exception in Rule 803 or 804;
6 ~~(2) the statement has equivalent circumstantial~~
7 ~~guarantees of trustworthiness~~the court
8 determines that it is supported by sufficient
9 guarantees of trustworthiness—after considering
10 the totality of circumstances under which it was
11 made and evidence, if any, corroborating the
12 statement; and
13 ~~(2) it is offered as evidence of a material fact;~~

¹ New material is underlined in red; matter to be omitted is lined through.

14 (3) it is more probative on the point for which it is
15 offered than any other evidence that the
16 proponent can obtain through reasonable efforts;
17 and
18 ~~(4) admitting it will best serve the purposes of these~~
19 ~~rules and the interests of justice.~~

20 (b) **Notice.** The statement is admissible only if, ~~before~~
21 ~~the trial or hearing,~~ the proponent gives an adverse
22 party reasonable notice of ~~the~~an intent to offer the
23 statement ~~and its particulars, including the declarant's~~
24 ~~name and address,~~including its substance and the
25 declarant's name—so that the party has a fair
26 opportunity to meet it. The notice must be provided
27 in writing before the trial or hearing—or in any form
28 during the trial or hearing if the court, for good cause,
29 excuses a lack of earlier notice.

Committee Note

Rule 807 has been amended to fix a number of problems that the courts have encountered in applying it.

Courts have had difficulty with the requirement that the proffered hearsay carry “equivalent” circumstantial guarantees of trustworthiness. The “equivalence” standard is difficult to apply, given the different types of guarantees of reliability, of varying strength, found among the categorical exceptions (as well as the fact that some hearsay exceptions, e.g., Rule 804(b)(6), are not based on reliability at all). The “equivalence” standard” has not served to limit a court’s discretion to admit hearsay, because the court is free to choose among a spectrum of exceptions for comparison. Moreover, experience has shown that some statements offered as residual hearsay cannot be compared usefully to any of the categorical exceptions and yet might well be trustworthy. Thus the requirement of an equivalence analysis has been eliminated. Under the amendment, the court is to proceed directly to a determination of whether the hearsay is supported by guarantees of trustworthiness.

The amendment specifically requires the court to consider corroborating evidence in the trustworthiness enquiry. Most courts have required the consideration of corroborating evidence, though some courts have disagreed. The rule now provides for a uniform approach, and recognizes that the existence or absence of corroboration is relevant to, but not dispositive of, whether a statement is accurate. Of course, the court must not only consider the existence of corroborating evidence but also the strength and quality of that evidence.

The change to the trustworthiness clause does not at all mean that parties may proceed directly to the residual

exception, without considering admissibility of the hearsay under Rules 803 and 804. Indeed Rule 807(a)(1) now requires the proponent to show that the proffered hearsay is a statement that “is not specifically covered by a hearsay exception in Rule 803 or 804.” Thus Rule 807 remains an exception to be invoked only when necessary.

In deciding whether the statement is supported by sufficient guarantees of trustworthiness, the court should not consider the credibility of any witness who relates the declarant’s hearsay statement in court. The credibility of an in-court witness does not present a hearsay question. To base admission or exclusion of a hearsay statement on the witness’s credibility would usurp the jury’s role of determining the credibility of testifying witnesses. The rule provides that the focus for trustworthiness is on circumstantial guarantees surrounding the making of the statement itself, as well as any independent evidence corroborating the statement. The credibility of the witness relating the statement is not a part of either enquiry.

The Committee decided to retain the requirement that the proponent must show that the hearsay statement is more probative than any other evidence that the proponent can reasonably obtain. This necessity requirement will continue to serve to prevent the residual exception from being used as a device to erode the categorical exceptions.

The requirements that residual hearsay must be evidence of a material fact and that its admission will best serve the purposes of these rules and the interests of justice have been deleted. These requirements have proved to be superfluous in that they are already found in other rules (*see*, Rules 102, 401).

The notice provision has been amended to make three changes in the operation of the rule:

- First, the rule requires the proponent to disclose the “substance” of the statement. This term is intended to require a description that is sufficiently specific under the circumstances to allow the opponent a fair opportunity to meet the evidence. Cf. Rule 103(a)(2) (requiring the party making an offer of proof to inform the court of the “substance” of the evidence). Prior case law on the obligation to disclose the “particulars” of the hearsay statement may be instructive, but not dispositive, of the proponent’s obligation to disclose the “substance” of the statement under the rule as amended. The prior requirement that the declarant’s address must be disclosed has been deleted; that requirement was nonsensical when the declarant was unavailable, and unnecessary in the many cases in which the declarant’s address was known or easily obtainable. If prior disclosure of the declarant’s address is critical and cannot be obtained by the opponent through other means, then the opponent can seek relief from the court.

- Second, the Rule now requires that the pretrial notice be in writing—which is satisfied by notice in electronic form. See Rule 101(b)(6). Requiring the notice to be in writing provides certainty and reduces arguments about whether notice was actually provided.

- Finally, the pretrial notice provision has been amended to provide for a good cause exception—the same exception found in Rule 404(b). Most courts have applied a good cause exception under Rule 807 even though it was not specifically provided for in the original rule, while some courts have read the original rule as it was written. Experience under the residual exception has shown that a good cause exception is necessary in certain limited situations. For example, the proponent may not become aware of the existence of the hearsay statement until after

the trial begins; or the proponent may plan to call a witness who without warning becomes unavailable during trial, and the proponent might then need to resort to residual hearsay. Where notice is provided during the trial, the general requirement that notice must be in writing need not be met.

The rule retains the requirement that the opponent receive notice in a way that provides a fair opportunity to meet the evidence. When notice is provided during trial after a finding of good cause, the court may need to consider protective measures, such as a continuance, to assure that the opponent is not prejudiced.

TAB 3

TAB 3A

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Memorandum To: Advisory Committee on Evidence Rules
From: Daniel J. Capra, Reporter
Re: Possible Amendment to Fed. R. Evid. 801(d)(A)
Date: October 1, 2017

For the past two years, the Committee has been considering the possibility of expanding substantive admissibility for certain prior inconsistent statements of testifying witnesses under Rule 801(d)(1)(A). The existing rule provides for substantive admissibility in only a very narrow circumstance --- where the witness made the inconsistent statement under oath at a formal proceeding. The current proposal is to expand substantive admissibility to statements that were recorded by audiovisual means. The rationales for the proposal are: 1. the witness who made the statement is subject to cross-examination; and 2. it is clear that the statement was actually made, and the jury can evaluate the statement --- and cross-examination won't be stifled by a witness who simply denies ever making the statement. There is also a non-evidentiary supporting rationale --- a change might encourage government officials to record more statements. Finally, there is a subsidiary proposal to allow for substantive admissibility where the witness acknowledges having made the prior statement --- though Committee members have expressed concern about the practical problems inherent in determining whether a witness has actually acknowledged the accuracy of the prior statement.

At the last meeting, the Committee decided to conduct more research before submitting the proposal for public comment. This memo describes the research that has been and will be conducted, and attaches supporting documentation. At the next meeting, all the research conducted to that point will be submitted to the Committee, so that it can make a decision whether to submit the proposed amendment to Rule 801(d)(1)(A) for public comment (i.e., more research).

The Working Draft

What follows is the working draft of the text and Committee Note for the proposed amendment. The acknowledgment alternative, and draft note about it, are placed in brackets.

(d) Statements That Are Not Hearsay. A statement that meets the following conditions is not hearsay:

(1) A Declarant-Witness's Prior Statement. The declarant testifies and is subject to cross-examination about a prior statement, and the statement:

(A) is inconsistent with the declarant's testimony and ~~was~~;

(i) was given under penalty of perjury at a trial, hearing, or other proceeding or in a deposition;

(ii) was recorded by audiovisual means, and the recording is available for presentation at trial; or

[(iii) is acknowledged by the declarant, while testifying at the trial or hearing, as the declarant's own statement; or]

(B) is consistent with the declarant's testimony and is offered:

(i) to rebut an express or implied charge that the declarant recently fabricated it or acted from a recent improper influence or motive in so testifying; or

(ii) to rehabilitate the declarant's credibility as a witness when attacked on another ground; or

(C) identifies a person as someone the declarant perceived earlier.

A working draft of the Committee Note provides as follows:

The amendment provides for greater substantive admissibility of inconsistent statements of a testifying witness, which is appropriate because the declarant is by definition testifying under oath and is subject to cross-examination about the statement. The requirement that the statement be made under oath at a former proceeding is unnecessarily restrictive. That requirement stemmed mainly from a concern that it was necessary to regulate the possibility that the prior statement was never made or that its presentation in court is inaccurate --- because it may be difficult to cross-examine a declarant about a prior statement that the declarant plausibly denies making. But as shown in the practice of some states, there is a less onerous alternative --- not widely available at the time the rule was

drafted --- to assure that what is introduced is what the witness actually said. The best proof of what the witness said, and that the witness said it, is when the statement is made in an audiovisual record. That is the safeguard provided by the amendment. Given this important safeguard, there is good reason to dispense with the confusing jury instruction that seeks to distinguish between substantive and impeachment uses for prior inconsistent statements.

The amendment expands substantive admissibility for prior inconsistent statements only if there is no dispute that the witness actually made the statement. Subdivision (A)(ii) requires a statement to be recorded by “audiovisual” means. So to be substantively admissible, it must be clear that the witness made the statement on both audio and video. “Off-camera” statements are not substantively admissible under the amendment.

It may arise that a prior inconsistent statement, even though made in an audiovisual record, is challenged for being unreliable --- for example that the witness was subject to undue influence, or impaired by alcohol at the time the statement was made. These reliability questions are generally for the trier of fact, and they will be relatively easy to assess given the existence of an audiovisual recording and testimony at trial by the person who made the statement.

Questions may arise when the recording is partial, or subject to technical glitches. Courts in deciding the analogous question of authenticity under Rule 901 have held that deficiencies in the recording process do not bar admissibility unless they “render the recording as a whole untrustworthy.” *United States v. Adams*, 722 F.3d 788, 822 (6th Cir. 2013). *See also United States v. Cejas*, 761 F.3d 717 (7th Cir. 2014) (intermittent skips in video recording did not render recordings untrustworthy). Courts can usefully apply that standard in assessing the witness’s prior statement for substantive admissibility.

There is overlap between subdivisions (A)(i) and (A)(ii). For example, audiovisual recording of a deposition is potentially admissible under both provisions. But the Committee decided to retain the longstanding original provision, as it has been the subject of extensive case law that should not be

discarded. Rather than replace the original ground of substantive admissibility, the decision has been made to add a new, if somewhat overlapping, ground.

[New Subdivision (A)(iii) provides for an additional, limited ground of substantive admissibility: where the declarant acknowledges having made the prior statement while testifying at the trial or hearing. Acknowledgment by the witness eliminates the concern that the statement was never made, so the acknowledging witness can be fairly cross-examined about the statement. It is for the court in its discretion to determine under the circumstances whether the witness has, in testifying, sufficiently acknowledged making the statement that is offered as inconsistent. There is no requirement that the court undertake a line-by-line assessment.]

While the amendment allows for somewhat broader substantive admissibility of prior inconsistent statements, it does not affect the use of any prior inconsistent statement for impeachment purposes. A party may wish to introduce an inconsistent statement not to show that the witness's testimony is false and prior statement is true, but rather to show that neither is true. Rule 801(d)(1)(A) is inapplicable if the proponent is not offering the prior inconsistent statement for its truth. If the proponent is offering the statement solely for impeachment and because it was false, it does not fit the definition of hearsay under Rule 801(c), and so Rule 801(d)(1)(A) never comes into play.

Outreach Efforts

1. The Reporter has contacted the following organizations to solicit preliminary views on the proposed amendment to Rule 801(d)(1)(A):

The American Association for Justice (AAJ)
The Innocence Project
The National Association of Criminal Defense Lawyers (NACDL)
The Criminal Justice Section of the ABA
The American College of Trial Lawyers

So far the Committee has received statements from AAJ and the Innocence Project. Those statements are reproduced as attachments to this memorandum.

2. The proposed amendment, an explanation for the amendment, and a request for preliminary comment has been posted on the Rules website. <http://www.uscourts.gov/rules->

[policies/proposed-amendments-published-public-comment](#). This “pre-public” comment request for preliminary comment on the website is a new idea that the Civil Rules Committee thought up for obtaining comments about their drafts of an amendment to Rule 30(b)(6).

As of this writing the only comment on Rule 801(d)(1)(A) received on the website has been from AAJ. Obviously if the proposal is released for actual public comment, the Committee will get more input, because that process is more institutionalized and is more well-known by interested parties.

FJC Surveys

Dr. Timothy Lau of the FJC has prepared two surveys --- one being sent to practitioners, and one being sent to judges. The surveys are designed to determine what the effect of expanding substantive admissibility of prior inconsistent statements will have on practice --- including possibly having more statements recorded (possibly for both good and ill), limiting instructions reduced, etc. The questions were reviewed by Judge Sessions, Judge Livingston, and the Reporter, all of whom provided suggestions for shaping the surveys.

The surveys are attached to this memorandum. The results from these surveys will be submitted to the Committee in the agenda book for the Spring 2018 meeting.

Attachments:

1. Preliminary Comment from AAJ.
2. Preliminary Comment from the Innocence Project.
3. Surveys prepared by the Federal Judicial Center.

TAB 3B

August 30, 2017

Hon. William K. Sessions, III
Chair, Advisory Committee on the Rules of Evidence
United States District Court
Federal Building
11 Elmwood Avenue, 5th Floor
Burlington, VT 05401

Re: Invitation for Comment on a Possible Amendment to Fed.R.Evid. 801(d)(1)(A)

Dear Judge Sessions:

The American Association for Justice (“AAJ”), formerly known as the Association of Trial Lawyers of America (“ATLA”), hereby submits these comments in response to Invitation for Comment on Possible Amendment to Fed.R.Evid. 801(d)(1)(A) (hereinafter “Invitation for Comment”) posted by the Advisory Committee on the Rules of Evidence (hereinafter “Advisory Committee”). AAJ, with members in the United States, Canada and abroad, works to preserve the constitutional right to trial by jury and access to justice when people are injured by the negligence or misconduct of others. AAJ advocates to ensure that all plaintiffs receive their Constitutional right to their day in court under fair, just and reasonable rules of evidence.

The Advisory Committee is considering a rule amendment that would allow the introduction of prior inconsistent statements made in audiovisual recordings for substantive purposes. AAJ believes that this rule change would ultimately prove important in very few civil cases, and would have more significant impact on criminal cases. While AAJ is still considering the proposed impact this amendment would have on civil litigation, it does wish to acknowledge the implication of this rulemaking could have on the ever-increasing importance of cell phone recordings and social media recordings as evidence. AAJ does not believe that the rule change itself would lead to an increase in recordings.

AAJ is hard pressed to find a single civil case in which an audiovisual recording of a prior inconsistent statement would have proven important in the disposition of a case if admitted for substantive reasons, not just impeachment. However, it is not hard to imagine such a case. For instance, a cell-phone recording taken immediately after a car accident where, inconsistent with testimony at trial, a defendant in the case makes a statement admitting fault in the video. While this recording could currently be introduced to impeach the witness, under the proposed rule change, this cell phone recording could now also be admitted as substantive evidence.

Cell phone recordings, which will certainly qualify as “audiovisual” recordings under this proposed rule change, will only become more prevalent, and as such are more likely to become important evidence in civil cases. The same is equally true of videos posted on social media outlets, such as Facebook and Instagram. These recordings likewise could potentially become evidence, which under the proposed rule could be admitted for substantive reasons if inconsistent with a person’s testimony at trial. Cell phone recordings seem ubiquitous for all events occurring in public spaces or those involving the police or other authorities, which may be why this proposed rule change has a limited

application. Live-streaming and other tools make video available instantly so the purpose of this rule may be of limited application as the video will be subject to viewing long before the declarant witness testifies.

Ultimately, the rules regarding hearsay are intended to preserve reliability of evidence. While the implications of this rule may grow as cell-phone recordings and social media recordings become more prevalent, changes in technology would not inherently affect the reliability of a recording that captures both the audio and visual aspects of a statement. Such a recorded statement provides context, is reliable and subject to proper cross-examination. As such, AAJ does not foresee this draft amendment impacting many civil cases.

However, given the everchanging audio visual landscape AAJ suggests that the Advisory Committee be mindful of the types of evidence that this rule change may implicate as technology evolves. More specifically, AAJ recommends that the Committee consider expanding the committee note to acknowledge that it is the intent of the Committee that “audiovisual recording” be deemed to apply to changes in technology, not just traditional videotaped recordings. Currently, the note does not specifically define “audiovisual”, but perhaps it would be useful to give examples of technology that are included in the proposed amendment, including the use of cell phone recordings and social media with an audiovisual component.

AAJ appreciates this opportunity to submit comments regarding Federal Rule of Evidence 801(d)(1)(A). If you have any questions or comments, please contact Sue Steinman, Senior Director of Policy and Senior Counsel, American Association for Justice, at (202) 944-2885.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kathleen L. Natri', with a small mark to the right.

Kathleen L. Natri
President
American Association for Justice

TAB 3C

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Benjamin N. Cardozo School of Law, Yeshiva University

To: The Advisory Committee on the Federal Rules of Evidence
From: M. Chris Fabricant, Director, Strategic Litigation, The Innocence Project
Date: September 1, 2017
Re: Organizational Statement Against the Proposed Amendment to Federal Rule of Evidence 801(d)(1)(A) on Prior Inconsistent Statements by a Witness

On behalf of the Innocence Project, I would like to thank the Advisory Committee for soliciting our input on the proposed amendment to Federal Rule of Evidence 801(d)(1)(A) (“proposed Rule”). After discussing the amendment internally and consulting with our sister organizations in the Innocence Network, we oppose the proposed Rule for its potential adverse impacts on individuals charged with or convicted of crimes they did not commit. While the proposed amendment is limited to the Federal Rules of Evidence, at least 38 states have adopted these rules and frequently amend their own rules when the Federal Rules are amended.¹ Because the overwhelming majority of criminal cases are litigated in state court, and the overwhelming majority of criminal prosecutions are resolved through plea bargaining, our opposition to the proposed Rule is focused primarily on its potential threat to the fair administration of justice in the plea context in state court criminal prosecutions, although we have similar concerns about the proposed Rule in the federal context.²

The Need for Data Prior to Adopting the Proposed Rule

As a threshold matter, the potential impact of the proposed Rule requires more research before an informed decision can be made. Although six states have already adopted a provision similar to the amendment before this Committee, the specific concerns about the proposed Rule discussed below are heightened by the dearth of data from those jurisdictions on the effects of the rule changes. While the research provided to the Committee from those states is useful anecdotal information, these data relate only to felony trials resulting in a guilty verdict, which were subsequently appealed, at least in part, on this specific issue. This provides no information related to cases resolved through plea bargaining, nor any data concerning the influence the proposed Rule will have in misdemeanor prosecutions. Put differently, there are no data concerning how the proposed Rule would influence the vast majority of criminal prosecutions. Consequently, the Innocence Project respectfully recommends that the Committee not move forward with the proposal unless and until more data are available in order to examine the impacts of analogous rule changes at the state level.

¹ See <https://www.law.cornell.edu/uniform/evidence>.

² Although precise figures are not available, approximately 95% of state prosecutions are resolved through guilty pleas. Jed S. Rakoff, *Why Innocent People Plead Guilty*, NY TIMES REVIEW OF BOOKS, available at <http://www.nybooks.com/articles/2014/11/20/why-innocent-people-plead-guilty/>. The numbers are similar in the federal system. As the Supreme Court has noted, at both the state and federal levels, the American Criminal Justice System is “for the most part a system of pleas, not a system of trials.” *Lafler v. Cooper*, 566 U.S. 156, 170 (2012).

In order to make an accurate, evidence-based assessment of the potential impact of the proposal, the Committee should commission a pilot study in the applicable jurisdictions to determine, inter alia, the prevalence of recorded witness statements, the types of cases in which such recordings are made or introduced, and how those recordings have impacted plea bargaining and trial practices. Such a study should analyze the effect of the introduction of the proposed Rule in a single jurisdiction and also compare two similar jurisdictions, one with and one without the proposed Rule, which would give the Committee some empirical basis from which to make a judgment.

The Potential to Exacerbate the Problem of Innocent People Pleading Guilty

The Innocence Project has long advocated for law enforcement agents to record and disclose all witness statements made during the course of an investigation. However, the proposed Rule includes neither standards for when law enforcement agents would be required to record witness statements, nor a reliability inquiry for determining the admissibility of such statements. In the absence of such necessary guidance (or, in the alternative, a mandate that all witness statements be recorded), the Innocence Project is concerned that the proposed Rule would be invoked selectively, and particularly in cases primarily reliant on an inculpatory witness statement, where the risk of wrongful conviction is heightened. While the proposed Rule reflects a concern about so-called “wobblers”—i.e., witnesses whose initial, truthful statements change by the time of trial—it fails to account for cases in which a witness’s initial statement is false. Because the proposed Rule facilitates the introduction of such false accusations, not just as impeachment evidence, but as direct evidence of guilt, the Innocence Project is concerned that the proposed Rule could be used to induce pleas in weak cases where there would otherwise be insufficient evidence of guilt, because a complaining witness at some point in time gave an inculpatory, unsworn statement.³ Indeed, under the proposed Rule, a successful prosecution could be mounted where the only sworn trial testimony actually *exculpates* the defendant, simply because the complainant—some time prior to trial and pursuant to no rules or regulations to ensure reliability—implicated the defendant, and that statement is credited by the trier of fact over the testimony at trial. Under such a regime, an innocent defendant may make a rational decision to plead guilty, rather than risk trial. Indeed, 38 of the 351 people exonerated by post-conviction DNA exonerations pled guilty to crimes they did not commit.⁴ Moreover, false witness statements or allegations contributed to over 50% of wrongful convictions nationwide.⁵

Moreover, the proposed Rule has the potential to delay and/or prevent justice even after a wrongful conviction has occurred. That is because a single, unsworn statement could provide the basis for upholding a conviction on appeal when a sufficiency of the evidence challenge is raised, or denying a defendant a new trial on post-conviction review, even where the complaining witness has recanted. The wrongful conviction of Gary Dotson, the very first individual exonerated through post-conviction DNA, is illustrative. Mr. Dotson was arrested after a woman reported being kidnapped and brutally raped as she walked home from work. At his 1979 trial in Illinois, Mr. Dotson was found guilty, based largely on the complaining

³ Misdemeanor prosecution of domestic violence cases seems particularly likely to involve such a fact pattern.

⁴ The phenomenon of innocent defendants pleading guilty is well documented: the Innocence Project has identified 38 individuals who were exonerated through post-conviction DNA testing after entering a guilty plea to a crime they did not commit. See The Innocence Project, *DNA Exonerations in the United States* (documenting 38 cases, or 11%, of the 351 DNA exonerations to date in which the exoneree pled guilty), available at <https://www.innocenceproject.org/dna-exonerations-in-the-united-states/> (last checked August 22, 2017).

⁵ See <http://www.law.umich.edu/special/exoneration/Pages/ExonerationsContribFactorsByCrime.aspx>.

witness’s testimony and identification of Mr. Dotson as her assailant. However, that witness recanted her allegation six years later, explaining that she fabricated the rape to obscure a consensual sexual encounter with her boyfriend. Though Mr. Dotson received a gubernatorial commutation after six years of wrongful incarceration and was eventually cleared by DNA evidence, a post-conviction court initially denied his petition for a new trial because it found the complaining witness more credible in her initial testimony than in her recantation.⁶ Finally, even if Dotson had received a new trial, the complaining witness’s initial statement, which turned out to be false, would have been admissible at that re-trial – even if it had been unsworn – had Illinois adopted the proposed Rule at the time of Mr. Dotson’s post-conviction proceedings. Due to our concern that the proposed Rule 801 would be applied selectively—and particularly in cases, like Mr. Dotson’s, that rely heavily on a witness’s inculpatory statement to compensate for a lack of other, reliable evidence—we believe the proposal creates a heightened risk of wrongful conviction.

Conclusion

In the face of such wide-ranging implications, the Innocence Project believes more data are necessary from the several states that currently allow the introduction of recorded prior inconsistent statements as substantive evidence of guilt. Additionally, in the absence of mandatory guidelines ensuring that witness statements are not selectively recorded, too much discretion is left to individual actors, which can incentivize recording of statements for use as substantive evidence in the weakest cases. This presents too great a threat of wrongful conviction for the Innocence Project to endorse the proposed Rule, particularly in the absence of data concerning the likely impact of the proposal.

⁶ Nat’l Institute of Justice, *Convicted by Juries, Exonerated by Science: Case Studies in the Use of DNA Evidence to Establish Innocence After Trial*, 51-52 (1996).
 Advisory Committee on Rules of Evidence

TAB 3D

SURVEY ON PRIOR INCONSISTENT STATEMENTS

Introduction

The Advisory Committee on the Federal Rules of Evidence is considering an expansion to Federal Rule of Evidence 801(d)(1)(A) that would allow more statements to be admitted for substantive purposes rather than just for impeachment. The proposed amendment would expand substantive admissibility to include prior inconsistent statements that "w[ere] recorded by audiovisual means . . . and . . . available for presentation at trial." The Advisory Committee has asked researchers at the Federal Judicial Center—the research and education agency of the federal courts—to survey a sample of federal judges about their experience with prior inconsistent statements in federal courts.

Your response by the close of business on **[DAY, DUE/DATE]** would be greatly appreciated.

Thank you in advance for your participation in the survey. Your views are very important to the Committee.

Information about the Questionnaire Software

The contact information for two Center researchers has been provided at the bottom of every page of this questionnaire. Please feel free to contact these researchers if you have any questions or experience any problems while completing the questionnaire.

Most questions may be left unanswered if you prefer not to provide an answer. However, some of the questions do demand responses because the subsequent questions are based on those responses. If you prefer to preview the questionnaire before answering the questions, a PDF that contains a general list of all questions is available at **[INSERT LINK]**.

A. Use of Prior Inconsistent Statements as Substantive Evidence

Federal Rule of Evidence 801(d)(1)(A) currently permits the admission of prior inconsistent statements as substantive evidence **only** if the statement was "given under penalty of perjury" at a formal proceeding.

The Advisory Committee is considering a proposal to expand the rule to admit a prior inconsistent statement substantively if it "was recorded by audiovisual means . . . and . . . [is] available for presentation at trial."

Which of the following would you interpret as being covered by the phrase "a prior statement . . . recorded by audiovisual means"?

Please select as many as may apply.

- A recording generated by a single recording system that captures both audio and visual of the prior statement
- A recording generated by a single recording system that captures either audio or visual of the prior statement

- A recording created by combining separate audio and visual feeds from different systems
- None of the above (*please specify*)

In answering the remaining questions, please interpret the term "a prior statement . . . recorded by audiovisual means" to mean a recording generated by a single recording system that captures both audio and visual of the prior statement, not a recording that was created by combining separate audio and video feeds or a recording that only has video or audio of the prior statement.

B. Experience with Prior Inconsistent Statements

1. In your experience, how often had any party before your court ever attempted to have a prior inconsistent statement admitted for the purpose of impeaching the credibility of a witness?

Never	Hardly Ever	Occasionally	Regularly	Very Often
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. How often had these attempts to have a prior inconsistent statement admitted for impeachment required an oral or written ruling?

	Never	Hardly Ever	Occasionally	Regularly	Very Often
Oral	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Written	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Based on your experience, how much do you agree with the following statement?

It is difficult for jurors to understand the instruction that a prior inconsistent statement is admissible only to impeach and not for the truth of the matter asserted in the statement.

Strongly Disagree	Disagree Somewhat	Neutral	Agree Somewhat	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. In your experience, how often were the prior inconsistent statements admitted for impeachment **not** "given under penalty of perjury"?

Never	Hardly Ever	Occasionally	Regularly	Very Often
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. How often were these prior inconsistent statements that were **not** "given under penalty of perjury" in the form of "a prior statement . . . recorded by audiovisual means"?

Never	Hardly Ever	Occasionally	Regularly	Very Often
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

C. Nature of Audiovisually Recorded Prior Inconsistent Statements




For the remainder of this questionnaire, please interpret the term "Audiovisually Recorded Prior Inconsistent Statements" to include all prior statements that:

- (1) were entered by or were offered in your court as prior inconsistent statements;
- (2) were "recorded by audiovisual means"; and

(3) were not "given under penalty of perjury."

1. In your experience, how did the declarants generally appear in the Audiovisually Recorded Prior Inconsistent Statements?

Please select a frequency for each of the following categories.

	Never	Hardly Ever	Occasionally	Regularly	Very Often
 Side Profile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 Quarter Profile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 Full Face	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Never Hardly Ever Occasionally Regularly Very Often



Face not Visible

Five radio buttons corresponding to the frequency categories: Never, Hardly Ever, Occasionally, Regularly, and Very Often.

2. Please feel free to expand upon your answer to the above question.

A large empty rectangular text box for providing an expanded answer.

3. In your experience, how much of the context of the making of the Audiovisually Recorded Prior Inconsistent Statements was visible within the recordings?


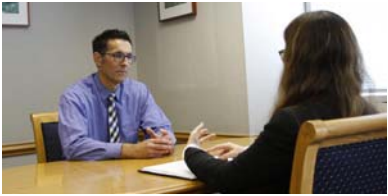


Please select a frequency for each of the following categories.

Never Hardly Ever Occasionally Regularly Very Often



Focused on the declarant.
Little background visible.

Five radio buttons corresponding to the frequency categories: Never, Hardly Ever, Occasionally, Regularly, and Very Often.

	Never	Hardly Ever	Occasionally	Regularly	Very Often
 <p>Significant amount of background visible. Audience or questioner not visible.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 <p>Significant amount of background and either audience or questioner visible. Demeanor of audience or questioner not visible.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 <p>Significant amount of background and demeanor of either audience or questioner visible. Full context not visible.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 <p>Full context visible without specific focus on declarant or audience or questioner.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>Other (please specify):</p> <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Please feel free to expand upon your answer to the above question.

5. In your experience, how generally was the **visual clarity** of the Audiovisually Recorded Prior Inconsistent Statements?



Poor quality



Adequate quality



Good quality

6. Please feel free to expand upon your answer to the above question.

7. In your experience, how generally was the **audio clarity** of the Audiovisually Recorded Prior Inconsistent Statements?

Poor quality

Adequate quality

Good quality

8. Please feel free to expand upon your answer to the above question.

9. Audiovisual recordings may have gaps or glitches, i.e., continuity problems, such that the recording may not be a complete recording of the events that have transpired.

In your experience, how often were there continuity problems in the Audiovisually Recorded Prior Inconsistent Statements?

Never

Hardly Ever

Occasionally

Regularly

Very Often

10. Please feel free to expand upon your answer to the above question.

11. Please describe any concerns with the reliability of Audiovisually Recorded Prior Inconsistent Statements you may have observed in your experience.

12. In your experience, how often were the Audiovisually Recorded Prior Inconsistent Statement statements recorded during an event specially organized to record the declarant's statement (as compared to statements recorded by chance)?

- Never**
 Hardly Ever
 Occasionally
 Regularly
 Very Often

13. Please feel free to expand upon your answer to the above question.

14. In your experience, what recording devices were used to generate the Audiovisually Recorded Prior Inconsistent Statements you have encountered?

Please select based on the following categories.

	Never	Hardly Ever	Occasionally	Regularly	Very Often
Fixture devices (e.g., surveillance cameras; interrogation room cameras; fixed pole cameras)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cameras integral to smart phones (e.g., iPhones, Android phones)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cameras integral or attached to computing devices (e.g., laptops, desktops, tablets, computer monitors)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Body cameras	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other human carried devices (e.g., "camcorders", digital cameras with recording capabilities, "spycams")	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vehicular cameras (e.g., "dashcams")	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other category (please specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. Please feel free to expand upon your answer to the above question.

16. Please describe some of the cases in which you have encountered Audiovisually Recorded Prior Inconsistent Statements in your court and the circumstances that gave rise to such statements.

D. General Observations and Opinion on the Proposed Amendment

1. Based on your experience, how much do you agree with the following statement?

The elimination of jury instructions distinguishing between the substantive and impeachment uses of prior inconsistent statements would be beneficial.

Strongly Disagree



Disagree



Neutral



Agree Somewhat



Strongly Agree



2. Please feel free to expand upon your answer to the above question.

3. How often do you think the substantive admissibility of Audiovisually Recorded Prior Inconsistent Statements will result in these statements being specially recorded in case the declarant may ultimately testify inconsistently?

Never



Hardly Ever



Occasionally



Regularly



Very Often



4. Please feel free to expand upon your answer to the above question.

5. Based on your experience, how much do you agree with the following statement?

It would be beneficial that more statements are audiovisually recorded in the hope that they would be substantively admissible as prior inconsistent statements.

Strongly Disagree



Disagree



Neutral



Agree Somewhat



Strongly Agree



6. Please feel free to expand upon your answer to the above question.

7. Do you support the Proposed Amendment to admit as **substantive evidence** prior inconsistent statements that:

- (1) were recorded by audiovisual means; and
 (2) were not given under penalty of perjury?

Strongly Oppose



Oppose



Neutral



Support



Strongly Support



8. Please feel free to expand upon your answer to the above question.

9. Which of these options would you prefer?

- No change to Rule 801(d)(1)(A)
- Adoption of the Proposed Amendment, but with additional restrictions on the admissibility of Audiovisually Recorded Prior Inconsistent Statements
- Adoption of the Proposed Amendment, with Audiovisually Recorded Prior Inconsistent Statements as currently defined
- Adoption of the Proposed Amendment, but with less restrictions on the admissibility of Audiovisually Recorded Prior Inconsistent Statements
- Amend Rule 801(d)(1)(A) to admit all prior inconsistent statements as substantive evidence

10. Please feel free to expand upon your answer to the above question.

E. Additional Comments

Please feel free to include below any additional comments you may have regarding this survey or the admissibility of prior inconsistent statements generally.

You have now reached the end of the survey. We thank you for the time and feedback you have provided to us in answering this survey.

If you have substantive questions about the survey, please contact FJC Research Associate Timothy Lau (202-502-4089; tlau@fjc.gov). If you are experiencing technical problems, please contact the FJC Survey Administrator Jessica Snowden (202-502-4049; jsnowden@fjc.gov).

TAB 3E

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SURVEY ON PRIOR INCONSISTENT STATEMENTS

Introduction

The Advisory Committee on the Federal Rules of Evidence is considering an expansion to Federal Rule of Evidence 801(d)(1)(A) that would allow more statements to be admitted for substantive purposes rather than just for impeachment. The proposed amendment would expand substantive admissibility to include prior inconsistent statements that "w[ere] recorded by audiovisual means . . . and . . . available for presentation at trial." The Advisory Committee has asked researchers at the Federal Judicial Center—the research and education agency of the federal courts—to survey a sample of trial lawyers about their experience with prior inconsistent statements in state and federal courts.

The American College of Trial Lawyers has provided your contact information to Center researchers to facilitate this survey. Your participation in this survey is voluntary. Any responses you provide will not be reported in any way attributable to you.

Your response by the close of business on **[DAY, DUE/DATE]** would be greatly appreciated.

Thank you in advance for your participation in the survey. Your views are very important to the Committee.

Information about the Questionnaire Software

The contact information for two Center researchers has been provided at the bottom of every page of this questionnaire. Please feel free to contact these researchers if you have any questions or experience any problems while completing the questionnaire.

Most questions may be left unanswered if you prefer not to provide an answer. However, some of the questions do demand responses because the subsequent questions are based on those responses. If you prefer to preview the questionnaire before answering the questions, a PDF that contains a general list of all questions is available at **[INSERT LINK]**.

A. Litigation Experience

1. Which of the following best describes your current practice?

- Law firm, including solo practice
- In-house counsel
- Government
- Non-profit or advocacy group
- Federal judge
- State court judge
- Other (*please specify*):

2. In which forum has most of your practice as a trial lawyer taken place?

- State courts
- Federal courts
- Roughly equal split of state and federal courts

3. In which state have you primarily practiced as a trial lawyer?

Please select only one state.

4. Has your experience as a trial lawyer primarily been civil or criminal?

- Primarily civil
- Primarily criminal
- About evenly split between civil and criminal

5. Have you primarily represented the government or defendants in your criminal trial practice?

- Primarily represented the government
- Primarily represented criminal defendants
- About evenly split between representing the state and defendants

6. Have you primarily represented plaintiffs or defendants in your civil trial practice?

- Primarily represented plaintiffs
- Primarily represented defendants
- About evenly split between representing plaintiffs and defendants

7. Please select your primary area of civil litigation practice from among the following areas.

Please select up to three areas. Please do not select an area unless it accounts for at least 1/3 of your practice.

- | | |
|--|---|
| <input type="checkbox"/> Administrative law | <input type="checkbox"/> Personal injury |
| <input type="checkbox"/> Bankruptcy | <input type="checkbox"/> Professional malpractice |
| <input type="checkbox"/> Civil rights | <input type="checkbox"/> Product liability |
| <input type="checkbox"/> Complex commercial disputes | <input type="checkbox"/> Real property |
| <input type="checkbox"/> Construction | <input type="checkbox"/> Securities |
| <input type="checkbox"/> Contracts | <input type="checkbox"/> Torts (generally) |
| <input type="checkbox"/> Domestic relations | <input type="checkbox"/> Mass torts |
| <input type="checkbox"/> Employment discrimination | <input type="checkbox"/> Oil and Gas |
| <input type="checkbox"/> ERISA | <input type="checkbox"/> Maritime |

- Insurance disputes
- Intellectual property
- Labor law

- Antitrust
- Other (please specify)

8. Please select your primary area of criminal litigation practice from among the following areas.

Please select up to three areas. Please do not select an area unless it accounts for at least 1/3 of your practice.

- Violent - homicide
- Violent - sexual abuse and domestic/intimate partner violence
- Violent - other
- Property - theft, robbery, burglary
- Property - cyber, identity
- Statutory - child pornography
- Statutory - drugs
- Statutory - firearms
- Statutory - immigration
- Statutory - organized crime and gangs
- Statutory - driving under the influence
- Statutory - white collar
- Other (please specify)

B. Use of Prior Inconsistent Statements as Substantive Evidence

1A/C. Federal Rule of Evidence 801(d)(1)(A) currently permits the admission of prior inconsistent statements as substantive evidence **only** if the statement was "given under penalty of perjury" at a formal proceeding.

Does this differ from the rules or practices in the courts of $\{q://QID5/ChoiceGroup/SelectedChoices\}$?

- Yes
- No
- Not Sure

2A/C. The Advisory Committee is considering a proposal to expand the rule to admit a prior inconsistent statement substantively if it "was recorded by audiovisual means . . . and . . . [is] available for presentation at trial."

Which of the following would you interpret as being covered by the phrase "a prior statement . . . recorded by audiovisual means"?

Please select as many as may apply.

- A recording generated by a single recording system that captures both audio and visual of the prior statement
- A recording generated by a single recording system that captures either audio or visual of the prior statement
- A recording created by combining separate audio and visual feeds from different systems
- None of the above (please specify)

B. Use of Prior Inconsistent Statements as Substantive Evidence

2B. Federal Rule of Evidence 801(d)(1)(A) currently permits the admission of prior inconsistent statements as substantive evidence **only** if the statement was "given under penalty of perjury" at a formal proceeding.

The Advisory Committee is considering a proposal to expand the rule to admit a prior inconsistent statement substantively if it "was recorded by audiovisual means . . . and . . . [is] available for presentation at trial."

Which of the following would you interpret as being covered by the phrase "a prior statement . . . recorded by audiovisual means"?

Please select as many as may apply.

- A recording generated by a single recording system that captures both audio and visual of the prior statement
- A recording generated by a single recording system that captures either audio or visual of the prior statement
- A recording created by combining separate audio and visual feeds from different systems
- None of the above (*please specify*)

In answering the remaining questions, please interpret the term "a prior statement . . . recorded by audiovisual means" to mean a recording generated by a single recording system that captures both audio and visual of the prior statement, not a recording that was created by combining separate audio and video feeds or a recording that only has video or audio of the prior statement.

C. Litigation Experience with Prior Inconsistent Statements

1A. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how often had any party ever attempted to have a prior inconsistent statement admitted **as substantive evidence**?

- | | | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Never | Hardly Ever | Occasionally | Regularly | Very Often | Do not recall |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

C. Litigation Experience with Prior Inconsistent Statements

1B. In your federal litigation experience, how often had any party ever attempted to have a prior inconsistent statement admitted **for the purpose of impeaching the credibility of a witness**?

- | | | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Never | Hardly Ever | Occasionally | Regularly | Very Often | Do not recall |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

C. Litigation Experience with Prior Inconsistent Statements

1C. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how often had any party ever attempted to have a prior inconsistent statement admitted **for the purpose of impeaching the credibility of a witness**?

- | | | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Never | Hardly Ever | Occasionally | Regularly | Very Often | Do not recall |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

2A. How often had these attempts to have a prior inconsistent statement admitted as substantive evidence required an oral or written ruling by a judge?

	Never	Hardly Ever	Occasionally	Regularly	Very Often
Oral	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Written	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2B. How often had these attempts to have a prior inconsistent statement admitted for impeachment required an oral or written ruling by a judge?

	Never	Hardly Ever	Occasionally	Regularly	Very Often
Oral	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Written	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2C. How often had these attempts to have a prior inconsistent statement admitted for impeachment required an oral or written ruling by a judge?

	Never	Hardly Ever	Occasionally	Regularly	Very Often
Oral	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Written	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3A. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how often were the prior inconsistent statements admitted as substantive evidence **not** "given under penalty of perjury"?

Never
 Hardly Ever
 Occasionally
 Regularly
 Very Often

3B. In your federal litigation experience, how often were the prior inconsistent statements admitted for impeachment **not** "given under penalty of perjury"?

Never
 Hardly Ever
 Occasionally
 Regularly
 Very Often

3C. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how often were the prior inconsistent statements admitted for impeachment **not** "given under penalty of perjury"?

Never
 Hardly Ever
 Occasionally
 Regularly
 Very Often

4. How often were these prior inconsistent statements that were **not** "given under penalty of perjury" in the form of "a prior statement . . . recorded by audiovisual means"?

Never
 Hardly Ever
 Occasionally
 Regularly
 Very Often

5. How often did these prior inconsistent statements not "given under penalty of perjury" and "recorded by audiovisual means" affect the outcome of the litigation?

Never
 Hardly Ever
 Occasionally
 Regularly
 Very Often

D. Potential Prior Inconsistent Statements

A statement does not become a prior inconsistent statement until the declarant has testified to the contrary. However, the possibility that a prior statement may become a prior inconsistent statement should the declarant testify may affect litigation strategy (e.g., whether to put the declarant on the stand, to settle, or to accept a plea agreement) or may prevent the grant of summary judgment.

1. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how often had the possibility of a prior statement becoming a prior inconsistent statement affected litigation strategy?

- Never
- Hardly Ever
- Occasionally
- Regularly
- Very Often
- Do not recall

2. Based on your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, please describe some ways in which litigation strategy was affected by the existence of a prior statement that might be deemed a prior inconsistent statement at trial and therefore admissible as substantive evidence.

3. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how often were these potential prior inconsistent statements that affected litigation strategy **not** "given under penalty of perjury"?

- Never
- Hardly Ever
- Occasionally
- Regularly
- Very Often

4. How often did these potential prior inconsistent statements **not** "given under penalty of perjury" take the form of "a prior statement . . . recorded by audiovisual means"?

- Never
- Hardly Ever
- Occasionally
- Regularly
- Very Often

5. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how often have you recorded a statement by audiovisual means in anticipation of the possibility that the recording may become a prior inconsistent statement and be admissible **as substantive evidence**?

- Never
- Hardly Ever
- Occasionally
- Regularly
- Very Often
- Do not recall

6. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ civil litigation experience, how often had the possibility of a prior statement becoming a prior inconsistent statement been relied upon to forestall the grant of summary judgment?

- Never
- Hardly Ever
- Occasionally
- Regularly
- Very Often

7. How often were these potential prior inconsistent statements that were relied upon to forestall the grant of summary judgment **not** "given under penalty of perjury"?

- Never
- Hardly Ever
- Occasionally
- Regularly
- Very Often

8. How often did these potential prior inconsistent statements **not** "given under penalty of perjury" take the form of "a prior statement . . . recorded by audiovisual means"?

Never
 Hardly Ever
 Occasionally
 Regularly
 Very Often



E. Nature of Audiovisually Recorded Prior Inconsistent Statements

For the remainder of this questionnaire, please interpret the term "Audiovisually Recorded Prior Inconsistent Statements" to include all prior statements that:

- (1) were entered, were offered, or may potentially have been admitted as prior inconsistent statements;
- (2) were "recorded by audiovisual means"; and
- (3) were **not** "given under penalty of perjury."

1A. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how did the declarants generally appear in the Audiovisually Recorded Prior Inconsistent Statements?

Please select a frequency for each of the following categories.

	Never	Hardly Ever	Occasionally	Regularly	Very Often
 <p>Side Profile</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 <p>Quarter Profile</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Never	Hardly Ever	Occasionally	Regularly	Very Often
-------	-------------	--------------	-----------	------------



Full Face

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------



Face not Visible

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

1B. In your federal litigation experience, how did the declarants generally appear in the Audiovisually Recorded Prior Inconsistent Statements?

Please select a frequency for each of the following categories.

Never	Hardly Ever	Occasionally	Regularly	Very Often
-------	-------------	--------------	-----------	------------



Side Profile

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Never Hardly Ever Occasionally Regularly Very Often



Quarter Profile



Full Face



Face not Visible

1C. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how did the declarants generally appear in the Audiovisually Recorded Prior Inconsistent Statements?

Please select a frequency for each of the following categories.

Never Hardly Ever Occasionally Regularly Very Often



Side Profile

○ ○ ○ ○ ○



Quarter Profile

○ ○ ○ ○ ○



Full Face

○ ○ ○ ○ ○








Face not Visible

○ ○ ○ ○ ○

2A. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how much of the context of the making of the Audiovisually Recorded Prior Inconsistent Statements was visible within the recordings?



Please select a frequency for each of the following categories.
Advisory Committee on Rules of Evidence Fall 2017 Meeting




	Never	Hardly Ever	Occasionally	Regularly	Very Often
 <p>Focused on the declarant. Little background visible.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 <p>Significant amount of background visible. Audience or questioner not visible.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 <p>Significant amount of background and either audience or questioner visible. Demeanor of audience or questioner not visible.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 <p>Significant amount of background and demeanor of either audience or questioner visible. Full context not visible.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Never	Hardly Ever	Occasionally	Regularly	Very Often
 <p>Full context visible without specific focus on declarant or audience or questioner.</p> <p>Other (please specify): <input type="text"/></p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2B. In your federal litigation experience, how much of the context of the making of the Audiovisually Recorded Prior Inconsistent Statements was visible within the recordings?


Please select a frequency for each of the following categories.

	Never	Hardly Ever	Occasionally	Regularly	Very Often
 <p>Focused on the declarant. Little background visible.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 <p>Significant amount of background visible. Audience or questioner not visible.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Never	Hardly Ever	Occasionally	Regularly	Very Often
 <p>Significant amount of background and either audience or questioner visible. Demeanor of audience or questioner not visible.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 <p>Significant amount of background and demeanor of either audience or questioner visible. Full context not visible.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 <p>Full context visible without specific focus on declarant or audience or questioner.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>Other (please specify):</p> <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2C. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how much of the context of the making of the Audiovisually Recorded Prior Inconsistent Statements was visible within the recordings?

Please select a frequency for each of the following categories.

	Never	Hardly Ever	Occasionally	Regularly	Very Often
 <p>Focused on the declarant. Little background visible.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Never	Hardly Ever	Occasionally	Regularly	Very Often
--	-------	-------------	--------------	-----------	------------



Significant amount of background visible.
Audience or questioner not visible.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------



Significant amount of background and either audience or questioner visible.
Demeanor of audience or questioner not visible.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------



Significant amount of background and demeanor of either audience or questioner visible.
Full context not visible.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------



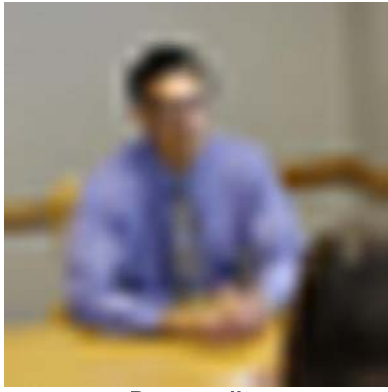
Full context visible without specific focus on declarant or audience or questioner.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Other (please specify):

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

3A. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how generally was the **visual clarity** of the Audiovisually Recorded Prior Inconsistent Statements?



Poor quality

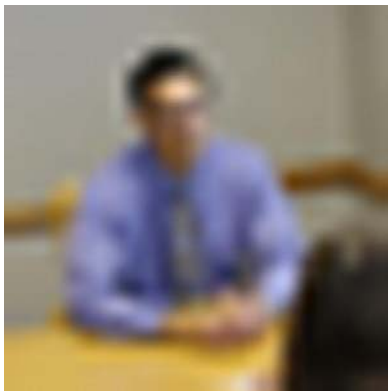


Adequate quality



Good quality

3B. In your federal litigation experience, how generally was the **visual clarity** of the Audiovisually Recorded Prior Inconsistent Statements?



Poor quality

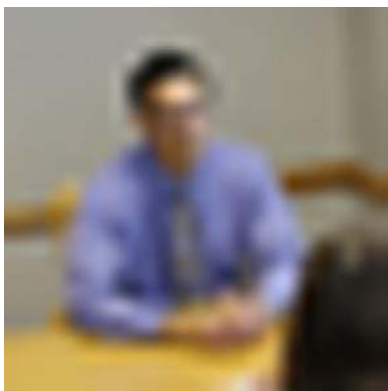


Adequate quality



Good quality

3C. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how generally was the **visual clarity** of the Audiovisually Recorded Prior Inconsistent Statements?



Poor quality



Adequate quality



Good quality

4A. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how generally was the **audio clarity** of the Audiovisually Recorded Prior Inconsistent Statements?

Poor quality

Adequate quality

Good quality

4B. In your federal litigation experience, how generally was the **audio clarity** of the Audiovisually Recorded Prior Inconsistent Statements?

Poor quality



Adequate quality



Good quality



4C. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how generally was the **audio clarity** of the Audiovisually Recorded Prior Inconsistent Statements?

Poor quality



Adequate quality



Good quality



5A. Audiovisual recordings may have gaps or glitches, i.e., continuity problems, such that the recording may not be a complete recording of the events that have transpired.

In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how often were there continuity problems in the Audiovisually Recorded Prior Inconsistent Statements?

Never



Hardly Ever



Occasionally



Regularly



Very Often



5B. Audiovisual recordings may have gaps or glitches, i.e., continuity problems, such that the recording may not be a complete recording of the events that have transpired.

In your federal litigation experience, how often were there continuity problems in the Audiovisually Recorded Prior Inconsistent Statements?

Never



Hardly Ever



Occasionally



Regularly



Very Often



5C. Audiovisual recordings may have gaps or glitches, i.e., continuity problems, such that the recording may not be a complete recording of the events that have transpired.

In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how often were there continuity problems in the Audiovisually Recorded Prior Inconsistent Statements?

Never



Hardly Ever



Occasionally



Regularly



Very Often



6A. Please describe any concerns with the reliability of Audiovisually Recorded Prior Inconsistent Statements you may have observed in your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience.

6B. Please describe any concerns with the reliability of Audiovisually Recorded Prior Inconsistent Statements you may have observed in your federal litigation experience.

6C. Please describe any concerns with the reliability of Audiovisually Recorded Prior Inconsistent Statements you may have observed in your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience.

7A. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how often were the Audiovisually Recorded Prior Inconsistent Statement statements recorded during an event specially organized to record the declarant's statement (as compared to statements recorded by chance)?

Never
Hardly Ever
Occasionally
Regularly
Very Often

7B. In your federal litigation experience, how often were the Audiovisually Recorded Prior Inconsistent Statement statements recorded during an event specially organized to record the declarant's statement (as compared to statements recorded by chance)?

Never
Hardly Ever
Occasionally
Regularly
Very Often

7C. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how often were the Audiovisually Recorded Prior Inconsistent Statement statements recorded during an event specially organized to record the declarant's statement (as compared to statements recorded by chance)?

Never
Hardly Ever
Occasionally
Regularly
Very Often

8A. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, what recording device were used to generate the Audiovisually Recorded Prior Inconsistent Statements you have encountered?

Please select based on the following categories.

	Never	Hardly Ever	Occasionally	Regularly	Very Often
Fixture devices (e.g., surveillance cameras; interrogation room cameras; fixed pole cameras)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cameras integral to smart phones (e.g., iPhones, Android phones)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cameras integral or attached to computing devices (e.g., laptops, desktops, tablets, computer monitors)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Body cameras	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other human carried devices (e.g., "camcorders", digital cameras with recording capabilities, "spycams")	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vehicular cameras (e.g., "dashcams")	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other category (please specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input style="width: 500px; height: 20px;" type="text"/>					

8B. In your federal litigation experience, what recording devices were used to generate the Audiovisually Recorded Prior Inconsistent Statements you have encountered?

Please select based on the following categories.

	Never	Hardly Ever	Occasionally	Regularly	Very Often
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Fixture devices (e.g., surveillance cameras; interrogation room cameras; fixed pole cameras)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cameras integral to smart phones (e.g., iPhones, Android phones)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cameras integral or attached to computing devices (e.g., laptops, desktops, tablets, computer monitors)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Body cameras	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other human carried devices (e.g., "camcorders", digital cameras with recording capabilities, "spycams")	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vehicular cameras (e.g., "dashcams")	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other category (please specify) <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8C. In your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, what recording devices were used to generate the Audiovisually Recorded Prior Inconsistent Statements you have encountered?

Please select based on the following categories.

	Never	Hardly Ever	Occasionally	Regularly	Very Often
Fixture devices (e.g., surveillance cameras; interrogation room cameras; fixed pole cameras)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cameras integral to smart phones (e.g., iPhones, Android phones)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cameras integral or attached to computing devices (e.g., laptops, desktops, tablets, computer monitors)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Body cameras	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other human carried devices (e.g., "camcorders", digital cameras with recording capabilities, "spycams")	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vehicular cameras (e.g., "dashcams")	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other category (please specify) <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9A. Please describe some of the cases in which you have encountered Audiovisually Recorded Prior Inconsistent Statements in your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience and the circumstances that gave rise to such statements.

9B. Please describe some of the cases in which you have encountered Audiovisually Recorded Prior Inconsistent Statements in your federal litigation experience and the circumstances that gave rise to such statements.

9C. Please describe some of the cases in which you have encountered Audiovisually Recorded Prior Inconsistent Statements in your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience and the circumstances that gave rise to such statements.

F. General Observations and Opinion on the Proposed Amendment

1A. Based on your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how much do you agree with the following statement?

The absence of jury instructions distinguishing between the substantive and impeachment uses of prior inconsistent statements has been beneficial.

Strongly Disagree	Disagree	Neutral	Agree Somewhat	Strongly Agree	Don't Want to Answer
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

F. General Observations and Opinion on the Proposed Amendment

1B. Based on your federal litigation experience, how much do you agree with the following statement?

The elimination of jury instructions distinguishing between the substantive and impeachment uses of prior inconsistent statements would be beneficial.

Strongly Disagree	Disagree	Neutral	Agree Somewhat	Strongly Agree	Don't Want to Answer
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

F. General Observations and Opinion on the Proposed Amendment

1C. Based on your $\{q://QID5/ChoiceGroup/SelectedChoices\}$ litigation experience, how much do you agree with the following statement?

The elimination of jury instructions distinguishing between the substantive and impeachment uses of prior inconsistent statements would be beneficial.

Strongly Disagree	Disagree	Neutral	Agree Somewhat	Strongly Agree	Don't Want to Answer
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Based on your litigation experience as a whole, do you support the admission as **substantive evidence** of prior inconsistent statements that:

- (1) were recorded by audiovisual means; and
- (2) were not given under penalty of perjury?

Strongly Oppose	Oppose	Neutral	Support	Strongly Support	Don't Want To Answer
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Please feel free to expand upon your answer to the above question.

G. Additional Comments

Please feel free to include below any additional comments you may have regarding this survey or the admissibility of prior inconsistent statements generally.

You have now reached the end of the survey. We thank you for the time and feedback you have provided to us in answering this survey.

If you have substantive questions about the survey, please contact FJC Research Associate Timothy Lau (202-502-4089; tlau@fjc.gov). If you are experiencing technical problems, please contact the FJC Survey Administrator Jessica Snowden (202-502-4049; jsnowden@fjc.gov).

TAB 4

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Memorandum To: Advisory Committee on Evidence Rules
From: Daniel J. Capra, Reporter
Re: Supreme Court decision affecting Fed.R.Evid. 606(b)
Date: October 1, 2017

At the spring meeting the Committee considered whether to amend Federal Rule 606(b) to take account of the Supreme Court's decision from the last term in *Pena-Rodriguez v. Colorado*. The *Pena-Rodriguez* Court held that the bar on juror testimony about deliberations, codified in Rule 606(b), is generally sound --- but applying it to preclude testimony about racist statements made during deliberations violates the defendant's Sixth Amendment right to a fair trial.

The specific holding of the case is as follows:

For the reasons explained above, the Court now holds that where a juror makes a clear statement that indicates he or she relied on racial stereotypes or animus to convict a criminal defendant, the Sixth Amendment requires that the no-impeachment rule give way in order to permit the trial court to consider the evidence of the juror's statement and any resulting denial of the jury trial guarantee.

Not every offhand comment indicating racial bias or hostility will justify setting aside the no-impeachment bar to allow further judicial inquiry. For the inquiry to proceed, there must be a showing that one or more jurors made statements exhibiting overt racial bias that cast serious doubt on the fairness and impartiality of the jury's deliberations and resulting verdict. To qualify, the statement must tend to show that racial animus was a significant motivating factor in the juror's vote to convict. Whether that threshold showing has been satisfied is a matter committed to the substantial discretion of the trial court in light of all the circumstances, including the content and timing of the alleged statements and the reliability of the proffered evidence.

At the spring meeting the Committee considered three possible amendments that might solve the problem of Rule 606(b) being subject to unconstitutional application:

1. Amending Rule 606(b) to codify the specific holding of *Pena-Rodriguez*, creating an exception to the prohibition on juror testimony to impeach a verdict in cases involving statements of racial bias only. The problem with that potential amendment would be that expansion of the *Pena-Rodriguez* holding to other types of juror conduct would necessitate yet another amendment to the Rule.

2. Amending Rule 606(b) to expand on the *Pena-Rodriguez* holding and to permit juror testimony about the full range of conduct and statements that may implicate a defendant's constitutional rights. The problem with that potential amendment is that it would require significant policy determinations and would be difficult to draft with precision.

3. Amending Rule 606(b) to include a generic exception to the Rule 606(b) prohibition of juror testimony, allowing such testimony whenever it is "required by the constitution." A problem seen by some members with this alternative was that it might be interpreted to permit juror testimony about any type of juror misconduct or statement that in some way could be argued to violate the Constitution.

The Committee chose not to pursue any of these alternatives. The Minutes of the meeting summarizes the Committee's determination as follows:

Ultimately, the consensus of the Committee was that any amendment at this time could suggest expected expansion and potentially contribute to it. Therefore, the Committee resolved to postpone consideration of an amendment to Rule 606(b) in favor of monitoring the cases following *Pena-Rodriguez*. The Reporter agreed to monitor the cases and to keep the Committee apprised.

This memo provides the update that the Committee requested. The case law, as seen below, has so far adhered to the line drawn by the Court in *Pena-Rodriguez*: the constitutionally-based exception to the Rule 606(b) bar on juror testimony is limited to proof of racist statements made during deliberations.

Case Law Digest

Young v. Davis, 860 F.3d 218 (5th Cir. 2017): The court held that Rule 606(b) applied to bar testimony that two jurors in a capital case thought they had to agree on evidence before it could be considered in mitigation. The failure of a juror to understand instructions is not an exception under Rule 606(b), and *Pena-Rodriguez* provided no relief:

The Supreme Court has since opened, narrowly we think, this door thought closed—a retreat from the traditional rule, adopted into the Federal Rules of Evidence, precluding juror testimony from being used to impeach a jury's verdict. In *Pena-Rodriguez*, Justice Kennedy wrote of the "substantial merit" of Rule 606(b), which "promotes full and vigorous discussion by providing jurors with considerable assurance that after being discharged they will not be summoned to recount their deliberations, and they will not otherwise be harassed or annoyed by litigants seeking to challenge the verdict." Then, citing to the Fourteenth Amendment's purpose of "eliminating racial discrimination emanating from official sources in the States," as well as the especially invidious threat posed by racial bias on jury panels, the Court held "that where a

juror makes a clear statement that indicates he or she relied on racial stereotypes or animus to convict a criminal defendant, the Sixth Amendment requires that the no-impeachment rule give way in order to permit the trial court to consider the evidence of the juror's statement and any resulting denial of the jury trial guarantee.”

The Court's emphasis on our long struggle against racial prejudice, and the “constitutional[] and institutional concerns” attending that history, evince its constrained relaxing of a traditionally inviolate rule. Prohibition of racial discrimination lies at the core of the Fourteenth Amendment. And in the erratic but relentless march toward a color-blind justice, its role in criminal proceedings has been salient. We decline the invitation to extend further the reach of *Pena-Rodriguez*, one antithetical to the privacy of jury deliberations—a principle whose loss would be attended by such high costs as to explain its veneration.

Montes v. Macomber, 2017 WL 1354779 (S.D.Cal.) (Huff, J.): Rule 606(b) bars proof that jurors in deliberations discussed the fact that the defendant did not testify. *Pena-Rodriguez* provides an exception only for proof of racial bias.

Zamora-Smith v. Davies, 2017 WL 3671859 (C.D.Cal.): After an extensive discussion of *Pena-Rodriguez*, the court held as follows: “The Supreme Court has not established an exception to the no-impeachment rule for the type of misconduct alleged—rushed deliberations on a Friday afternoon when one juror claimed to have a flight and did not want to return on Monday.”

Vera v. United States, 2017 WL 3081666 (D.Conn.): Language from *Pena-Rodriguez* supporting Rule 606(b) was used to reject an affidavit from a juror who said she was pressured by other jurors to vote guilty.

United States v. Davis, 2017 WL 2907112 (M.D.Pa.): The defendant, after the verdict was announced, accused the jurors of being racist. The judge, relying on *Pena-Rodriguez*, interviewed the jurors and found no basis for the claim.

Sears v. Chatman, 2017 WL 2644478 (N.D.Ga.): *Pena-Rodriguez* mandates no exception from the Rule 606(b) bar for a claim that a juror was pressured by other jurors during deliberations.

Sanders v. Davis, 2017 WL 2591907 (E.D.Ca.): Rule 606(b) bars inquiry into allegations that jurors misunderstood the trial judge's instruction; the court describes the holding in *Pena-Rodriguez* as being that “the rule against inquiring into statements during jury deliberations gives way only where juror makes a clear statement of racial stereotyping or animus.”

Anderson v. Kelley, 2017 WL 1160583 (E.D.Ark.): The defendant alleged that a juror voted guilty even though she didn't believe so; but the court found Rule 606(b) barred proof from the jury to prove this claim. The court stated that “the allegations here are unlike the race-infected comments that lifted the Rule 606(b) bar in *Pena-Rodriguez v. Colorado*, 137 S. Ct. 855 (2017). There's no suggestion that Gipson's vote was motivated by racial bias.

Another development:

The Advisory Committee in Colorado is considering how to amend Colorado Rule 606(b) to comply with *Pena-Rodriguez*. The Committee contacted the Reporter, stating a desire to “follow the lead” of the Federal Advisory Committee. I told the Committee that there was no lead to follow, but to keep the Federal Advisory Committee apprised of developments in Colorado.

TAB 5

TAB 5A

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Daniel J. Capra
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Memorandum To: Advisory Committee on Evidence Rules
From: Daniel J. Capra, Reporter
Re: Consideration of Possible Changes to Rule 404(b)
Date: October 1, 2017

The Pepperdine Conference in Fall 2016 was largely devoted to the important case law developments regarding the use of Rule 404(b), especially in criminal cases. These case law trends essentially seek to assure that Rule 404(b) arguments are scrutinized so that the rule is not used as a device to admit evidence that is in fact offered for propensity. The fact that some courts --- especially the Seventh and Third (and most recently a panel of the Fourth) Circuits --- are taking a fresh look at the scope and meaning of Rule 404(b) raises questions about whether the rule can or should be amended to accommodate these new developments. It also raises questions about what, if anything should be done about the conflict between the circuits that are looking more closely at Rule 404(b) and those that are still taking the traditional broad approach to admissibility.

At the last meeting, the Committee reviewed three strands of new case law that are intended to provide for more careful analysis of admissibility under Rule 404(b). These limiting principles are:

1. The prosecutor must explain particularly why and how the bad act evidence is admissible for a proper purpose, and the probative value as to the proper purpose must not depend on a propensity inference.
2. When the government is offering the bad act as proof of an element of the crime --- particularly intent and knowledge --- the evidence is not admissible under Rules 404(b) and 403 unless the defendant actively contests that element. An active contest is not found simply by entering a not-guilty plea.

3. The “inextricably intertwined” doctrine --- which holds Rule 404(b) to be inapplicable to bad acts that are part of the charged crime --- is limited to bad acts that directly prove an element of the crime. Acts that require an inference and are not part of the crime itself--- such as a threat to a witness --- must proceed through Rule 404(b), even if they “complete the story” or are labelled “intrinsic”.

The Committee engaged in extensive discussion of these three limiting principles at the last meeting, and also discussed possible changes to the Rule 404(b) notice requirement. Some proposed changes to the notice requirement actually went toward addressing the proposed substantive limitations on Rule 404(b) admissibility (such as requiring the prosecutor to provide notice of the proper purpose for the evidence), while others were intended to improve notice procedures (such as requiring that the notice be made 14 days before trial). At the end of this discussion, the Committee resolved to continue consideration of possible amendments to Rule 404(b). The minutes of the last meeting describe the Committee’s resolution:

At the conclusion of the discussion, Judge Sessions noted that the question for the Committee was whether to continue consideration of Rule 404(b) at the fall meeting or whether to abandon efforts to improve the operation of the Rule for the time being. The consensus of the Committee was that Rule 404(b) is one of the most important and most litigated evidence rules and that the issues it raises merit further consideration. The Committee members agreed that adding an “active contest” requirement to the Rule was ill-advised, but resolved to devote more attention to the issues of the “inextricably intertwined doctrine,” the division in courts about proper articulation of non-propensity inferences, and the Rule 404(b) notice requirements. The Reporter stated that he would provide the Committee with a Rule 404(b) case outline for its fall meeting, including district court opinions, to help determine the level of care applied to Rule 404(b) rulings in criminal cases. One Committee member suggested that the Committee, at the very least, could rely on the case digest to formulate a best practices manual for Rule 404(b) evidence, should the Committee decide not to proceed with amendments to the Rule.

This memorandum is in four parts. Part One discusses the recent case law involving two of the three case law trends: articulating non-propensity inferences and limiting the “inextricably intertwined” doctrine. This discussion is in large part reproduced from the spring memo to the Committee, but it is updated in parts. (The case law on the “active contest” requirement has been dropped). Part Two provides a digest of many of the Rule 404(b) cases decided since the last meeting. Part Three sets forth and discusses drafting alternatives that would implement the two case law trends that the Committee is still considering; and, importantly, it includes a different alternative that would change the Rule 404(b)/403 balancing test to make it more protective for criminal defendants. Part Four sets forth the proposed amendment to the notice provision of Rule 404(b) that the Committee has already approved unanimously. That amendment would delete the provision stating that the defendant must request notice before the government is required to provide it. Finally, appended to this memo is a report by Professor Richter on state law variations on Rule 404(b).

It should be emphasized that nothing in this memorandum involves an action item at this meeting.

I. Two Case Law Developments Imposing More Rigor on the Rule 404(b) Determination

Rule 404(b) currently provides as follows:

(b) Crimes, Wrongs, or Other Acts.

(1) *Prohibited Uses.* Evidence of a crime, wrong, or other act is not admissible to prove a person's character in order to show that on a particular occasion the person acted in accordance with the character.

(2) *Permitted Uses; Notice in a Criminal Case.* This evidence may be admissible for another purpose, such as proving motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake, or lack of accident. On request by a defendant in a criminal case, the prosecutor must:

(A) provide reasonable notice of the general nature of any such evidence that the prosecutor intends to offer at trial; and

(B) do so before trial — or during trial if the court, for good cause, excuses lack of pretrial notice.

Traditionally, the analysis of Rule 404(b) issues has not been rigorous. Typically a court presented with a Rule 404(b) objection would take three quick steps:

1. Emphasize that Rule 404(b) is a rule of inclusion, not exclusion.
2. Find that the proffered bad act is probative of a not-for-character purpose (or, often, a laundry list of such purposes), regardless of whether the defendant actually contested the purpose for which the bad act was purportedly relevant.
3. Find that the probative value for the proper purpose was not substantially outweighed by the prejudicial effect.

As discussed at the last meeting, one of hundreds of examples of the traditional, “knee-jerk” approach to Rule 404(b) is found in *United States v. Geddes*, 844 F.3d 983, 989 (8th Cir. 2017).¹ The defendant was charged with aiding and abetting sex trafficking by force, fraud or

¹ The Federal Rules of Evidence Manual contains more than 300 pages of summarized circuit court cases that treat Rule 404(b) as a “rule of inclusion” and find bad acts admissible essentially whenever they are found probative of some not-for-character purpose, even if that purpose is not actively contested --- and even when the probative value for the purpose proceeds through a character inference. In addition, the case digest of recent cases, in Part Two of this memo, contains a number of examples of almost automatic admissibility of bad act evidence under the 404(b) “rule of inclusion.”

coercion. He moved to exclude testimony that four years earlier, he had physically assaulted and threatened to kill his girlfriend because of a text message that he found on her phone. The court stated first that there is no error under Rule 404(b) “unless the evidence clearly had no bearing on the case and was introduced solely to prove the defendant’s propensity to commit criminal acts.” It stated that Rule 404(b) is a rule of “inclusion rather than exclusion and admits evidence of other crimes or acts relevant to any issue in the trial, unless it tends to prove only criminal disposition.” The court found that the prior act was probative of knowledge and intent, both of which were called into question because the statute required proof of knowing transportation in interstate commerce and intent to coerce. Those elements were in issue because of the defendant’s not guilty plea --- regardless of whether they were actively contested by the defendant. Finally, the court noted that a limiting instruction was given and so the danger of unfair prejudice did not substantially outweigh the probative value of the act in proving knowledge and intent.²

The Rule 404(b) analysis in *Geddes* is arguably thin for a number of reasons. First, threatening to kill his girlfriend is relevant to prove intent to coerce the alleged victim only if you go through a propensity inference. Saying “if he had an intent to hurt his girlfriend it is more likely he had an intent to coerce the alleged victim” is just another way of saying that threatening his girlfriend shows a propensity to threaten women. Thus, the bad act is not truly offered for a non-propensity purpose. Second, the defendant was not actively contesting intent. He argued that he never made any threat at all. If simply pleading not guilty is enough to put intent into issue for purposes of Rule 404(b), then virtually any act somewhat similar to the charged act will be admissible. Third, the court’s statement that the government overcomes a Rule 404(b) objection by coming up with one non-propensity purpose for which evidence is at all relevant ignores the work that Rule 403 is supposed to do when the probative value for the non-propensity purpose is weak.

Finally, the *Geddes* court’s emphasis that Rule 404(b) is a “rule of inclusion” mischaracterizes the rule. It is true that Rule 404(b) directs the court to non-propensity purposes. But it remains the case that the bad act is excluded if the bad act is in fact offered to prove propensity. Calling Rule 404(b) a rule of inclusion distracts the court from analyzing whether the evidence is really being offered to prove propensity, even though the government has thrown in a non-propensity purpose. The Third Circuit, in *United States v. Caldwell*, 760 F.3d 267, 275 (3rd Cir. 2014) had an arguably more honest take on what it might mean for Rule 404(b) to be a “rule of inclusion”:

Throughout the nineteenth century and into the twentieth, American courts differed as to whether the common law rule was “exclusionary” or “inclusionary.” Both of these descriptors can be misleading. To be sure, no one doubted that evidence relevant only for the limited purpose of showing a defendant’s general propensity to commit the charged offense was inadmissible. Instead, the debate

² For another typical case involving drug charges, see *United States v. Smith*, 741 F.3d 1211 (11th Cir. 2013). The defendant was charged with cocaine distribution, and his prior convictions for *possessing* cocaine were admitted at trial. The court found no error, reasoning that 1) Rule 404(b) is a “rule of inclusion”; 2) “a not guilty plea in a drug conspiracy case makes intent a material issue and opens the door to admission of prior drug-related offenses”; and 3) prior convictions for possession were sufficiently probative of intent to distribute.

concerned whether the list of previously recognized non-propensity purposes was exhaustive (or “exclusive”), or whether *any* non-propensity purpose, even if not previously recognized, could support admission of the prior act evidence (the “inclusive” approach). See David P. Leonard, *The New Wigmore: Evidence of Other Misconduct and Similar Events* § 4.3.2, at 224 (2009) (“[T]he real question ... is whether the courts actually confine admissibility to a set of enumerated purposes.”).

The matter was settled in 1975 with the adoption of the Federal Rules of Evidence. * * * By introducing the list of permissible purposes with the words “such as,” the drafters made clear that the list was not exclusive or otherwise limited to a strictly defined class.

We have on occasion noted that Rule 404(b) adopted an inclusionary approach. Our use of the term “inclusionary” merely reiterates the drafters' decision to not restrict the non-propensity uses of evidence. It does not suggest that prior offense evidence is presumptively admissible. On this point, let us be clear: Rule 404(b) is a rule of general exclusion, and carries with it “no presumption of admissibility.” 1 Christopher B. Mueller & Laird C. Kirkpatrick, *Federal Evidence* § 4:28, at 731 (4th ed.2013). The Rule reflects the revered and longstanding policy that, under our system of justice, an accused is tried for *what* he did, not *who* he is. And in recognition that prior offense evidence is generally more prejudicial than probative, Rule 404(b) directs that evidence of prior bad acts be excluded—*unless* the proponent can demonstrate that the evidence is admissible for a non-propensity purpose.

So to the *Caldwell* court, Rule 404(b) as a “rule of inclusion” simply means that the list of proper purposes in the rule is not exclusive. (Just recently, a panel of the Fourth Circuit, in *United States v. Hall*, 858 F.3d 254 (4th Cir. 2017), rejected the broad “rule of inclusion” analysis and adopted the *Caldwell* view of Rule 404(b)).

The peril in following the traditional interpretation of “rule of inclusion” --- in *Geddes* and like cases --- is that the court will treat Rule 404(b) as a rule providing for presumptive admissibility of uncharged misconduct.

At the spring meeting the DOJ representative suggested that the Reporter’s memo set forth only one case --- *Geddes* --- in which there was an asserted problem of “knee-jerk” admissibility under Rule 404(b), and that the trial court in that case was actually quite careful in its application of the Rule. The response to that argument is that *Geddes* is only one example of a typical analysis in many courts --- as is seen in the copious annotations in the Federal Rules of Evidence Manual, and in the case law digest *infra*. The case law digest sets out only the most recent examples of cases at both the district and appellate level that cite “rule of inclusion” as a mantra and find evidence admissible under Rule 404(b) even though it is essentially offered for propensity.

Geddes was chosen as an example because it involves the most frequent road to easy admissibility under Rule 404(b) --- offering the bad act to prove intent. The line between intent and propensity is definitely thin: to say “he intended to do it before and therefore it is more likely that he intended to do it this time” is not a lot different from saying “because he did it before he is more likely to have done it this time.” Professor Imwinkelried has surveyed the case law in drug cases and concludes as follows:

It is a commonplace observation that the courts have been very liberal in admitting uncharged misconduct evidence of other drug transactions to prove intent in drug prosecutions. Especially when the accused is charged with a possessory offense with intent to distribute, the courts routinely admit evidence of the accused’s other drug offenses. Although the accused is charged with intent to traffic and distribute, a large number of courts admit uncharged misconduct evidence that the accused possessed mere user quantities. The opinions are replete with sweeping assertions that “virtually any prior drug offense” is admissible to prove intent in a drug prosecution.³

We now proceed to two strands of case law that seek to impose limitations on Rule 404(b) so that it will be more carefully applied.

A. Requiring a showing that the probative value for a proper purpose proceeds through a non-propensity inference.

Under Rule 404(b), bad act evidence is inadmissible if offered to prove that the defendant committed the charged conduct because he has the propensity to do so. But the evidence “may be admissible” if offered for a non-character purpose. Once the prosecution articulates a proper purpose, then the court assesses whether the probative value for that purpose is substantially outweighed by the risk of prejudicial effect, i.e., that the jury will 1) impermissibly use the evidence for the propensity purpose or 2) convict the defendant just for being a bad person, regardless of whether he has a propensity to commit the crime charged.

There is unquestionably a dispute in the courts about how to assess the probative value of bad acts offered for a proper purpose. Some circuits have recently pointed out that in assessing probative value for the non-character purpose, the court must assure itself that the inferences to be derived from the act are *independent of any propensity inference*. Other courts, like *Geddes* and *Smith*, discussed above, tend to find it sufficient that the bad act evidence is probative of one of the listed purposes, without worrying too much about whether the probative value is dependent on a propensity inference. The leading example of the more careful approach is the Seventh Circuit’s decision in *United States v. Gomez*, 763 F.3d 845, 862-63 (7th Cir. 2014) (en banc). In *Gomez*, the government had evidence that someone nicknamed “Guero” was a reseller of drugs. The government claimed that Gomez was Guero. Gomez claimed that it was his brother-in-law who was the drug dealer Guero. The trial court admitted evidence of the defendant’s prior cocaine possession, ostensibly for the proper, non-character purpose of proving

³ Imwinkelried, *Criminal Minds: The Need to Refine the Application of the Doctrine of Objective Chances as a Justification for Introducing Uncharged Misconduct Evidence to Prove Intent*, 45 Hofstra L.Rev. 851, 871 (2017), quoting *United States v. Sanders*, 688 F.3d 1298, 1314 (11th Cir. 2012).

identity. The court of appeals instructed that it was not enough for the bad act evidence to be relevant for a non-character purpose. Rather, “the district court should not just ask whether the proposed other-act evidence is relevant to a non-propensity purpose *but how exactly the evidence is relevant to that purpose*—or more specifically, how the evidence is relevant without relying on a propensity inference. Careful attention to these questions will help identify evidence that serves no permissible purpose.” (emphasis added). The *Gomez* court concluded that the cocaine possession was improperly admitted to prove identity, because the probative value for identity was dependent on an inference that because the defendant sold drugs before, he sold them again. It explained as follows:

Because the proponent of the other-act evidence must explain how it is relevant to a non-propensity purpose, the government needed a rationale for connecting the cocaine found in Gomez's bedroom to his identity as Guero *without relying on the forbidden propensity inference*. * * * Gomez's mistaken-identity defense singled out another person—his brother-in-law and housemate Victor Reyes—as the “real” Guero. The government introduced the user quantity of cocaine found in Gomez's bedroom for the purpose of showing that as between the two, it was more likely that Gomez was Guero. * * * [But] the evidence of the defendant's history of drug dealing tended to prove his identity as a participant in the charged drug deal only by way of a forbidden propensity inference: Once a drug dealer, always a drug dealer. * * *

* * * The government's sole theory is that Gomez's possession of a user quantity of cocaine 26 days *after* the conspiracy ended shows that he, rather than Reyes, was Guero. That argument is extraordinarily weak, but the more important point is that it rests on pure propensity: Because Gomez possessed a small quantity of cocaine at the time of his arrest, he must have been involved in the cocaine-distribution conspiracy. The district court should not have admitted this evidence.

Another illustration of a case holding that prior misconduct must be excluded where its probative value for the expressed purpose proceeds through the propensity inference is the Third Circuit's decision in *United States v. Smith*, 725 F.3d 340, 342 (3d Cir. 2013). Smith was charged with threatening a federal officer with a gun and possessing a firearm during a crime of violence. The trial court admitted evidence that two years before Smith allegedly committed the charged crimes, he had been observed dealing drugs at the same location. The court of appeals found that the prior bad act evidence “violates our long standing requirement that, when seeking to introduce evidence of prior bad acts under Rule 404 (b), the proponent must set forth ‘a chain of logical inferences, *no link of which* can be the inference that because the defendant committed ... offenses before, he therefore is more likely to have committed this one.’ *United States v. Sampson*, 980 F.2d 883, 887 (3d Cir. 1982) (emphasis added).” The government argued that the prior drug dealing at the location was probative of the defendant's motive to commit the charged crime, i.e., it was evidence that he was protecting his turf. The court rejected that argument because, “for the evidence of the 2008 drug sale to speak to Smith's motives in 2010, one must necessarily (a) assume something about Smith's character based on the 2008 evidence (that he was a drug dealer) and (b) infer that Smith acted in conformity with that character in 2010 by dealing drugs and therefore had a motive to defend his turf.” Thus, the mere fact that the government *articulated* a non-character purpose was not enough to admit the evidence for that

purpose—that was because the evidence was probative of motive only under the assumption that the defendant had a bad character. The government was proceeding through a propensity inference.

But as stated above, many courts simply look to find probative value for the proper purpose cited by the prosecution without investigating whether the probative value for that purpose relies on a propensity inference. Exemplary is *United States v. Mathews*, 431 F.3d 1296, 1311 (11th Cir. 2005), a case in which the defendant’s prior uncharged drug transaction was held properly admitted to prove his intent to conspire to commit drug transactions. The court stated its approach as follows:

The * * * question is whether the 1991 arrest is relevant to the intent at issue in the current conspiracy charge. In *United States v. Butler*, 102 F.3d 1191 (11th Cir.1997), this court held that a three-year-old prior conviction for possession of cocaine for personal use was relevant and admissible for purposes of demonstrating defendant's intent in the charged conspiracy for possession with intent to distribute. * * * It must follow then that, at least in this circuit, Matthews’s 1991 arrest for distribution of cocaine was relevant to the intent at issue in the charged conspiracy to distribute cocaine.

Judge Tjoflat, in dissent in *Mathews*, argued that the majority had failed to explain how the probative value of the evidence of prior drug activity to show intent actually proceeded through a non-propensity inference:

I concede that the line between evidence admitted to demonstrate intent and evidence admitted to demonstrate propensity is hardly clear. It is difficult to argue that a person had an intention to do something on a similar occasion because he or she demonstrated that intention previously without implicitly suggesting that the person has a proclivity towards the intent. * * * [But] the rules distinguish between the two and so must we. * * * At the very least, where the evidence sought to be admitted demonstrates nothing more than a criminal intent ... it must be excluded as propensity evidence. If the inferential chain must run through the defendant’s character—and his or her predisposition towards a criminal intent—the evidence is squarely on the propensity side of the elusive line. Where, on the other hand, an inference can be drawn that says nothing about the defendant’s character—for example, based on the “improbability of coincidence”—the evidence is more properly permissible for non-propensity purposes.

See also United States v. Henry, 848 F.3d 1 (1st Cir. 2017) (noting that the court had “repeatedly upheld the admission of prior drug dealing by a defendant to prove a present intent to distribute”; concurring opinion concluding that prior drug activity to prove intent was nothing more than a propensity inference and suggesting that the Circuit should reconsider its case law); *United States v. Logan*, 121 F.3d 1172 (8th Cir. 1997) (evidence of prior possession of drugs was probative of knowledge and intent to distribute, with no analysis of how the bad act was probative for those purposes independent of any propensity inference); *United States v. Gadison*, 8 F.3d 186 (5th Cir. 1993) (same). *See generally* Ranaldo, *Is Every Drug User a Dealer?*:

Federal Courts are Split in Applying Fed.R.Evid. 404(b), 8 Fed. Cts. L.Rev. 147 (2014) (noting the dispute in the courts on whether prior acts of possession are probative of intent to distribute, and characterizing the difference as whether or not the court is considering that the probative value for intent proceeds through a propensity inference).

Most of the cases involving bad acts that proceed through the propensity inference are, like *Matthews*, cases involving use of prior drug activity in drug cases, with the prosecution arguing that the prior drug activity is offered for intent. Many have argued that when bad acts are offered, “intent” cannot be readily separated from the propensity inference. See Sonenshein, *The Misuse of Rule 404(b) on the Issue of Intent in the Federal Courts*, 45 Creighton L.Rev. 215, 218 (2011) (“What chain of reasoning can link the prior drug history to the charged crime other than one that infers that the defendant has a drug-related propensity * * *? The earlier drug use, which is behavioral evidence, can be relevant only if we assume that the defendant’s behavior forms an unchanging pattern.”).

But the problem of using propensity inferences for so-called proper purposes occurs for other purposes as well, such as identity (*Gomez, supra*), and motive. An example of the propensity problem with offers to prove motive is *United States v. Roux*, 715 F.3d 1019 (7th Cir. 2013). The court in *Roux* affirmed the defendant’s conviction for coercing a minor to create sexually explicit images. It held that the trial judge did not abuse discretion in admitting testimony from the victim’s minor sisters that they too had been sexually abused by the defendant. The court reasoned that “[t]he district court properly determined that the acts of abuse described by CC and SH [minor sisters] were probative of Roux’s motive to commit the charged child pornography offense” because “prior instances of sexual misconduct with a child victim may establish a defendant’s sexual interest in children and thereby serve as evidence of the defendant’s motive to commit a charged offense involving the exploitation of children.” But the court’s use of “motive” is really nothing but “propensity”: a defendant who has a “sexual interest in children” has the *propensity* “to commit a charged offense involving the exploitation of children.” Other examples are found in the case digest in Part Two.

In sum, there is conflict in the courts, and significant difficulty, in how and even whether to determine if the probative value of the bad act to prove the proper purpose actually proceeds through a non-propensity inference. An attempt to draft an amendment and Committee Note to deal with this conflict is set forth in Part Three.

B. Limiting the “inextricably intertwined” doctrine:

Rule 404(b) requires that “crimes, wrongs, or other acts” cannot be offered as proof of character when character evidence is offered to prove conduct. But it is often difficult to determine which acts are “other acts” as opposed to acts that are part of the offense charged. The test used by most courts is whether the acts that are the subject of the proof are “inextricably intertwined” with the basic elements of the crime charged. If so, Rule 404(b) is considered inapplicable and there is no need to articulate a “not-for-character” purpose for the evidence. Nor is there any need to give prior notice of the intent to use the evidence, as is required if the

evidence is covered by Rule 404(b). Of course, Rule 403 will still apply to the evidence.⁴ However, it would be the rare case in which proof of an inextricably intertwined act could be considered so prejudicial as to justify exclusion under Rule 403.

Sometimes it is pretty clear that bad act evidence is part of the charged misconduct. Take for example *United States v. Lyle*, 856 F.3d 191 (2nd Cir. 2017). The defendant was convicted of charges related to distribution of methamphetamine, including conspiracy. The charges resulted after he was arrested in a car containing a large quantity of meth. While on release after that arrest, the defendant was found in a hotel room weighing out baggies of meth, consistent with distribution. The court found that this evidence was inextricably intertwined. The defendant was charged with conspiracy, and the bad act was evidence in furtherance of the conspiracy --- during the time in which the conspiracy was operating. Thus the bad act evidence was direct proof of the crime charged.⁵ See also, *United States v. Pace*, 981 F.2d 1123, 1135 (10th Cir. 1992) (“Rule 404(b) only applies to evidence of acts extrinsic to the charged crime. Evidence of Leonard’s sale was direct evidence of the conspiracy, which the indictment charged as occurring between July 1 and October 26, 1990. Conduct during the life of a conspiracy that is evidence of the conspiracy is not Rule 404(b) evidence.”).

Lyle is fairly easy because any act that was part of the conspiracy is directly related to the conduct that the government alleged in the indictment, so there is no concern that evidence of that act is primarily used to prove propensity. This would be true whether or not the act was specifically alleged as an overt act.

The notion of “inextricably intertwined” evidence becomes more complicated when it is examined in cases such as *United States v. Hilgefurd*, 7 F.3d 1340, 1346 (7th Cir. 1993). Hilgefurd suffered what the court described as “hard times.” He had borrowed over one million dollars from a bank and the Farmer’s Home Administration using the two farms he owned as security for the debt. When he suffered financial difficulties, the bank foreclosed on the mortgage it held on one of his farms. The bank then bought the farm at the foreclosure sale and evicted Hilgefurd. The United States foreclosed on his other farm.

Hilgefurd retaliated by sending bills to employees of the bank and the FHA and then taking deductions on his tax return for the unpaid bills. Among the charges brought against him were counts alleging willful filing of false tax returns. To prove the tax counts, the government offered evidence that in the years prior to the challenged tax returns, Hilgefurd had generated “a blizzard of complicated and groundless litigation, primarily involving his fruitless attempts to regain his two farms.” Hilgefurd objected at trial under Rule 404(b). The court held that Rule 404(b) was not applicable to this evidence, because it was “intricately related to the fact of the case at hand.”

⁴ See *United States v. Hilgefurd*, 7 F.3d 1340, 1344 (7th Cir. 1993):

When deciding if the other acts evidence was admissible without reference to Rule 404(b), we must determine whether such evidence was intricately related to the facts of the case at hand. If we find the evidence is so related, the only limitation on the admission of such evidence is the balancing test required by Rule 403.

⁵ The court held alternatively that the evidence was admissible to show knowledge and intent --- a critique of that analysis is found in the case digest in Part Three.

Cases such as *Hilgeford* are more difficult than a conspiracy case like *Lyle*, where the bad acts offered occurred while the conspiracy was ongoing. The bad acts in *Hilgeford* did not occur in the time period covered by the indictment. The fact that the groundless litigation was probative of an element of the prosecution's case (the willfulness in the tax return filings) does not distinguish it from bad act evidence covered by Rule 404(b); all evidence offered by the prosecution in a criminal trial must be somehow probative of an element of the crime. The court's statement that the groundless litigation concerning the farm was "intricately related" to the tax counts is vague and conclusory.

Hilgeford is hardly the only case in which courts have been muddled in applying the rule that evidence of acts "inextricably intertwined" with the charge is exempt from Rule 404(b). Part of the problem is that courts often use different phrases to capture the concept. Examples include acts that are "intrinsic" to the crime charged; acts that form part of a "single criminal episode"; acts that are an "integral part" of the crime; and acts that "complete the story" or "explain the context" of the crime. See, e.g., *United States v. Lucas*, 849 F.3d 638 (5th Cir. 2017) ("background" evidence is "intrinsic" to the crime charged --- even though many cases evaluate background evidence under Rule 404(b)); *United States v. Payne-Owens*, 845 F.3d 868 (8th Cir. 2017) (in a felon-firearm prosecution, gang membership evidence was "intrinsic" because "contributed to the narrative of the charged crime" and "it helped to provide a total picture").

It gets even more confusing in some courts that have more than one doctrine for determining whether the bad acts are "other" acts outside Rule 404(b). Consider *United States v. Loftis*, 843 F.3d 1173 (9th Cir. 2016). In a wire fraud prosecution, the government sought interlocutory relief after the trial judge, in an *in limine* motion, held that evidence of frauds not specified in the indictment would be evaluated under Rule 404(b). The Court of Appeals held that Rule 404(b) was inapplicable for two separate reasons. First, the frauds not specified in the indictment were not "other" acts because the crime charged included not only the specific executions of the fraud scheme alleged in the indictment, but also "the overall scheme." Thus the acts were part of the charged conduct. This was because an element of the crime of wire fraud is "the existence of a scheme to defraud." Second, the uncharged acts were "inextricably intertwined" with the frauds specified in the indictment because the uncharged transactions were "part of the overall scheme" and "part of the same transaction." The Court did not explain why it had two separate doctrines that found this evidence to be outside Rule 404(b), when the reason that both doctrines applied was exactly the same.

One noted commentator has summed up the "inextricably intertwined" doctrine with the following criticism:

"Inextricably intertwined" is the modern de-Latinized version of *res gestae*, and it has been savaged by a similar critique. The standard has been described as "lacking character" and "obscure" because it does not embody a clear principle. * * * The vacuous nature of the test's wording gives courts license to employ sloppy analysis and allows them quickly to slip from a conclusory analysis to a desired conclusion. Simply stated, the indefinite phrasing of the doctrine is a virtual invitation for abuse."

Imwinkelried, *The Second Coming of Res Gestae: A Procedural Approach to Untangling the “Inextricably Intertwined” Theory for Admitting Evidence of an Accused’s Uncharged Misconduct*, 59 Cath. U. L.Rev. 719, 724 (2010) (citations omitted).

Several Circuits have been questioning whether there should even be an exception from Rule 404(b) for acts that are inextricably intertwined with charged offenses. For example, in *United States v. Green*, 617 F.3d 233, 246–247 (3rd Cir. 2010), a defendant charged with drug crimes challenged evidence that he threatened to kill the person who turned him over to authorities. The trial court admitted this evidence as inextricably intertwined with the charged crime. The court affirmed, but in an extensive and detailed analysis it rejected any broad use of the “inextricably intertwined” doctrine. The court noted three problems with the “inextricably intertwined” test:

The first is that the test creates confusion because, quite simply, no one knows what it means. Such an impediment stands as an obstacle to helpful analysis. Indeed, we have criticized the “inextricably intertwined” standard as “a definition that elucidates little.” * * * Whether evidence qualifies as intrinsic in a particular case may well depend on which version of the test one employs. For example, Green’s threat to kill A.G. would qualify as intrinsic if the test is whether it “pertain[s] to the chain of events explaining the context” of the crime * * *. The same threat would not be intrinsic, however, if the test were whether that threat was “an integral part of the immediate context of the crime charged.” * * * We see no principled way to choose among these competing incarnations of the test, yet that choice could well be determinative. * * *

The second problem with the inextricably intertwined test is that resort to it is unnecessary. The most common justification for admitting evidence of “intertwined” acts is to allow a witness to testify freely and coherently; we do not want him to have to tiptoe around uncharged bad acts by the defendant, and thereby risk distorting his narrative. This is a worthy goal, but it can be accomplished without circumventing Rule 404(b). * * * [T]he same evidence would also be admissible within the framework of that rule because allowing the jury to understand the circumstances surrounding the charged crime—completing the story—is a proper, non-propensity purpose under Rule 404(b). * * * All that is accomplished by labeling evidence “intrinsic” is relieving the government from providing a defendant with the procedural protections of Rule 404(b).

The third problem with the inextricably intertwined test is that some of its broader formulations, taken at face value, classify evidence of virtually any bad act as intrinsic.

The *Green* Court declared that the “inextricably intertwined” standard “is not our test for intrinsic evidence. Like its predecessor *res gestae*, the inextricably intertwined test is vague, overbroad, and prone to abuse, and we cannot ignore the danger it poses to the vitality of Rule 404(b).”

But the *Green* court did not “reject the concept of intrinsic evidence entirely.” It explained as follows:

[W]e will reserve the “intrinsic” label for two narrow categories of evidence. First, evidence is intrinsic if it “directly proves” the charged offense. This gives effect to Rule 404(b)’s applicability only to evidence of “*other* crimes, wrongs, or acts.” If uncharged misconduct directly proves the charged offense, it is not evidence of some “other” crime. Second, uncharged acts performed contemporaneously with the charged crime may be termed intrinsic if they facilitate the commission of the charged crime. But all else must be analyzed under Rule 404(b).

Applying the narrowed test of “intrinsic” evidence to the defendant’s threat to kill the witness, the court held that it was not intrinsic and so was covered by Rule 404(b). First, it did not directly prove that Green attempted to possess cocaine with intent to distribute (it created an inference, but that was circumstantial, not direct). Additionally, it was not performed contemporaneously with the crime itself and did not facilitate the commission of the crime charged. Notably, though, the court affirmed the conviction, because the evidence was properly admitted under Rule 404(b), as providing context to the jury and as proof of motive.

The Seventh Circuit, in *United States v. Gorman*, 613 F.3d 711, 719 (7th Cir. 2010), appears to have discarded the “inextricably intertwined” doctrine. Gorman was charged with lying to a grand jury when he testified that he did not store a particular car in the parking garage of his condominium; the car was owned by his cousin and was related to drug activity. At trial the government offered evidence that the defendant had the car towed from his garage after police inquired about its location, and took two bags of money from the car. The trial court admitted this theft-related evidence as “inextricably intertwined” with the perjury charge. The court affirmed the conviction but stated that “[h]enceforth, resort to inextricable intertwinement is unavailable when determining a theory of inadmissibility.” The court explained as follows:

There traditionally have been subtle distinctions between direct evidence of a charged crime, inextricable intertwinement evidence, and Rule 404(b) evidence, but our case law has not often focused on these fine distinctions. We have often lumped together these kinds of evidence, and this has only served to further cloud the already murky waters of the inextricable intertwinement doctrine.

There is now so much overlap between the theories of admissibility that the intertwinement doctrine often serves as the basis for admission even when it is unnecessary [because the act is direct evidence of the crime]. Thus, although this fine distinction has traditionally existed, the inextricable intertwinement doctrine has since become overused, vague and quite unhelpful. To ensure that there are no more doubts about the court’s position on this issue—the inextricable intertwinement doctrine has outlived its usefulness.

As applied to the facts, the court found that the theft-related evidence was admissible, without the need to invoke the intertwinement doctrine. “Because the basis for the perjury charge was that [the defendant] denied ‘having’ the car in his garage, his theft of the car and extrication of the money from within were direct evidence of his false testimony. The fact that [the defendant] removed the Bentley from the garage demonstrated that he ‘had’ a Bentley in the garage in the first instance. Therefore, this evidence was properly admitted, albeit as direct evidence rather

than under the inextricable intertwinement doctrine.” The court noted that “any confusion of the proper channel of admissibility” was “insignificant” to the ultimate outcome of admissibility.⁶

Relatedly, in *United States v. Bowie*, 232 F.3d 923, 927 (D.C. Cir. 2000), the court rejected the “inextricably intertwined” rule where evidence was offered to “complete the story” of a charged crime. The court found the doctrine unnecessary.

As a practical matter, it is hard to see what function this interpretation of Rule 404(b) performs. If the so-called “intrinsic” act is indeed part of the crime charged, evidence of it will, by definition, always satisfy Rule 404(b). * * * So far as we can tell, the only consequences of labeling evidence “intrinsic” are to relieve the prosecution of Rule 404(b)’s notice requirement and the court of its obligation to give an appropriate limiting instruction upon defense counsel’s request.

In the end, the *Bowie* Court concluded that “there is no general ‘complete the story’ or ‘explain the circumstances’ exception to Rule 404(b) in the D.C. Circuit. Such broad exclusions have no discernible grounding in the ‘other crimes, wrongs, or acts’ language of the rule. Rule 404(b), and particularly its notice requirement, should not be disregarded on such a flimsy basis.”

But other circuits still employ the “inextricably intertwined” doctrine to find that Rule 404(b) is inapplicable. In these circuits, evidence used to “complete the story” is pretty much the same as evidence admitted for “context” --- and yet “context” is a Rule 404(b) purpose while “complete the story” is not. And evidence found “intrinsic” often could also be characterized as evidence of state of mind or consciousness of guilt and so covered by Rule 404(b). *See, e.g., United States v. Ali*, 799 F.3d 1008 (8th Cir. 2015) (evidence that one defendant supported a terrorist group before it was designated as a terrorist organization was “intrinsic” to the crime charged because it explained how the fundraising began); *United States v. Ford*, 784 F.3d 1386 (11th Cir. 2015) (common methods used by the defendant to commit fraud were “intrinsic” because they were similar to the charged offenses); *United States v. Castleman*, 795 F.3d 904 (8th Cir. 2015) (in a drug prosecution, evidence of death threats against witnesses, offered to prove consciousness of guilt, were “direct evidence of the crime charged” and so “not subject to a Rule 404(b) analysis” --- though such evidence is clearly circumstantial, not direct). *See also* Imwinkelried, *supra*, at 726 (“In many of the cases in which the courts have invoked the [inextricably intertwined] doctrine, they could just as easily have relied on a recognized noncharacter theory, such as motive.”).

⁶ For further discussion of the Seventh Circuit’s position, see Padgett, *How Less is More: The Unraveling of the Inextricable Intertwinement Doctrine under United States v. Gorman*, 6 Seventh Circuit Review 196 (2010). The author applauds the court for abandoning the “inextricably intertwined” doctrine and concludes as follows:

This area of the law is contentious enough, with Rule 404(b) being the most litigated rule in the Federal Rules of Evidence. Compounding the complexities of this Rule by continuing to have a vague and misused doctrine was wasteful of the judiciary’s already scarce time and dangerous for defendants.

Restyling and the “Inextricably Intertwined Doctrine”

As seen above in the discussion of the *Green* case --- and as discussed at the last Committee meeting --- the linchpin of the “inextricably intertwined” doctrine is that Rule 404(b) applies to “*other* crimes, wrongs or acts.” Specifically the original rule provided that “[e]vidence of other crimes, wrongs, or acts is not admissible to prove the character of a person in order to show action in conformity therewith.” That phrase is quoted in *Green* to indicate that acts that are actually part of the crime charged are not “other” and so are not covered by Rule 404(b).

Green was decided before the rules were restyled. And the restyling made a change to the phrase. The first sentence of Rule 404(b) now states that “[e]vidence of a crime, wrong, or *other* act is not admissible to prove a person’s character in order to show that on a particular occasion the person acted in accordance with the character.” This change was raised at the last Committee meeting as one that might have affected the scope of any “inextricably intertwined” doctrine. It can be argued that the relocation of the word “other” makes a substantive change, because now “other” is just describing acts that are neither crimes nor wrongs --- it is no longer describing the kind of evidence that is covered by Rule 404(b) *because it is not part of the charged crime*.

That argument would lead to the conclusion that the restyling made a substantive change to the coverage of Rule 404(b). There are two responses to that argument. The first is that any inference of a substantive change is forestalled by the Restyling Committee Note, which says that no substantive change is intended. The second and more important response is that the substantive change described would make no sense. It would mean that *all* bad act evidence is covered by Rule 404(b), even the evidence of the charged crime itself. That is to say, the rule would mean that evidence of *any* “crime, wrong, or other act is not admissible to prove a person’s character in order to show that on a particular occasion the person acted in accordance with the character.” And it makes no sense for Rule 404(b) to cover evidence of the crime itself, because that evidence by definition is not offered to prove the defendant’s character. For example, in a murder case, could the restyling be interpreted to mean that evidence of the murder itself is covered by Rule 404(b)? Literally, perhaps, because it is evidence of a “crime, wrong, or other act.” But the coverage is silly because the charged act of murder is not offered to prove character; it’s offered to prove the murder.

Ultimately, then, it would seem that the restyling had no effect on the scope of Rule 404(b)’s coverage of bad act evidence --- and there is no call to propose an amendment designed only to correct the restyled iteration. That said, the phrase “other crimes, wrongs, or acts” is *different* from the phrase “crimes, wrongs, or other acts.” It seems to describe something that is different. And the former seems a better way to capture the point that the rule is covering acts that are “other” --- and so not part of the crime charged. So the Committee may wish to consider changing the language back to the original, *as part of a broader amendment*. Though the counterargument is that it might be taken as a concession that there was an error in the restyling, and the differential here does not really amount to an error --- not an error with any practical effect, at any rate.

Drafting Possibilities

Trying to regulate the “inextricably intertwined” doctrine through a textual change is a challenge. There will always be some line-drawing required between the acts that are charged in an indictment and those that are not but yet appear pretty “close” to the charged acts or covered by the indictment. The courts above that try to reject the doctrine are still left to define the line between the crime charges and “other” acts --- such as through the distinction between direct and indirect evidence as in *Gorman* and *Green*. Perhaps a test that distinguishes direct and indirect evidence of the crime could be workable if its application was addressed in detail in a committee note. Perhaps not.

In Part Three, an attempt is made to codify a limitation on the “inextricably intertwined” doctrine.

II. Case Law Digest

Rule 404(b) Case Law Digest

Note: This digest covers circuit court cases decided since April, 2017. It covers all the reported circuit court cases with any meaningful discussion.

As to district court cases, only a sample from the last year is included as there are just too many that are too alike.

Circuit Court Opinions

1. Evidence Found Improperly Admitted

Not “background” but propensity: *United States v. Steiner*, 847 F.3d 103 (3rd Cir. 2017): In a felon-firearm prosecution, a prior arrest warrant was offered and admitted as “background” to the police investigation. The court found this to be error. Despite the government’s representations, the arrest warrant was not in fact what led the police to the defendant. “The only purpose the arrest warrant served was to improperly suggest that Steiner was predisposed to commit criminal acts.” The court “admonish[ed] the government to take greater care in its representations and not brandish Rule 404(b) so cavalierly.”

Prior drug conviction offered solely for propensity: *United States v. King*, 865 F.3d 848 (6th Cir. 2017): The defendant was charged with laundering what he thought was drug money (but was actually money provided by a confidential informant). On cross-examination of the defendant at trial, the prosecutor raised the defendant’s prior arrest and misdemeanor conviction for cocaine possession. The court found that there was no ground for introducing the evidence “other than to show that he had a propensity to commit crimes.” The government argued that the defendant opened the door to the drug evidence when he testified about his history of substance abuse to garner juror sympathy. But the court responded that the drug evidence was not contradictory of the defendant’s testimony but rather consistent with it. The court found the error to be harmless.

2. Questionable Application of “Inextricably Intertwined”

“Background” is “intrinsic” evidence: *United States v. Lucas*, 849 F.3d 638 (5th Cir. 2017): The defendant was tried for wire fraud arising from a fraudulent real estate investment. The defendant had told investors that Watson was providing him information about the investment. The court found no error in admitting the fact that the defendant had met that man at a methadone clinic. Because that background explained the true nature of the relationship between the defendant and the man, it was “intrinsic” to the crime charged.

Comment: Where the defendant met Watson was not direct evidence of the crime, and would have been more usefully and fairly analyzed as background evidence under Rule 404(b).

“Contributing to the narrative”: *United States v. Payne-Owens*, 845 F.3d 868 (8th Cir. 2017): The court affirmed the defendant’s conviction for being a felon and an unlawful drug user in possession of a firearm. An ATF agent who investigated the defendant obtained a search warrant to access the defendant’s Facebook account and found photos showing the defendant with ammunition and a handgun and holding up four fingers --- which was a sign associated with a gang. The court found no abuse of discretion in admission of the gang evidence. It reasoned that the evidence was admissible under Rule 404(b) because it tended to prove the defendant’s motive to possess a real gun. But the court also stated that the Rule was inapplicable because the gang evidence was “intrinsic.” The court found the evidence intrinsic because it “contributed to the narrative of the charged crime” and “it helped to provide a total picture.” The court provided no analysis that would explain how these descriptions made the evidence “intrinsic”; and it mentioned no limit on characterizing evidence as intrinsic.

“Plan” evidence is inextricably intertwined: *United States v. Horner*, 853 F.3d 1201 (11th Cir. 2017): The court affirmed convictions of a husband and wife for assisting in the preparation of a fraudulent tax return and filing a false individual income tax return. The couple failed to tell their tax preparer that they had deposited substantial amounts of cash into business and personal accounts, and none of the funds was included on their tax returns. The IRS determined that the cash amounted to diverted income. The court concluded that the government’s evidence of the cash deposits was admissible and references to them as “structuring” were permissible. The court reasoned that the deposits were inextricably linked to the tax charges because “the cash deposits formed the basis of the tax fraud itself.” The court also held that evidence of their taxes and finances for other years was also inextricably intertwined because it was part of the same plan. Alternatively, the court concluded that the evidence of conduct in other years was relevant to prove motive and intent.

Comment: The court seems right about the deposits that were the basis of the fraud because you couldn’t prove that there was tax fraud without proving the deposits. But the evidence of other years is not direct proof of the crime and should be analyzed under Rule 404(b).

3. Questionable Applications of Intent or Knowledge

Intent in a drug case: *United States v. Henry*, 848 F.3d 1 (1st Cir. 2017): The defendant was convicted of possession of crack cocaine with intent to distribute. His defense was that the officers lied in claiming that they had found drugs on him. The court found no error in admitting the defendant's prior drug conviction to prove intent. It stated that it had "repeatedly upheld the admission of prior drug dealing by a defendant to prove a present intent to distribute." The court emphasized that the defendant's failure to challenge intent did not remove the issue of intent from the case. The court did, however, step back from the government's argument that "evidence of a prior drug distribution offense is *always* relevant under Rule 404(b) to show knowledge and intent in a prosecution for possession of a controlled substance with intent to distribute." The court noted that "in many cases, impermissible propensity reasoning lurks as one of the links in the logical chain of relevance" and "encourage[d] district courts to carefully consider the proponent's assertion of why a prior conviction has special relevance and examine whether, in the particular case-specific circumstances, the proponent is simply attempting to disguise propensity evidence by artificially affixing it with the label of a permitted Rule 404(b)(2) purpose." It also noted that the defendant did in a way contest intent, by seeking a lesser included offense instruction for simple possession. [That said, it remains the case that the court found no abuse of discretion in admitting the conviction, even though the trial court did not establish that the conviction was probative of intent independent of a propensity inference.]

Two judges in *Henry* concurred, questioning the First Circuit case law establishing that evidence of prior drug crimes is properly admitted to prove intent to distribute drugs. The judges pointed out that the authority was "contrary to Rule 404(b)" because proof of intent in drug cases proceeds through a propensity inference: "that is, his propensity is to be a seller, rather than a buyer or user." The judges found that any error in admitting the bad act was harmless, but noted that "one can make a good argument for going en banc in a future case to reconsider our Rule 404(b)(1) jurisprudence."

Intent and knowledge in a drug case: *United States v. Lyle*, 856 F.3d 191 (2nd Cir. 2017): The defendant was convicted of charges related to distribution of methamphetamine, including conspiracy. He was arrested in a car containing a large quantity of meth. His defense was that he was a user and not a distributor, and that he did not know that a large quantity of meth was in the car. The trial court admitted evidence that after that arrest, the defendant was found in a hotel room smoking meth, and weighing out baggies of meth on a scale. The court found no error. It stated first that the evidence was inextricably intertwined, because the defendant was charged with conspiracy, and the bad act was evidence in furtherance of the conspiracy --- during the time in which the conspiracy was operating. [This part of the ruling is discussed in Part Two, supra.] Second, the evidence was admissible to show knowledge and intent. The court noted that knowledge and intent was actively disputed by the defendant, and declared that "possession of 14-15 grams of methamphetamine and tools of the drug trade less than a month after he was arrested with the rental car is probative of his knowledge and intent regarding the contents of the rental car."

Comment: The court’s ruling on intent seems justified because the defendant was actively contesting intent and the act was close in time and involved the same drug --- so its probative value was high. But the court is simply wrong on knowledge. That is because the bad act took place *after* the crime charged. A bad act is properly offered for knowledge when it shows that the defendant learned something from the prior experience --- you are more likely to know about something if it happened before. But by definition you can’t learn from a future experience. So the path of inference for knowledge derived from a future act is just a smokescreen for propensity --- because the bad act shows he was a drug dealer, he must have known he was dealing drugs before.

“Intent” but no explanation of why the bad act is probative: *United States v. Sterling*, 860 F.3d 233 (4th Cir. 2017): A former CIA agent was convicted of unauthorized retention and disclosure of classified information. He argued on appeal that the trial court erred in admitting evidence that he improperly kept four classified documents --- unrelated to the charges --- in his home. The court stated that a not guilty plea puts the defendant’s intent at issue; it specifically “declined to adopt the rule of some other circuits that evidence of other crimes may not be offered when the defendant unequivocally denies committing the acts charged in the indictment.” The court in conclusory fashion stated that “evidence showing that Sterling improperly retained four classified documents in the past encouraged the proper evidentiary inference that any subsequent retention of classified documents was, if proven, intentional.”

“Intent” but really propensity: *United States v. Thomas*, 847 F.3d 193 (5th Cir. 2017): The court affirmed the defendant’s convictions for theft from a program receiving federal funds, money laundering and payment structuring, all arising from work the defendant did for the New Orleans Traffic Court. It found no plain error in the admission of evidence of the defendant’s actions prior to the crime charged, in which he submitted inflated and duplicate invoices to the traffic court. The court found that the evidence “was relevant to an issue other than Thomas’s character, as it lessened the likelihood that Thomas committed the charged offenses with innocent intent.” But the court did not explain how the bad act evidence raised an inference of intent to commit the charged crime in any other way than by a propensity inference.

Prior acts of drug sales and drug use admissible to show intent to distribute: *United States v. Jackson*, 856 F.3d 1187 (8th Cir. 2017): In a case charging heroin distribution, the court found no error in the admission of: 1. Evidence that a search of the defendant’s home at an unrelated time showed that the defendant was involved in drug-dealing, and 2. Testimony of a witness that he and the defendant did heroin together. The court held that: 1) Rule 404(b) is a rule of inclusion; 2) pleading not guilty places intent in issue; 3. Prior acts of drug distribution are probative of intent to distribute; and 4. Prior acts of drug *use* are probative of intent to distribute. [So this is as automatic as it gets.]

“Intent” but really propensity: *United States v. LaFontaine*, 847 F.3d 974 (8th Cir. 2017): The court affirmed the defendant’s conviction for making a threat in a 2015 call to the Department of Justice and held that the trial judge did not abuse discretion in admitting a 2013 call by the defendant to a federal court employee. It concluded that the earlier call was relevant to intent, which was the key issue in the case. The court did not explain, however, why a prior threat was relevant to an intent to make a later threat, other than by way of a propensity

inference. The court stated that Rule 404(b) is “one of inclusion, such that evidence offered for permissible purposes is presumed admissible absent a contrary determination.”

“Rule of inclusion”, etc.: *United States v. Johnson*, 860 F.3d 1133 (8th Cir. 2017): In a trial on charges of rape and assault, the court admitted the defendant’s prior assault convictions. The court found no error, applying its basic template: 1. Rule 404(b) is a rule of inclusion; 2. By pleading not guilty, the defendant put intent in issue; and 3. Prior acts of assault were probative of intent to commit the charged assault.

“Rule of inclusion,” etc.: *United States v. Riepe*, 858 F.3d 552 (8th Cir. 2017): The defendant was charged with attempted enticement of a minor. The government offered evidence that he had approached other minors previously. The court found no error in the admission of the bad act evidence. It stated that Rule 404(b) is a rule of inclusion; and that the prior acts were probative of intent to entice.

Conclusory application of knowledge and intent: *United States v. Rembert*, 851 F.3d 836 (8th Cir. 2017): The court affirmed the defendant’s firearm and drug convictions and held that the trial judge did not abuse discretion in admitting a video posted on a media website that showed the defendant holding a firearm and smoking what appeared to be marijuana. The court stated that “evidence that a defendant possessed a firearm on a previous occasion is relevant to show knowledge and intent.” The court gave no explanation that this was so absent reliance on a propensity inference.

No explanation of a non-propensity inference: *United States v. Ubaldo*, 859 F.3d 690 (9th Cir. 2017): Affirming the defendant’s conviction for illegally smuggling weapons, the court held that the trial judge did not abuse discretion in admitting evidence of a previous attempt to smuggle weapons, as it was relevant to intent, knowledge and absence of mistake. But it gave no explanation of how this was so absent reliance on a propensity inference.

4. Questionable Applications of Other Purposes

Motive: *United States v. Williston*, 862 F.3d 1023 (10th Cir. 2017): The defendant was charged with murdering the two-year-old daughter of his girlfriend. The trial court admitted evidence that the defendant had previously spanked the girl, often lashed out at her, disciplined her by hitting her, and threw a cup at her. The court found no error and affirmed. It noted first that “Rule 404(b) is a rule of inclusion, and we regularly affirm the admission of other-acts evidence unless it tends to prove *only* a criminal propensity.” (emphasis added). The court stated that the bad act evidence proved motive --- that the defendant’s history with the girl showed his resentment and thus the “reason” that the defendant would beat her to death.

Comment: Surely the listing of “motive” as a proper purpose must mean more than “he had the same motive to do the bad act as he had to do the charged act.” That is just propensity. The most sensible meaning of “motive” is that the bad act *gives* the defendant the motive to do the charged act --- such as if the victim was going to report the defendant for having done a previous bad act.

5. Careful Explanations of Probative Value and Non-Propensity Inference

Requiring an explanation of probative value independent of a propensity inference: *United States v. Repak*, 852 F.3d 230 (3rd Cir. 2017): The defendant was charged with public corruption --- conditioning the issuance of redevelopment grants on personal favors. He challenged the admission of evidence of other solicitations and items he received that were unrelated to those charged. The trial court found the bad act evidence admissible to prove knowledge and intent. The court, after noting that Rule 404(b) was a rule of *exclusion*, found that the trial court had erred in not specifically finding that the evidence was probative of these purposes without involving a propensity inference. The court recognized that the defendant actively contested his mental state. But it also “reiterated the importance of concretely connecting the proffered evidence to a non-propensity purpose.” It found that the government’s proffer and the trial court’s ruling “fell short, failing to explain how evidence of uncharged solicitations would have a tendency to make Repak’s knowledge and intent more probative in the mind of a juror.” The government never explained “how the proffered evidence should work in the mind of a juror to establish knowledge and intent” and the trial court’s analysis was “inexact and fails to adequately link the other-acts evidence to a non-propensity purpose with careful precision.”

Nonetheless the court affirmed because it was itself able to discern a chain of inferences that did not rely on propensity: 1. The prior solicitations showed that the defendant had knowledge that his arrangements did not involve unilateral favors by the grantees; therefore they tended to establish that he knew he was getting favors in the charged transactions as a condition of giving the grants; 2. They also showed intent because they made it more likely “that Repak did not unwittingly solicit and receive [services] without knowing or intending that the services were meant to influence him in his role as . . . Executive Director.” The court also found that the trial court erred in its Rule 403 balancing because all it did was conclude that Rule 403 was satisfied. But the court found that it was apparent that the probative value of the evidence was significant --- because the defendant actively contested his mental state. And the prejudicial effect was diminished by the trial court’s limiting instruction and by the fact that the bad-act evidence did not involve criminal convictions (only acts).

Fourth Circuit panel adopts the *Gomez-Caldwell* approach: *United States v. Hall*, 858 F.3d 254 (4th Cir. 2017): The defendant was charged with possession of marijuana with intent to distribute, as well a firearms offense. Six kilograms of marijuana and three firearms were found in a house in which the defendant resided with others. The drugs and guns were found in a locked bedroom and the government had no direct evidence linking the defendant to the bedroom. To establish constructive possession, the government offered and the trial court admitted the defendant’s four prior convictions --- one for possession of marijuana and three for possession with intent to distribute. The court found error under Rule 404(b). The bad act evidence was ostensibly offered for purposes of knowledge and intent, but the court found that the relevance for those purposes mostly proceeded through a propensity inference, and where it did not the probative value was nonetheless substantially outweighed by the prejudicial effect. The court made the following points:

1. Following *Caldwell*, the court stated that Rule 404(b) is a rule of *exclusion* --- the references to it as a rule of inclusion are intended to mean only that the list of proper purposes is not exclusive.

2. Possession offenses generally are not relevant to intent to distribute (other than for propensity) because “the *mens rea* requirements for possession and distribution offenses are fundamentally different” --- so because the prior possession offenses did not require specific intent, “the only relevance that conviction could have to his intent to distribute marijuana on a later, unrelated occasion is that it tends to suggest that Defendant is, in general, more likely to distribute drugs because he was involved with drugs in the past.”

3. Possession offenses are not always relevant to establish knowledge of the drug for purposes of distribution. That is because “distribution quantities of a drug are often packaged differently than quantities possessed for personal use, rendering a defendant’s knowledge of the packaging of a personal use amount of a drug irrelevant to his knowledge of how a distribution amount of the same drug might be packaged.” Also, a drug may be distributed in a number of forms, so that possession of one form might not be probative of knowledge of possession of another form.

4. But possession offenses may be relevant to knowledge “if the particular characteristic of the drug used to establish knowledge does not materially vary based on quantity, form, or packaging, for example.” Applied to this case, the court found the prior convictions probative of knowledge of the smell of unburnt marijuana. But that probative value did not substantially outweigh the prejudice, because the defendant did not contest that he knew the smell of marijuana. He just claimed he had no access to the marijuana in the locked bedroom. That is, knowledge was not actively contested --- meaning that the probative value of the bad act to prove knowledge was diminished. The court rejected the government’s argument that by pleading not guilty, the defendant automatically placed his intent and knowledge at issue for Rule 404(b) purposes --- if that were so, it would “swallow up the general rule against admission of prior bad acts.”

5. As to the intent-based convictions, they were not sufficiently probative of intent as to the charged crime because of their “lack of factual similarity and temporal proximity.” Given the lack of linkage, the only probative value of the intent-based convictions was through the criminal propensity inference.

6. As to the intent-based convictions, they were probative of knowledge because “past experience with distribution amounts of marijuana makes it more likely that Defendant knew, based on the pervasive smell of marijuana, that there was marijuana inside the residence.” But that probative value was minimal because the defendant did not contest his knowledge of marijuana or the smell --- he contested access.

***Comment:* The *Hall* majority took pains to establish that its *Gomez/Caldwell*-type analysis was supported by existing Fourth Circuit precedent. It devoted six pages to a rebuttal of the dissenter’s claim that Fourth Circuit precedent allowed virtually automatic admissibility of uncharged drug activity to show intent and knowledge in a drug case. It’s**

fair to state that the majority’s adoption of a stricter approach for Rule 404(b) evidence is, unfortunately, on shaky ground in terms of Fourth Circuit authority.

Absence of mistake: *United States v. Jimenez-Elvirez*, 862 F.3d 527 (5th Cir. 2017): The defendant was convicted of transporting undocumented aliens into the U.S. The trial court admitted his previous conviction for illegally transporting aliens. The court found no error. The government argued that it was “intrinsic” because the same tractor-trailer was used in the prior event. But the court was “skeptical” that there was enough evidence to link the two acts for purposes of finding the prior act to be “intrinsic” to the charged crime. The court found, however, that the prior smuggling event was properly admitted to prove absence of mistake. The defendant argued that he was in the wrong place at the wrong time. But the prior event involved the same tractor trailer and the two events were only three months apart --- making it less likely that the defendant was clueless as to what was going on.

Absence of Accident: *United States v. Henthorn*, 864 F.3d 1241 (10th Cir. 2017): The defendant was charged with murder, by pushing his wife off a cliff in Rocky Mountain National Park. He claimed it was an accident, she slipped and fell. The circumstances were suspicious --- including the fact that the defendant had taken out a large life insurance policy on his wife shortly before the incident. The trial court admitted evidence of two other incidents, one in which his prior wife died when she was crushed by the family car while the defendant was changing a tire in a remote location (just after the defendant had purchased life insurance on her), and one in which his second wife was injured at a remote cabin when hit with a large wooden beam that the defendant dropped from the roof. The court of appeals found no error in admitting these incidents. It reasoned that the government was not relying on a propensity inference, but rather that “the use of the prior incidents here rests on a logic of improbability that recognizes that prior incidents involving similar circumstances decrease the likelihood that Henthorn lacked the requisite intent, motive, and plan in committing the charged offense. Indeed, the prior incidents make it more likely that the charged offense was the product of design, rather than an accident.”

Comment: The court essentially relied on the “doctrine of chances.” That reliance seems very sound. How many similar tragic accidents can one guy be around ---especially after having bought life insurance? The *Henthorn* court was certainly not engaged in a “knee-jerk” resolution. The entire 17-page opinion is devoted to a careful analysis of Rule 404(b) and 403.

Knowledge: *United States v. Gaskins*, 849 F.3d 1345 (11th Cir. 2017): The court affirmed the defendant’s conviction for sex trafficking of a minor. It held that the trial judge did not abuse discretion in admitting evidence that the defendant drove two other minors to meet clients for prostitution and only later discovered that they were minors. The evidence was offered to prove that the defendant was on notice not to rely on the age listed on a website. The evidence tended to show defendant’s knowledge that the victim in the instant case was a minor.

6. Reverse 404(b) --- Evidence Offered by the Defendant

Not relevant: *United States v. Canales*, 857 F.3d 963 (8th Cir. 2017): In a prosecution for distributing methamphetamine, the defendant claimed that he had been entrapped by the confidential informant. He offered evidence that the CI shot at him because the CI believed the defendant robbed his friend. But the trial court excluded the evidence, and the Court of Appeals found no error. The shooting occurred after the distribution charged in the case and moreover was unrelated to drug trafficking; so it was not relevant to any entrapment defense.

Not admissible to prove identity: *United States v. Plume*, 847 F.3d 624 (8th Cir. 2017): Affirming the defendant's convictions for assault resulting in serious bodily injury and child abuse involving his wife's infant grandson, the court held that evidence that the wife had previously committed child abuse not involving the grandson was inadmissible propensity evidence. The court noted that the prior abuse involved "different victims, different injuries, and different degrees of severity" and so could not be admitted to prove identity.

7. Cases on Notice

One week's notice is sufficient: *United States v. White*, 819 F.3d 976 (8th Cir. 2017): The defendant argued that the Rule 404(b) notice requirement was violated because he did not receive notice until one week before the trial. The court found that one week was sufficient time to reply and the defendant was not prejudiced. The court stated that "Rule 404(b)'s notice standard is flexible" and that what constitutes a reasonable disclosure "will depend largely on the circumstances of each case."

District Court Opinions

1. Cases that admit bad act evidence without much of a bother -- especially for intent or knowledge:

United States v. Steele, 2016 WL 4036843 (N.D. Ga. July 28, 2016): The defendant was charged with a Hobbs Act Robbery. The government sought to admit evidence of a previous Hobbs Act Robbery. The court wrote that "the evidence of the September 27, 2007 Hobbs Act robbery conviction is relevant to an issue other than the defendant's character. Given that the prior conviction is for Hobbs Act robbery, the very same crime with which the defendant is charged in this case, the evidence of the 2007 conviction is relevant to showing the defendant's intent." The court did not explain how the prior robbery was probative of intent in any way other than through the propensity inference.

United States v. Franklin, 2016 WL 4033105 (D. Idaho July 27, 2016): The defendant was charged with wire fraud. He was accused of creating fake credit cards and licenses to purchase a large quantity of goods from various retail stores. These events took place in Idaho, but the government wanted to introduce a similar spending spree involving the defendant that occurred in Colorado a few months earlier. The court permitted the government to do so. The

court stated that the Colorado evidence “tends to prove issues clearly material to this case – the defendant's knowledge, intent, modus operandi, pattern of behavior and the absence of any mistake.” The court does not go into detail about *how* the previous spree fits into any of the laundry list of permitted uses. Moreover, it does not discuss whether knowledge or intent were contested by the defendant.

United States v. Escobar, 2016 WL 3676176 (D. Minn. July 7, 2016): In a narcotics case, the government sought to admit three prior drug-related convictions, each against a separate defendant. After quoting Rule 404(b), this is the entirety of the court’s analysis:

Such evidence is generally admissible unless it is offered only to prove a defendant’s character. Evidence of other acts is especially probative when intent is an issue, if those other acts are material to the defendant's intent.

The prior convictions listed above are relevant and probative in this matter to establish motive, intent, and knowledge, among other matters. All of these convictions are therefore admissible.

United States v. Jones, 2017 WL 2124084 (S.D. Miss. May 15, 2017): In a narcotics case, the court heard post-trial motions regarding admission of unrelated drug activity. In three sentences, the court determined there was a “sufficient nexus” between the defendant and the evidence, and that the evidence was “relevant to the issue of intent.” It did not note whether the defendant actively contested intent, nor did it explain how it proceeded through a non-propensity chain of reasoning to admit the evidence.

United States v. Cotton, 2016 WL 6666943 (D. Nev. Nov. 10, 2016): The defendant was charged with marijuana and firearms offenses. The defendant was stopped for a traffic violation and officers found a gun and a bag of pre-packaged marijuana. In an in limine ruling, the court found that three convictions would be admissible under Rule 404(b). The convictions were for: 1. maintaining a place for the purpose of selling a controlled substance; 2. possession of a controlled substance for the purpose of sale (cocaine); and 3. trafficking in a controlled substance (ecstasy). All three prior convictions were admitted as probative of the defendant’s intent. The defendant argued that if he put on a defense that the bag with the marijuana was not his, none of his prior convictions would be probative except to prove propensity. The court rejected this argument by explaining that the defendant put intent at issue by pleading not guilty.

United States v. Jacobs, 194 F. Supp. 3d 216 (E.D.N.Y. 2016): The defendant was indicted on 27 counts of aiding in the preparation of false returns. The government filed a motion in limine to admit evidence of additional uncharged false tax returns prepared by the defendant for the same clients. The false tax returns were for a previous year and could not be charged due to the statute of limitations. The court found the prior returns were probative of motive. But the court did not explain how filing false tax returns in one year would give the defendant a motive to file false tax returns in a subsequent year. In the absence of any probative value to prove motive, it would appear that the prior filing is being offered to show propensity --- though if the defendant were contending that he didn’t know that the later returns were fraudulent, the prior returns would be admissible to prove knowledge.

United States v. Harris, 2017 WL 2118284 (E.D. Tex. May 12, 2017): The defendant was charged with conspiracy to use, carry, or possess firearms during a crime of violence (home invasions). The defendant moved in limine to exclude six prior bad acts involving home invasions. The court stated that a not guilty plea puts intent at issue, and that similar acts are admissible to show intent.

United States v. Hayes, 2016 WL 7046747 (D. Utah Dec. 2, 2016): The defendant was charged with participating in a conspiracy to distribute methamphetamine. The prior bad act evidence that the court admitted was the defendant's admission to smoking methamphetamine on the day of his arrest and evidence that he previously used methamphetamine. The court found that "Defendant's prior use of methamphetamine may be used to show knowledge, plan, motive or intent to participate in the alleged crimes. Therefore, the evidence is probative of a material issue other than character and is admissible." The court did not explain any chain of inference by which uncharged drug activity would be probative for *four* separate proper purposes in a drug case.

United States v. Cowden, 2016 WL 5794763 (N.D.W. Va. Oct. 4, 2016): The defendant was charged with use of excessive force. He filed a motion in limine to exclude allegations of his use of excessive force on an unrelated occasion, where the defendant allegedly subdued a man in a domestic violence situation. The government claimed that the prior act (the domestic violence incident) was "relevant, necessary, and reliable" because it proved the defendant's willfulness. The court found Rule 404(b) to be a rule of inclusion. Then it simply stated that "the evidence is relevant to the element of willfulness in Count One and the defendant's state of mind." No further explanation or analysis was provided.

2. Cases where the probative value appears to proceed through a propensity inference to get to the "proper" purpose:

United States v. Minnick, 2016 WL 7131470 (D. Md. Dec. 5, 2016): The defendant filed a post-trial motion challenging his conviction for distributing heroin. He argued that it was error to admit a recorded conversation in which the defendant discussed selling cocaine, while using drug slang. The court first noted the recorded conversation about cocaine was not intrinsic to the crime because the defendant was charged with distributing heroin. Still, it admitted the evidence "as probative of [Defendant's] knowledge of coded language relating to drugs and his intent to engage in drug trafficking." The court explained as follows:

Here, the Government's case centered on recorded conversations in which Minnick and others used language that the Government argued constituted coded language relating to drug dealing. The defense countered, through expert testimony, that the language used was typical of ordinary conversation among individuals from a particular community or social circle. In the context of this case, therefore, the conversation in question was relevant to establish that Minnick had knowledge of drug

slang and coded language and that when he used such language, he had the intent to engage in drug dealing. It was particularly probative because it occurred in September 2014, within the period of the charged conspiracy, and was captured on the same telephone that Minnick had used for other conversations in which he allegedly used coded language to discuss drug dealing.

Comment: There is a good argument that the evidence of the other transaction is offered for propensity. That argument relies on the difference between drug “slang” --- like “a quarter” --- and coded conversation, like “chimneys.” The conversation regarding the uncharged conversation was not coded, it was slang. So it really shows little to nothing about the defendant’s knowledge of coded language.

United States v. Bigham, 2016 WL 4944138 (E.D. Mich. Sept. 15, 2016): The defendant was charged with three counts of possession with intent to distribute a controlled substance. One of the counts of possession was based on a traffic stop where the defendant didn’t have his license and fled the scene in a black 1998 Lexus and evaded the police. An eyewitness, however, called 911 and said that someone driving rapidly in a black Lexus dropped a bag out of their window. When the police investigated, they found drugs on the ground, packaged in a manner that indicated narcotics trafficking. To tie the drugs to the defendant, law enforcement tried to introduce several other instances where the defendant was pulled over, had either no license or a suspended license, fled the scene, and threw drugs out of his car window. The defendant claimed this was inadmissible under Rule 404(b). The court concluded that the other incidents were indicative of a modus operandi -- the defendant was pulled over, didn’t have a valid license, fled, and threw the drugs out of his car, which was registered to someone else (twice to his mother). The court found this to be a “distinctive pattern of behavior,” showing the defendant’s M.O. As such, it admitted the prior bad acts to prove identity.

Comment: The most compelling portion of the prior bad acts in this instance was that the cars were registered to the defendant’s mother in two of the events. But this was not always the case. The other factors the court said helped to prove identity -- fleeing from the cops and throwing the drugs out of the window -- seem to be normal reactions to being chased by the police while carrying drugs, not an indication of one’s M.O. The more generic a so-called modus operandi, the more likely it is that the evidence is probative only to show propensity.

United States v. Dumire, 2016 WL 4507390 (W.D. Va. Aug. 26, 2016): The defendant was charged with two counts of being a felon in possession of a firearm. The government sought to introduce evidence of the defendant possessing guns on other occasions. This evidence was admitted. The court held that the other possessions tended to prove that the defendant knowingly and intentionally possessed the firearms on the times charged. *See also United States v. Payne*,

2016 WL 5794810 (W.D. Va. Oct. 4, 2016) (prior gun possession admitted to prove knowledge; knowledge placed in question by the plea of not guilty).

Comment: These cases are very similar to *Caldwell* but reach the opposite result. The defendant in each case was denying he had firearms. He wasn't contending lack of knowledge or intent. So the only path of inference is that he had a firearm because he had a firearm on other occasions. It is notable that in each of these cases the court cites a bevy of Fourth Circuit cases holding that prior possession is admissible to show intent and knowledge in firearms cases. So there is a clear split of authority in the circuits on this issue (and indeed within the Fourth Circuit itself, *see Hall, supra*).

3. Cases where the court conducts a rigorous 404(b) analysis and admits the evidence under Rule 404(b):

United States v. Shayota, 2016 WL 5791376 (N.D. Cal. Oct. 4, 2016): The defendants were charged with conspiring “to manufacture and distribute counterfeit bottles of a liquid dietary supplement known as 5-Hour ENERGY.” They filed motions to exclude evidence showing they previously engaged in schemes similar to the one charged. The government sought to admit the evidence to prove “the defendants' knowledge, intent, preparation, plan, and absence of mistake or accident.” The court looked at four factors (materiality, remoteness in time, sufficiency of the evidence, and similarity between the alleged acts and charged acts) outlined by the 9th Circuit and determined that the previous acts were all admissible to show that the defendants were sophisticated and knew what they were doing when they sold the counterfeit 5-Hour ENERGY. The court declared that “the defendants' past history of working together on similar schemes indicates that they understood their roles as well as the objects of the conspiracy, and demonstrates how they gained knowledge, skills, and networks necessary to carry out the alleged 5-Hour ENERGY conspiracy.”

United States v. Hassanshahi, 195 F. Supp. 3d 35 (D.D.C. 2016): The defendant was charged with conspiracy to violate the International Economic Emergency Powers Act and the Iranian Transactions and Sanctions Regulations, commonly referred to as the United States' trade embargo against Iran. The government intended to elicit evidence that the defendant had knowledge that a license from OFAC was required to do business in Iran. In a prior lawsuit, documented with a court opinion, the defendant was advised of the rules regarding doing business in Iran. The court found that the prior conduct was not being used to show that the defendant had a particular character and acted in conformity with that character; instead, it was used to show an absence of mistake, which is permissible under Rule 404(b). The court did an extremely thorough job of dealing with all of the defendant's arguments, explaining why the evidence at issue was admissible.

United States v. Laskowski, 2016 WL 4011230 (N.D. Ill. July 27, 2016): The defendant sought to exclude evidence that he encouraged a witness to not answer her front door to accept a grand jury subpoena, where the grand jury was investigating the criminal conduct that the defendant was eventually charged with. The court found the evidence was supported by a propensity-free chain of reasoning --- not that the defendant had a propensity to commit crime, but rather that he was conscious of his guilt on the crime charged. Citing *Gomez*, the court

declared that “[c]onnecting Defendant’s attempt to prevent someone from aiding the government’s investigation to his consciousness of guilt requires no propensity inference.”

United States v. Hodge, 2017 WL 2312238 (D.V.I. May 26, 2017): The defendant was one of six defendants who were charged with conspiracy to possess controlled substances (cocaine powder and marijuana) and related offenses. The defendant sought to exclude evidence of his violating drug laws during the time period of the alleged drug conspiracy. The court explained Rule 404(b) in a detailed manner and concluded that the two specific drug trafficking events the defendant sought to exclude “constitute[d] intrinsic evidence, and [were] not subject to the requirements of Rule 404(b).” The court, nevertheless, properly examined the evidence under Rule 403, too, and it concluded that, although the evidence was certainly damaging to the defendant, it was not unfairly prejudicial.

4. Cases that conducted a rigorous analysis and excluded the evidence offered under Rule 404(b):

United States v. Hitesman, 2016 WL 3523854 (N.D. Cal. June 28, 2016): The defendant was charged with committing attempted bank robbery. The government sought to admit evidence of the defendant’s six prior bank robbery convictions under Rule 404(b). The government’s theory was that this evidence demonstrated the defendant’s modus operandi. After a thorough analysis, the court refused to admit the evidence. The government noted that there were a few characteristics from the prior crimes that were found in the charged crime: the perpetrator was alone, did not wear a mask, used a demand note, and said he had a gun without showing the gun. The court cited an array of circuit court decisions where similar evidence was found insufficiently unique to prove identity. The court recognized that if the circumstances are not sufficiently unusual, the evidence ostensibly offered for identity is actually being used to show propensity.

United States v. Shirley, 214 F. Supp. 3d 1124 (D.N.M. 2016): The defendant was indicted for unlawfully killing a person within Indian country with a knife with malice aforethought, and related offenses. The defendant objected to admission of evidence of many knives owned by the defendant, including one he was clutching when arrested. The court rigorously went through the case law, and it accurately laid out how to evaluate bad act evidence. (Judge Browning’s opinions on evidence are extraordinarily thorough and detailed). The government argued that the knives would show the defendant’s “access to, familiarity with, and use of” the type of weapon used in the crime, but the court found that sort of “propensity inference is impermissible.” The court concluded that “such evidence suggests that Maynard Shirley is a person who possesses and is predisposed to use knives, and that therefore, he must have been the person who used ‘sharp objects’ to stab the victims in this case.” The court also noted that under Rule 403 this evidence would be minimally probative, because showing familiarity with a particular weapon is not the same as showing intent or knowledge. Finally, the court held that evidence that the defendant was found fleeing prosecution with a knife *would* be admissible, for the non-propensity purpose of consciousness of guilt. See also Judge Browning’s opinion in *Sec. & Exch. Comm’n v. Goldstone*, 2016 WL 3996384 (D.N.M. June 27, 2016) for a remarkably thorough Rule 404(b) analysis.

United States v. Williams, 2016 WL 4536864 (E.D.N.Y. Aug. 30, 2016): The defendant was charged with conspiracy to distribute narcotics and a firearm violation. While the court ruled on two motions and several pieces of evidence (and admitted some 404(b) evidence), it also excluded evidence that the police recovered firearms and marijuana as a result of a traffic stop of the defendant. The government sought to admit evidence of the guns and marijuana on the theory that this demonstrated the defendant's modus operandi --- specifically that the defendant kept these in a trap (*i.e.*, a hidden compartment). The court, however, was unpersuaded. It required that evidence offered for identity under a theory of modus operandi must be such that has "unusual characteristics." The court found that using a secret compartment was hardly unique. The court, however, did allow the government to introduce the fact that the defendant was involved in the traffic stop (though not what the fruits of that stop were) because he was stopped while driving with three of his co-conspirators, which allowed the government to demonstrate there was a longstanding relationship between the co-conspirators. The court did a very careful job of parsing the evidence and assuring that it was probative of a proper purpose.

United States v. Bey, 2017 WL 1547006 (E.D. Pa. Apr. 28, 2017): The defendant was charged with being a felon in possession of a firearm. He moved to exclude his 2002 conviction for a firearms offense and 2002 arrest for a separate firearms offense. The court noted that the first step in the Rule 404(b) analysis is to demonstrate a non-propensity purpose for admitting the evidence. The government argued the evidence was probative to show "knowledge and absence of mistake in possessing a firearm." But the court, relying on *Caldwell*, responded that because the case involved actual possession (as opposed to constructive possession), the issues of knowledge and absence of mistake were not being contested. Here, the defendant claimed the police planted the gun on him. The court concluded that "the only purpose of introducing this evidence is to demonstrate that if [the defendant] knowingly possessed firearms in the past, he is more likely to have knowingly possessed the firearm on [the date at issue]. This is exactly the type of evidence that Rule 404(b) prohibits."

United States v. Sneed, 2016 WL 4191683 (M.D. Tenn. Aug. 9, 2016): The defendant was charged with conspiracy to possess and distribute cocaine and possession and distribution of cocaine within 1,000 feet of an elementary school. The defendant argued for exclusion of a YouTube rap video entitled "4ThARightPrice," which depicted the defendant and other individuals performing a rap song containing lyrics about drug sales and gang activity. The government argued that the video was probative of the defendant's participation in the charged conspiracy and his intent to distribute cocaine. The court, in a thorough analysis, concluded that "[t]he Government's argument has a fatal flaw; rapping about selling drugs does not make it more likely that the defendant did, in fact, sell drugs." The court stated that "the video will suggest to the jury that because the defendant rapped about selling drugs on one occasion, he acted in accordance with the behavior described in the rap on another occasion, the definition of prohibited propensity evidence." The court noted that the statements in the video were general, and nothing in them tied in any way to the details of the charged crime.

III. Drafting Alternatives

This section considers drafting alternatives for addressing the two case law trends discussed in Part Two, as well as other suggestions for change that have been raised by Committee members, the Reporter and Professor Richter. The changes will be taken, and commented upon, one by one.

A. Requiring the probative value of the bad act to proceed through a non-propensity inference.

Alternative 1. Adding a simple statement to the substantive provision.

(b) Crimes, Wrongs, or Other Acts.

(1) ***Prohibited Uses.*** Evidence of a crime, wrong, or other act is not admissible to prove a person’s character in order to show that on a particular occasion the person acted in accordance with the character.

(2) ***Permitted Other Uses; ~~Notice in a Criminal Case.~~*** This evidence may be admissible for another purpose, such as proving motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake, or lack of accident. But the probative value for the other purpose may not depend on a propensity inference.

(3) **Notice in a Criminal Case.** On request by a defendant in a criminal case, the prosecutor must:

- (A) provide reasonable notice of the general nature of any such evidence that the prosecutor intends to offer at trial; and
- (B) do so before trial — or during trial if the court, for good cause, excuses lack of pretrial notice.

Reporter’s comment:

If the sentence is added as above, it makes sense to drop the notice provision to another section. *Frankly, including the notice provision together with the most important substantive provision of Rule 404(b) --- a decision made in the Restyling --- was not an elegant choice.* And it would be most inelegant to retain the current structure if another sentence is added to the middle of the provision.

Moreover, the word “permitted” in the title of (b)(2) is not exactly correct because the bad act evidence is “permitted” only if the probative value for the purpose is not substantially outweighed by the prejudicial effect. The text catches that point by stating that the evidence

“may be admissible” if offered for another purpose. But “may be admissible” is not the same as “permitted.” So if the Rule is going to be amended, there is a good argument that the heading should be changed as indicated, from “permitted” to “other”. This is another thing that probably should have been caught in the restyling.

Committee Note for this change:

The amendment emphasizes that it is not enough simply to articulate a non-character purpose for evidence of other crimes, wrongs or acts. In order for Rule 404(b) to protect in accordance with its intent, the probative value of the evidence for the proper purpose cannot be dependent on a propensity inference. For example, if evidence of uncharged misconduct is offered to prove intent, it cannot be admitted for that purpose if the inference is, “because the bad act shows he has a propensity to commit a crime like the one charged, it tends to prove he had the intent to commit the charged crime.” The proponent must therefore articulate to the court the chain of inferences from the bad act evidence to the purpose for which it is offered, and explain how that chain of inferences does not depend on the actor’s propensity.

Alternative 2: A more elaborate statement requiring a chain of reasoning without a propensity inference.

Judge Marten proposes that the *Gomez* principle be set forth in a more particularized form. His proposed amendment reads as follows:

(b) Crimes, Wrongs, or Other Acts.

(1) ***Prohibited Uses.*** Evidence of a crime, wrong, or other act is not admissible to prove a person’s character in order to show that on a particular occasion the person acted in accordance with the character.

(2) ***Permitted Other Uses; Notice in a Criminal Case.*** ~~This evidence may be admissible for another purpose, such as proving motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake, or lack of accident. The court may admit this evidence for another purpose only upon making the following findings:~~

(A) The other act is relevant to a specific purpose other than the person's character or propensity to behave in a certain way;

(B) the specific purpose is established through a chain of reasoning that does not rely on the inference that the person has a certain character and acted in accordance with that character on the occasion charged in the case; and

(C) the probative value of the other act evidence is not substantially outweighed by the risk of unfair prejudice, after taking account of the extent to which the non-propensity fact for which the evidence is offered is disputed.⁷

(3) Notice in a Criminal Case. On request by a defendant in a criminal case, the prosecutor must:

- (A) provide reasonable notice of the general nature of any such evidence that the prosecutor intends to offer at trial; and
- (B) do so before trial — or during trial if the court, for good cause, excuses lack of pretrial notice.

Reporter’s Comment: This proposal can probably have the same Committee Note as the prior one. It gets at the same point of protecting against propensity inferences but is more elaborate and specific. That may well be a good thing for such an important rule.

It seems drastic to cut out the list of proper purposes, though, as there are literally thousands of cases that have cited and used that rule language. (This point is discussed more fully below). And for purposes of this amendment it might well not be necessary. The amendment seems to work fine even with the list of proper purposes retained. Subdivision (A) might then seem a bit repetitive, but perhaps repetition is a good thing in this context.

Query whether it is useful to specifically incorporate a Rule 403 balancing test here. All courts agree that Rule 403 applies here. And it is not usual to specify that Rule 403 does apply --- for example, there is nothing in Rules 407, 608, or 801 that refers to Rule 403, and yet the Rule is applied underneath those rules. Arguably mentioning Rule 403 here draws the use of Rule 403 in doubt when applied in these other contexts.⁸ Moreover, the “in dispute” clause fits somewhat awkwardly in a list of findings. To the extent that the “in dispute” language is added to incorporate an “active dispute” requirement, the Committee has determined that it does not wish to pursue that requirement in rule text. So it may be appropriate to drop subdivision (C).

Alternative 3: Adding to the notice provision:

One of the options being explored by the Committee is incorporating an emphasis on non-propensity inferences in the notice provision. It might look like this:

(b) Crimes, Wrongs, or Other Acts.

⁷ I added friendly amendments to Judge Marten’s draft that I found necessary to comport with the structure of findings having to be made by the court. I also took the liberty of changing the term “at issue” in (2)(C) to “disputed.” “Disputed” is the word used in Rule 407 and it accomplishes a similar purpose here --- subsequent remedial measures can be offered to prove feasibility, for example, only if feasibility is “disputed.” Moreover, the term “at issue” might raise confusion when considered together with “character *in issue*” --- which refers to cases in which character must be proven under the substantive law.

⁸ The only exception is Rule 609(a)(1), but Rule 403 is mentioned there because there are so many other balancing tests at work in that rule that it was thought that it would be confusing if Rule 403 were not specified.

(1) ***Prohibited Uses.*** Evidence of a crime, wrong, or other act is not admissible to prove a person’s character in order to show that on a particular occasion the person acted in accordance with the character.

(2) ***Permitted Uses; Notice in a Criminal Case.*** This evidence may be admissible for another purpose, such as proving motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake, or lack of accident. ~~On request by a defendant in~~⁹ In a criminal case, the prosecutor must:

(A) provide reasonable notice of the general nature of any such evidence that the prosecutor intends to offer at trial; ~~and~~

(B) do so before trial — or during trial if the court, for good cause, excuses lack of pretrial notice;

(C) articulate in the notice the non-propensity purpose for which the prosecution intends to offer the evidence; and

(D) articulate the chain of reasoning supporting the purpose for offering the evidence.

Reporter’s Comments:

1. There are two important differences between adding to the substantive provision (alternatives 1 and 2) and addressing the problem in a notice provision (alternative 3).

The first difference is that if the provision is one of notice, it will not apply in civil cases. Perhaps that is a permissible result because most of the problems of overbroad application of Rule 404(b) have occurred in criminal cases. But there have been complaints that bad acts ostensibly admitted for non-character purposes in civil cases are actually nothing but propensity evidence. One commentator has noted the following problem of motive shown through propensity inferences in Title VII cases:

[W]hen plaintiffs offer evidence of an employer’s “motive” they overwhelmingly do so based on the following logic; The employer’s prior acts reveal that the employer has some discriminatory mindset; ipso facto, the employer was motivated to discriminate [by that mindset in taking the adverse action.] Nothing more than semantics differentiates this “motive” from character propensity.

Marshall, *The Character of Discrimination Law: The Incompatibility of Rule 404 and Employment Discrimination Suits*, 114 Yale L.J. 1063, 1076 (2005).

It would seem that requiring that probative value for a proper purpose must proceed through a non-propensity inference is a worthy goal in both criminal and civil cases. Therefore,

⁹ The Committee has unanimously agreed that the request requirement should be eliminated.

if the Committee agrees to beef up the notice requirements, it is worth considering expanding those requirements to all cases. The reason given by the Advisory Committee for limiting the notice requirement to criminal cases was that the Civil Rules already contain broad discovery provisions, which are likely to result in full disclosure of all bad acts that the proponent would seek to admit. So at first glance a notice requirement for civil cases in Rule 404(b) would be superfluous at best and might be confusing. But if the “articulation” requirements are added to the notice provision, then the overlap with civil discovery rules is not so clear. That is, the proposed *addition* to the Rule 404(b) notice requirement --- which is not about production but about articulating a proper purpose --- will in fact add something important to what the Civil Rules already provide. Therefore, if the Committee does decide to add an articulation requirement to the Rule 404(b) notice provision, it should also consider extending the provision to civil cases.

Extending the proposal to civil cases would look like this:

(2) *Permitted Uses; Notice ~~in a Criminal Case~~.* This evidence may be admissible for another purpose, such as proving motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake, or lack of accident. ~~On request by a defendant in a criminal case, the prosecutor~~ The proponent must:

(A) provide reasonable notice of the general nature of any such evidence that the ~~prosecutor~~ proponent intends to offer at trial; and

(B) do so before trial — or during trial if the court, for good cause, excuses lack of pretrial notice;

(C) articulate in the notice the non-propensity purpose for which the proponent intends to offer the evidence; and

(D) articulate the chain of reasoning supporting the purpose for offering the evidence.

It should be noted that the above changes to the notice requirement would also result in a criminal defendant having an obligation to provide pretrial notice of “reverse 404(b)” evidence. That is of course a judgment call for the Committee. On a drafting level, it gets awkward to state that the notice requirement applies in civil cases and to the prosecutor in criminal cases, but not to the criminal defendant. On the merits, there is no obvious reason to exclude criminal defendants from having to articulate how evidence of other acts is probative to a proper purpose without proceeding through a propensity inference. Moreover, the extension would not result in a dramatic change because “reverse 404(b)” evidence is rarely offered.

The second difference between a substantive provision and a notice provision is that a substantive provision actually governs the admissibility of evidence. A violation of a substantive provision means that the evidence is inadmissible. A violation of the notice provision, in this instance, means only that the proponent failed to timely articulate a non-propensity purpose. Whether that results in exclusion of evidence is within the discretion of the court, which may instead impose other sanctions or even excuse the violation under the circumstances. The point is

that a notice provision does not itself guarantee that the bad act evidence will have to proceed through non-propensity inferences; rather it guarantees only a timely articulation of the proponent's arguments.

This discussion leads pretty clearly to a third alternative: adding the substantive requirement that the evidence must proceed through non-propensity inferences, *and* adding to the notice provisions to require the proponent to *articulate* those inferences. Adding both provisions will assure that the non-propensity arguments are laid out for the court early on, and also will provide specific authority for the court to exclude the bad act evidence if the probative value for the asserted purpose actually proceeds through a propensity inference. The court can and must exclude the bad act evidence that proceeds through a propensity inference, even if the proponent satisfies the notice provision by articulating a chain of inferences. That is because the proponent's act of articulating a chain of inferences doesn't preclude the possibility that in fact the probative value is based on a propensity inference.

Combining both alternatives:

For ease of reference, a change that would add the requirement that the probative value proceed through non-propensity inferences, and would also add the requirement that the proponent articulate those inferences, could look like this --- with the inclusion of extending the notice requirement to a civil case, and deleting the request requirement (a point that has already been approved by the Committee):

(b) Crimes, Wrongs, or Other Acts.

(1) ***Prohibited Uses.*** Evidence of a crime, wrong, or other act is not admissible to prove a person's character in order to show that on a particular occasion the person acted in accordance with the character.

(2) ***Permitted Other Uses; ~~Notice in a Criminal Case.~~*** This evidence may be admissible for another purpose, such as proving motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake, or lack of accident. But the probative value for the other purpose may not depend on a propensity inference. [*Or adding Judge Marten's subdivisions here, see Alternative 2.*]

(3) **Notice in a Criminal Case.** ~~On request by a defendant in a criminal case, the prosecutor~~
The proponent must:

(A) provide reasonable notice of the general nature of any such evidence that the ~~prosecutor~~
proponent intends to offer at trial; ~~and~~

(B) do so before trial — or during trial if the court, for good cause, excuses lack of pretrial notice;

(C) articulate in the notice the non-propensity purpose for which the proponent intends to offer the evidence; and

(D) articulate the chain of reasoning supporting the purpose for offering the evidence.

Concern expressed about pretrial notification of proper purposes:

At a previous meeting, two concerns were expressed about requiring the proponent, in advance of trial, to disclose a proper purpose and articulate a chain of inferences that does not proceed through propensity. The first concern is that the proponent will over-notify; that is, the proponent will articulate every proper purpose under the sun so as not to be caught short for failing to articulate the purpose at a later date. It seems, though, that the risk of over-designation is not high because under the proposal the proponent must not only articulate a proper purpose but must also explain how, exactly, the bad act is probative for such a purpose without proceeding through a propensity inference. That required explanation is likely to temper the incentive to over-declare permissible purposes --- because if the purpose is way off, the explanation of probative value should fail in the making. For example, take a felon-firearm case in which a prosecution witness says he saw the defendant with a gun and the defendant denies it. If a previous act of gun possession is offered, a prosecutor's designation of "knowledge" would have to be followed by an explanation something like "the prior act shows he has familiarity with guns and so it makes it more likely that the defendant knew he was possessing a gun on the night in question." But the probative value under that explanation is close to zero, because nobody is arguing that the defendant didn't know what a gun was. The only probative value is that because he had a gun once he is more likely to have had one on the night in question. Thus, the potential over-designation of "knowledge" in this circumstance would be "outed" by the need to explain its true probative value.

Another concern about a pretrial "articulation" requirement is that the proponent might not be aware at the early stages of all the possible ways in which a bad act might become relevant. Proper purposes may reveal themselves as the case further develops. That is a legitimate point, and surely a rule that imposes a requirement of advance articulation of a proper purpose needs to have some flexibility. That flexibility can be provided by a good cause exception. Of course, the Rule 404(b) notice requirement currently *has* a good cause exception. But as drafted above, there is a possible argument that the good cause requirement could be interpreted as applying only to *providing* the notice, not to the new articulation requirements. That reading is possible because the good cause exception is placed ahead of the new requirements. The problem looks like it is solved if the provisions are rearranged, as follows:

Extending the good cause protection to the requirement that the proponent articulate a proper purpose and a non-propensity chain of reasoning:

(3) Notice in a Criminal Case. ~~On request by a defendant in a criminal case, the prosecutor~~
The proponent must:

(A) provide reasonable notice of the general nature of any such evidence that the ~~prosecutor~~
proponent intends to offer at trial; ~~and~~

(B) articulate in the notice the non-propensity purpose for which the proponent intends to offer the evidence;

(C) articulate the chain of reasoning supporting the purpose for offering the evidence; and

(B D) do so before trial — or during trial if the court, for good cause, excuses lack of pretrial notice.

This rearrangement could be coupled with a Committee Note providing that the good cause exception will apply to cases in which a proper purpose for the evidence does not become evident until after the trial begins. That excerpt of a Committee Note could look like this:

As restructured, the good cause exception applies not only to the timing of the notice but also to the obligations to articulate a non-propensity purpose and explain how the evidence leads to that purpose independent of a propensity inference. A good cause exception for the articulation requirements is necessary because in some cases a permissible purpose for the evidence may not become clear until just before, or even during, trial.

B. Amendment to Deal with the “Inextricably Intertwined” Doctrine

As discussed above, there is much to dislike about the “inextricably intertwined” doctrine --- it is fuzzy, it overlaps with Rule 404(b) for such matters as “context” and “background”, and it is not at all uniformly applied by the courts. But that said, there must be some line drawn between acts that are part of the charged crime and acts that are “other” and so covered by Rule 404(b). Otherwise Rule 404(b) would be applicable to eyewitness testimony such as “I saw the defendant rob the bank he is charged with robbing.”

One possibility is to try a “direct/indirect” distinction --- indirect evidence would be covered by Rule 404(b) while direct evidence would be proof of the crime itself. A “direct/indirect” line --- currently employed by some reform-minded courts, as discussed above --- seems miles better than other possible fixes. For example, adding language that Rule 404(b) doesn’t apply to evidence of acts “inextricably intertwined” with the charged crime or “intrinsic” to the charged crime adds nothing to the enterprise. Also, courts are obviously familiar with the direct/indirect terminology. And finally, if applying Rule 404(b) to all indirect evidence would end up expanding the rule’s coverage in some courts, the consequences are not terrible. All that happens under current law is that the notice requirement of Rule 404(b) will apply --- that is because indirect evidence that is close to the crime will almost certainly fit a non-character purpose like “background” or “context” and so will be admissible even if Rule 404(b) applies to it.

The question arises whether the direct/indirect distinction should apply to civil cases. Again, in theory there is no reason to distinguish civil and criminal cases in determining whether bad acts are “other” acts or whether they are part of the claim or defense. There do not appear to be any reported civil cases applying the “inextricably intertwined” doctrine. But it would not seem to hurt to give the same guidance to courts in civil cases as is given in criminal cases.

If the Committee wishes to address the “inextricably intertwined” doctrine in an amendment to the text of Rule 404(b), it might look something like this:

(b) Crimes, Wrongs, or Other Acts.

(1) ***Prohibited Uses.*** Evidence of a crime, wrong, or other act --- offered as indirect evidence of a matter in dispute --- is not admissible to prove a person’s character in order to show that on a particular occasion the person acted in accordance with the character.

A Committee Note excerpt might look like this:

The amendment provides that Rule 404(b) does not apply to direct evidence of the matter in dispute. For example, in a prosecution for bank robbery, Rule 404(b) does not apply to testimony from an eyewitness that he saw the defendant rob the bank. Rule 404(b) has no application because there can be no argument that by presenting that evidence the government is trying to raise the inference that the defendant has a propensity; rather it is just proving the crime charged. On the other hand, evidence that the defendant threatened an eyewitness a week after the crime is indirect evidence of the bank robbery, and should be evaluated under Rule 404(b). Many courts, in determining the coverage of Rule 404(b), have held that evidence of acts “inextricably intertwined” with the charged crime, or “intrinsic” to it, are outside the rule’s coverage. But that iteration has led to confusion and conflicting results in the courts. The Committee believes that a “direct/indirect” distinction is easier to apply and will provide the proper scope of coverage for Rule 404(b).

Moving “other”:

Another possibility, discussed earlier in the memo, is to return the word “other” to its original placement before “crimes” in the rule. That change would in some way be related to the “inextricably intertwined” doctrine because courts have relied on the original rule’s placement of “other” to implement that doctrine. See Kenneth Graham, *Federal Practice and Procedure* § 5239 (“One of the key words in determining the scope of Rule 404(b) is ‘other’; only crimes, wrongs or acts ‘other’ than those at issue under the pleading are made inadmissible under the general rule.”). It would not at all solve the problem of the breadth and fuzziness of the inextricably intertwined doctrine, however --- because all that breadth and fuzziness was *created* at a time when “other” was placed before “crimes.” And the courts that have cut back on the doctrine --- discussed earlier in the memo --- have not relied on the text (or the restyling) to do so. They have cut back on the doctrine because it is amorphous and unhelpful. Moreover, courts that do continue to employ the inextricably intertwined doctrine cite and quote the restyled rule without missing a beat. *See, e.g., United States v. Loftis*, 843 F.3d 1173 (9th Cir. 2016) (quoting the restyled Rule 404(b)(1) in full, and then applying the inextricably intertwined doctrine after stating that “Rule 404(b) applies solely to evidence of ‘other’ acts, not to evidence of the very acts charged as crimes in the indictment”). So putting “other” back in its original place will not

solve the problems caused by the “inextricably intertwined” doctrine. That doctrine was a disaster when “other” was in its original place.

Independently of any move to resolve the inextricably intertwined doctrine, however, there is something to be said for returning to “other crimes, wrongs, or acts.” For the reasons discussed earlier, the original location of “other” makes more sense and avoids the nonsensical interpretation that Rule 404(b) governs evidence of the charged crime itself. On the other hand, the restyling, while arguably resulting in a weird change of meaning in Rule 404(b), has not actually created any practical problem. I have not found a case in which a court relied on the restyled rule to come to a result on “other” crimes that is different than it would have under the original rule.

If the Committee does wish to change the location of “other” then that change is pretty simple and it can be coupled with the direct/indirect distinction. It looks like this:

(b) Crimes, Wrongs, or Other Acts.

(1) *Prohibited Uses.* Evidence of a any other crime, wrong, or ~~other~~ act --- offered as indirect evidence of a matter in dispute --- is not admissible to prove a person’s character in order to show that on a particular occasion the person acted in accordance with the character.

It should be noted that the rule cannot be turned back to the original exactly, because the original version was “evidence of crimes, wrongs, or other acts.” But the plural is frowned upon in restyling, and is no longer used throughout the Evidence Rules, so using the plural would raise hackles with the style consultants.

Also, it probably needs to be “any other”; it can’t be “another.” Because “another” is singular, it could raise the inference that *only one* other crime, wrong or act would be covered by the Rule. That problem was raised in the restyling when Rules 413-415 were proposed to be restyled as “another sexual assault.” The Evidence Rules Committee determined that this could be a substantive change --- limiting admissibility to only one sexual assault --- and so it was changed to “any other.” That’s probably what needs to be done here if the change is to be made.

One problem in moving “other” though, is the Committee Note. What could be said? Here are two possibilities, only partly in jest:

“Other is being returned to its original placement, because it makes more sense there, even though the restyling change hasn’t made a difference in any case.” Or

“Other is being returned to its original placement to provide better guidance on which acts are covered by Rule 404(b) and which are not --- even though when it was in its original place the courts responded by establishing a formless and confusing ‘inextricably intertwined’ doctrine.”

But it could be fair to conclude that nothing need be said about the restyling, if moving “other” is in tandem with adding a direct/indirect distinction. Then the draft Committee Note, set forth above, seems to adequately cover both changes without having to comment specifically on the change of “other.”

C. Other suggestions regarding the notice requirement.

1. Disclosure of the “General Nature” of the Evidence.

At a previous meeting, a Committee member argued that practice under Rule 404(b) would be improved if the government were required to provide a more detailed description of the other acts that it intends to introduce. The operative language in the Rule is that the government must disclose the “general nature” of the Rule 404(b) evidence. The assertion was that the notice provided was sometimes so general that it gave little if any assistance in knowing about or preparing for the evidence. There is case law that does support the contention that the term “general nature” requires relatively little of the government. *See, e.g., United States v. Watson*, 409 F.3d 458 (D.C.Cir. 2005), where the prosecution gave pretrial notice that it would offer the testimony of a cooperating witness, but did not provide the name of the witness, nor the facts or circumstances of the proposed testimony. The court found that this notice was sufficient because it provided the “general nature” of the testimony. Other examples of vague notice found sufficient under the Rule 404(b) “general nature” language include *United States v. Kern*, 12 F.3d 122, 124 (8th Cir.1993) (holding that the government's statement that it “might use evidence from some local robberies” was sufficient to describe the general nature of the acts under Rule 404(b)); and *United States v. Schoeneman*, 893 F.Supp. 820, 823 (N.D.Ill.1995) (rejecting the defendant’s motion that the government provide notice of the dates, times, places and persons involved in the acts it planned to admit under Rule 404(b)).

The argument for more specificity in the notice requirement is straightforward: in order to determine whether the evidence is admissible for a proper purpose, and that the probative value does not proceed through a propensity inference, it is critical to know just what the evidence is. There might also be a dispute over whether the defendant even did the act --- again that argument cannot be made effectively if the defendant doesn’t know what the act is. Moreover, it is important to get the court attuned to proper purposes and propensity inferences as soon as possible --- and that is difficult to do if the court does not know what the evidence is.

Assuming the Committee wishes to require more specificity in the notice provision, the question is how to accomplish this objective.

One possible solution is simply to delete the “general nature” language --- in which case the notice provision could look like this:

(2) Permitted Uses; Notice in a Criminal Case. This evidence may be admissible for another purpose, such as proving motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake, or lack of accident. On request by a defendant in a criminal case, the prosecutor must:

(A) provide reasonable notice of ~~the general nature~~ of any such evidence that the prosecutor intends to offer at trial; and

(B) do so before trial — or during trial if the court, for good cause, excuses lack of pretrial notice.

A Committee Note excerpt might look like this:

The notice provision has been amended to require the government to provide a more detailed description of the evidence that the government intends to offer. The term “general nature” has been read in some courts to allow the government to meet its disclosure obligation without describing the specific act that the evidence would be offered to prove, and without describing the source or form of the evidence. Deleting the term “general nature” means that the government must describe the source of the evidence, the form of the evidence, and the act that the government seeks to prove with the evidence. The notice needs to be sufficiently detailed to allow the defendant (and the court) to determine how the act to be proved is probative for a specific articulated purpose.

Another possibility is to borrow from the amendment to the Rule 807 notice provision that has been unanimously approved by the Committee. That amendment requires the proponent to disclose the “substance” of the evidence. Employing the same language in Rule 404(b) would of course promote uniformity. And the word “substance” arguably provides a bit more guidance than no guidance at all.

If the term “substance” is used, the amendment to the notice provision would look like this:

(2) ***Permitted Uses; Notice in a Criminal Case.*** This evidence may be admissible for another purpose, such as proving motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake, or lack of accident. On request by a defendant in a criminal case, the prosecutor must:

(A) provide reasonable notice of the ~~general nature~~ substance of any such evidence that the prosecutor intends to offer at trial; and

(B) do so before trial — or during trial if the court, for good cause, excuses lack of pretrial notice.

The Committee Note excerpt could look like this (borrowing from the Note to the proposed amendment to Rule 807):

The notice provision has been amended to require the government to provide a more detailed description of the evidence that the government intends to offer. The term “general nature” has been read in some courts to allow the government to meet its disclosure obligation without describing the specific act that the evidence would tend to prove, and without describing the source or form of the evidence. The notice needs to be sufficiently detailed to allow the defendant (and the court) to determine how the act to be proved is probative for a specific articulated purpose. The Rule requires the proponent to disclose the “substance” of the evidence. This term is intended to require a description that is sufficiently specific under the circumstances to allow the opponent a fair opportunity to meet the evidence. Cf. Rule 103(a)(2) (requiring the party making an offer of proof to inform the court of the “substance” of the evidence). Under the amendment the government must describe the source of the evidence, the form of the evidence, and the act that the government seeks to prove with the evidence.

2. Timing Issues.

A number of Committee members have indicated an interest in moving up the timing of the notice of intent to use Rule 404(b) evidence. This could be a useful way to get the parties and the court attuned at the outset to whether the asserted purpose for the evidence proceeds through a non-propensity inference.

Currently, Rule 404(b) requires the government to provide “reasonable notice * * * before trial.” This essentially means that there is no clear time period within which notice must be provided, and courts have varied on what is “reasonable.” *Compare United States v. Perez-Tosta*, 36 F.3d 1552 (11th Cir. 1994) (stating there are three factors to consider whether notice was reasonable: 1) when the Government could reasonably have learned of the evidence; 2) the extent of prejudice to the defendant from a lack of time to prepare; and 3) how significant the evidence is to the prosecution’s case), *with United States v. Williams*, 792 F.Supp. 1120 (S.D. Ind. 1992) (holding that reasonable notice under 404(b) requires notice to be provided at least ten days prior to the start of trial, unless the government can show a reason to deviate from that rule), and *United States v. White*, 819 F.3d 976 (8th Cir. 2017) (one week is sufficient). *See also United States v. White*, 816 F.3d 976, 984 (8th Cir. 2016) (rejecting the argument that notice must be provided two weeks prior to trial, because the standard is one of reasonableness under the circumstances; finding that notice provided one week before trial was reasonable).

Adding a specific time before trial by which notice must be provided would do a better job of accelerating the notice requirement than any “reasonableness” standard can provide. It is true that the virtue of clarity also leads to the possibility of rigidity. Surely there will be situations in which the proponent will not be able to comply with a specific deadline. But that concern is ameliorated by the good cause exception that is currently provided for in Rule 404(b).

The proposal for an amendment to the notice requirement that was made by a Committee member would require notice to be provided “at least two weeks before trial, unless the court, for good cause, excuses this requirement.” Setting the date in terms of weeks would be unusual for the national rules --- which are set in terms of days. See, e.g., Evidence Rules 412 (14 days); Civil Rule 27(a)(2) (21 days); Civil Rule 12 (21 days); Criminal Rule 12.1 (14 days). Thus it

would appear preferable, for purposes of uniformity, to set the period as “at least 14 days before trial.”

One problem with a specific-days requirement is how to count the days. The other sets of rules have a specific method for counting days. See, e.g., Civil Rule 6. But these time-counting rules do not explicitly apply to the Evidence Rules. So there might be questions of what happens when a 14-day period falls on a weekend or holiday. The time-counting rules clearly say that you automatically add another day to the period (which means a 15-day notice period if the 14th day is a holiday). But, again, those rules do not apply to the Evidence Rules. But if the period is a multiple of 7, there is not much of a problem, because the time is counted backward from the day of trial, so counting multiples of 7 backward can at least never land on a weekend. While it might end on a holiday, a court in such a rare case could use the time-counting rules as guidance even though they are not binding.

If the time period for notice is to be 14 days before trial, the change could look like this:

(2) **Permitted Uses; Notice in a Criminal Case.** This evidence may be admissible for another purpose, such as proving motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake, or lack of accident. On request by a defendant in a criminal case, the prosecutor must:

(A) provide reasonable notice of the general nature [substance] of any such evidence that the prosecutor intends to offer at trial; and

(B) do so at least 14 days before trial — or at a later date ~~during trial~~ if the court, for good cause, excuses ~~—lack of pretrial notice—~~ this requirement.

The Committee Note excerpt for this change could look like this:

The rule has been amended to add a requirement that notice be provided at least 14 days before trial unless the court for good cause allows notice at a later date. The “reasonableness” standard under the original rule led to differing results, and in some cases courts found it “reasonable” when the notice was provided only a few days before trial. With Rule 404(b) evidence, it is particularly important to have accelerated notice, because it is critical for the parties and the court to discuss and evaluate the purpose for which the evidence is offered at an early point in the proceedings. Early notice allows the court to focus at the outset on whether the evidence is offered for a proper purpose, and on whether the probative value of the evidence for that purpose is dependent on a propensity inference.

3. Notice in Writing

The proposed amendment to Rule 807, currently out for public comment, requires notice to be in writing. There would appear to be no reason to have an inconsistency in Rule 404(b).

The DOJ has argued that such a requirement is not necessary because they always give notice in writing. But if that is the case, there is no harm in adding a written notice requirement to Rule 404(b). The benefit, even if already complied with, is that the Rules are made consistent, which is a good thing. Moreover, if the notice requirements are beefed up in any way --- such as by requiring articulation of proper purposes--- or are extended to parties other than the government, then there is all the more reason for adding a requirement that notice be in writing.

The writing requirement is easy to add:

(2) *Permitted Uses; Notice in a Criminal Case.* This evidence may be admissible for another purpose, such as proving motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake, or lack of accident. ~~On request by a defendant~~ ~~in~~ In a criminal case, the prosecutor must:

(A) provide reasonable, written notice of the ~~general nature~~ substance of any such evidence that the prosecutor intends to offer at trial; and

(B) do so at least 14 days before trial — or at a later date ~~during trial~~ if the court, for good cause, excuses ~~lack of pretrial notice~~ this requirement.

And the Committee Note on the change can simply say what the Rule 807 Committee Note says:

The Rule now requires that the pretrial notice be in writing—which is satisfied by notice in electronic form. See Rule 101(b)(6). Requiring the notice to be in writing provides certainty and reduces arguments about whether notice was actually provided.

Putting all the notice provisions together --- articulation requirements and procedural requirements, and extending it to all cases, would look like this:

(3) Notice in a Criminal Case. ~~On request by a defendant in a criminal case, the prosecutor~~ The proponent must:

(A) provide reasonable, written notice of the ~~general nature~~ substance of any such evidence that the ~~prosecutor~~ proponent intends to offer at trial; ~~and~~

(B) articulate in the notice the non-propensity purpose for which the proponent intends to offer the evidence;

(C) articulate the chain of reasoning supporting the purpose for offering the evidence; and

(~~B~~ D) do so at least 14 days before trial — or during trial at a later date if the court, for good cause, excuses ~~lack of pretrial notice~~ this requirement.

E. The Suggestion to Delete the Proper Purposes Language in Rule 404(b)(2)

At the last meeting, a Committee member suggested that Rule 404(b)(2) should be amended to delete the list of proper purposes. One possible rationale for deleting the provision is that it states the obvious. The first sentence of Rule 404(b)(1) states that other acts evidence is not admissible to prove conduct in accordance with character. By inference that means the bar does not apply if the bad act evidence is offered to prove something *other* than conduct in accordance with character. So while the proper purposes provision might be useful to highlight the principle that the Rule 404 bar applies only if the evidence is offered to prove conduct in accordance with character, it is not necessary and arguably has no substantive effect.

Another possible argument for deleting the proper purpose language is that it has been read to mean that Rule 404(b) is one of presumptive admissibility --- which should not be the case and which some courts have found to be an improper expansion of the rule, as discussed above. Deleting the language, with an explanatory Committee Note, might be used to signal that Rule 404(b) is not a rule of inclusion but rather a rule that excludes bad act evidence unless the government can come up with a proper purpose, free of propensity inferences.

With that said, there are strong reasons to be cautious about deleting the proper purposes language. It has been cited and applied in thousands of opinions and so deleting the language could throw decades of precedent into some question. It would be looked at as a major change, when theoretically it is no change at all to the meaning of the Rule. It can be argued that any problem with the rule does not really come from the language, but rather from the knee-jerk application of the rule over time. It could be argued that deleting the language is a necessary wake-up call to courts, to get them to apply the rule with more care. But the change seems so profound that perhaps the other suggested amendments regarding non-propensity inferences --- such as the balancing test proposal below --- would be a better way to provide a wake-up call.

F. A Different Solution --- Changing the Balancing Test

Professor Richter has suggested that a different solution might be used that would take account of and perhaps correct the case law based on the concept that Rule 404(b) is a rule of inclusion. This solution is pretty straightforward and could be a way to provide more protection without tinkering too much with Rule 404(b). The solution is to import the balancing test from Rule 609(a)(1), that provides a little more protection to criminal defendants --- the court must find that the probative value *outweighs* the prejudicial effect. This means that the rule is no longer a rule of inclusion, because there is a mild presumption for exclusion. But it does not go all the way to reversing the Rule 403 test --- the probative value only has to outweigh, and not substantially outweigh, the prejudicial effect.

Here is what the balancing proposal could look like, when coupled with other changes previously discussed:

(b) Other Crimes, Wrongs, or ~~Other~~ Acts.

(1) ***Prohibited Uses.*** Evidence of a any other crime, wrong, or other act --- when offered as indirect evidence of a matter in dispute --- is not admissible to prove a person's character in order to show that on a particular occasion the person acted in accordance with the character.

(2) ***Permitted Other Uses; ~~Notice in a Criminal Case.~~*** This evidence may be admissible for another purpose, such as proving motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake, or lack of accident. If the evidence is offered against a defendant in a criminal case, its probative value must outweigh its prejudicial effect to that defendant. In all other cases, admissibility is subject to Rule 403. ~~On request by a defendant in a criminal case, the prosecutor~~

(3) **Notice.** The proponent must:

(A) provide reasonable, written notice of the general nature of [the substance of] any such evidence that the ~~prosecutor~~ proponent intends to offer at trial; ~~and~~

(B) articulate in the notice the non-propensity purpose for which the proponent intends to offer the evidence;

(C) articulate the chain of reasoning supporting the purpose for offering the evidence; and

~~(B-D)~~ do so at least 14 days before trial — or ~~during trial~~ at a later date if the court, for good cause, excuses this requirement ~~lack of pretrial notice.~~

Such a balancing test could assist with the problem of pure propensity uses for other acts evidence without imposing a rigid propensity prohibition. By setting a higher standard for the admission of other acts evidence against criminal defendants, a heightened balancing test might encourage prosecutors and trial judges to articulate the probative value of other acts evidence to ensure that it clears the higher hurdle set by a more protective balancing and that its admission survives appellate scrutiny. A more protective test would also tilt the scales against admission of other acts evidence that creates significant propensity concerns. And it would be useful to help to exclude bad act evidence where the point to be proved is not actively disputed, because the evidence would be of minimal probative value and unlikely to satisfy the more protective balancing test. In other words, the change in balancing might solve many of the problems seen by courts like *Gomez*, without having to add new and potentially complex language to the rule.

Here is a Draft Committee Note for a New Balancing Test

Rule 404(b)(2) has been amended to provide a more protective balancing test for criminal defendants. This is the same balancing test in favor of a criminal defendant prescribed by Rule 609(a)(1)(B). The more protective balancing test for criminal defendants clarifies that Rule 404(b) is not a rule of “inclusion” as some federal opinions have stated. The Committee has determined that in many cases bad acts have been admitted against criminal defendants that are, in effect, used as proof of the defendant's

bad character and propensity to commit a crime. The chances of such an outcome are reduced by a more protective balancing test. The new test will help to ensure that other bad acts are admissible only when they are highly probative for a non-character purpose. It will also help to ensure that other bad acts, even when offered for a proper purpose, are admissible only when the government shows a substantial need for admitting them, such as when the issue is actively disputed by the defendant. For example, the balancing test is unlikely to be met when a bad act is offered to prove the defendant's intent to commit the charged crime, and the defense contends that the defendant never committed the crime in the first place.

Comments on the New Balancing Draft:

1. The change seems much less disruptive than language requiring a chain of non-propensity inferences. And it has the virtue of applying a balancing test with which courts and litigants are already familiar. Moreover, as Professor Richter's memo on state variations points out, a few states are already employing this balancing test, apparently to good effect (i.e., it provides a measure of protection without excessively barring bad act evidence).

2. The draft excludes language about non-propensity inferences and active disputes, because the idea is that a stricter balancing test will work in a flexible way to deal with those issues on a case by case basis.

3. If this change were to be adopted, the distinction between "intrinsic" and "extrinsic" acts would take on a greater importance --- because the former would be governed by Rule 403 and the latter governed by the more protective balancing test. That is why the draft *retains* the "direct/indirect" language, which is designed to provide more clarity and more regulation of the inextricably intertwined doctrine. Alternatively, a Committee Note could address the inextricably intertwined problem. That might look like this:

Rule 404(b) and the amended balancing test for criminal defendants apply only to evidence of "other" crimes, wrongs, or acts. Trial judges must, therefore, determine which acts are "other" or extrinsic to the charged offense, necessitating Rule 404(b) analysis, and which are direct proof of the charged offense and free from Rule 404(b) scrutiny. Courts should not circumvent the more protective balancing test by attaching vague and conclusory labels to a defendant's other acts, such as "inextricably intertwined" or "complete the story." Trial judges should explain *how* an act is so connected to the charged offense so as to avoid Rule 404(b) treatment, in place of employing conclusory labels. Because appropriate line-drawing in this context is impossible to capture with precision, close calls in classifying a defendant's acts should be resolved in favor of Rule 404(b) application --- especially given the importance of filtering bad act evidence through the new and more protective balancing test.

4. If the balancing test is changed for criminal defendants, then it is important to add in text that Rule 403 applies to everything else. It is true that Rule 403 applies now, even though it is not specified. But there will be a negative inference that could be drawn if a specific balancing test is added for criminal defendants and nothing is said about other cases. The precedent for

including a reference to Rule 403 is found in Rule 609(a)(1). It wasn't absolutely necessary to mention Rule 403 there in cases not involving criminal defendants, as Rule 403 applies by default. But it was considered helpful to do so in order to differentiate the Rule 403 test from the special balancing test set forth for criminal defendants in Rule 609(a)(1), and to clarify that Rule 403 applies wherever the special balancing test does not.

5. The changes to the notice provision discussed previously are included in this draft, because they are useful even with the changed balancing test. That is, the Committee might find that even with a more protective balancing test it would be useful to require the proponent to provide an explanation of proper purpose and probative value. And the proposed procedural changes to the notice requirement, such as timing and substance of the notice, work independently of the balancing test.

IV. The Proposal to Delete the Requirement that the Defendant Must Ask for Notice

The Committee has already decided unanimously to go forward with an amendment to the notice provision of Rule 404(b). That amendment would delete the requirement that the defendant must ask the government to provide notice. If the Committee eventually decides that it does not wish to consider any broader amendment to Rule 404(b), then this minor amendment to the notice provision could be proposed to the Standing Committee with the recommendation that it be issued for public comment. But if the Committee decides to continue consideration of broader amendments to Rule 404(b), then this minor proposal will be held back, because amendments to the same rule should be packaged if possible.

The text of the proposed amendment to delete the request requirement is as follows:

Rule 404. Character Evidence; Crimes or Other Acts

* * *

(b) Crimes, Wrongs, or Other Acts.

(1) *Prohibited Uses.* Evidence of a crime, wrong, or other act is not admissible to prove a person's character in order to show that on a particular occasion the person acted in accordance with the character.

(2) *Permitted Uses; Notice in a Criminal Case.* This evidence may be admissible for another purpose, such as proving motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake, or lack of accident. ~~On request by a defendant in~~ In a criminal case, the prosecutor must:

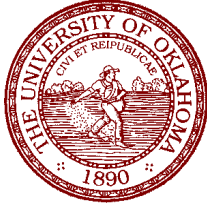
(A) provide reasonable notice of the general nature of any such evidence that the prosecutor intends to offer at trial; and

(B) do so before trial—or during trial if the court, for good cause, excuses lack of pretrial notice.

The Committee Note for the amendment to delete the request requirement is as follows:

The amendment eliminates the requirement that the defendant must make a request before notice is provided. That requirement is not found in any other notice provision in the Federal Rules of Evidence. It has resulted mostly in boilerplate demands on the one hand, and a trap for the unwary on the other. Moreover, the benefit to the government of the requirement is minimal, because many local rules require the government to provide notice of Rule 404(b) material without regard to whether it has been requested. And in many cases, notice is inevitably provided anyway when the government moves *in limine* for an advance ruling on the admissibility of Rule 404(b) evidence. The request requirement has thus become a technicality that has outlived any usefulness it may once have had.

TAB 5B



The University of Oklahoma
COLLEGE OF LAW

To: Professor Daniel J. Capra, Reporter to the Advisory Committee on Evidence Rules

From: Liesa L. Richter, Academic Consultant to the Advisory Committee on Evidence Rules

Re: State Variations on Federal Rule of Evidence 404(b)

Date: September 19, 2017

In light of recent opinions from the Third, Fourth, and Seventh Circuit Courts of Appeal restricting the admissibility of “other acts” evidence offered against criminal defendants, the Advisory Committee has been exploring the possibility of amendments to Federal Rule of Evidence 404(b). Many state counterparts to Federal Rule 404(b) vary from the federal provision in certain respects that may prove helpful to the Advisory Committee in contemplating potential amendments.

Some states impose stricter procedural requirements on the admission of evidence of other crimes, wrongs, or acts. For example, several pre-trial notice provisions require notice within a specific time period. Others demand more particularized notice of the details of any other acts evidence the prosecution intends to proffer, as well as the rationale supporting admissibility. Some states demand hearings outside the presence of the jury to determine the admissibility of other acts evidence and require detailed findings on the record supporting a judge’s decision to admit such evidence.

Some state provisions provide enhanced substantive restrictions on the admissibility of other acts evidence offered against a criminal defendant. Several states have modified the traditional Rule 403 balancing test in the context of Rule 404(b) evidence. In place of the Rule 403 balancing that favors admissibility of other acts evidence, these states have recalibrated the balance to reject other acts evidence in close cases. Similar to federal judicial opinions that have emphasized the importance of a defendant “actively contesting” an issue proved by other acts evidence, at least one state has a genuine “dispute” requirement in the text of its counterpart to Rule 404(b). Importantly, some states combine enhanced procedural protections with substantive restrictions on the admission of other acts evidence to ensure that their versions of Rule 404(b) constitute rules of “exclusion” designed to limit evidence of other crimes, wrongs, or acts.¹

¹ See e.g., Tenn. R. Evid. 404(b), *discussed supra*, p. 16-18 (requiring: a hearing outside the presence of the jury to consider other acts evidence; a finding by the trial judge that the defendant committed the other crimes, wrongs, or

Finally, some state rules of evidence contain language that seeks to differentiate between “other” crimes, wrongs, or acts that are not part of the charged offense for which a defendant is on trial from “inextricably intertwined” or “integral” acts that should be proved as part of the charged offense. As described below, these provisions have not necessarily created greater clarity than the federal courts have achieved in drawing lines under Federal Rule 404(b).

This memorandum will address the state variations on Federal Rule of Evidence 404(b) summarized above in four sections:²

- Procedural Protections: Notice/Record Findings
- Protective Balancing Tests
- Active Contest Requirements
- Inextricably Intertwined Provisions

A. Procedural Protections: Notice/Record Findings

Several state provisions contain procedural requirements for the admission of other crimes, wrongs, or acts evidence that are more stringent than the requirements of Federal Rule of Evidence 404(b). The procedural protections required by rules in Florida, Hawaii, Kansas, Kentucky, Michigan, Minnesota, Tennessee, and West Virginia are discussed below.

1. Florida

Florida Statute §90.404 governs the admissibility of “similar fact evidence of other crimes, wrongs, or acts.”³ Subsection (d) of the provision requires the prosecution in a criminal case to provide pre-trial notice of similar fact evidence, as follows:

(d) 1. When the state in a criminal action intends to offer evidence of other criminal offenses under paragraph (a), paragraph (b), or paragraph (c), *no fewer than 10 days before trial, the state shall furnish to the defendant or to the defendant's counsel a written statement of the acts or offenses it intends to offer, describing them with the particularity*

acts by clear and convincing evidence; exclusion where unfair prejudice outweighs probative value (even if not substantially); record findings by the trial judge articulating the rationale for admitting the other acts evidence).

² Some state versions of Rule 404(b) depart from the federal model in other respects. For example, several states do not require pre-trial notice of Rule 404(b) evidence. Others contain exhaustive lists of proper purposes for admitting other act evidence and/or specify additional proper purposes not contained in the Federal Rule. A few states exclude evidence of crimes, wrongs, or other acts only where their “sole” purpose is to prove a person’s propensity to engage in certain conduct. Finally, several states demand “clear and convincing” proof of a defendant’s commission of a crime, wrong, or other act, setting a higher burden of proof than the preponderance standard mandated by Federal Rule of Evidence 104(b) and the Supreme Court’s opinion in *Huddleston v. United States*. See e.g., Tenn. R. Evid. 404(b); Neb. Stat. Ann. §27-404(3). Because these state variations are not implicated by the recent Circuit precedent and are not consistent with potential amendments the Committee has been discussing, this memorandum does not address these state variations.

³ F.S.A. § 90.404(2)(a).

required of an indictment or information. No notice is required for evidence of offenses used for impeachment or on rebuttal.⁴

Some Florida cases reject pre-trial notice of “similar fact” evidence pursuant to this provision due to the prosecution’s failure to describe the rationale for admitting such evidence.⁵ Others have suggested that the notice need not detail the chain of inferences supporting admissibility of similar fact evidence.⁶ Other Florida courts have focused on the detail with which the notice describes the specific similar facts that the prosecution intends to offer, rejecting notice where there is inadequate factual particularity.⁷ Still, Florida courts permit less specific notice where it is clear that the defense obtained the requisite information prior to trial.⁸

Strict compliance with the 10-day rule is not required and Florida courts excuse timing defects in the notice in cases where the defendant suffered no prejudice.⁹ Only very rarely do defects in the requisite notice result in reversals of convictions in Florida.¹⁰

⁴ F.S.A. § 90.404(2)(d) (emphasis added). Paragraph “(a)” referenced in the notice provision is the standard provision permitting evidence of other crimes, wrongs, or acts to be used for proper non-character purposes. Subsections “(b)” and “(c)” referenced in the notice provision refer to other acts evidence offered in sex offense and child molestation cases, which are also covered by the same Florida statute.

⁵ See *State v. Zenobia*, 614 So.2d 1139 (Fla. 5th Dist. Ct. App. 1995) (“the state has failed utterly to suggest in its notice what particular aspect—i.e., motive, opportunity, intent, preparation, plan, knowledge, or lack of consent—it really seeks to prove by such evidence. Hence, we think the kind of notice used here should be grounds for the exclusion of the evidence, simply because of the insufficiency of the notice.”).

⁶ See *Quinn v. State*, 662 So.2d 947 (Fla. 5th Dist. Ct. App. 1995) (In furnishing notice of intent to offer evidence of other crimes, State need not state purpose of its use of the evidence or specific reasons or explanations of what jury might deduce from the evidence).

⁷ See *Sabine v. State*, 58 So.3d 943 (Fla. 2d Dist. Ct. App. 2011) (where motion did not contain dates, locations, or details of the uncharged sexual conduct that it sought to introduce, it was not sufficiently particular to satisfy section 90.404’s notice requirement); *Garcia v. State*, 521 So.2d 191 (Fla. 1st Dist. Ct. App. 1988) (State’s service of notice of similar fact evidence was defective where notice did not describe the offenses State intended to offer with particularity, but error was harmless).

⁸ *Jaggers v. State*, 588 So.2d 613 (Fla. 2d Dist. Ct. App. 1991) (state provided sufficient notice of intent to offer other crimes testimony in retrial on charge of sexual battery of a child, where notice directed defense counsel to transcripts from prior trial).

⁹ *Miller v. State*, 632 So.2d 243 (Fla. 3d Dist. Ct. App. 1994) (trial court did not abuse its discretion in admitting evidence of prior criminal conduct by defendant even though less than ten days’ notice had been given by state, where court conducted hearing *in limine* on issue and was told, without contradiction, that matters which were subject to state’s belated notice had all been covered by parties during depositions of relevant witnesses and there was no suggestion that defendant had been prejudiced by late notice); *Barbee v. State*, 630 So.2d 655 (Fla. 5th Dist. App. 1994) (finding notice given nine days prior to trial sufficient in absence of prejudice to defense and rejecting defendant’s argument that the statutory rule precludes judicial discretion to excuse tardy notice); *State v. Paille*, 601 So.2d 1321 (Fla. 2nd Dist. Ct. App. 1992) (holding that lack of notice was harmless where it was apparent that the defendant knew of the other crimes evidence, and the defendant knew of the State’s intent to introduce the evidence at trial).

¹⁰ See *Gardner v. State*, 821 So.2d 1220 (Fla. 2nd Dist. Ct. App. 2002) (State’s error in failing to provide notice of its intent to introduce evidence of other crimes provided by defendant’s out-of-court statement required reversal, as it was not clear that such failure did not prejudice defendant in preparation of his defense); *Wightman v. State*, 982 So.2d 74 (Fla. 2d Dist. Ct. App. 2008) (“Because Wightman was not given the pretrial notice and the other due process safeguards discussed in *McLean* were not employed, the State cannot invoke section 90.404(2)(b) to justify the admission of other-crime evidence in this case.”).

2. Hawaii

Hawaii Rule of Evidence 404(b) contains a notice provision that was added in 1994, as follows:

(b) Other crimes, wrongs, or acts. Evidence of other crimes, wrongs, or acts is not admissible to prove the character of a person in order to show action in conformity therewith. It may, however, be admissible where such evidence is probative of another fact that is of consequence to the determination of the action, such as proof of motive, opportunity, intent, preparation, plan, knowledge, identity, modus operandi, or absence of mistake or accident.¹¹ *In criminal cases, the proponent of evidence to be offered under this subsection shall provide reasonable notice in advance of trial, or during trial if the court excuses pretrial notice on good cause shown, of the date, location, and general nature of any such evidence it intends to introduce at trial.*¹²

The Hawaii notice provision differs from the existing federal rule in three ways: 1) it does not require an opponent of Rule 404(b) evidence to request notice; 2) it imposes a notice obligation on all proponents of other acts evidence in criminal cases, including on defendants; and 3) it demands more detailed notice of the date and location of the prior crime, wrong, or act.¹³ The Hawaii Supreme Court has stated that the notice requirement is designed “to reduce surprise and promote early resolution of admissibility questions.”¹⁴

The requirement that all proponents provide notice of Rule 404(b) evidence in criminal cases definitely has some teeth and has been used to exclude defense Rule 404(b) evidence. The Hawaii Supreme Court analyzed the constitutionality of the notice provision, as well as the trial court’s decision to exclude defense Rule 404(b) evidence for lack of notice in *State v. Pond*.¹⁵ In that case, the defendant was charged with physically abusing his live-in girlfriend and his principal defense at trial was self-defense. Specifically, the defendant claimed that the victim was drunk and attacked him on the night in question. On the first day of trial, the defense sought permission to introduce testimony from the defendant concerning an alleged incident approximately a week and half prior to the charged incident in which the victim also “smacked” the defendant, pursuant to Hawaii Evidence Rule 404(b). Although the defense lawyer argued that he had been unable to comply with the detailed pre-trial notice provision sooner because he could not pinpoint the date of the prior incident, the trial judge excluded the evidence based upon lack of reasonable notice.

On appeal following the defendant’s conviction, the defense claimed that the exclusion of defense Rule 404(b) evidence for lack of notice violated his Sixth Amendment rights and that the trial judge abused his discretion in excluding the evidence based upon a lack of pre-trial notice. The Hawaii Supreme Court rejected the defendant’s constitutional challenge to the notice

¹¹ Unlike its federal counterpart, Hawaii Evidence Rule 404(b) specifically lists modus operandi as a proper purpose for other acts evidence.

¹² Hawaii R. Evid. 404(b).

¹³ *State v. Pond*, 193 P.3d 368, 379 (Hawaii 2008).

¹⁴ *Id.*

¹⁵ *State v. Pond*, 193 P.3d 368 (Hawaii 2008).

provision, stating that: “The HRE Rule 404(b) notice requirement comports with this court's interest in promoting the orderly administration of justice and does not interfere with the defendant's constitutional rights.”¹⁶ The court further found that the trial judge did not abuse his discretion in excluding evidence of the prior altercation due to a lack of notice by the defense. The Hawaii Supreme Court noted that the defense was previously aware of the incident and still could not pinpoint the date even during trial. The court suggested that the defense should have provided at least “general notice” of the evidence prior to trial, even if it could not pinpoint the date as required by the Rule. For these reasons, the court found that the defense argument to excuse pre-trial notice for good cause was “disingenuous at best” and that the trial judge was free to reject it.¹⁷

The requirement of detailed notice of the “date” and “location” of other act evidence has been less stringently enforced. In *State v. Barrios*, the appellate court upheld the trial court’s decision to admit the defendant’s specific acts of drug use, notwithstanding very generic pre-trial notice by the prosecution, where the defendant failed to object to the lack of more detailed notice.¹⁸ The court reasoned, as follows:

Nor did the Circuit Court plainly err, or abuse its discretion, in determining that Barrios had reasonable notice under HRE Rule 404(b), of the drug evidence that the State intended to introduce at trial. First, as noted above, the Circuit Court instructed defense counsel to object at trial to any previously unknown evidence of drug use or drug paraphernalia. Defense counsel agreed to do so. No objections were made. The State filed a Notice of Intent to Rely on Potential Rules 404(b), 608, or 609.1 HRE Material, ... which indicated an intent to introduce “[e]vidence of drug and alcohol use during the commission of the crimes.” Although the drug use testimony described details concerning the acquisition of the drugs and the preparation for and methods of drug use that took place before, as well as during, the commission of the crimes, no objections were raised as to a lack of reasonable notice and we reject Barrios's argument that the alleged deficiencies in providing him more specific notice of such evidence warrant the vacating of his convictions.

In *State v. Kekona*, the Hawaii Court of Intermediate Appeals found that the trial court abused its discretion in excluding defense Rule 404(b) evidence, notwithstanding the defendant’s failure to provide reasonable notice in advance of trial of the date, location, and general nature of

¹⁶ *Id.*; See also *State v. So’o*, No. 28023, 2008 WL 1922975 (Hawaii Ct. App. April 30, 2008) (Trial court, in prosecution for abuse of family or household member, did not violate defendant's right to confrontation by precluding defendant from asking victim during cross-examination about prior acts of violence or aggressive behavior by victim, where defendant failed to give reasonable notice of that evidence in advance of trial and failed to establish good cause for having failed to do so).

¹⁷ The court vacated the conviction, however, based upon the trial court’s refusal to allow cross-examination of the victim regarding her marijuana use on the night of the alleged attack due to lack of pre-trial notice. The Hawaii Supreme Court found that the defense was *not* required to give reasonable notice of intent to cross-examine the victim about her marijuana use on the night of the alleged attack because the defendant intended to show that her perception and testimony about the incident were not credible, and Hawaii Rule 404(b) did not apply to evidence introduced to impeach a witness’s sensory or mental defect. *Id.*

¹⁸ *State v. Barrios*, 383 P.3d 124 (Hawaii Ct. App. 2014), *sentence vacated on other grounds*, 389 P.3d 916 (Hawaii 2016).

the evidence.¹⁹ The court noted that “the purpose of the notice required ... is to reduce surprise and promote early resolution of admissibility questions.” Where the state filed a motion *in limine* in advance of trial seeking to exclude the defense evidence of past abuse by the victim, “prosecutors apparently had notice” that the defendant intended to support his defense with the evidence of prior abuse.²⁰

3. Kansas

The Kansas counterpart to Federal Rule 404(b) contains a notice provision that took effect in 2009 and is slightly different from the federal provision, as follows:

(e) In a criminal action in which the prosecution intends to offer evidence under this rule, the prosecuting attorney shall disclose the evidence to the defendant, including statements of witnesses, at least 10 days before the scheduled date of trial or at such later time as the court may allow for good cause.²¹

Like the Federal Rule, this notice provision applies only to the prosecution in a criminal case. Unlike the Federal Rule that mandates only “reasonable notice of the general nature of any such evidence,” the Kansas provision requires disclosure of “the evidence..., including statements of witnesses” and provides a time certain of at least 10 days prior to trial. Because the new notice provision was added in 2009, there are few cases interpreting it and I found no decisions analyzing the required disclosure of witness “statements” in connection with Rule 404(b). The cases that do exist predictably suggest that the pre-trial notice requirement has not led to reversals of criminal convictions.

The addition of a specific time limit in the notice provision does not eliminate needed flexibility in the admission of other acts evidence in Kansas. In *State v. Adkins*, the prosecution failed to provide the requisite notice within the 10-day time limit and the trial court granted the defense a continuance to ensure that there would be 10 days between the notice and the beginning of the trial.²² Following his conviction, the defendant appealed, arguing that the untimely notice violated his rights under K.S.A. §60-455(e). In an unpublished opinion, the Kansas Court of Appeals held that the statute did not prohibit the grant of a continuance to satisfy the 10-day requirement and that the trial judge was well within his discretion in selecting the continuance as a remedy. Therefore, in addition to the option of finding “good cause” to excuse pre-trial notice under the statute, a trial judge may order a continuance of the trial to afford time for compliance.

The prosecution in *State v. Fulson* provided no pre-trial notice at all of its intent to introduce other acts evidence.²³ At trial, however, an officer called as a prosecution witness testified that the victim identified the defendant from “some photos of [the defendant] from past history.” Following his conviction, the defendant argued that this testimony introduced evidence

¹⁹ *State v. Kekona*, 209 P.3d 1234, 1255 (Hawaii Ct. App. 2009).

²⁰ *Id.*

²¹ Kan. Stat. Ann. §60-455(e).

²² *State v. Adkins*, 264 P.3d 1060 (Table) (Kan. Ct. App. 2011).

²³ *State v. Fulson*, 326 P.3d 1090 (Table) (Kan. Ct. App. 2014).

of his past misdeeds to the jury without any pre-trial notice. The appellate court rejected the defense argument, finding that the prosecution did not violate the notice provision because it had no intention of introducing any information about the defendant's prior misdeeds that may have been suggested inadvertently to the jury through this testimony.²⁴

In *State v. Ulmer*, the defendant was convicted of assault and argued that admission of his prior threat against the victim was erroneous.²⁵ Even assuming that the prior threat was proper evidence of the defendant's intent and motive in connection with the charged assault, the defendant claimed that he was not given notice that the threat would be admitted at least 10 days before the trial. The court found any error in failing to give the statutorily required notice harmless in light of the overwhelming evidence of guilt.

Defense counsel frequently fail to preserve objections to prosecutorial pre-trial notice, thus waiving any meaningful appellate review. In *State v. Massengale*, for example, the prosecution provided no pre-trial notice of evidence arguably constituting other acts evidence.²⁶ The appellate court rejected the defense challenge to pre-trial notice, finding that defense counsel was clearly well aware of the relevance of the other acts evidence based upon pre-trial proceedings and that the defense failure to object to any error in the admission of other acts evidence at trial also waived any error on this basis.²⁷

4. Kentucky

Kentucky Evidence Rule 404(c) requires notice of Rule 404(b) evidence to be given, as follows:

(c) Notice requirement. In a criminal case, if the prosecution intends to introduce evidence pursuant to subdivision (b) of this rule as a part of its case in chief, it shall give reasonable pretrial notice to the defendant of its intention to offer such evidence. Upon failure of the prosecution to give such notice the court may exclude the evidence offered under subdivision (b) or for good cause shown may excuse the failure to give such notice and grant the defendant a continuance or such other remedy as is necessary to avoid unfair prejudice caused by such failure.

The Kentucky notice provision is distinct from its federal counterpart in three respects: 1) it does not require a defense request for notice; 2) it requires reasonable pre-trial notice of other acts evidence to be offered by the prosecution during its case-in-chief only; and 3) it expressly

²⁴ *Id.*

²⁵ *State v. Ulmer*, 386 P.3d 927 (Table) (Kan. Ct. App. 2016).

²⁶ *State v. Massengale*, 317 P.3d 149 (Table) (Kan. Ct. App. 2014).

²⁷ *See also State v. Herndon*, 379 P.3d 403 (Kan. Ct. App. 2016)(Defendant argues that the prosecutor introduced evidence in his opening statement which was not disclosed at least 10 days before trial, however, the court held that these statements were not testimony or evidence, and further, the issue was not objected to and therefore not preserved); *State v. Yeager*, 359 P.3d 1071 (Table) (Kan. Ct. App. 2015)(Yeager argues on appeal that he was not given 10-days' notice regarding the admission of evidence of prior sexual acts, however, he did not object to this at trial and the issue was not preserved); *State v. Mondonedo*, 270 P.3d 1231 (Table) (Kan. Ct. App. 2012)(Defendant attempts to object based on the State's failure to disclose the evidence 10 days prior, however, the issue was not preserved).

provides for the remedy of a continuance in the case of a good cause exception to this pre-trial notice obligation.²⁸ “The intent of KRE 404(c) is to provide the accused with an opportunity to challenge the admissibility of this evidence through a motion *in limine* and to deal with the reliability and prejudice problems at trial.”²⁹

One of the earliest Kentucky cases regarding notice is *Gray v. Commonwealth*, a sexual assault prosecution.³⁰ The appellate court found that the trial court had abused its discretion in allowing testimony from three witnesses about uncharged acts of abuse by the defendant because the prejudicial effect of those uncharged acts substantially outweighed any probative value. The court also emphasized the importance of pre-trial notice of such evidence, noting that the prosecution had informed the defense of its intent to call the witnesses on the morning of the first day of trial. The court stated:

the present case vividly demonstrates that the integrity of the trial is jeopardized when previously unknown witnesses appear at the eleventh hour with evidence of uncharged collateral crimes” ...[e]ven in cases where evidence of prior uncharged criminal activity between the defendant and third persons is admissible, fundamental fairness dictates, and we hold, that the defendant is entitled to be informed of the names of the non-complaining witnesses and the nature of their allegations so far in advance of trial as to permit a reasonable time for investigation and preparation.³¹

The appellate court reversed the defendant’s conviction in *Daniel v. Commonwealth* due to inadequate pre-trial notice of testimony by the victim’s cousin that the defendant allegedly abused her as well.³² Although the State argued that a police report turned over to the defense listed the cousin as a witness who had been interviewed, the reviewing court found that inadequate to satisfy the notice requirement. The court found that a police report alone, made available to defendant through discovery, indicating that the state spoke to all children present as to whether they witnessed improper sexual activity did not provide reasonable pretrial notice of the victim's cousin as a potential witness to the defendant's other bad acts.³³

Notwithstanding strong language supporting a robust notice requirement in cases like these, reversal for lack of adequate pre-trial notice is extremely rare. Kentucky courts frequently reject defense arguments regarding the prosecution’s failure to provide formal notice of other acts evidence where it is apparent that the defense had “actual notice” of the evidence and an opportunity to challenge it.³⁴ Appellate courts in Kentucky also forgive short notice.³⁵ Kentucky

²⁸ The Rule also expressly acknowledges the trial court’s ability to exclude other acts evidence for lack of notice. From a stylistic perspective, the Kentucky Rule differs in placing notice obligations in a separate subsection (c) of its version of Rule 404.

²⁹ *Bowling v. Commonwealth*, 942 S.W.2d 293, 300 (Ky.1997) (quoting Robert G. Lawson, *The Kentucky Evidence Law Handbook*, § 2.25 (3rd Ed.1993)), *overruled on other grounds*, *McQueen v. Commonwealth*, 339 S.W.3d 441 (Ky. 2011).

³⁰ 843 S.W.2d 895, 897 (Ky. 1992).

³¹ *Id.*

³² 905 S.W.2d 76 (Ky. 1995).

³³ *Id.*

³⁴ *See Tamme v. Commonwealth*, 973 S.W.2d 13 (Ky. 1998) (defense had sufficient “actual notice” to file motion in limine and thus suffered no prejudice from lack of pre-trial notice); *Bowling v. Commonwealth*, 942 S.W.2d 293

courts have found notice that describes other acts generically reasonable as well.³⁶ Similar to other jurisdictions, Kentucky courts also find errors with respect to pre-trial notice harmless.³⁷

5. Michigan

Michigan Rule of Evidence 404(b)(2) contains a notice provision that requires the prosecution to articulate its rationale for offering other acts evidence, as follows:

(b) Other crimes, wrongs, or acts.

(2) The prosecution in a criminal case shall provide reasonable notice in advance of trial, or during trial if the court excuses pretrial notice on good cause shown, of the general nature of any such evidence it intends to introduce at trial *and the rationale, whether or not mentioned in subparagraph (b)(1), for admitting the evidence*. If necessary to a determination of the admissibility of the evidence under this rule, the defendant shall be required to state the theory or theories of defense, limited only by the defendant's privilege against self-incrimination.

(Ky. 1997) (defendant suffered no prejudice from any deficiency in prosecutor's notice of intent to use other crimes evidence, where defendant had actual notice and moved in limine to exclude such evidence), *overruled on other grounds*, McQueen v. Commonwealth, 339 S.W.3d 441 (Ky. 2011); Burgher v. Commonwealth, 2009 WL 2707177 (Ky. 2009) (Defendant received actual notice reasonably sufficient to satisfy requirement where defendant received a copy of police report containing defendant's threats in discovery, and although receiving the police report in discovery would not be sufficient of itself, defendant's motion in limine to suppress the statements at issue showed he had actual notice as well as the opportunity to challenge the admissibility of the evidence.); Matthews v. Commonwealth, 163 S.W.3d 11 (Ky. 2005) (Pre-trial proceedings made it clear that defense was aware that prosecution's theory of the case depended on other act and of intent to use other act evidence in prosecution.).

³⁵ See Hoff v. Commonwealth, 2011 WL 6820227 (Ky. 2011) (although defendant received notice only three days before trial, the present counts and others involving defendant's alleged rape of daughter were to be tried together until five days before trial, prosecutor notified defense of the evidence by telephone immediately after learning of it, and defendant was able to make motion in limine to exclude the evidence that was granted in part.); Dant v. Commonwealth, 258 S.W.3d 12 (Ky. 2008) (Defendant received adequate notice of the state's intent to introduce other-acts evidence at murder trial, even though defendant received notice only a few days before trial began; defendant was nonetheless able to file a motion in limine in which he challenged both adequacy of notice and substantive issue of whether other-acts evidence was admissible, and defendant was able to challenge admissibility of other-acts evidence again at trial.); Hughes v. Commonwealth, 2008 WL 3890165 (Ky. 2008) (Commonwealth provided defendant with reasonable notice of its intent to present the testimony of witness concerning defendant's uncharged criminal acts, even though defendant received the notice five days before trial); Dillman v. Commonwealth, 257 S.W.3d 126 (Ky.App. 2008) (Commonwealth disclosing its possession of evidence after hearing defense's opening statement did not violate notice requirements for introducing character evidence and evidence of other crimes; Commonwealth disclosed evidence at earliest feasible time in which it believed evidence was relevant).

³⁶ See Ernst v. Commonwealth, 160 S.W.3d 744 (Ky. 2005) (evidence that defendant's history of "theft related offenses" might be introduced sufficient to survive plain error review, even though it failed to specify that the Commonwealth might introduce evidence relating to his theft of money from purses of murder victim and her sister).

³⁷ See Johnson v. Commonwealth, 2016 WL 6125737 (Ky. 2016) (Commonwealth's error in failing to give advance notice to defendant of its intent to use prior bad acts evidence reflecting upon defendant's possessiveness and jealousy concerning victim was harmless).

To facilitate this mandate, the Rule provides that the defense “shall be required to state the theory” of defense, if necessary, subject to the constitutional privilege against self-incrimination.³⁸

The 1995 amendment that added the requirement that the prosecution specify its rationale for admitting the evidence was born of a 1993 decision by the Michigan Supreme Court.³⁹ In *People v. VanderVliet*, the court carefully articulated the process by which a trial court should assess admissibility of Rule 404(b) evidence and announced a pre-trial notice obligation for the prosecution in criminal cases:

To assist the judiciary in this extraordinarily difficult context and to promote the public interest in reliable fact finding, we intend to adopt a modification of Rule 404(b). We require the prosecution to give pretrial notice of its intent to introduce other acts evidence at trial, and authorize the trial judge, consistent with the law in ten other states, to require the defendant to articulate his theory or theories of defense.”⁴⁰

The court explained that: “A notice requirement promotes reliable decision-making, prevents unfair surprise, and offers the defense the opportunity to marshal arguments regarding both relevancy and unfair prejudice.”⁴¹ The court outlined a flexible approach to other acts evidence to allow trial courts to assess admissibility armed with all necessary information, as follows:

Where pretrial procedures, including requests for offers of proof, do not furnish a record basis to reliably determine the relevance and admissibility of other acts evidence, the trial court should employ its authority to control the order of proofs, require the prosecution to present its case in chief, and delay ruling on the proffered other acts evidence until after the examination and cross-examination of prosecution witnesses. If the court still remains uncertain of an appropriate ruling at the conclusion of the prosecutor's other proofs, it should permit the use of other acts evidence on rebuttal, or allow the prosecution to reopen its proofs after the defense rests, if it is persuaded in light of all the evidence presented at trial, that the other acts evidence is necessary to allow the jury to properly understand the issues.⁴²

Potential difficulties in policing the notice with rationale requirement can be seen in *People v. Sabin*.⁴³ In that case, a defendant’s previous acts of sexual assault against a step-daughter were admitted by the trial court in his prosecution for the rape of his own daughter. The prosecution recited several of the Rule 404(b) purposes in support of admissibility at trial,

³⁸ See *People v. VanderVliet*, 508 N.W.2d 114, 133 (Mich. 1993) (“no judge can be expected to correctly assess the evidentiary issue unless and until the court is presented with a concrete theory of defense that allows the court to determine relevancy. Without such a concrete presentation, a defendant's general posture, as here, requires the trial judge to assume the relevancy of other acts proffered under noncharacter theories of admissibility.”), *amended opinion* 520 N.W.2d 338 (Mich. 1994).

³⁹ Michigan Editor’s notes to Michigan R. Evid. 404.

⁴⁰ *People v. VanderVliet*, 508 N.W.2d 114, 133 (Mich. 1993), *amended opinion* 520 N.W.2d 338 (Mich. 1994).

⁴¹ *Id.* at n. 51.

⁴² *Id.* at 133.

⁴³ *People v. Sabin*, 614 N.W.2d 888 (Mich. 2000).

including motive, intent, absence of mistake and the credibility of the victim.⁴⁴ The trial court ultimately instructed the jury that the prior assault could be used to show common plan, scheme or system.⁴⁵ Following the defendant's conviction, the Michigan Court of Appeals reversed, finding no proper purpose for the prior assault evidence and significant unfair prejudice to the defendant. The Michigan Supreme Court reinstated the conviction, holding that the prior assault was admissible to show the defendant's common plan, scheme, or system. The dissent disagreed that the prior assault evidence had been properly admitted, but also took issue with the appellate court's reliance on a proper purpose never "articulated" by the prosecution either in a pre-trial notice or at trial itself. The dissent argued that the articulation requirement in the notice would become meaningless if a prosecutor or the court could reach for previously unarticulated proper purposes for the first time on appeal. This conflict between the Justices illustrates the concern that a specific prosecutorial or judicial "articulation" requirement could confine reviewing courts to the purposes identified and analyzed below.

Michigan cases often find defects in pre-trial notice harmless. For example, in *People v. Jackson*, the prosecution was permitted to introduce testimony from a witness about uncharged sexual relationships she had with the defendant under a *res gestae* theory in a prosecution involving sexual misconduct.⁴⁶ The court rejected the lower court's application of a *res gestae* exception to Rule 404(b) and found the prior acts covered by the Rule. The court nonetheless excused the failure to afford the required pre-trial notice of Rule 404(b) evidence as harmless:

[T]he lack of proper pretrial notice did not result in the admission of substantively improper other-acts evidence. Thus, although the defendant was not afforded his due 'opportunity to marshal arguments' against its admission before it was introduced at trial, he has not shown that any such arguments would have been availing, or would have affected the scope of testimony ultimately presented to the jury. Furthermore, while the defendant suffered 'unfair surprise' from the unexpected introduction of this testimony at trial, he was admittedly aware of [the witness's] general version of events before trial, including her and [another alleged victim's] prior relationships with the defendant, and he has not demonstrated how he would have approached trial or presented his defense differently had he known in advance that [the witness] would be permitted to testify as she did.⁴⁷

In finding harmless error from lack of pre-trial notice, the court also addressed the prosecutor's argument that a witness statement providing that the witness "was sexually assaulted in the past" and has spoken with "a former church member" who also had been "sexually assaulted by our pastor" was sufficient to satisfy the notice obligation. The court held that the witness statement was inadequate to satisfy the notice requirement of Rule 404(b)(2) because "neither her witness statement nor the fact of her endorsement suggested, let alone provided reasonable notice of, the

⁴⁴ *Id.*

⁴⁵ Michigan does not have a counterpart to Fed. R. Evid. 414 and thus, this evidence was analyzed solely under Michigan's version of Rule 404(b).

⁴⁶ *People v. Jackson*, 498 Mich. 246 (2015).

⁴⁷ *Id.* at 270.

prosecution's intent to have Price testify to her and Newsome's prior relationships with the defendant, or what the rationale for admitting that other-acts evidence might be.”⁴⁸

In *People v. Hawkins*, the Michigan Court of Appeals also forgave the prosecutor’s failure to provide the pre-trial notice required by the Rule.⁴⁹ The court in *Hawkins* explained that the notice requirement was designed:

(1) to force the prosecutor to identify and seek admission only of prior bad acts evidence that passes the relevancy threshold, (2) to ensure that the defendant has an opportunity to object to and defend against this sort of evidence, and (3) to facilitate a thoughtful ruling by the trial court that either admits or excludes this evidence and is grounded in an adequate record.⁵⁰

Notwithstanding these important purposes, the court found a prosecutorial failure to follow the notice requirement harmless: “[b]ecause this evidence was admissible, notice to [the defendant] would not have had any effect on whether the trial court should have admitted it at trial, regardless of the record or arguments that could have been developed and articulated following notice.”⁵¹ In addition, the court noted that the defendant “never suggested how he would have reacted differently to this evidence had the prosecutor given notice,” and that the court could not find “that this lack of notice had any effect whatsoever.”⁵²

Interestingly, the Michigan Supreme Court has proposed an amendment to this notice provision that would clarify that: “This notice must be provided in writing 14 days before trial or orally in open court on the record.”⁵³ The proposal is currently in the notice and comment stage and a public hearing will be held on September 20, 2017.⁵⁴

⁴⁸ *Id.*

⁴⁹ *People v. Hawkins*, 628 N.W.2d 105 (Mich. Ct. App. 2001).

⁵⁰ *Id.* at 113.

⁵¹ *Id.*

⁵² *Id.* at 114.

⁵³ See <http://courts.mi.gov/Courts/MichiganSupremeCourt/rules/court-rules-admin-matters/pages/michigan-rules-of-evidence.aspx>. This proposal to amend the notice procedure follows a Michigan Court of Appeals decision stating that “[a]ccordingly, we hold that if the record does not demonstrate compliance by the prosecution with the mandatory notice requirement of MRE 404(b)(2), upon objection by the defense, the trial court must exclude the evidence absent a showing of “good cause” for the failure to provide the notice.” See *People v. Johnson*, 866 N.W.2d 883, 890 (Mich. Ct. App. 2015). The Michigan Supreme Court thereafter vacated the portion of the opinion discussing the notice obligation, but otherwise dismissed the appeal due to agreement that any errors were harmless in light of overwhelming evidence against the defendant. *People v. Johnson*, 864 N.W.2d 147 (Mich. 2015). Proposals to clarify the notice obligation in Michigan Rule 404(b) followed.

⁵⁴ A brief review of the comments suggests that prosecutors and defense attorneys generally support the time limitation (with a good cause exception retained), but disagree over the utility of “oral” notifications “on the record,” with defense counsel preferring written notice and prosecutors in favor of the flexibility that oral notice provides. At least one comment has highlighted the drafting ambiguity with respect to the applicability of the 14 day rule to oral notifications and has suggested revision to clarify that the time limit applies equally to written and oral notice.

6. Minnesota

Minnesota's version of Rule 404(b) imposes stringent notice and articulation requirements on the prosecution, as follows:

(b) Other crimes, wrongs, or acts. Evidence of another crime, wrong, or act is not admissible to prove the character of a person in order to show action in conformity therewith. It may, however, be admissible for other purposes, such as proof of motive, opportunity, intent, preparation, plan, knowledge, identity, or absence of mistake or accident. In a criminal prosecution, such evidence shall not be admitted unless 1) *the prosecutor gives notice of its intent to admit the evidence consistent with the rules of criminal procedure*; 2) *the prosecutor clearly indicates what the evidence will be offered to prove*; 3) the other crime, wrong, or act and the participation in it by a relevant person are proven by clear and convincing evidence; 4) the evidence is relevant to the prosecutor's case; and 5) the probative value of the evidence is not outweighed by its potential for unfair prejudice to the defendant.⁵⁵ Evidence of past sexual conduct of the victim in prosecutions involving criminal sexual conduct, including attempts or any act of criminal sexual predatory conduct is governed by rule 412.

Minnesota Rule of Criminal Procedure 7.02 sets forth the specific requirements for prosecutorial notice of Rule 404(b) evidence, as follows:

Subd. 1. Notice of Other Crime, Wrong, or Act. *The prosecutor must notify the defendant or defense counsel in writing of any crime, wrong, or act that may be offered at the trial under Minnesota Rule of Evidence 404(b)* No notice is required for any crime, wrong, or act:

- (a) previously prosecuted,
- (b) offered to rebut the defendant's character evidence, or
- (c) arising out of the same occurrence or episode as the charged offense.⁵⁶

Subd. 2. Notice of a Specific Instance of Conduct. The prosecutor must notify the defendant or defense counsel in writing of the intent to cross-examine the defendant or a defense witness under Minnesota Rule of Evidence 608(b) about a specific instance of conduct.

Subd. 3. Contents of Notice. *The notice required by subdivisions 1 and 2 must contain a description of each crime, wrong, act, or specific instance of conduct with sufficient particularity to enable the defendant to prepare for trial.*

⁵⁵ Minnesota is also one of the states that combines several procedural and substantive restrictions, modifying the traditional Rule 403 balancing in defendant's favor by not requiring prejudice to outweigh probative value "substantially." Modified balancing tests, including Minnesota's, are discussed in the next section, *infra*.

⁵⁶ The Minnesota Rule expressly deals with the "inextricably intertwined" issue as it relates to notice with this "arising out of" standard.

Subd. 4. Timing.

(a) In felony and gross misdemeanor cases, the notice must be given at or before the Omnibus Hearing under Rule 11, or as soon after that hearing as the other crime, wrong, act, or specific instance of conduct becomes known to the prosecutor.

(b) In misdemeanor cases, the notice must be given at or before a pretrial conference under Rule 12, if held, or as soon after the hearing as the other crime, wrong, act, or specific instance of conduct becomes known to the prosecutor. If no pretrial conference occurs, the notice must be given at least 7 days before trial or as soon as the prosecutor learns of the other crime, wrong, act, or specific instance of conduct.

These notice requirements originated in *State v. Spreigel*, where the court addressed the severe prejudice to a criminal defendant forced to defend against unanticipated allegations and held that:

although [other acts] evidence is otherwise admissible under some exception to the general exclusionary rule, it shall not hereafter be received unless within a reasonable time before trial the state furnishes defendant in writing a statement of the offenses it intends to show he has committed, described with the particularity required of an indictment or information, subject, however, to the following exceptions: (a) offenses which are part of the immediate episode for which defendant is being tried; (b) offenses for which defendant has previously been prosecuted; and (c) offenses which are introduced to rebut defendant's evidence of good character.⁵⁷

Shortly thereafter, the Minnesota Supreme Court also emphasized the need for the prosecutor to articulate the proper purpose for other act evidence.⁵⁸ The Minnesota Rule also has been interpreted to impose precise articulation requirements on the trial judge admitting other acts evidence.⁵⁹ Notwithstanding these more stringent notice and articulation requirements, appellate review of the admission of other acts evidence in Minnesota looks very similar to the appellate review of other acts evidence under Federal Rule 404(b). Much of the focus of the analysis is spent on the appellate court's assessment of the proper purpose for the evidence.

⁵⁷ *State v. Spreigel*, 139 N.W.2d 167, 173 (Minn. 1965). In subsequent cases, Minnesota courts have held that notice is not required for evidence used to establish a "relationship" between parties or for previously prosecuted offenses because there would be no unfair surprise to a defendant from such evidence. See *State v. Enger*, 539 N.W.2d 259 (Minn. 1995) (evidence establishing a relationship between the defendant and victim not subject to *Spreigel* requirements) and *State v. Feehan*, 412 N.W. 2d 309 (Minn. Ct. App. 1987) (where notice is designed to prevent surprise, it is not necessary for previously prosecuted offenses of which defendant is well aware). But, "[b]eyond the *Spreigel* notice requirement, when a defendant demands disclosure of state's evidence and other relevant material pursuant to Minn.R.Crim.P. 9.01, the state must disclose evidence of other crimes not included in the *Spreigel* notice requirement. For example, the state must disclose other crimes for which defendant was previously prosecuted." *State v. Bolte*, 530 N.W.2d 191 (Minn. 1995).

⁵⁸ *State v. Billstrom*, 149 N.W. 2d 281 (Minn. 1967).

⁵⁹ *Angus v. State*, 695 N.W.2d 109, 120 (Minn.2005)(One of the requirements for admitting *Spreigel* evidence is that the district court "must identify the precise disputed fact to which the *Spreigel* evidence would be relevant."); See also *State v. Farden*, 773 N.W.2d 303, 317 (Minn. 2009)(stating that "[t]o properly assess the relevancy and probative value of the evidence, the district court must first "identify the precise disputed fact to which the *Spreigel* evidence would be relevant" and evaluating only the purposes identified by the trial court).

Cases often examine a litany of potential proper purposes.⁶⁰ Little attention is paid to the prosecutor's notice, the prosecutor's precise articulation of the purpose for which evidence was offered, or the trial judge's specific record reasoning for admissibility in cases where there appears to be a proper purpose on review.⁶¹ Only very rarely does an appellate court base reversal on a failure of pre-trial notice.⁶²

7. Tennessee

The Tennessee Supreme Court characterizes the Tennessee version of Rule 404(b) as a "rule of exclusion" due to the significant prejudice suffered by criminal defendants against whom other act evidence is admitted.⁶³ To facilitate this approach to other acts evidence, Tennessee Rule 404(b) imposes procedural requirements, including a mandatory hearing outside the presence of the jury and specific record findings by the trial court prior to admission of other acts evidence, as follows:

(b) Other Crimes, Wrongs, or Acts. Evidence of other crimes, wrongs, or acts is not admissible to prove the character of a person in order to show action in conformity with the character trait. It may, however, be admissible

⁶⁰ See *e.g.*, *State v. Washington-Davis*, 867 N.W.2d 222 (Minn. Ct. App. 2015) ("We see no error in the admission of this evidence because it tended to show appellant's intent, knowledge, absence of mistake or accident, and common scheme or plan.").

⁶¹ See *State v. Whelan*, 189 N.W.2d 170 (Minn. 1971) (improper reference to other offenses perpetrated by defendant against victim without pre-trial notice harmless); *State v. Schweppe*, 237 N.W.2d 609 (Minn. 1975) (where evidence of defendant's homosexual relationship with victim was properly admissible to show motive and where defense counsel was clearly aware that such evidence would be offered at trial, there was no unfair surprise and arguable failure to provide pre-trial notice was not prejudicial); *State v. Bolte*, 530 N.W.2d 191, 199 (Minn. 1995) (reaffirming the importance of and the need for full compliance with notice requirements, but approving "substantial compliance" with the notice requirements due to a lack of prejudice to the defendant in a case where the defendant was aware of the relevance of the prior offense and the prosecution gave notice during trial prior to proffering the evidence); *State v. Rossberg*, 851 N.W.2d 609, 615 (Minn. 2014) (finding that trial court erred in failing to identify the "precise disputed fact" to which prior act evidence was relevant, but that articulation error was harmless where prior act was not unduly prejudicial and where there was overwhelming evidence of defendant's guilt); *Wanglie v. State*, 398 N.W.2d 54, 57–58 (Minn.App.1986) (holding that mention in complaint of other incidents, defense's access to statements and other documents concerning the other incidents, and familiarity of defense counsel with them supported admission of Spreigl evidence); *State v. Barsness*, 2014 WL 5419726 (Minn. Ct. App. October 27, 2014) (failure to provide requisite notice of testimony regarding prior criminal act was plain error, but harmless); *State v. Washington-Davis*, 867 N.W.2d 222 (Minn. Ct. App. 2015) (rejecting challenge to state's articulation of purpose with cursory analysis: "state clearly indicated what the evidence was offered to prove, both in its pretrial motion and during multiple pretrial arguments before the district court.").

⁶² See *State v. Coonrod*, 652 N.W.2d 715, 720 (Minn. Ct. App. 2002) (finding prejudicial failure to provide pre-trial notice of evidence that defendant was collecting photos of "teen-age girls" on the Internet and using the Internet to ask a 15-year-old girl other than the victim for a date: "The state provided no notice of any intent to present evidence of the computer file folders, or any other Spreigl evidence. The state did disclose as a possible witness J.L., the subject of one of the computer file folders, but did not identify her as a Spreigl witness. Although defense counsel admitted receiving police reports referring to the computer file folders, the complaint merely mentioned the search of Coonrod's computer, without reciting any evidence found in that search to indicate the state might be using it to prove the offense. Thus, we cannot conclude that there was substantial compliance with the notice requirement.").

⁶³ *State v. Rounsaville*, 701 S.W.2d 817, 820 (Tenn. 1985).

for other purposes.⁶⁴ The conditions which must be satisfied before allowing such evidence are:

- (1) The court upon request must hold a hearing outside the jury's presence;
- (2) The court must determine that a material issue exists other than conduct conforming with a character trait and must upon request state on the record the material issue, the ruling, and the reasons for admitting the evidence;
- (3) The court must find proof of the other crime, wrong, or act to be clear and convincing; and⁶⁵
- (4) The court must exclude the evidence if its probative value is outweighed by the danger of unfair prejudice.⁶⁶

Because it relies upon the procedural requirements of a mandatory hearing and record findings, the Tennessee provision does not mandate pre-trial notice. A 1991 Tennessee Advisory Commission Comment describes the history of the procedural requirements:

The Commission drafted Part (b) in accord with the Supreme Court's pronouncements in *State v. Parton*, 694 S.W.2d 299 (Tenn.1985). There the Court established precise procedures to emphasize that evidence of other crimes should usually be excluded. In the exceptional case where another crime is arguably relevant to an issue other than the accused's character--issues such as identity (including motive and common scheme or plan), intent, or rebuttal of accident or mistake--the trial judge must first excuse the jury. Then the judge must decide what material issue other than character forms a proper basis for relevancy. If the objecting party requests, the trial judge must state on the record the issue, the ruling, and the reason for ruling the evidence admissible. Finally, the judge must always weigh in the balance probative value and unfair prejudice. If the danger of unfair prejudice outweighs the probative value, the court should exclude the evidence even though it bears on a material issue aside from character. Finally, according to *Parton*, the trial judge must find that the evidence is "clear and convincing" that the defendant committed another crime.⁶⁷

The Tennessee courts have recognized that these requirements not only protect criminal defendants from prejudicial evidence, they also promote efficiency by requiring other acts issues to be resolved outside of trial without lengthening the trial itself and risking unnecessary distraction from the events at issue.⁶⁸ A trial court that substantially complies with the procedural requirements in the Rule is

⁶⁴ Tennessee's version of the Rule contains no illustrative list of proper purposes for such evidence.

⁶⁵ Tennessee is also a state that departs from the *Huddleston* view that a defendant's commission of other crimes, wrongs, or acts should be treated as a matter of conditional relevance pursuant to Rule 104(b). Instead Tennessee demands that the trial judge find proof of the other act by clear and convincing evidence.

⁶⁶ Tennessee is also a state that removes the modifier "substantially" from the traditional Rule 403 balancing test applicable to other acts evidence and directs that the trial judge "must" exclude evidence failing this test. The impact of that change is discussed, *infra*, in the section on modified balancing tests.

⁶⁷ Advisory Commission Comment to Tenn. R. Evid. 404.

⁶⁸ *State v. Bigbee*, 885 S.W.2d 797, 806 (Tenn. 1994) ("Not only does the admission of irrelevant bad acts evidence have a high potential for prejudice, the testimony required to establish, as well as rebut, the prior bad act can substantially lengthen a trial, as this case demonstrates. Rule 404(b) should be followed closely to avoid prejudicing the rights of the accused and to maintain the focus of the trial."); *But see State v. Gilley*, 173 S.W.3d 1 (Tenn. 2005) (noting that trial court may need to revisit any pre-trial rulings in light of actual evidence admitted at trial).

entitled to significant deference, whereas a trial court that does not will receive no deference on appeal.⁶⁹ A failure to comply substantially with the procedures mandated by the Rule is not necessarily fatal to admissibility, however. Tennessee appellate courts uphold admission of other acts evidence even in cases where the trial court failed to follow the mandatory requirements.⁷⁰

8. West Virginia

Prior to 2014, West Virginia Evidence Rule 404(b) was identical to its federal counterpart, requiring notice of Rule 404(b) evidence only by the prosecution in a criminal case and only upon request by the defendant. In 2014, the Rule was amended to broaden the notice provision.⁷¹ West Virginia Evidence Rule 404(b) currently reads:

(b) Crimes, Wrongs, or Other Acts.

(1) *Prohibited Uses.* Evidence of a crime, wrong, or other act is not admissible to prove a person's character in order to show that on a particular occasion the person acted in accordance with the character.

(2) *Permitted Uses; Notice Required.* This evidence may be admissible for another purpose, such as proving motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake, or lack of accident. *Any party seeking the admission of evidence pursuant to this subsection must:*

(A) *provide reasonable notice of the general nature and the specific and precise purpose for which the evidence is being offered by the party at trial; and*

(B) *do so before trial--or during trial if the court, for good cause, excuses lack of pretrial notice.*

The current provision differs from its federal counterpart in three ways: 1) it does not require an opponent to request pre-trial notice of other acts evidence; 2) it requires all proponents, including defendants, to provide pre-trial notice in all cases (the language of the notice provision is not confined to criminal cases); and 3) it requires notice of the “specific and precise purpose for which the evidence is being offered” at trial.⁷² As a result of this amendment, the West Virginia Supreme Court of Appeals has held that a criminal defendant seeking to introduce Rule 404(b)

⁶⁹ State v. Dotson, 450 S.W.2d 1, 76-77 (Tenn. 2014); *see also* State v. DuBose, 953 S.W.2d 649, 652 (Tenn. 1997) (“in view of the strict procedural requirements of Rule 404(b), the decision of the trial court should be afforded no deference unless there has been substantial compliance with the procedural requirements of the Rule.”).

⁷⁰ State v. DuBose, 953 S.W.2d 649 (Tenn. 1997) (trial court failed to comply substantially with Rule 404(b) procedures by failing to place findings on the record during hearing; appellate court reviews admissibility based upon evidence presented at hearing and without deference to trial judge’s determination but nonetheless upholds admissibility); State v. Sexton, 368 S.W.3d 371, 406 (Tenn. 2012) (“the inadequacy of the proceeding, standing alone, would not serve as a basis for exclusion.”).

⁷¹ *See* State v. Zuccaro, 799 S.E.2d 559, n. 12 (S.Ct. App. W.V. 2017) (upholding exclusion of other acts evidence proffered by the defense in a murder prosecution).

⁷² *See id.* (explaining that “modifications to the language included ‘broad[ening]’ the requirement of reasonable notice to every party, not just the state in a criminal prosecution, of the general nature of and the specific and precise purpose for which the evidence is being offered by the party at trial.”).

evidence must now comply with the same notice and articulation requirements that the prosecution must follow.⁷³

State v. McGinnis is the seminal West Virginia case on the proper procedures for admitting Rule 404(b) evidence and inspired the contemporary Rule.⁷⁴ In that murder prosecution, the court did not focus on pre-trial notice, but demanded precise articulation of the purpose for Rule 404(b) evidence by the prosecution and by the trial court during trial. The *McGinnis* court rejected a recitation of all permissible purposes for other acts evidence and demanded that “the prosecution is required to identify the specific purpose for which the evidence is being offered and the jury must be instructed to limit its consideration of the evidence to only that purpose.”⁷⁵ The court found this safeguard necessary “necessary to prevent prosecutorial abuse and overreaching.”⁷⁶ The court also chastised the trial judge for failure to articulate a Rule 403 balancing analysis on the record: “when admitting evidence under Rule 404(b), the record must clearly reveal the analysis the trial court used to comply with the mandates of Rule 403.”⁷⁷ The notice provisions were added to the West Virginia Rule thereafter, requiring precise articulation prior to trial to facilitate this detailed analysis.

The West Virginia cases mandate very precise articulation of purpose by the proponent and precise record findings by the trial court during an *in camera* hearing to support admissibility of Rule 404(b) evidence and lower courts are sometimes reversed for failure to police these requirements carefully.⁷⁸ West Virginia courts sometimes relax those requirements, however. In *State v. Zacks*, the trial judge conducted an *in camera* hearing as required by *McGinnis* prior to allowing testimony concerning the defendant’s other acts.⁷⁹ On appeal of his conviction, the defendant claimed that the trial court had not identified precisely the relevance of his other acts or performed a Rule 403 balancing test supporting admissibility on the record. Although even appellate counsel for the State conceded that the trial court’s *in camera* findings did “not live up to appellate counsel’s expectations,” the appellate court found them sufficient to support the relevance and probative effect of

⁷³ *Id.* (rejecting defendant’s argument to apply relaxed standards to other acts evidence offered by a criminal defendant and finding no constitutional violation as a result).

⁷⁴ *State v. McGinnis*, 455 S.E.2d 516 (S.Ct. App. W.V. 1994).

⁷⁵ *Id.* at 523. The *McGinnis* court also held that that the admissibility of Rule 404(b) evidence must be determined as a preliminary matter by the trial judge after an *in camera* hearing pursuant to Rule 104(a) by a preponderance of the evidence and not as a matter of conditional relevance under Rule 104(b). *Id.* at 527.

⁷⁶ *Id.* at 524. (finding that “[t]he burden is squarely on the prosecution to identify, with particularity, the specific purpose for which the evidence is being offered.”).

⁷⁷ *Id.*

⁷⁸ See *State v. MacFarland*, 721 S.E.2d 62, 73 (S.Ct. App. W.V. 2011)(concluding that the circuit court’s failure to conduct the balancing test required by Rule 403 on the record was erroneous because “If the factors used by the circuit court in conducting the Rule 403 balancing test do not appear on the record, this Court is unable to effectively review the circuit court’s decision to admit the evidence in question.”); *State v. Jonathon B.*, 737 S.E.2d 257, 266 (S.Ct. App. W.V. 2012)(finding that the circuit court abused its discretion by allowing other acts evidence to be admitted without holding a *McGinnis* hearing to fully consider all of the evidentiary requirements with regard to the pornographic file names on the defendant’s computer); *Stafford v. Rocky Hollow Coal Co.*, 482 S.E.2d 210, 217 (S.Ct. App. W.V. 1996)(“It is obvious that the trial court abused its discretion when it failed to comply with the gate-keeping requirement for the admissibility of prior bad acts.”).

⁷⁹ *State v. Zacks*, 513 S.E.2d 911 (S.Ct. App. W.V. 1998).

the other acts evidence and affirmed. Notwithstanding case law suggesting the need for “precise” articulation of the Rule 404(b) analysis, therefore, West Virginia appellate courts may excuse general findings favoring admissibility in some cases.⁸⁰

State v. Graham addressed the sufficiency of pre-trial notice more directly.⁸¹ In that case, the defendant challenged the content of the Rule 404(b) pre-trial notice provided by the prosecution. The appellate court found the notice sufficient where “[t]he text of the notice specifically contain[ed] the style, the date, and the case number of the defendant's prior conviction... [and] also state[d] that the purpose of the evidence [was] to prove the defendant's lustful disposition toward children.”⁸²

West Virginia courts also excuse the pre-trial notice requirement altogether in appropriate circumstances and the good cause exception to the pre-trial notice requirement has been utilized to permit use of Rule 404(b) evidence not anticipated by the prosecution prior to trial. In *State v. Mongold*, the prosecution stated before trial that it did not anticipate using any Rule 404(b) evidence, but was permitted to prove past acts of child abuse by the defendant during its rebuttal case.⁸³ The prosecution argued that it was unaware of the need for any other acts evidence until after the presentation of the defense and the trial court found good cause to excuse pre-trial notice. The appellate court found that the trial court did not abuse its discretion in finding good cause where “Mr. Mongold put on apparently unanticipated extensive evidence regarding his good relationship with children, and evidence, including expert testimony, suggesting that Hannah's death could have been caused accidentally while playing the game of ‘airplane.’”⁸⁴

⁸⁰ *Id.* at n. 3 (“While the circuit court did not comply with the technical mandate of *McGinnis*, we have previously supported the admission of bad acts evidence under Rule 404(b) in cases where the circuit court's actions, though not “ideal,” were adequate to show it has lived up to the spirit of *McGinnis*.”).

⁸¹ *State v. Graham*, 541 S.E.2d 341 (S. Ct. App. W.V. 2000).

⁸² *Id.* Although the content of the notice was not challenged in the attempted murder prosecution in *State v. Lewis*, the opinion set forth the detailed notice given in that case, which provides some indication of the type of notice given at the trial level in West Virginia:

The proposed 404(b) evidence shows that the Defendant was convicted of Domestic Battery on or about October 13th 2011. This incident occurred only nine months prior to the brutal attack on Ms. Thomas. According to Trooper See's complaint, on February 15th 2011, the Defendant accused Ms. Thomas (who was his wife at the time) of being with a boyfriend. He then attacked her in their apartment. He started strangling her and said that “he was going to kill her.” At one point in the struggle he pulled out a knife and put it to her chest, and later cut her on her hand. * * *

This evidence clearly shows that the Defendant had a motive, jealousy, to commit the crime at hand. It further shows that the Defendant actually did intend to kill Ms. Thomas. Indeed, the Indictment charges the Defendant with Attempted Murder, and the State must prove that the Defendant actually intended to kill Ms. [Thomas] and not just maliciously wound her. The Defendant's statement that “he was going to kill her” is very good evidence on that point. Lastly, it shows that the Defendant had a common scheme or plan to use a knife to kill Ms. Thomas. The Defendant used a knife in both the February and November attacks.

State v. Lewis, 797 S.E.2d 605, 609 (S.Ct. App. W.V. 2017).

⁸³ *State v. Mongold*, 647 S.E.2d 539 (S.Ct. App. WV. 2007).

⁸⁴ *Id.* at 548; *see also* *State v. Graham*, 541 S.E.2d 341 (S. Ct. App. W.V. 2000)(prosecutorial disclosure of Rule 404(b) evidence outside the original time frame mandated by the circuit court was not untimely because the defendant still received notice of the State's intent to use the evidence approximately three months and fourteen days prior to trial).

B. Protective Balancing Tests

In *Huddleston v. United States*, the Supreme Court emphasized the importance of a Rule 403 balancing in connection with the admission of other acts evidence pursuant to Federal Rule of Evidence 404(b).⁸⁵ The standard Rule 403 balance permits the exclusion of relevant evidence whenever its probative value is “substantially outweighed” by a danger of “unfair prejudice, confusing the issues, misleading the jury, undue delay, wasting time, or needlessly presenting cumulative evidence.”⁸⁶ Of course, the risk of unfair propensity prejudice is the most salient in connection with the admission of a criminal defendant’s uncharged misdeeds through Rule 404(b). Although a Rule 403 balancing may suffice to exclude such evidence, the test favors admissibility by requiring that probative value be “substantially outweighed” by such prejudice. Some states have counterparts to Rule 404(b) that modify the traditional Rule 403 balance to offer criminal defendants greater protection and to err in favor of exclusion of other acts evidence in close cases.

1. Excluding Other Acts Evidence When Unfair Prejudice “Outweighs” Proper Probative Value

A few states have made a modest alteration to the standard Rule 403 balance by eliminating the modifier “substantially” from the balancing test applicable to Rule 404(b) evidence. State analogues to Federal Rule of Evidence 404(b) in Massachusetts, Minnesota, and Tennessee modify the Rule 403 balancing test traditionally applicable to other acts evidence in this way.⁸⁷ In these jurisdictions, other acts evidence will be excluded whenever unfair prejudice outweighs probative value at all – even if the prejudice does not “substantially” outweigh probative value. The balancing test in these states still favors admission slightly by requiring that unfair prejudice outweigh probative value, but offers more protection than the standard weighing.

- Massachusetts

There are no Massachusetts Rules of Evidence. Instead, there is a “guide” from the Supreme Judicial Court Advisory Committee on Massachusetts Evidence law as it exists today.⁸⁸ Massachusetts Guide to Evidence Section 404(b) alters the balancing applicable to other acts evidence as follows:

⁸⁵Huddleston v. United States, 485 U.S. 681 (1988).

⁸⁶Fed. R. Evid. 403.

⁸⁷ See Mass. Guide to Evid. Section 404(b)(“ However, evidence of other bad acts is inadmissible where its probative value is outweighed by the risk of unfair prejudice to the defendant, even if not substantially outweighed by that risk.”); Minn. R. Evid. 404(b) (admitting other acts evidence only if “the probative value of the evidence is not outweighed by its potential for unfair prejudice to the defendant.”); Tenn. R. Evid. 404(b)(“The court must exclude the evidence if its probative value is outweighed by the danger of unfair prejudice.”).

⁸⁸ See Mass. Guide to Evid. Section 102 (“The sections contained in this Guide summarize the law of evidence applied in proceedings in the courts of the Commonwealth of Massachusetts as set forth in the Massachusetts General Laws, common law, and rules of court, and as required by the Constitutions of the United States and Massachusetts.”).

(b) Crimes, Wrongs, or Other Acts.

(1) Prohibited Uses. Evidence of a crime, wrong, or other act is not admissible to prove a person's character in order to show that on a particular occasion the person acted in accordance with the character.

(2) Permitted Uses. This evidence may be admissible for another purpose, such as proving motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake, or lack of accident. However, *evidence of other bad acts is inadmissible where its probative value is outweighed by the risk of unfair prejudice to the defendant, even if not substantially outweighed by that risk.* Evidence of such an act is not admissible in a criminal case against a defendant who was prosecuted for that act and acquitted.⁸⁹

This more protective balancing test for other acts evidence offered against criminal defendants was announced definitively in *Commonwealth v. Crayton* in 2014.⁹⁰ In that prosecution for possession of child pornography, the trial judge admitted several pornographic sketches of underage girls found in the defendant's jail cell some ten months after the charged incident to show the defendant's "knowledge" and "state of mind," even though the only real issue in dispute was the defendant's identity as the perpetrator. On appeal, the Supreme Judicial Court of Massachusetts noted some disagreement in the Massachusetts case law regarding the appropriate standard for weighing other acts evidence, with some courts applying a traditional Rule 403 balancing test and others suggesting a higher standard. The court concluded that "because 'other bad acts' evidence is 'inherently prejudicial,' it makes sense to impose a more exacting standard on its admissibility than the standard applicable to other evidence."⁹¹ Therefore, the court held that other acts evidence would be excluded "where its probative value is outweighed by the risk of unfair prejudice to the defendant, even if not substantially outweighed by that risk."⁹²

Applying this standard, the appellate court found that admission of the other acts was erroneous because the jury was instructed "to consider the hand-drawn sketches only as to issues that were not in dispute" and because "the drawings had only a general similarity to the child pornography found on the computer." Therefore, "the risk was enormous that the jury would use the drawings for the forbidden purpose of identifying the defendant as the person who viewed the child pornography on computer no. two based on his bad character and propensity to possess child pornography."⁹³

The addition of this more protective balancing test has not prevented prosecutorial reliance on other acts evidence in appropriate cases and Massachusetts courts continue to uphold the admission of prior bad acts against criminal defendants for proper purposes.⁹⁴ Nor has the

⁸⁹ Massachusetts is one of the jurisdictions that alters the *Huddleston* rule of conditional relevance for proof of other acts by a criminal defendant, at least with respect to acquitted acts.

⁹⁰ *Commonwealth v. Crayton*, 21 N.E.3d 157, n. 27 (Supreme Judicial Court of Massachusetts 2014).

⁹¹ *Id.*

⁹² *Id.*

⁹³ *Id.* at 177.

⁹⁴ See *Commonwealth v. Miller*, 56 N.E.3d 168 (Supreme Judicial Court of Massachusetts 2016) (evidence of domestic violence committed by defendant against his girlfriend, which led to confrontation between defendant and murder victim, properly admitted to show "contentious nature" of relationship between defendant and victim, which provided motive for killing); *Commonwealth v. Forte*, 14 N.E.3d 900 (Supreme Judicial Court of Massachusetts

more protective balancing test prevented entirely questionable reliance on other act evidence by the prosecution in Massachusetts cases. In *Commonwealth v. Mazariego*, the defendant was charged with the murder of prostitute.⁹⁵ He admitted being present at the scene of the crime, having sexual relations with the victim, and failing to pay her. Importantly, he claimed that his accomplice, who was also present, was the one who killed her. The trial judge admitted the defendant's "history of bringing prostitutes to the same location" and the appellate court affirmed, stating that prior relations with prostitutes were relevant to show intent, similarity in location of past encounters, absence of mistake, and the defendant's level of involvement in planning the crime.⁹⁶ At least one Massachusetts court has noted, however, that the more protective balancing test could be outcome determinative in some cases.⁹⁷

- Minnesota

Minnesota Evidence Rule 404(b) also contains a more protective balancing test for criminal cases, as follows:

(b) Other crimes, wrongs, or acts. Evidence of another crime, wrong, or act is not admissible to prove the character of a person in order to show action in conformity therewith. It may, however, be admissible for other purposes, such as proof of motive, opportunity, intent, preparation, plan, knowledge, identity, or absence of mistake or accident. In a criminal prosecution, such evidence shall not be admitted unless 1) the prosecutor gives notice of its intent to admit the evidence consistent with the rules of criminal procedure; 2) the prosecutor clearly indicates what the evidence will be offered to prove; 3) the other crime, wrong, or act and the participation in it by a relevant person are proven by clear and convincing evidence; 4) the evidence is relevant to the prosecutor's case; and 5) *the probative value of the evidence is not outweighed by its potential for unfair prejudice to the defendant*. Evidence of past sexual conduct of the victim in prosecutions involving criminal sexual conduct, including attempts or any act of criminal sexual predatory conduct is governed by rule 412.⁹⁸

Much like the Massachusetts cases, Minnesota Supreme Court cases were inconsistent in articulating the balancing test applicable to Rule 404(b) evidence.⁹⁹ In 2006, Minnesota Evidence Rule 404(b) was amended to clarify that other acts evidence should be excluded in criminal cases whenever probative value is "outweighed" by unfair prejudice, even if not

2014) (instances of defendant's aggressive conduct in 16 hours preceding murder of homeless man admissible to illustrate angry state of mind); *Commonwealth v. McGee*, 4 N.E. 3d 256 (Supreme Judicial Court of Massachusetts 2014) (photograph of defendant holding a firearm that could have been the one used in the crime was more probative as to the means of committing the crime than it was prejudicial propensity evidence).

⁹⁵ *Commonwealth v. Mazariego*, 47 N.E.3d 420 (Supreme Judicial Court of Massachusetts 2016).

⁹⁶ *Id.*

⁹⁷ See *Commonwealth v. Christie*, 89 Mass. App. Ct. 665, 667, n.2 (2016) ("Had the judge had the benefit of the [more protective balancing test] he may, of course, have concluded that the challenged evidence was not admissible.").

⁹⁸ Minnesota Rule 404(b) also contains heightened notice and articulation standards as discussed in the previous section. Minnesota is also one of the states that demands "clear and convincing" proof of crimes, wrongs, or other acts.

⁹⁹ Minn. R. Evid. 404(b), Advisory Committee Comment to 2006 amendment.

“substantially” outweighed by such prejudice.¹⁰⁰ The Rule was amended to reflect the Minnesota Supreme Court’s “longstanding view that because of the great potential for misuse of this evidence, the trial judge should exclude the evidence in the close case.”¹⁰¹ The Advisory Committee for the Minnesota Evidence Rules noted that “[a] slight balance in favor of unfair prejudice requires exclusion” pursuant to this modified balancing test.¹⁰²

This more protective balancing test leads to careful weighing of probative value and unfair prejudice in Minnesota and leads to the exclusion of other acts evidence in some cases.¹⁰³ That said, the Minnesota courts still find other acts evidence sufficiently probative to overcome this protective test in many cases.¹⁰⁴

- Tennessee

In addition to the many procedural protections incorporated into Tennessee’s counterpart to Rule 404(b) discussed above, Tennessee Rule of Evidence 404(b)(4) also alters the traditional Rule 403 balancing test with respect to evidence of other crimes, wrongs, or acts. This standard eliminates the modifier “substantially” in the traditional Rule 403 standard and provides that a “court must exclude the evidence if its probative value is outweighed by the danger of unfair prejudice.”¹⁰⁵ The Tennessee courts have explained that this alteration in the required balancing

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² “We have repeatedly stated that if the issue of admissibility of other-crime evidence is, in the trial court’s view unclear, the trial court should give the benefit of the doubt to the defendant and exclude the evidence.” *State v. Spreigl*, 139 N.W.2d 167, 172 (Minn. 1965).

¹⁰³ *See State v. Fardan*, 773 N.W.2d 303 (Minn. 2009)(evidence of another robbery committed with same firearm on same night as charged felony murder was admissible under Rule 404(b) to show intent and lack of accident in charged shooting where defense argued lack of intent, but distinct sexual assaults committed on same night without firearm were more prejudicial than probative and should have been excluded); *State v. Ness*, 707 N.W.2d 676, 686 (Minn. 2006)(finding acts of sexual abuse 35 years prior to charged offense too dissimilar and remote to be probative as to whether current victim was mistaken and that any value was outweighed by prejudice where the government had little need for the evidence); *Angus v. State*, 695 N.W.2d 109, 120 (Minn.2005) (providing “guidance” for retrial after post-conviction relief and finding that prosecution had insufficient “need” for prior bad act evidence to justify prejudice to defendant; dissent forcefully arguing that prior bad act evidence was necessary to combat defense theory that defendant was an innocent bystander).

¹⁰⁴ *See e.g.*, *State v. Welle*, 870 N.W.2d 360 (Minn. 2015) (reversing court of appeals and affirming trial court’s admission of two prior assaults in which defendant punched a victim in the head and falsely claimed self- defense to rebut defendant’s claim of self-defense in instant murder/manslaughter prosecution: “Welle’s pattern of shifting blame and falsely asserting self-defense is relevant to one or more of the elements of Welle’s self-defense claim.”); *State v. Campbell*, 861 N.W.2d 95, 101 (Minn. 2015) (finding any alleged error in admitting evidence of previous shots fired incident harmless, but noting that “[i]f it is unclear whether the ...[404(b)] evidence is admissible, the benefit of the doubt should be given to the defendant and the evidence should be excluded.”); *State v. Burrell*, 772 N.W.2d 459, 465 (Minn. 2009) (“If it is ‘a close call’ whether the evidence should be admitted, the trial court should exclude it” and upholding admissibility of pattern of drive by shootings in murder prosecution for later drive-by shooting that killed bystander notwithstanding significant potential for unfair prejudice because trial was a bench trial) (citation omitted); *State v. Washington-Davis*, 867 N.W.2d 222 (Minn. Ct. App. 2015) (rejecting appellant’s challenge to testimony by alleged victims of prostitution scheme about defendant’s conduct before date of charged conspiracy “because it tended to show appellant’s intent, knowledge, absence of mistake or accident, and common scheme or plan.”).

¹⁰⁵ *Tenn. R. Evid.* 404(b)(4).

is designed to facilitate Tennessee’s “restrictive approach” to evidence of other crimes, wrongs, or acts:

However, the test in Rule 404(b) for balancing probative value against prejudicial effect differs from that established in Rule 403. To be excluded under Rule 403, the danger of unfair prejudice must “substantially outweigh” the probative value. Under Rule 404(b), however, the danger of unfair prejudice must simply “outweigh” the probative value. The restrictive approach of Rule 404(b) recognizes that evidence of other crimes, wrongs or acts carries a significant danger of unfair prejudice.¹⁰⁶

This balance should result in the exclusion of other acts evidence whenever “the unfair prejudice outweighs the probative value or is dangerously close to tipping the scales.”¹⁰⁷ The combination of this more protective balancing test with the other procedural protections required by the Tennessee Rule serves to generate careful consideration of other acts evidence, as well as routine findings of error in the admission of such evidence.¹⁰⁸ Tennessee’s version of Rule 404(b) is thus treated as a rule of “exclusion” as a result of the numerous procedural and substantive protections it contains. Although the Tennessee Rule also demands a hearing outside the presence of the jury, the Tennessee Supreme Court has recognized that pre-trial rulings balancing probative value against unfair prejudice may need to be reconsidered during trial once the court can fairly evaluate other evidence presented at trial.¹⁰⁹

2. Excluding Other Acts Evidence in Criminal Cases Unless Probative Value “Outweighs” Unfair Prejudice

¹⁰⁶ State v. DuBose, 953 S.W.2d 649, 654 (Tenn. 1997)(citing *Tennessee Law of Evidence*, § 404.7 at 172).

¹⁰⁷ See State v. Luellen, 867 S.W.2d 736, 741 (Tenn. Ct. App. 1992).

¹⁰⁸ See State v. Sexton, 368 S.W.3d 371, 403 (Tenn. 2012) (“contrary to the requirements for admission under Rule 404(b), the unfair prejudicial effect of the alleged sex abuse outweighed the probative value as to motive.”); State v. Gilliland, 22 S.W.3d 266, 270 (Tenn. 2000) (trial court abused discretion in admitting evidence of prior shooting in felony murder trial because probative value was outweighed by unfair prejudice, but error was harmless due to overwhelming proper evidence of defendant’s guilt); State v. McCary, 922 S.W.2d 511 (Tenn. 1996)(explaining Tennessee’s restrictive approach and reversing sexual assault convictions due to trial court’s error in allowing testimony concerning identical uncharged assaults); State v. Bordis, 905 S.W.2d 214 (Tenn. 1995)(explaining restrictive approach to other acts evidence and reversing murder conviction based upon starvation death of three-month old child due to prosecution proof of defendant’s lifestyle that produced intentional neglect, including visits to gay bars, drinking, illicit sexual conduct, and prior arrests); State v. Rounsaville, 701 S.W.2d. 817 (Tenn. 1985) (reversing forgery conviction based upon admission of testimony from bank teller that defendant had attempted unsuccessfully to pass a forged instrument on another occasion); State v. Fleece, 925 S.W.2d 558 (Tenn. Crim. App. 1995) (reversing DUI conviction where negligible probative value of defendant’s restricted license at the time of the offense was outweighed by the prejudicial suggestion that defendant had a prior DUI conviction); State v. Luellen, 867 S.W.2d 736, 741 (Tenn. Ct. App. 1992) (reversing convictions for possession with intent to distribute cocaine due to introduction of three prior acts of drug possession. Court found prior offenses admitted for the proper purpose of proving defendant’s knowledge and intent, which were contested, but found that the evidence failed the balancing test where the probative value of the other acts evidence was diminished by other evidence of knowledge and intent, thus making prejudice outweigh probative value).

¹⁰⁹ See State v. Gilley, 173 S.W.3d 1, 6 (Tenn. 2005) (“the existence of a material issue at trial and the balancing of the probative value and unfair prejudice—require consideration of the evidence presented at trial. Thus, trial courts must be cognizant that if pretrial evidentiary rulings are made, they may need to be reconsidered or revised based on the evidence presented at trial.”).

Two states have gone one step further and have adopted a balancing test that favors exclusion of other acts evidence by requiring the proper probative value of such evidence to “outweigh” any unfair prejudice. In Pennsylvania and Virginia, therefore, the appropriate probative value of a criminal defendant’s uncharged acts must be stronger than the unfair propensity inferences likely to be drawn from the evidence. Because this balancing sets exclusion as the default when both sides of the scale are equally weighted, it offers more protection against improper use of other acts evidence.

- Pennsylvania

The Pennsylvania Evidence Rules were adopted in 1998, enshrining Pennsylvania common law evidentiary principles in a code.¹¹⁰ Pennsylvania Rule of Evidence 404(b) is very similar to its federal counterpart with one major difference.¹¹¹ Pennsylvania Rule 404(b)(2) demands that other acts evidence presented in a criminal case clear a higher hurdle than that required in federal cases, providing for more stringent balancing, as follows:

(b) Crimes, Wrongs or Other Acts.

(1) Prohibited Uses. Evidence of a crime, wrong, or other act is not admissible to prove a person's character in order to show that on a particular occasion the person acted in accordance with the character.

(2) Permitted Uses. This evidence may be admissible for another purpose, such as proving motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake, or lack of accident. *In a criminal case this evidence is admissible only if the probative value of the evidence outweighs its potential for unfair prejudice.*

Therefore, the Pennsylvania Rule favors exclusion of other acts evidence in criminal cases unless legitimate probative value eclipses any risk of prejudice to the defendant.

This rule of “exclusion” notwithstanding, the Pennsylvania cases reveal a steady flow of other acts evidence admitted against criminal defendants. Such evidence is routinely admitted to show common plan, intent or modus operandi.¹¹² And the Pennsylvania cases reveal that

¹¹⁰ Commonwealth v. Horvath, 781 A.2d 1243 (Pa. Super. 2001).

¹¹¹ In addition to providing for more protective balancing in criminal cases of other acts evidence, Pennsylvania Rule 404(b) does not require criminal defendants to request notice of other acts evidence and imposes a general obligation on the prosecution to provide reasonable notice in advance of trial (unless excused for good cause) of the “general nature of any such evidence the prosecutor intends to offer at trial.” PA. R. EVID. 404(b)(3).

¹¹² See e.g., Commonwealth v. Hicks, 156 A.3d 1114 (Pa. 2017)(evidence of defendant’s prior assaults on other women constituted admissible other crimes evidence); Commonwealth v. Johnson, 160 A.3d 127, 145 (Pa. 2017) (rejecting trial court’s application of “identity” purpose for proving defendant’s prior drug partnership, but affirming admission of act where it was necessary to prove charged offense of murder in the course of a heroin robbery); Commonwealth v. Arrington, 86 A.3d 831 (Pa. 2014) (probative value of evidence of defendant's prior crimes committed against three other girlfriends to show common scheme to control girlfriends through violence and intimidation, outweighed prejudicial effect to defendant from admission of this evidence); Commonwealth v. Boczkowski 846 A.2d 75 (Pa. 2004) (affirming admission of evidence regarding murder of wife prior to victim of charged murder to show absence of mistake or accident).

other acts evidence can survive the more protective balancing test even in the absence of “active contest” by the defendant.¹¹³

Although the Pennsylvania opinions generally do not emphasize the more restrictive balancing test, it has been utilized to exclude other acts evidence against Pennsylvania defendants in some cases. In *Commonwealth v. Santiago*, the prosecution in a murder case was permitted to introduce evidence that the defendant moved up a scheduled trip and left the country shortly after the alleged murder in an effort to show flight and consciousness of guilt.¹¹⁴ In addition, the government sought to prove that the defendant failed to inform his parole officer of the change in his plans, suggesting that he was in such a hurry to flee that he was willing to violate the terms of his parole.¹¹⁵ The trial court refused to allow such other acts evidence and the appellate court upheld that ruling, relying on the protective balancing test in Pennsylvania Rule 404(b)(2). Specifically, the court found that the probative value of the defendant’s parole violation in demonstrating consciousness of guilt was insufficient to outweigh the likely prejudice that would result from the jury learning that the defendant was already “on parole.”¹¹⁶ Therefore, even though the government’s proffered purpose in offering this other act evidence did not depend upon a propensity inference about the defendant’s criminal tendencies for its value, it could not survive heightened balancing.¹¹⁷

- Virginia

Virginia’s evidence rules have long been a product of its common law. In 2012, however, the Virginia Supreme Court enacted a body of evidence rules designed to bring coherence to the Virginia law of evidence.¹¹⁸ Although the Virginia Rules bear a close resemblance to the Federal Rules of Evidence in many respects, they include some important distinctions.¹¹⁹ One place where the Virginia Rules depart slightly from federal practice is with respect to admissibility of other acts evidence. The Virginia Rule applies a more rigorous balancing standard to such evidence, as follows:

Virginia Supreme Court Rule 2:404

(b) Other Crimes, Wrongs, or Acts. Except as provided in Rule 2:413 or by statute, evidence of other crimes, wrongs, or acts is generally not admissible to prove the character trait of a person in order to show that the person acted in conformity therewith. *However, if the legitimate probative value of such proof outweighs its incidental prejudice, such evidence is admissible if it tends to prove any relevant fact pertaining to the offense charged, such as*

¹¹³ See *Commonwealth v. Boczkowski*, 846 A.2d 75 (Pa. 2004) (“the defendant does not have to actually forward a formal defense of accident, or even present an argument along those lines, before the Commonwealth may have a practical need to exclude the theory of accidental death”).

¹¹⁴ *Commonwealth v. Santiago*, 822 A.2d 716, 728 (Pa. Super. 2003).

¹¹⁵ *Id.*

¹¹⁶ *Id.*

¹¹⁷ *Id.*; see also *Commonwealth v. Horvath*, 781 A.2d 1243 (Pa. Super. 2001) (conduct underlying previous convictions based upon the events that formed the basis for charged offense was admissible, but fact of “conviction” arising out of that conduct was more prejudicial than probative and could not be admitted).

¹¹⁸ Jeffrey Bellin, *The Virginia and Federal Rules of Evidence: A Concise Comparison with Commentary* (2015).

¹¹⁹ *Id.*

where it is relevant to show motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake, accident, or if they are part of a common scheme or plan.

The common law of Virginia from which this Rule was recently adapted reflects a cautious approach to other acts evidence. The Virginia courts analyze common plan and scheme evidence narrowly, insist upon truly idiosyncratic evidence to show identity, and regulate the slippery purpose of intent with care.¹²⁰ For example, *Donahue v. Commonwealth* was a prosecution for possession with intent to distribute marijuana and PCP.¹²¹ At trial, the defendant argued that the marijuana and PCP found in her apartment belonged to her husband and that she was not involved in its distribution. Over her objection, and much like many federal district courts, the Virginia trial court admitted her prior conviction for distribution of PCP to establish her “intent” to distribute drugs on the charged occasion. The Virginia Supreme Court reversed her conviction, however, finding the admission of her previous drug sale erroneous where its probative value depended on her propensity to sell drugs and did not outweigh its prejudice to her.¹²² Although decisions to exclude other acts evidence like *Donahue* rarely rest exclusively on the heightened balancing test, that test reflects the overall tenor of the cautious approach to other acts evidence in Virginia.

C. Active Contest Requirement

Some recent federal opinions have suggested that other acts evidence should not be admitted against a criminal defendant unless that defendant “actively contests” an issue to which the other acts evidence is probative. Although opinions in many states discuss the importance of assessing trial disputes in considering the admissibility of other acts evidence, New Jersey Rule of Evidence 404(b) expressly requires a “dispute” regarding issues proved by other acts evidence, as follows:

(b) Other Crimes, Wrongs, or Acts. Except as otherwise provided by Rule 608(b), evidence of other crimes, wrongs, or acts is not admissible to prove the disposition of a person in order to show that such person acted in conformity therewith. Such evidence may be admitted for other purposes, such as proof of motive, opportunity, intent, preparation, plan, knowledge, identity or absence of mistake or accident *when such matters are relevant to a material issue in dispute.*¹²³

¹²⁰ See e.g., *Walker v. Commonwealth*, 770 S.E.2d 197 (Va. 2015) (analogizing Rule 2:404(b) to rules for joinder of crimes and finding a series of four drug sales involving identical participants in same neighborhood over a two week period *not* part of a “common scheme or plan”); *Pryor v. Commonwealth*, 661 S.E.2d 820 (Va. 2008) (erroneous to allow videotape of later drug transaction to go to jury room to prove identity in connection with earlier drug sale; even assuming the later transaction was somehow relevant to corroborate defendant’s visits to the location, its probative value could not overcome prejudice to defendant); *Scates v. Commonwealth*, 553 S.E.2d 756, 763 (Va. 2001) (reversing conviction for burglary with unforced entry where prosecution introduced testimony that the defendant used credit cards to break into “homes”; there was no use of a credit card in the charged offense and the testimony prejudiced the defendant by suggesting multiple other offenses).

¹²¹ *Donahue v. Commonwealth*, 300 S.E.2d 768 (Va. 1983).

¹²² *Id.*

¹²³ N.J. Evid. R. 404(b) (emphasis added).

The Editor’s comments to the Rule explain that this language was added to New Jersey’s version of Rule 404(b) to emphasize that ordinarily other crimes evidence is admissible only to prove “some other fact in issue,” and not a general disposition to commit crimes or other wrongs.¹²⁴

New Jersey courts characterize Rule 404(b) as one of “exclusion” and have noted that the approach to such evidence in the federal courts is more “permissive” than the New Jersey approach.¹²⁵ The New Jersey Supreme Court has set out a four-part test that a proponent of such evidence must satisfy:

1. The evidence of the other crime must be admissible as relevant to a material issue;
2. It must be similar in kind and reasonably close in time to the offense charged;
3. The evidence of the other crime must be clear and convincing; and
4. The probative value of the evidence must not be outweighed by its apparent prejudice.¹²⁶

The New Jersey Supreme Court has emphasized that the material issue “must be genuinely disputed” under the first prong of the analysis¹²⁷ and has explained what it means for a material issue to be in dispute:

In determining whether 404(b) evidence bears on a material issue, the Court should consider whether the matter was projected by the defense as arguable before trial, raised by the defense at trial, or was one that the defense refused to concede. Further, the other-crimes evidence must be necessary for the proof of the disputed element. Indeed, in assessing the fourth prong, courts should consider whether the matter can be proved adequately by other evidence.¹²⁸

The New Jersey appellate courts, therefore, routinely examine the arguments presented at trial to determine whether admitted uncharged acts evidence helped to resolve issues genuinely in dispute. Many New Jersey opinions find a sufficient trial dispute by the defense to satisfy the first requirement of the test.¹²⁹ In several cases, however, the New Jersey Supreme Court has

¹²⁴ Editor’s Comments to N.J. Evid. Rule 404.

¹²⁵ *State v. Cofield*, 605 A.2d 230, 233 (N.J. 1992).

¹²⁶ *Id.* Although this formulation suggests more protective balancing akin to that required in Massachusetts, Minnesota, and Tennessee, New Jersey courts have not clearly articulated an intent to enhance the balancing standard and make inconsistent references to the balancing standard.

¹²⁷ *Id.* at 235.

¹²⁸ *State v. P.S.*, 997 A.2d 163, 180 (N.J. 2010) (discussing New Jersey’s restrictive approach to other acts evidence and reversing sexual assault conviction based upon trial court’s erroneous decision to permit evidence of very different sexual assault against a different victim) (citing *State v. Stevens*, 558 A.2d 833 (1989) and *State v. Marrero*, 691 A.2d 293 (1997)).

¹²⁹ *State v. Garrison*, 155 A.3d 996, 1003-04 (N.J. 2017) (notwithstanding defendant’s argument that his state of mind was “not genuinely contested” because he maintained that no sexual assault occurred, trial court properly admitted evidence of uncharged strip poker game with child victim in another state in sexual assault prosecution where defendant actively argued at trial that the child victim was the “aggressor” and that any inappropriate actions originated with her); *State v. Lykes*, 933 A.2d 1274 (N.J. 2007) (trial court did not err in permitting prosecution to cross-examine defendant concerning prior uncharged handling of cocaine where “defendant steadfastly urged that the sole issue in the case was whether he knew that the vials contained cocaine”); *State v. G.S.*, 678 A.2d 1092 (N.J. 1996)(evidence of prior sexual abuse of child in Monmouth County was relevant to dispute regarding whether the

reversed convictions due to the admission of uncharged bad acts not necessary to resolve any disputed issue at trial.¹³⁰ That said, the court has not always required a defendant to “actively” dispute a particular element to support admissibility of uncharged misconduct. In *State v. Stevens*, a police officer was charged with an unlawful search of a female motorist for purposes of sexual gratification.¹³¹ Over a defense objection, the prosecution was permitted to introduce evidence of prior uncharged instances in which the officer searched or sexually assaulted a female using his authority as a public officer in order to demonstrate the defendant’s “intent.” The New Jersey Supreme Court affirmed, notwithstanding the defendant’s failure to argue mistake or to actively dispute his intent:

Despite defendant's denial that the searches occurred, the State was required to prove both their occurrence and defendant's unlawful purpose in conducting the searches. Thus, defendant's unlawful purpose was a genuine issue in the case. Defendant's denial that the searches occurred did not relieve the State of its burden to prove that his purpose was to gratify his sexual desires, and not merely to discharge his official duties.¹³²

Analysis in *State v. G.V.*, however, suggested that the New Jersey Supreme Court was more concerned about “active contest” than it was about the prosecution’s reliance on propensity inferences.¹³³ In that case, the court found that the trial court erred in allowing testimony from the older sister of the victim in a sexual assault prosecution that she too was assaulted by the defendant because there was no dispute about “intent” or “mistake”:

[I]n a case involving a horrendous course of patent sexual depravity which continued for years, there was no defense that atrocious acts were simply misinterpreted expressions of fatherly affection ... Nor could it be fairly said that if the defendant committed the acts in question, there was a material factual dispute with regard to whether he was seeking

sexual contacts with same child in Sussex County were “inadvertent, accidental or unplanned” and to explain child’s delay in reporting abuse where defendant challenged her credibility on that basis); *State v. Oliver*, 627 A.2d 144 (N.J. 1993) (permitting evidence of uncharged assaults on women at defendant's home when others were present downstairs to prove feasibility of occurrence in instant case; defense suggested that assault would not be possible without other occupants of house overhearing it); *State v. Parker*, 2007 WL 1425486 (N.J. App. 2007) (affirming admission of distinctive physical abuse of girlfriend in prosecution for manslaughter of child where the question of whether defendant inflicted injuries on the child inadvertently, while disciplining him, was material to the issues in dispute); *State v. Cusick*, 530 A.2d 806 (N.J. App. 1986) (holding other sexual assaults admissible at trial to prove lack of mistake where defendant argued sexual contact with victim was inadvertent).

¹³⁰ See *State v. J.M.*, 137 A.3d 490 (N.J. 2016) (in prosecution of massage therapist for sexually assaulting a customer, error to allow previous customer’s testimony about a similar sexual assault; “Defendant does not argue that the alleged sexual assault of E.S. was consensual or accidental; rather, he maintains that the sexual assault never occurred. As such, A.W.’s testimony is inadmissible to establish motive, intent, or absence of mistake because defendant's state of mind is not a “genuinely contested” issue in this case.”); *Carlucci v. State*, 85 A.3d 965, 976 (N.J. 2014) (reversing conviction because defendant’s statements to officer revealing that she had been in trouble for crack cocaine in the past should not have been admitted under Rule 404(b) where the defendant did not dispute her knowledge of cocaine at trial or the fact that confiscated baggies field tested positive for cocaine); *State v. G.V.*, 744 A.2d 137 (N.J. 2000)(trial court erred in allowing testimony from older sister of victim in sexual assault prosecution that she too was assaulted by the defendant where there was no dispute about “intent” or “mistake”).

¹³¹ *State v. Stevens*, 558 A.2d 833 (N.J. 1989).

¹³² *Id.*

¹³³ *State v. G.V.*, 744 A.2d 137 (N.J. 2000).

sexual gratification. Neither absence of intent or accident or inadvertence or motive were genuinely at issue as to the main crime of sexual assault.¹³⁴

The court went on to advise that the older sister's testimony would be admissible during the retrial of the case if the defendant specifically raised a "vendetta defense," accusing the victim of fabricating allegations due to her anger over her parents' divorce. The dissent disagreed that such a dispute raised by the defense would justify admission of the prior offense, arguing that the assault on the victim's older sister would undermine the victim's vendetta or bias only by suggesting the defendant's propensity to commit unlawful sexual assaults on his children.¹³⁵ The express requirement of a "material issue in dispute" has resulted in detailed analysis of trial disputes in evaluating admissibility of other acts evidence in New Jersey.

D. Inextricably Intertwined Provisions

As the Committee has previously seen, several federal courts have sought to restrict the admission of uncharged misconduct evidence by limiting or eliminating the use of the vague "inextricably intertwined" doctrine to circumvent Rule 404(b) analysis.¹³⁶ Although some states similarly have attempted to restrict this doctrine through judicial opinions, a few states have incorporated language into their evidence rules designed to distinguish "other" acts requiring Rule 404(b) analysis from related or inextricably intertwined acts that need not survive such scrutiny.¹³⁷

1. Kentucky

Kentucky Rule 404(b)(2) expressly provides for the admissibility of inextricably intertwined acts, as follows:

(b) Other crimes, wrongs, or acts. Evidence of other crimes, wrongs, or acts is not admissible to prove the character of a person in order to show action in conformity therewith. It may, however, be admissible:

(1) If offered for some other purpose, such as proof of motive, opportunity, intent, preparation, plan, knowledge, identity, or absence of mistake or accident; or

¹³⁴ *Id.*

¹³⁵ *Id.*

¹³⁶ See *United States v. Green*, 617 F.3d 233, 246-47 (3d Cir. 2010); *United States v. Gorman*, 613 F.3d 711, 719 (7th Cir. 2010); *United States v. Bowie*, 232 F.3d 923, 927 (D.C. Cir. 2000).

¹³⁷ Michigan has rejected a "*res gestae*" or inextricably intertwined exception to its Rule 404(b) through case law, as have several federal circuits. See *People v. Jackson*, 869 N.W.2d 253, 274 (Mich. 2015) ("As the plain language of the rule makes clear, MRE 404(b) applies to evidence of 'crimes, wrongs, or acts' other than the 'conduct at issue in the case' that may give rise to a character-to-conduct inference."). Many states, however, recognize something akin to the doctrine in their case law. For example, Minnesota allows admission of "immediate episode evidence" outside the strictures of its Rule 404(b) counterpart: "Immediate-episode evidence is admissible 'where two or more offenses are linked together in point of time or circumstances so that one cannot be fully shown without proving the other, or where evidence of other crimes constitutes part of the [events at issue].'" *State v. Washington-Davis*, 867 N.W.2d 222 (Minn. Ct. App. 2015) (quoting *State v. Riddley*, 776 N.W.2d 419, 425 (Minn. 2009)) (admitting evidence of violence and financial control over defendant's victims in prostitution scheme).

(2) If so inextricably intertwined with other evidence essential to the case that separation of the two (2) could not be accomplished without serious adverse effect on the offering party.

According to the Kentucky Supreme Court, “[t]he key to understanding this exception is the word inextricably. The exception relates only to evidence that must come in because it is so interwoven with the evidence of the crime charged that its introduction is unavoidable.”¹³⁸ This admonition notwithstanding, the Kentucky courts frequently admit uncharged acts of criminal defendants through the inextricably intertwined provision, noting that KRE 404(b)(2) is “intended to be flexible enough to permit the prosecution to present a complete, unfragmented, unartificial picture of the crime committed by the defendant, including necessary context, background and perspective.”¹³⁹ The Kentucky Supreme Court has relied heavily on the federal precedent admitting inextricably intertwined acts outside the strictures of Rule 404(b) to justify

¹³⁸ Major v. Commonwealth, 177 S.W.3d 700, 707 (Ky. 2005) (quoting Funk v. Commonwealth, 842 S.W.2d 476, 480 (Ky.1993)).

¹³⁹ Norton v. Commonwealth, 890 S.W.2d 632, 638 (Ky.App.1994) (citations omitted) (In trial for trafficking in LSD, admission of portions of audiotape concerning proposed sale of marijuana did not violate rule against admission of evidence of other crimes, wrongs, or acts; negotiations regarding marijuana were inextricably intertwined with negotiations regarding LSD because “[i]n this instance, separation of the evidence as contemplated by Norton, if not impossible in the first place, would have seriously and adversely affected the Commonwealth’s ability to present the case to the jury”); *see also* Keene v. Commonwealth, 2016 WL 7665438 (Ky. 2016) (defendant’s uncharged assaultive behavior was inextricably intertwined with the evidence of rape because it explained inconsistency in victim’s statements highlighted by defense); Johnson v. Commonwealth, 2014 WL 4160215 (Ky. 2014) (collateral crimes evidence of defendant’s conviction for trafficking in marijuana was admissible in case where defendant stood accused of manufacturing methamphetamine because it arose from the police search of a hotel room prior to the discovery of the methamphetamine manufacturing laboratory at his residence and was inextricably intertwined with instant case); Kerr v. Commonwealth, 400 S.W.3d 250 (Ky. 2013) (trial court did not abuse its discretion in admitting evidence that police had two arrest warrants for defendant that were unrelated to charged drug trafficking offenses because they were inextricably intertwined with police surveillance of defendant’s hotel room, which led to defendant being charged with drug trafficking offenses; “KRE 404(b)(2) allows the Commonwealth to present a complete, unfragmented picture of the crime and investigation[,]” including a “picture of the circumstances surrounding how the crime was discovered”); Clark v. Commonwealth, 267 S.W.3d 668 (Ky. 2008) (trial court did not err in permitting mother of minor victims in sexual offense prosecution to testify that she did not immediately confront defendant upon discovering the abuse because he had physically assaulted her in the past and she was afraid of him; the setting and context of the events surrounding the mother’s discovery of the sexual abuse, and her reasons for not contemporaneously confronting the defendant about it, were germane to the overall sequence of events surrounding the crimes and to the events which led to them being reported to authorities and were inextricably intertwined with other evidence critical to the case); Mackin v. Commonwealth, 2008 WL 4291605 (Ky. 2008) (pornographic books found in defendant’s home were inextricably intertwined with other evidence in rape prosecution where the defendant allegedly used the books as a vehicle to assuage the victim’s concerns about incest and as a springboard to further their sexual relationship); Major v. Commonwealth, 177 S.W.3d 700, 707 (Ky. 2005) (evidence that murder defendant was incarcerated at the time of his telephone confession to his father was admissible in murder prosecution as being “inextricably intertwined” with other evidence essential to the case; defendant’s incarceration provided the setting and context within which police investigation took place and within which defendant called his father and confessed); Furnish v. Commonwealth, 95 S.W.3d 34, 46 (Ky. 2002) (defendant’s use of crack cocaine following murder showed that he used victim’s ATM card to obtain money to purchase the drugs; clearly, such evidence is intertwined with the evidence pertaining to the other charges). *See also* Price v. Commonwealth, 31 S.W.3d 885 (Ky. 2000) (upholding trial court’s decision to try murder and rape charges jointly where evidence of the defendant’s prior and subsequent sexual abuse of his step-daughter was so inextricably connected with the issues concerning his motive and intent to kill his wife that the evidence would have been admissible even in a separate trial for murder).

this approach.¹⁴⁰ In only a few cases have Kentucky courts rejected reliance on the inextricably intertwined provision and found error in the admission of uncharged acts admitted on that basis.¹⁴¹ The codification of the inextricably intertwined “exception” to the prohibition on other acts evidence, therefore, appears to have increased reliance on the doctrine in Kentucky.

2. Louisiana

Louisiana Rule 404(B) also expressly permits “integral” uncharged acts to be admitted through the Louisiana provision governing other crimes, wrongs, or acts, as follows:

B. Other crimes, wrongs or acts.

(1) Except as provided in Article 412, evidence of other crimes, wrongs, or acts is not admissible to prove the character of a person in order to show he acted in conformity therewith. It may, however, be admissible for other purposes, such as proof of motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake or accident, provided that upon request by the accused, the prosecution in a criminal case shall provide reasonable notice in advance of trial, of the nature of any such evidence it intends to introduce at trial for such purposes, *or when it relates to conduct that constitutes an integral part of the act or transaction that is the subject of the present proceeding.*¹⁴²

The Louisiana Supreme Court has explained that the additional basis for admitting uncharged acts was codified to replace the doctrine of *res gestae* that formerly governed admissibility of uncharged acts connected with the charged offense:

[U]nder La. C.E. art. 404(B)(1) evidence of other crimes, wrongs or acts may be introduced when it relates to conduct, formerly referred to as *res gestae*, that ‘constitutes an integral part of the act or transaction that is the subject of the present proceeding.’ *Res gestae* events constituting other crimes are deemed admissible because they are so nearly connected to the charged offense that the state could not accurately present its case without reference to them. A close proximity in time and location is required between the charged offense and the other crimes evidence ‘to insure that “the purpose served by admission of other crimes evidence is not to depict defendant as a bad man, but rather to

¹⁴⁰ See *Kerr v. Commonwealth*, 400 S.W.3d 250 (Ky. 2013) (quoting federal cases and treatises supporting admissibility of inextricably intertwined acts).

¹⁴¹ See *Gonzalez v. Commonwealth*, No. 2011-SC-00466, 2013 WL 1188020 (Ky. 2013) (defendant’s inflammatory threats against police officer, who was not involved in investigating charged murder, during interview were not inextricably intertwined with proof of shooting and could have been redacted; error harmless); *Major v. Commonwealth*, 177 S.W.3d 700, 707 (Ky. 2005) (reversing defendant’s conviction for murder of his wife, due, in part, to testimony of his daughter as to her later sexual abuse; though terrible, it had no relevance to the issues involved in the murder; nor could it be said to be “inextricably intertwined” with the other evidence).

¹⁴² La. C.E. art. 404(B)(1)(emphasis added). Pretrial notice by the prosecution of its intention to use evidence forming part of the *res gestae* is not required. *State v. Catchings*, 440 So.2d 153 (La. App. 1983); *State v. Jackson*, 450 So.2d 621 (La. 1984).

complete the story of the crime on trial by proving its immediate context of happenings near in time and place.¹⁴³

Notwithstanding this language that suggests a cautious approach to the doctrine, the court has also characterized the doctrine in Louisiana as a “broad” one that covers “not only spontaneous utterances and declarations made before or after the commission of the crime, but also testimony of witnesses and police officers pertaining to what they heard or observed during or after the commission of the crime if a continuous chain of events is evident under the circumstances.”¹⁴⁴ In *State v. Taylor*, the court found that the integral acts doctrine applied to allow evidence of a seven state crime spree, involving armed robbery and the shooting of a police officer, that followed the charged murder of a car salesman. Although the court acknowledged that there was not close proximity in time and location between the charged murder and the subsequent uncharged crime spree, the court found that defendant’s argument that he lacked the requisite intent to support his first degree murder charge required the prosecution to complete the story and demonstrate the full context in which the charged murder took place.¹⁴⁵

In the earlier case of *State v. Colomb*, the Louisiana Supreme Court reinstated a conviction reversed by the Louisiana Court of Appeals, finding that the appellate court had applied an “unduly restrictive” approach to integral acts evidence.¹⁴⁶ In that case, the trial court in a felon-in-possession prosecution permitted evidence regarding drugs possessed by the defendant at the time he was apprehended in a van in possession of the weapon. The appellate court reversed, holding that the evidence of drug possession did not relate to conduct forming an integral part of the charged offense, but that, even assuming defendant’s drug possession constituted part of the *res gestae* or an integral component of his firearms possession, it could discern “no relevant reason, other than prejudice for its admission into evidence.”¹⁴⁷ The Louisiana Supreme Court disagreed because the defendant claimed at trial that the van and the gun belonged to his wife, that he had borrowed the vehicle to run some morning errands, and that he had not realized she had placed the weapon in the glove compartment of the vehicle until he braked suddenly at the order of the officers. As a result of the defendant’s argument that he lacked dominion and control or knowledge of the weapon, the court held that evidence of the defendant’s marijuana possession at the time of his arrest allowed jurors to draw necessary inferences based upon the defendant’s contemporaneous conduct and reinstated the conviction.¹⁴⁸

¹⁴³ *State v. Taylor*, 838 So.2d 729, 741 (2003) (quoting *State v. Colomb*, 747 So.2d 1074, 1076 (La. 1999)).

¹⁴⁴ *Id.*

¹⁴⁵ *Id.* at 743 (the evidence of defendant’s uncharged crime spree “placed the killing of the victim in its proper context, *i.e.*, as the starting point of grand scheme to rob the bank in Lamoni, Iowa, and then to make a run for the Mexican border, as if the entire episode were an out-take from defendant’s favorite movie, *Natural Born Killers*.”).

¹⁴⁶ *State v. Colomb*, 747 So.2d 1074, 1076 (La. 1999).

¹⁴⁷ *Id.* at 1075.

¹⁴⁸ *Id.* at 1077. The court also noted, without resolving, a conflict in the Louisiana cases concerning the applicability of the Rule 403 balancing test to integral acts evidence. *Id.*; see also *State v. Edwards*, 406 So.2d 1331, 1350–1351 (La.1981)(affirming trial court’s admission of testimony as part of the *res gestae* in defendant’s trial for murder that on the same night, the defendant suggested they “go make a hit,” that defendant stole wine from a grocery store; that they followed another woman to a college campus after the murder in an attempt to snatch her purse; and that they went to a convenience store looking for still another “hustle” until the appearance of a police officer terminated the night’s activities); *State v. Brewington*, 601 So.2d 656 (La. 1992)(reinstating murder conviction after appellate court

Although many of the uncharged acts admitted through the Louisiana “integral acts” provision would likely fit within permissible purposes identified by the Rule, such as knowledge, intent, motive, common plan or scheme, some might not.¹⁴⁹

3. Texas

Texas Evidence Rule 404(b) exempts evidence of “extraneous acts” from its notice requirement where those acts arise “in the same transaction” as the charged offense, as follows:

(b) Crimes, Wrongs, or Other Acts.

(1) *Prohibited Uses*. Evidence of a crime, wrong, or other act is not admissible to prove a person's character in order to show that on a particular occasion the person acted in accordance with the character.

(2) *Permitted Uses; Notice in Criminal Case*. This evidence may be admissible for another purpose, such as proving motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake, or lack of accident. *On timely request by a defendant in a criminal case, the prosecutor must provide reasonable notice before trial that the prosecution intends to introduce such evidence--other than that arising in the same transaction--in its case-in-chief.*

In addition to being exempt from the Texas notice obligation, “same transaction” evidence is frequently admitted in criminal cases in Texas outside the limits of Rule 404(b). The “same transaction” doctrine is described by the Texas courts in this manner:

extraneous offense evidence may also be admissible as same-transaction contextual evidence, where “several crimes are intermixed, or blended with one another, or connected so that they form an indivisible criminal transaction. In that situation, ‘the jury is entitled to know all [the] relevant surrounding facts and circumstances of the charged offense; an offense is not tried in a vacuum. Evidence admitted under the same transaction exception is considered general evidence to be used for all purposes and does

reversed due to admission of “other bad acts” evidence; trial court did not err in allowing evidence that the accused possessed crack cocaine and a .357 caliber pistol (not used in the shooting) less than two hours before the victim’s death because the evidence, “formed an inseparable part of the state's substantial circumstantial evidence linking him to the shooting,” and because evidence of cocaine possession was “an integral part of the act or transaction that was the subject of the present proceeding.”); *State v. Argo*, 476 So.2d 409, 412 (La. App. 1985) (evidence of assault and car thefts committed during seven or eight hours before attempted murder of police officer was admissible as *res gestae* when crimes were so closely related and intertwined that the state could not have presented complete story of the charged offense without them).

¹⁴⁹ See *State v. Sharp*, 810 So.2d 1179, 1196 (La. App. 2002) (arson of unoccupied residence hours before shooting and at a different location was admissible in homicide prosecution as integral part of events leading up to killing); *State v. Bilbo*, 719 So.2d 1134, 1139 (La. App. 1998) (La. App. 1998) (in defendant’s prosecution for kidnaping and rape of Louisiana woman, evidence that defendant had stolen a car from a Florida car dealership six days earlier by threatening car salesman and had driven the stolen car to California and was involved in an accident in Louisiana just before kidnaping victim who stopped to see if she could assist defendant and his companions with car trouble, was admissible conduct constituting an “integral part” of the charged kidnaping); *State v. Camp*, 580 So.2d 957, 960 (La.App. 5th Cir.1991)(in prosecution for simple burglary, reference to knife taken from defendant after his apprehension was admissible as “integral part” of burglary; even though carrying concealed weapon was not element of that offense).

not require a limiting instruction. “[S]ame-transaction contextual evidence is admissible only when the [charged] offense would make little or no sense without also bringing in [the same-transaction contextual] evidence.” In other words, same-transaction contextual evidence is admissible only “where such evidence is *necessary* to the jury's understanding of the instant offense.”¹⁵⁰

Occasionally, extraneous acts evidence offered under a “same transaction” theory is rejected.¹⁵¹ Texas courts frequently admit other bad acts evidence under this doctrine without requiring notice or limiting instructions, however.¹⁵²

¹⁵⁰ Beltran v. State, 2017 WL 943437 (Tex. App. 2017) (quotations omitted).

¹⁵¹ Rogers v. State, 853 S.W.2d 29, 34 (Tex. Crim. App. 1993)(evidence of the defendant’s possession of marijuana was not admissible same transaction evidence in a case where defendant was prosecuted for two burglaries and for possession of methamphetamine; evidence of marijuana possession at the time of arrest was not *necessary* to the jury's understanding).

¹⁵² See Moreno v. State, 721 S.W.2d 295, 301(Tex. Crim. App. 1986) (in defendant’s prosecution for murder of state trooper during traffic stop, permissible to introduce evidence that the defendant killed his brother and sister-in-law one-half hour prior to charged murder of trooper; “[i]t is well settled that where one offense or transaction is one continuous episode, or another offense or transaction is a part of the case on trial or blended or closely interwoven therewith, proof of all the facts is proper.”)(quoting Mitchell v. State, 650 S.W.2d 801, 811 (Tex.Cr.App.1983)); Prible v. State, 175 S.W.3d 724, 731-32 (Tex. Crim. App. 2005)(although defendant was charged only with causing the deaths of two adults, the trial court properly permitted the State to introduce evidence that their three children also died from smoke inhalation caused by a fire defendant set to conceal evidence; “the murders of Steve and Nilda and the deaths, by smoke inhalation, of their three children were so connected that they formed an indivisible criminal transaction.”); Devoe v. State, 354 S.W.3d 457, 470 (Tex. Crim. App. 2011)(where defendant was charged with murders of two teenage girls, evidence of his murder of three others, assault of another, theft of a weapon and multiple car thefts was all admissible same transaction evidence where the charged murders took place during a three-day crime spree and the defendant did not rest between incidents; the trial court was within its discretion in concluding that “[t]he evidence is so intermingled between all of the events that occurred it would just—it would be impossible to do so without leaving a hole, leaving a gaping hole in the State's case.”); Beltran v. State, 2017 WL 943437 (Tex. App. 2017) (evidence that defendant was dealing drugs was admissible same-transaction evidence in prosecution for sexual assault of a minor where evidence was offered to show that victim's mother allowed defendant to sexually assault victim in exchange for cocaine; “[e]xtraneous offense evidence may also be admissible as same-transaction contextual evidence, where several crimes are intermixed, or blended with one another, or connected so that they form an indivisible criminal transaction.”).

TAB 6

TAB 6A

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Memorandum To: Advisory Committee on Evidence Rules
From: Daniel J. Capra, Reporter
Re: Proposed Amendment to Rule 106
Date: October 1, 2017

Judge Paul Grimm, a District Judge from D. Md., a former member of the Civil Rules Committee, and a renowned expert on evidence, requests the Evidence Rules Committee to consider possible amendments to Rule 106. The suggestions for change are set forth with Judge Grimm's typical thoroughness in his opinion in *United States v. Bailey*, which is attached to this memorandum.

Rule 106, known as the rule of completeness, currently provides as follows:

Rule 106. Remainder of or Related Writings or Recorded Statements

If a party introduces all or part of a writing or recorded statement, an adverse party may require the introduction, at that time, of any other part — or any other writing or recorded statement — that in fairness ought to be considered at the same time.

The problems raised by Judge Grimm arise mostly in criminal cases, and in a relatively common scenario. The defendant has made a hearsay statement confessing to the crime, but the statement also contains assertions that would be beneficial to the defendant's case. The government seeks to admit the inculpatory part of the statement as a statement of a party-opponent under Rule 801(d)(2)(A). That step is unobjectionable. But then the defendant seeks to admit the exculpatory part of the statement, and the government lodges a hearsay objection. Rule 801(d)(2)(A) is not applicable, as that exemption covers only the statements made by him that the prosecution seeks to offer *against* him.¹ The question then becomes whether the rule of

¹ See, e.g., *United States v. Sanjar*, 853 F.3d 190, 204 (5th Cir. 2017): "When offered by the government, a defendant's out-of-court statements are those of a party-opponent and thus not hearsay. Rule 801(d)(2)(A). When

completeness can be invoked to require admission of the defendant's exculpatory statements. As Judge Grimm notes, the courts are in dispute on whether the rule of completeness can be helpful to the defendant to overcome the hearsay objection. And there are further complications if the statement is oral rather than written or recorded, because Rule 106 does not appear by its terms to apply to oral unrecorded statements; the courts are in dispute about how the rule of completeness applies to such statements. A further dispute is whether the common-law rule of completeness (which applied to oral statements and allowed admission of fairly completing statements even if they were hearsay) remains applicable, given the Supreme Court's recognition that Rule 106 is only a "partial codification" of the common-law rule. *Beech Aircraft Corp. v. Rainey*, 488 U.S. 153, 171 (1988).

This memorandum is divided into four parts. Part One sets forth the two basic problems of application of Rule 106 that might be the subject of an amendment. Part Two discusses state variations. Part Three discusses the merit of an amendment, or a group of amendments, to Rule 106. Part Four sets forth drafting alternatives.

Given the thoroughness of Judge Grimm's analysis, it would be mere duplication to set forth all of the background cases and scholarship in this memo. The reader is referred to *Bailey* for all of that. This memo will focus on the points of disagreement among the courts and on whether an amendment might be useful to resolve those disagreements.

I. Two Problems in Applying Rule 106, as Discussed by Judge Grimm in *Bailey*

A. Can Hearsay Be Admitted When Necessary to Complete Under Rule 106?

The most important problem --- and dispute among the courts --- raised by Judge Grimm is whether a proper invocation of Rule 106 will require the court to admit a statement over the government's hearsay objection. It is important to narrow the inquiry, as Judge Grimm does. Nobody credibly argues that Rule 106 allows the defendant to admit all relevant exculpatory hearsay simply because the government offered a portion of the defendant's statement. Rather, the context of the argument is that the fairness requirement of Rule 106 has kicked in. And that means that the government has introduced a portion of a statement that is *misleading*, and the defendant's exculpatory statement is necessary to place the admitted portion in context and so correct a misleading impression. *See, e.g., United States v. Branch*, 91 F.3d 699, 728 (5th Cir. 1996) (the defendant's exculpatory statement was not admissible under Rule 106 where the portion admitted by the government was not misleading but rather was a complete confession to the crime charged). Judge Grimm gives a good example: the defendant admits that he owned the murder weapon, but also states that he sold it months before the murder. In this circumstance, admitting only the statement of ownership is misleading. The question is whether the government can successfully object on hearsay grounds to the defendant's statement that he sold the gun.²

offered by the defense, however, such statements are hearsay (the defendant may, of course, reiterate the out-of-court statements if he chooses to testify)."

² *See also Commonwealth v. Crayton*, 470 Mass. 228, 247 (2014), where the defendant was charged with using a library computer to download child pornography. A police officer asked the defendant if he had used the library computer on the day of the download. The defendant said that he had used the computer but not to download the child pornography. The government admitted only the inculpatory part of the statement. The court found that the

As Judge Grimm notes, many courts have held that even in this narrow situation, a defendant cannot invoke Rule 106 to correct the government’s misleading presentation of the evidence. The rationale given is that Rule 106 is simply a timing mechanism; it cannot operate as a hearsay exception because, for one thing it is not in Article VIII. And there is no indication in the Rule that it should operate as a hearsay exception. But as Judge Grimm notes, a number of courts have reasoned that in order to do its job of correcting unfairness, Rule 106 *has to* operate as a rule that will admit completing evidence over a hearsay objection.

B. Applying the Rule of Completeness to Oral, Unrecorded Statements

Rule 106 does not, by its terms, apply to oral statements that have not been recorded. The Advisory Committee Note cryptically states that the limitation to written and recorded statements was implemented for “practical reasons.” Judge Grimm plausibly concludes that the “practical” reason that persuaded the Advisory Committee to narrow the traditional rule of completeness was a concern over disputes about what was said in an oral statement --- similar to the concern that the Committee has discussed the last few years regarding prior inconsistent statements under Rule 801(d)(1)(A).³ But as Judge Grimm notes, the problems involved in proving what was said probably do not justify a blanket rule that leaves these statements out of any completeness principle.

The exclusion of unrecorded oral statements from Rule 106 has not stopped the courts from applying the completeness principle to those statements. As Judge Grimm recounts, the Supreme Court has intimated that the common-law rule of completeness---which does cover oral statements --- retains vitality. *See United States v. Sanjar*, 853 F.3d 190, 204 (5th Cir. 2017) (common law rule of completeness “is just a corollary of the principle that relevant evidence is generally admissible”). Like Rule 106, the common law rule comes into play only when “necessary to qualify, explain, or place into context” the portion of the oral statement already admitted. And as recognized by Judge Grimm, the common-law rule of completeness as to oral statements has been implemented by the courts fairly consistently through an invocation of Rule 611(a), which grants courts the authority to “exercise reasonable control over the mode and order of examining witnesses and presenting evidence so as to . . . make those procedures effective for determining the truth.”

The end result in the courts is that oral statements are subject to the rule of completeness in the same measure as written statements, just under a different rule. While that is disorganized and can cause confusion it might not be cause for amending Rule 106 to cover oral statements. But the problem that does remain is in those courts that have found that Rule 106 does not allow admission of hearsay as to written and recorded statements. Those courts, as Judge Grimm sets forth at page 13, extend that limitation to the common-law rule and to treatment of unrecorded oral statements under Rule 611(a). So

rule of “verbal completeness” required the admission of the defendant’s denial over a hearsay objection: “By excluding the defendant’s denial, the judge might have left the jury with the false impression that the defendant had not denied viewing the child pornography where an innocent person would have denied it, and therefore, there was a significant risk that a reasonable jury might have understood the other statements the defendant made to the detectives as an implied admission to having viewed the child pornography.”

³ The Florida Advisory Committee, commenting on the Florida counterpart to Federal Rule 106, explains the exclusion of oral statements this way:

This section does not apply to conversations but is limited to writings and recorded statements because of the practical problem involved in determining the contents of a conversation and whether the remainder of it is on the same subject matter. These questions are often not readily answered without undue consumption of time. Therefore, remaining portions of conversations are best left to be developed on cross-examination or as a part of a party’s own case.

the major problem is the one discussed above --- whether a party is to be allowed to correct a misleading portion through their own statements that have been excised.

II. State Court Variations

In this section, only variations that might be pertinent to the matters at hand are discussed. For example, Alabama Rule 106 allows completing but only if the completing portion is from the same writing or recording as the admitted portion. The Federal Rule allows completing with “any other writing or recorded statement” --- but there is no call to narrow that language. Also a few states, such as Louisiana, do not have a rule of completeness in their evidence rules --- but that is not a situation to be replicated at the federal level at this point, if it ever was.

1. *California Evidence Code § 356:*

Where part of an act, declaration, conversation, or writing is given in evidence by one party, the whole on the same subject may be inquired into by an adverse party; when a letter is read, the answer may be given; and when a detached act, declaration, conversation, or writing is given in evidence, any other act, declaration, conversation, or writing which is necessary to make it understood may also be given in evidence.

Comment: The California rule specifically covers oral statements. It doesn’t specifically say that the completing evidence is admissible even if it is hearsay. If the Committee decides to continue review of Rule 106, the Reporter will look at the California cases.

2. *Connecticut Rule of Evidence §1-5:*

(a) Contemporaneous introduction by proponent. When a statement is introduced by a party, the court may, and upon request shall, require the proponent at that time to introduce any other part of the statement, whether or not otherwise admissible, that the court determines, considering the context of the first part of the statement, ought in fairness to be considered contemporaneously with it.

(b) Introduction by another party. When a statement is introduced by a party, another party may introduce any other part of the statement, whether or not otherwise admissible, that the court determines, considering the context of the first part of the statement, ought in fairness to be considered with it.

Comment: Use of the word “statement” is intended to and does cover unrecorded oral as well as written statements. Connecticut case law provides that completing evidence can be admitted over a hearsay objection: See *State v. Tropiano*, 158 Conn. 412, 420, 262 A.2d 147 (1969) (Because the other part of the statement is introduced for the purpose of placing the first part into context, the other part need not be independently admissible.). This is because the Connecticut rule explicitly provides for substantive admissibility of the completing statement (“whether or not otherwise admissible”).

3. *Georgia Rule of Evidence § 24-8-822.*

Entire conversation admissible when admission given in evidence

When an admission is given in evidence by one party, it shall be the right of the other party to have the whole admission and all the conversation connected therewith admitted into evidence.

Comment: This rule is placed in Article 8 and so is recognized as creating a hearsay exception. What's more, it is not dependent on a misleading presentation by the adversary. It is a broad rule limited only by relevance principles. *See, e.g., Bowe v. State*, 288 Ga.App. 376, 654 S.E.2d 196 (2007) (“Where a part of a conversation, which amounts to an incriminatory admission, is admitted in evidence, it is the right of the accused to bring out other portions of the same conversation, even though it is self-serving in its nature, or exculpatory, in that it justifies, excuses, or mitigates the act.”). If the Committee decides to continue its consideration of an amendment to Rule 106, the Reporter will look into how this rule is operating in Georgia.

4. Iowa Rule of Evidence Rule 5.106.

Remainder of related acts, declarations, conversations, writings, or recorded statements

a. If a party introduces all or part of an act, declaration, conversation, writing, or recorded statement, an adverse party may require the introduction, at that time, of any other part or any other act, declaration, conversation, writing, or recorded statement that in fairness ought to be considered at the same time.

b. Upon an adverse party's request, the court may require the offering party to introduce at the same time with all or part of the act, declaration, conversation, writing, or recorded statement, any other part or any other act, declaration, conversation, writing, or recorded statement that is admissible under rule 5.106(a). Rule 5.106(b), however, does not limit the right of any party to develop further on cross-examination or in the party's case in chief matters admissible under rule 5.106(a).

Comment: The Iowa rule specifically covers unrecorded oral statements. It is unclear what Iowa is trying to do with the two separate subdivisions. The first sentence of subdivision (b) seems simply to duplicate subdivision (a). And as to the last sentence, it wouldn't seem necessary to state that cross-examination should be allowed regarding the completing parts. If the Committee decides to continue with a project on Rule 106, the Reporter will look into this further.

5. Maine Rule of Evidence 106:

If a party utilizes in court all or part of a writing or recorded statement, an adverse party may require the introduction, at that time, of any other part--or any other writing or recorded statement--that in fairness ought to be considered at the time.

Comment: The Maine Advisory Committee explains the difference from the Federal Rule:

The words “utilized in court” are designed to permit the same procedure when a writing is silent on a point as when it is contrary to the testimony of a witness on the stand. A concession drawn from a witness that his written statement does not include a certain thing may be just as misleading as introduction of a part of a statement contrary to his testimony. The Federal Rule uses “introduced” instead of “utilized in court” and thus does not protect against the misleading effect which may result from the use of a statement without its introduction in evidence.

6. Montana Rule of Evidence 106:

(a) When part of an act, declaration, conversation, writing or recorded statement or series thereof is introduced by a party: (1) an adverse party may require the introduction at that time of any other part of such item or series thereof which ought in fairness to be considered at that time; or

(2) an adverse party may inquire into or introduce any other part of such item of evidence or series thereof.

(b) This rule does not limit the right of any party to cross-examine or further develop as part of the case matters covered by this rule.

Comment: This rule specifically covers unrecorded oral statements. The relationship between the two subdivisions is that the federal principle in (1) allows contemporaneous completion for fairness, while subdivision (2), which tracks pre-existing Montana law, provides for a broader completion at some later point in the trial.

7. Nebraska Rule of Evidence 27-106:

(1) When part of an act, declaration, conversation or writing is given in evidence by one party, the whole on the same subject may be inquired into by the other. When a letter is read, all other letters on the same subject between the same parties may be given. When a detached act, declaration, conversation or writing is given in evidence, any other act, declaration or writing which is necessary to make it fully understood, or to explain the same, may also be given in evidence.

(2) The judge may in his discretion either require the party thus introducing part of a total communication to introduce at that time such other parts as ought in fairness to be considered contemporaneously with it, or may permit another party to do so at that time.

Comment: This is a broad rule of completion, akin to Georgia's --- although not as clearly allowing hearsay because it is not included in the hearsay chapter. Discretion is given to the judge to complete for fairness contemporaneously or to have everything brought it at a later time.

8. New Hampshire Rule of Evidence 106:

(a) If a party introduces all or part of a writing or recorded statement, an adverse party may require the introduction, at the time, of any other part-- or any other writing or recorded statement-- that in fairness ought to be considered at the same time.

(b) A party has a right to introduce the remainder of an unrecorded statement or conversation that his or her opponent introduced so far as it relates:

(1) to the same subject matter; and

(2) tends to explain or shed light on the meaning of the part already received.

Comment: Like Nebraska, the New Hampshire rule allows a broad right of reply, apparently (though not explicitly) overcoming any hearsay exception, and a more limited right to complete contemporaneously, akin to the federal rule.

9. Oregon Rule of Evidence 106:

40.040. Rule 106. When part of transaction proved, whole admissible

When part of an act, declaration, conversation or writing is given in evidence by one party, the whole on the same subject, where otherwise admissible, may at that time be inquired into by the other; when a letter is read, the answer may at that time be given; and when a detached act,

declaration, conversation or writing is given in evidence, any other act, declaration, conversation or writing which is necessary to make it understood may at that time also be given in evidence.

Comment: The rule seems broad as it applies to oral statements and even actions, and it is not dependent on responding to a misleading representation. Yet it has an important limit --- the completing evidence must be “otherwise admissible.”

The legislative history indicates that the Federal Rule was not adopted because it applies only to a writing or recorded statement, and so “would exclude the possibility of admitting the remainder of any contemporaneous act, declaration or conversation. This limitation is inconsistent with the broad purpose of the rule, which is one of fairness.” But the limitation in the rule that the completing evidence must be otherwise admissible does not at all comport with a broad view of fairness.

10. Texas Rule of Evidence 106:

Texas Rule 106 is virtually identical to the Federal Rule. But Texas adds a Rule 107, called a rule of “optional completeness” which tracks New Hampshire Rule 106(b) --- allowing completeness at a later point, including oral statements and actions, and apparently operating to allow hearsay at that later point:

Rule 107. Rule of Optional Completeness

If a party introduces part of an act, declaration, conversation, writing, or recorded statement, an adverse party may inquire into any other part on the same subject. An adverse party may also introduce any other act, declaration, conversation, writing, or recorded statement that is necessary to explain or allow the trier of fact to fully understand the part offered by the opponent. “Writing or recorded statement” includes a deposition.

Comment: It seems that what Texas and other states like New Hampshire are doing is tracking the federal rule in one rule (for contemporaneous completion) and tracking the common-law rule of completeness in a separate rule or subdivision (for completion at some time in the trial). That removes some of the chaos that is found in the Federal system. But it would help to make it more clear --- as Georgia does by where it places the rule --- that hearsay can be admitted to complete.

Conclusion on State Variations

A number of states cover unrecorded oral statements, so the practicalities that the Federal Advisory Committee was concerned about did not deter those states. One state, Georgia, specifically provides for a hearsay exception, and one state, Connecticut, specifically says that the completing evidence is admissible without regard to other rules; while a hearsay exception is implicit in other state variations. And several states have codified the common-law exception, either in tandem with or in substitution of the Federal model. All of these options are possible alternatives for Federal Rule 106 and may serve to alleviate some of the problems currently encountered in Federal courts, as discussed by Judge Grimm.

III. The Merits of Amending Rule 106

As discussed above, there are two amendments that might be made to address the conflicts in the courts regarding Rule 106, and to improve the rule as Judge Grimm suggests. The first is to provide that a statement that completes in accordance with the fairness standards of Rule 106 is admissible over a

hearsay objection. The second is to expand the coverage of Rule 106 to include unrecorded oral statements.⁴ These will be discussed in turn.

A. Overcoming the Hearsay Problem

As Judge Grimm recounts, many courts have found that even if a statement qualifies under the Rule 106 fairness standard --- that is, even if it ought in fairness to be admitted contemporaneously with the portion admitted by the adversary --- it is nonetheless subject to exclusion as hearsay. These courts view Rule 106 to be merely a timing rule for evidence that is otherwise admissible. Judge Grimm describes in detail the contrary view of a number of courts, best set forth in *United States v. Sutton*, 801 F.2d 1346 (D.C.Cir. 1986), that Rule 106 is by its terms not limited by other rules of admissibility, and that “Rule 106 can adequately fulfill its function only by permitting the admission of some otherwise inadmissible evidence when the court finds in fairness that the proffered evidence should be considered contemporaneously.”

This is a conflict in the courts about an important and oft-recurring matter, and Judge Grimm makes a strong case that it needs to be resolved. There is further a strong case that it should be resolved by an amendment to the Rule, because this conflict is one of long-standing.⁵ One of the strongest reasons for amending an Evidence Rule has traditionally been that to do so will resolve a longstanding conflict --- resolving such a conflict is at the heart of codification of a uniform set of Federal Rules of Evidence.

If the conflict is to be resolved, it would seem apparent that it must be resolved in favor of admissibility of the completing evidence under the narrow conditions established in Rule 106. Judge Grimm makes the case as well as it can be made. It seems simply wrong to hold that the adverse party can introduce a misleading portion of a statement, and yet evidence that would be fairly offered to complete would be excluded as hearsay.

One argument against amendment, however, is that the courts that do exclude such completing evidence are simply wrong about the hearsay question itself. That is, even if the hearsay rule does remain applicable, correctly applied it would not bar the completing evidence. As Judge Grimm observes, when the proponent offers evidence out of its necessary context, any out-of-court statement that is clearly necessary to place the evidence in proper context is not hearsay at all; rather it is admissible for the not-

⁴ Some of the states allow completion evidence for “acts” as well as statements. Because the rule is about contemporaneous completion, it can be argued that allowing contemporaneous completion for acts should be approached with caution. For example, if the government provides an eyewitness to state that he saw the defendant entering the bank that was robbed, does the defendant, at that point, get to introduce evidence that he saw the defendant leave the bank without any money? A completeness rule as to acts could threaten to upset the order of proof in many cases. This memo proceeds under the assumption that including “acts” in Rule 106 would be problematic, but if the Committee decides to the contrary, a draft including “acts” will be presented at the next meeting.

⁵ The conflict was previously raised to the Evidence Rules Committee by the Reporter on two prior occasions --- once in 2002 and then again in 2006. In both cases, the conflict was discussed as part of a complete review of the Evidence Rules to determine whether there were conflicts in the rules that warranted amendment. In 2002, the Committee was not convinced that the problem arose often enough to warrant an amendment. In 2006, the Committee focused on conflicts in other rules that it found more pressing --- Rules 408, 606(b) and 609. In the eleven years since the problem was last visited, the conflict in the courts shows no sign of resolution.

for-truth purpose of providing context.⁶ So it can be argued that amending Rule 106 to say, for example, that the hearsay rule is inapplicable to the completing remainder might be confusing, because it is simply not applicable, before or after the amendment.

But on the other hand, if a large number of courts are getting the hearsay question wrong, and have been doing so for years, it may be that the only way to have them get it right is to amend the rule to clarify that the completing remainder is admissible over a hearsay objection. Such an amendment would be useful even though it states the obvious to some courts. Moreover and very importantly, the amendment would have substantive value, because it would mean that the completing portion could actually be used for its truth. Under the “context” rationale, the adversary would be entitled to a limiting instruction, that the completing portion was admissible only to put the initial portion in context --- this even though it was the adversary who put in the misleading portion in the first place. It would seem that having the completing portion admissible *to prove a fact* would be a proper outcome under the circumstances --- because the party who introduced the misleading portion should have lost any right to complain.⁷

A draft that would provide for substantive admissibility of the completing portion is set forth in the next section.

B. Unrecorded Oral Statements

As Judge Grimm compellingly argues, there is no good reason to exclude categorically all unrecorded oral statements from a rule of completeness. While there might be a dispute about the content or existence of some oral statements in some cases, surely the difficulty of proof is a matter that should be handled on a case-by-case basis under Rule 403. That is, the fairness rationale should apply equally to completing unrecorded oral statements unless the court finds a substantial and legitimate dispute about the making or content of the completing statements, such that the probative value would be substantially outweighed.

So it would seem at first glance that there is a compelling reason to amend Rule 106 to cover unrecorded oral statements, as a number of the states have done. But a complicating factor is that, as Judge Grimm describes, courts have generally found a way to apply the rule of completeness to unrecorded oral statements. Most courts have, as indicated in *Bailey*, relied upon Rule 611(a). There is other authority that relies on the common-law rule of completeness. And sometimes both. So at least in terms of coverage of unrecorded oral statements, there would not appear to be a strong need to amend Rule 106 itself. The problem is being handled, albeit in a scattershot and disorganized way.

But while the unrecorded oral statement question is not in itself a reason to amend Rule 106, the question becomes different if the decision is made to amend Rule 106 to provide that completing evidence is admissible over a hearsay objection. Many rule-based problems are not serious enough to warrant an

⁶ See Michael Hardin, *This Space Intentionally Left Blank: What to do When Hearsay and Rule 106 Completeness Collide*, 82 Ford. L. Rev. 1283 (2013) (Remainder that is otherwise hearsay should be admitted whenever its probative value in providing necessary context is not substantially outweighed by its prejudicial effect).

⁷ See, e.g., *United States v. Lopez-Medina*, 596 F.3d 716 (10th Cir. 2010) (holding that opening the door to otherwise inadmissible evidence operates as a waiver of objections to that evidence).

amendment on their own but are usefully addressed as an addition to an amendment that is going to be proposed.⁸

What would be the advantage of amending Rule 106 to cover unrecorded oral statements? Basically it could bring an organized approach to a chaotic area. One advantage of good codification is that an unseasoned litigator can just look at the rule and figure out what to do. But that is not possible with unrecorded oral completing statements, because looking at the rule one would think that there would be no way to admit the completing statement. Certainly Rule 611(a), or the common-law rule of completeness, would not come readily to mind. So adding coverage of oral statements to Rule 611(a) would be part of the good housekeeping and user-friendliness that is an important part of rulemaking.

IV. Drafting Alternatives

Below are two drafts of a possible amendment to Rule 106. Draft one is addressed solely to the problem of substantive admissibility of the completing statement. Draft two adds a change that would cover unrecorded oral statements.

A. Draft One --- Substantive Admissibility Only

Rule 106. Remainder of or Related Writings or Recorded Statements

If a party introduces all or part of a writing or recorded statement, an adverse party may require the introduction, at that time, of any other part — or any other writing or recorded statement — that in fairness ought to be considered at the same time, even if it would otherwise be inadmissible under the rule against hearsay.

Draft Committee Note

The Rule has been amended to provide that if a party offers evidence that is necessary to correct a misleading impression created by an adverse party, then that completing evidence is admissible over a hearsay objection. Courts have been in conflict over whether completing evidence properly admissible under Rule 106 can be admitted over a hearsay objection. The Committee has determined that the rule of completeness, grounded in fairness, cannot fulfill its function if the party that creates the misimpression can object to the completing evidence on hearsay grounds. For example, assume the defendant in a murder case admits that he owned the murder weapon, but also states that he sold it months before the murder. In this circumstance, admitting only the statement of ownership is misleading. The adverse party, who has by definition created the situation that makes completion necessary, should not be permitted to invoke the hearsay rule and thereby allow the misleading statement to remain un rebutted. The

⁸ An example is the Rule 408 amendment in 2006. The major reason for the amendment was to resolve a conflict over whether a civil settlement was admissible in a subsequent criminal case. Another problem was whether a statement made in a settlement conference could be admitted to impeach a party at trial as an inconsistent statement. That problem was not considered serious enough to warrant an amendment on its own, but it was added to the amendment package once the Committee determined it was going forth with the rule on criminal cases.

adverse party can be fairly said to have waived its right to object to hearsay that would be necessary to correct a misleading impression.

The amendment does not give a green light of admissibility to all excised portions of writings and recordings. It does not change the basic rule, which limits admissibility on completeness grounds only to those that are necessary in fairness to correct otherwise misleading presentations.

B. Draft Two: Substantive Admissibility and Unrecorded Oral Statements

Rule 106. Remainder of or Related Writings or Recorded Statements

If a party introduces all or part of a an oral, written writing or recorded statement, an adverse party may require the introduction, at that time, of any other part — or any other oral, written writing or recorded statement — that in fairness ought to be considered at the same time, even if it would otherwise be inadmissible under the rule against hearsay.

Draft Committee Note

The Rule has been amended to provide that if a party offers evidence that is necessary to correct a misleading impression created by an adverse party, then that completing evidence is admissible over a hearsay objection. Courts have been in conflict over whether completing evidence properly admissible under Rule 106 can be admitted over a hearsay objection. The Committee has determined that the rule of completeness, grounded in fairness, cannot fulfill its function if the party that creates the misimpression can object to the completing evidence on hearsay grounds. For example, assume the defendant in a murder case admits that he owned the murder weapon, but also states that he sold it months before the murder. In this circumstance, admitting only the statement of ownership is misleading. The adverse party, who has by definition created the situation that makes completion necessary, should not be permitted to invoke the hearsay rule and thereby allow the misleading statement to remain un rebutted. The adverse party can be fairly said to have waived its right to object to hearsay that would be necessary to correct a misleading impression.

The Rule has also been amended to cover oral statements that have not been recorded. The original Advisory Committee Note cites “practical reasons” for limiting the coverage of the Rule to writings and recordings. To the extent that the concern was about disputes over the content or existence of an unrecorded statement, that concern does not justify excluding such a statement completely from the coverage of the Rule. The trial judge, under Rule 403, can take into account the nature and difficulty of the dispute over the content or existence of the completing statement in deciding whether it is admissible. In any case, courts generally have found unrecorded completing statements to be admissible under either Rule 611(a) or the common-law rule of completeness. The amendment brings all rule of completeness questions under one rule.

The amendment does not give a green light of admissibility to all excised portions of writings, recordings and statements. It does not change the basic rule, which limits admissibility on completeness grounds only to those that are necessary in fairness to correct otherwise misleading presentations.

TAB 6B

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**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND**
Southern Division

UNITED STATES OF AMERICA,

v.

Criminal No.: PWG-16-0246

CALEB ANDREW BAILEY,

Defendant.

* * * * *

MEMORANDUM OPINION

Defendant Caleb Andrew Bailey was charged with multiple counts including illegal possession of machine guns, receipt and possession of unregistered short-barrel rifles, receipt and possession of unregistered destructive devices, production and attempted production of child pornography, possession of child pornography, and witness tampering. Revised Second Superseding Indictment, ECF No. 88-2. Prior to trial, the Government filed a motion *in limine*, in which it sought a pretrial ruling precluding Bailey from “eliciting on cross-examination of law enforcement agents certain potentially exculpatory statements Bailey made during his [recorded] interviews with law enforcement on May 5, 2016.” Gov. Mot. 1, ECF No. 62. In a nutshell, the Government argued that anything Bailey told the agents during his recorded interview¹ that it intended to introduce during its case in chief would be admissible non-hearsay (as an admission by a party opponent under Fed. R. Evid. 801(d)(2)(A)), but that anything exculpatory that Bailey

¹ I previously denied Bailey’s Motions to Suppress, ECF No. 52, the two Mirandized statements that he gave to Government agents on May 5, 2015, the day a search and seizure warrant was executed at his residence, which led to the discovery of the evidence that led to the charges pending against him. The guidance in this opinion assumes that the statements given by the Defendant are not inadmissible under the Fourth or Fifth Amendments. Put differently, the focus of this opinion is the law of evidence, and it takes as given that there are no Fourth or Fifth Amendment grounds for suppressing the defendant’s statement.

told them that he intended to elicit under cross examination or otherwise would be inadmissible hearsay, unless he was prepared to testify about it and be subject to cross examination. Gov. Mot. 2. Bailey filed an opposition. Def.'s Opp'n, ECF No. 91.

On May 12, 2017, I held a telephonic hearing with counsel during which I advised that without knowing the specific portions of Bailey's statements that the Government intended to introduce, I was not able to issue a definitive pretrial ruling on the record pursuant to Fed. R. Evid. 103(b), but I nonetheless gave them guidance regarding the approach I would take at trial. I also told them that I planned to issue a written opinion to memorialize my thinking because the issues raised by the Government are recurring in nature, and there is a scarcity of helpful decisional authority in this circuit to guide courts and counsel in resolving the sometimes complicated issues the Government's Motion raises. This Memorandum Opinion provides that guidance.

Whether the defendant in a criminal trial may compel the Government to introduce his exculpatory statements at the same time that it introduces his inculpatory ones implicates a number of evidentiary rules, including Rules 102 (which instructs judges to interpret the rules of evidence in order to insure fairness, ascertain the truth, and to secure a just determination), 106 (the so-called "rule of completeness"), 401 (relevance), 403 (probative value versus danger of unfair prejudice or confusion); 611(a) (court control over the examination of witnesses and presentation of evidence); and 802 (the rule against admissibility of hearsay, and its exceptions). But where the inculpatory statements given by the defendant to the government were not written or recorded, common-law principles of evidence also apply. As will be seen, although there is no shortage of case law and treatise analysis on this subject, the law is far from settled, and

courts and commentators have reached starkly different results by applying a variety of approaches, resulting in an evidentiary landscape that is unclear.

It is not my aim in this opinion to untangle the many nuances of the Gordian knot raised by the Government’s Motion, but rather to identify the key elements that a court should examine to make an appropriate ruling, consistent with the Rules of Evidence and the still-viable common law.² The starting place is the common law evidentiary principle known as the “doctrine of completeness” (which is partially codified as Fed. R. Evid. 106), and its impact on the adversary system.

I. Common-Law Origins of Rule 106

The relationship between Rule 106 and the common-law doctrine of completeness has been explained by one respected evidence treatise this way:

Rule 106 arises from the common law completeness doctrine. Both the common law and Rule 106 presume two tenets of the adversary system. First, under the principle of party presentation of evidence, parties—not the court—bear the responsibility to produce evidence of their respective factual claims. An important corollary of party presentation holds that neither party has any obligation to produce evidence that favors the adversary. Second, a principal of sequential procedure, sometimes called “stage preclusion”, provides that the trial of an issue of fact follows a sequence of proof and counterproof whereby at each stage the parties alternate roles in presenting and challenging evidence. . . . The two tenets that give rise to Rule 106 are also embodied in Rule 611.

21A Charles Alan Wright & Kenneth W. Graham, Jr., *Federal Practice and Procedure: Evidence* § 5072 (2d ed. 2005) (footnotes omitted).

² Following my telephone hearing with counsel but before the entry of this Memorandum Opinion providing the written rationale for my oral ruling, the Defendant entered a guilty plea to certain of the charges. For this reason, there will be no trial. Nonetheless, because I informed counsel that I would memorialize in writing the ruling that I previously made, and because the issues discussed have occurred in past cases where, without the full consideration of the issues that I have given in this case, I reached contrary results, I am filing this Memorandum Opinion. Had the case proceeded to trial, I would have adopted the analysis set out above. It is my hope that the discussion may be helpful to other judges of this court, and counsel, in future cases.

The back-and-forth presentation of evidence in a criminal case usually works fairly smoothly, but problems arise when one party's artful phrasing of a question calls for a response that is technically accurate, but incomplete, altering the meaning of the original statement. A classic example is when the prosecutor elicits from a law-enforcement witness that, when the defendant was interviewed in connection with a homicide investigation, he admitted that he owned the gun used to commit the murder but omits that the defendant also said that he sold the gun three months before the shooting. Quoting the defendant out of context presents a misleading picture for the jury. In such circumstances, if the defendant is required to wait until his case in chief, or even until cross examination, to put his statement to the government witness in its proper context, it might be too late to counteract the impression left with the jury that the defendant, having admitted to owning the murder weapon, was the one who shot the victim.

A. Common-Law Doctrine

“The common law responded to these abuses of the adversary system by a limited restriction on party control of the cases that . . . [is called] ‘the completeness doctrine.’ ” 21A Wright & Graham, *supra*, § 5072. Wigmore’s description of the rule of completeness was that “[i]n evidencing the tenor of an utterance material or relevant, made in words, whether written or oral in original or in copy, the whole of the utterance on a single topic or transaction must be taken together.” *Id.* (quoting John Henry Wigmore, *Code of Evidence* 371 (3d ed. 1941)). The influential Field Code codified the common law rule of completeness in this manner:

When part of an act, declaration, conversation or writing is given in evidence by one party, the whole on the same subject may be inquired into by the other; when a letter is read, the answer may be given; and when a detached act, declaration, conversation or writing is given in evidence, any other act, declaration, conversation or writing, which is necessary to make it understood, may also be given in evidence.

Id. (quoting N.Y. Commissioners on Practice and Pleading, *Code of Civil Procedure* § 1687, at 704–05 (1850)).

A careful reader will notice straightaway that in its common-law and early-code-law expression, the doctrine of completeness encompassed conversations and other spoken utterances (as well as acts) that had not been memorialized in writing or recorded. Another important feature of the common-law doctrine of completeness was that it allowed the introduction of otherwise inadmissible evidence to give proper context to the incomplete and misleading evidence offered by the original proponent. *Id.* § 5072 (“Thus, the opponent can introduce what would otherwise be hearsay to complete a truncated statement offered by the proponent.” (citing *Crawford v. United States*, 212 U.S. 183, 201 (1909))). Less clear was whether the party seeking to complete the record regarding what was said in a writing or conversation could require the proponent to include the content necessary for completeness at the time the incomplete version was presented to the jury or had to wait until his case in chief or cross examination to do so. Most common-law courts would not allow this “acceleration of completeness,” but some courts, including the Supreme Court, did. *Id.* (citing *Crawford*, 212 U.S. at 201).

B. Rule 106

The common-law doctrine of completeness has been partially codified by Fed. R. Evid. 106. *Beech Aircraft Corp. v. Rainey*, 488 U.S. 153, 171–72 (“The Federal Rules of Evidence have partially codified the doctrine of completeness in Rule 106.”); *United States v. Wilkerson*, 84 F.3d 692, 696 (4th Cir. 1996) (“The common-law doctrine of completeness has been partially codified in Rule 106 of the Federal Rules of Evidence.”). Rule 106 states:

If a party introduces all or part of a *writing* or *recorded statement*, an adverse party may require the introduction, *at that time*, of any other part—or any other writing or recorded statement—that *in fairness ought to be considered at the same time*.

Fed. R. Evid. 106 (emphasis added). The italicized words highlight several important features of Rule 106. First, it applies only to writings and recorded statements, not to conversations or other oral statements that have not been memorialized in some written or recorded form (hence, Rule 106 only *partially* incorporates the common law rule). Second, when the Rule applies, it permits the party against whom the incomplete information has been introduced to require the introduction of completing information at the same time (the so called “acceleration clause”). Third, the rule only requires the introduction of the completing information when fairness requires that it be considered at the same time as the incomplete information.

The Advisory Committee Note to Rule 106 states:

The rule is based on two considerations. The first is the misleading impression created by taking matters out of context. The second is the inadequacy of repair work when delayed to a point later in the trial. The rule does not in any way circumscribe the right of the adversary to develop the matter on cross-examination or as part of his own case.

For practical reasons, the rule is limited to writings and recorded statements and does not apply to conversations.

Fed. R. Evid. 106 advisory committee’s note to 1972 proposed rules (citation omitted). Conspicuously absent from the Rule or the Advisory Note is any indication of whether completing information can be admitted under Rule 106 even if otherwise inadmissible (for example, because it is hearsay).³ Nor does the Rule or Note give any guidance as to what must be shown to satisfy the “fairness” requirement in order to require the introduction of the

³ In 2002–03, the Advisory Committee considered whether to amend Rule 106 to extend its scope to oral statements and acts, and whether to amend the rule to state that evidence that met the fairness requirement of Rule 106 was admissible even if it would be inadmissible if offered on its own. It ultimately “voted unanimously not to amend Rule 106 on the ground that the costs exceeded the benefits because ‘any problems under the current rule were being well-handled by the courts.’ ” 21A Wright & Graham, *supra*, § 5071 (quoting Advisory Comm. on Evidence Rules, *Minutes of Meeting of April 25, 2003*, at 9).

completing information at the same time as the incomplete information. And, although the Advisory Note states that the rule only applies to writings and recorded statements (and not to conversations) for “practical reasons,” it does not explain what those practical reasons are, or how courts should deal with the problem created when one party introduces a misleadingly incomplete portion of an oral statement or conversation.

II. Application of Rule 106

A. Independent Admissibility

1. Split of Authority

In the absence of guidance from the Rule or the Committee, courts and commentators have been left to answer these questions on their own, with conflicting results. For example, some courts have held that evidence that would be inadmissible if offered independently cannot be used for completeness purposes under Rule 106. *See, e.g., United States v. Hassan*, 742 F.3d 104, 134–35 (4th Cir. 2014) (holding that district court did not abuse its discretion by excluding defendant’s exculpatory statements under Rule 106 because they were inadmissible hearsay); *United States v. Mitchell*, 502 F.3d 931, 965 n.9 (9th Cir. 2007) (“Rule 106 applies only to written and recorded statements, not unrecorded oral confessions, and Rule 106 does not render admissible otherwise inadmissible hearsay.”); *United States v. Guevara*, 277 F.3d 111, 127 (2d Cir. 2001) (“Rule 106 does not ‘render admissible evidence that is otherwise inadmissible.’ ” (quoting *United States v. Terry*, 702 F.2d 299, 315 (2d Cir. 1983))), *overruled on other grounds as recognized in United States v. Doe*, 297 F.3d 76, 90 n.16 (2d Cir. 2002); *United States v. Ortega*, 203 F.3d 675, 682–83 (9th Cir. 2000) (holding that Rule 106 would not allow defendant’s exculpatory statements because they were inadmissible hearsay); *United States Football League v. Nat’l Football League*, 842 F.2d 1335, 1375–76 (2d Cir. 1998) (“The

doctrine of completeness does not compel admission of otherwise inadmissible hearsay evidence.” (citation omitted)); *United States v. Wilkerson*, 84 F.3d 692, 696 (4th Cir. 1996) (holding that the government was entitled to introduce the defendant’s inculpatory statements as admissions under Rule 801(d)(2)(A), but that the defendant could not introduce exculpatory portions under Rule 106 because they would be inadmissible hearsay).

What is concerning about many of the cases that have restricted Rule 106 to evidence that is independently admissible is the ease with which they have done so without any real consideration of the common-law history of the doctrine of completeness (which did not limit completing evidence to that which was independently admissible), its purpose to guard against abuses of the adversary system, or the harm that can result from letting one party (for example, the government in a criminal case) have an unfair advantage over another by creating a misleading impression in the minds of the jury that is, as a practical matter, uncorrectable. This hardly lives up to the aspirations of Rule 102 that the rules of evidence should be construed to the “end of ascertaining the truth and securing a just determination.”

But not all courts have been so quick to restrict Rule 106 to independently admissible evidence, even at the expense of fairness. In *United States v. Sutton*, 801 F.2d 1346 (D.C. Cir. 1986), the court rejected the notion that only admissible evidence could be used to complete the record under Rule 106. Its analysis is worth quoting at length:

Rule 106 explicitly changes the normal order of proof in requiring that . . . evidence [within the scope of the Rule] must be “considered contemporaneously” with the evidence already admitted. Whether Rule 106 concerns the substance of evidence, however, is a more difficult matter. The structure of the Federal Rules of Evidence indicates that Rule 106 is concerned with more than merely the order of proof. Rule 106 is found not in Rule 611, which governs the “Mode and Order of Interrogation and Presentation,” but in Article I, which contains rules that generally restrict the manner of applying the exclusionary rules. *See* C. Wright & K. Graham, *Federal Practice and Procedure: Evidence* § 5078, at 376 (1977 & 1986 Supp.). Moreover, every major rule of exclusion in the Federal Rules of

Evidence contains the proviso, “except as otherwise provided by these rules,” which indicates “that the draftsmen knew of the need to provide for relationships between rules and were familiar with a techniques for doing this.” *Id.* There is no such proviso in Rule 106, which indicates that Rule 106 should not be so restrictively construed. *See id.*

Rule 106 can adequately fulfill its function only by permitting the admission of some otherwise inadmissible evidence when the court finds in fairness that the proffered evidence should be considered contemporaneously. A contrary construction raises the specter of distorted and misleading trials, and creates difficulties for both litigants and the trial court.

The most sensible course is to allow the prosecution to introduce the inculpatory statements. The defense can then argue to the court that the statements are misleading because of a lack of context, after which the court can, in its discretion, permit such limited portions to be contemporaneously introduced as will remove the distortion that otherwise would accompany the prosecution’s evidence. Such a result is more efficient and comprehensible, and is consonant with the requirement that the “rules shall be constructed to secure fairness in administration, elimination of unjustifiable expense and delay, and promotion of the law of evidence to the end that the truth may be ascertained and proceedings justly determined. Federal Rule of Evidence 102.

Id. at 1368–69 (footnotes omitted); *see also United States v. Harvey*, 653 F.3d 388, 394–95 (6th Cir. 2011) (affirming decision of district court to admit under the rule of completeness recordings that the court previously had ruled inadmissible on their own); *United States v. Bucci*, 525 F.3d 116, 133 (1st Cir. 2008) (“[O]ur case law unambiguously establishes that the rule of completeness may be invoked to facilitate the introduction of otherwise inadmissible evidence.”); *United States v. Gravely*, 840 F.2d 1156, 1163 (4th Cir. 1988) (“The cross-designated portions, while perhaps not admissible standing alone, are admissible as a remainder of a recorded statement. Fed. R. Evid. 106 allows an adverse party to introduce any other part of a writing or recorded statement which ought in fairness be considered contemporaneously. The rule simply speaks the obvious notion that parties should not be able to lift selected portions out of context.”); *United States v. LeFevour*, 798 F.2d 977, 980–82 (7th Cir. 1986) (“If otherwise inadmissible evidence is necessary to correct a misleading impression, then

either it is admissible for this limited purpose by force of Rule 106 . . . or, if it is inadmissible . . . the misleading evidence must be excluded too.”); *United States v. Green*, 694 F. Supp. 107, 110 (E.D. Pa. 1988) (noting with approval the D.C. Circuit’s holding that Rule 106 permits introduction of evidence that is otherwise inadmissible), *aff’d*, 875 F.2d 312 (3d Cir. 1989).

2. *Concerns Animating Split of Authority Are Mitigated by Proper Application of Rule 106’s “Fairness” Clause*

Perhaps courts’ willingness to restrict the use of Rule 106 to admissible evidence reflects the same concern expressed by the Department of Justice when it objected to the revision of the rule in 2002 to permit the use of inadmissible evidence. DOJ “prosecutors argued that amending the Rule would allow defense counsel to make bogus claims that the evidence was taken out of context so that they could get inadmissible evidence before the jury.” 21A Wright & Graham, *supra*, § 5071. Fair enough. But it is just as much of an abuse of the adversary system for the prosecution to paint a misleading picture to the jury by introducing out-of-context inculpatory statements by the defendant as it is for a defense attorney to assert “bogus” claims that prosecution evidence was taken out of context as a pretext to “correct” the record by introducing otherwise inadmissible evidence. And it does not answer to prevent the later abuse but permit the former. Moreover, proper application of the “fairness” requirement of Rule 106 should prevent the abuses that the Department of Justice feared because judges should restrict application of Rule 106 to those situations where misleading information actually was introduced by the prosecution and allow only such correcting evidence as is necessary to counteract it. In this regard, courts and commentators have identified various factors that go a long way towards preventing any abuse of Rule 106 that might occur if inadmissible evidence is allowed to complete the record.

To begin with, Rule 106 should never come into play unless misleading evidence has been introduced that requires clarification or explanation—otherwise there is no unfairness that needs correction. *Wilkerson*, 84 F.3d at 696 (“Thus, the rule of completeness . . . would not appl[y] . . . where there was no partially introduced conversation that needed clarification or explanation.”). And, judges need not take at face value exaggerated claims that a partially introduced statement requires completion unless it can be shown with some precision just how the incomplete evidence is taken out of context. The Seventh Circuit has identified a four-part test to determine when this has happened:

Our case law interpreting Rule 106 requires that the evidence the proponent seeks to admit must be relevant to the issues in the case. Even then, a trial judge need admit only that evidence which qualifies or explains the evidence offered by the opponent. The test is conjunctive. Once relevance has been established, the trial court then must address the second half of the test, and should do so by asking (1) does it explain the admitted evidence, (2) does it place the admitted evidence in context, (3) will admitting it avoid misleading the trier of fact, and (4) will admitting it insure a fair and impartial understanding of all the evidence.

United States v. Velasco, 953 F.2d 1467, 1474–75 (7th Cir. 1992) (citations omitted).

A respected evidence treatise also has identified a series of factors that help courts identify when the fairness requirement of Rule 106 has been met. They include: (1) Is the proffered evidence taken out of context (does what is missing change the meaning of what was introduced)? (2) Does the lack of context make the evidence misleading (does the admitted evidence “invite” or “permit” a false premise)? (3) Can the misleading impression be dispelled by other means (for example, by instructing the jury not to draw the misleading inference, or by permitting introduction of completing evidence at a later time, such as during cross examination or the defense case, so as not to interrupt the presentation of the prosecution’s case)? (4) How much evidence is needed to dispel misleading effects (lawyers should be precise in identifying the information actually needed to correct the misleading impression created by the incomplete

evidence, and judges should be skeptical about allowing expansive introduction of lengthy excerpts from writings or recordings under the guise of “correcting” a misimpression)? (5) How strong is the evidence admitted and omitted (how does the strength of the admitted evidence compare to the strength of the omitted evidence—a minor discrepancy does not require “correction” with a massive introduction of information of little probative value)? (6) How long will repair be delayed if not accelerated (if the completing information is not introduced during the prosecution’s case, can the defendant effectively dispel any misleading impression during cross examination or during his case in chief, or will the damage, once done, be irremediable if not immediately addresses)? (7) What is the consequential fact to be proved (if the misimpression goes to an essential element of the prosecution’s case—such as the defendant’s motive or intent—then there is a more exigent need to insure immediate correction than exists if the incomplete information is primarily relevant to a less critical issue, such as an assessment of a witness’s credibility)? (8) How much will completion disrupt or prejudice the proponent (the more disruptive the immediate completion will be of the proponent’s case, the more cautious the court should be before allowing it at that time)? And (9) does truncation or completion implicate constitutional rights (if the prosecution introduces incomplete portions of a defendant’s confession that, if not completed by introducing other parts of the confession, would require the defendant to waive his Fifth Amendment right not to testify)? 21A Wright & Graham, *supra*, § 5077.2.

Consideration of these factors should be sufficient for any careful judge to determine whether (and if so, how much) completeness is required by Rule 106, and eliminate much of the concern expressed by those who resist the idea of permitting inadmissible evidence to complete the record when fairness legitimately requires it. Unfortunately, to date few cases (especially

those that hold that inadmissible information may not be used for completion purposes) have taken the opportunity to do so.

B. Oral Statements

A final vexing issue raised (but not answered) by Rule 106 and the enigmatic language of the Advisory Committee Note is what courts should do with regard to oral statements or conversations that have not been memorialized by a writing or recording—particularly when the unwritten or unrecorded statement is the defendant’s confession to a law-enforcement officer. On its face, Rule 106 is limited to “writings” and “recorded statements,” and the Advisory Committee Note states that for (unnamed) “practical reasons” the rule does not apply to conversations. Fed. R. Civ. P. 106 & advisory committee’s note to 1972 proposed rules. Many courts have taken this to mean that in a criminal case, the prosecution may elicit a law-enforcement officer’s testimony about inculpatory statements made by the defendant because they are admissible under Rule 801(d)(2)(A) as admissions. But they have also held that, during cross examination of the officer, the defendant may not elicit non-inculpatory statements the defendant made during the same interview because (a) Rule 106 does not apply to oral statements and (b) even if it did, the defendant’s exculpatory statements (even if necessary to dispel the misleading, out-of-context impression left by the officer’s direct examination) are inadmissible hearsay. *See, e.g., Ortega*, 203 F.3d at 682–83 (“Even if the rule of completeness did apply, exclusion of Ortega’s exculpatory statements was proper because these statements would still have constituted inadmissible hearsay.”); *Wilkerson*, 84 F.3d at 696 (holding that Rule 106 did not apply to unrecorded conversation between defendant and FBI agent, and defendant’s exculpatory statements to the agents were not admissible under the hearsay rules).

While the “practical reasons” why oral conversations are excluded from Rule 106 undoubtedly include the need to avoid “he said, she said” disputes about the content of an unrecorded or unwritten statement, those concerns do not justify creating an environment in which the prosecution may be able to introduce the defendant’s out-of-context inculpatory oral statements, but where the defendant is powerless to do anything at that time because Rule 106 does not reach oral statements. And if there is legitimate concern about the difficulty in establishing what was said in oral conversations, the factors described above provide a judge with the analytical tools to determine whether to allow the evidence during the proponent’s case or thereafter during cross examination or during the adversary’s case in chief on a case by case basis. A blanket rule of prohibition is unwarranted, and invites abuse. Moreover, if the content of some oral statements are disputed and difficult to prove, others are not—because they have been summarized (for example, in a FBI agent’s form 302 summary of the defendant’s confession), or because they were witnessed by enough people to assure that what was actually said can be established with sufficient certainty.

1. *Residual Common-Law Completeness Doctrine*

But there is an even more fundamental reason why court decisions that hold that Rule 106 does not apply to oral statements or conversations should not prevent a party from completing the record (at the time the misleading evidence is introduced or thereafter during cross examination or the opposing party’s own case) to prevent abuse of the adversary system when a proponent introduces a misleadingly incomplete part of a conversation or oral confession. The reason is that, as the Supreme Court itself appears to have recognized, Rule 106 only *partially* codifies the common law doctrine of completeness, and for situations beyond the reach

of Rule 106, the common law still applies.⁴ *Beech Aircraft*, 488 U.S. at 170–72; 1 Kenneth S. Broun, *McCormick on Evidence* § 56, at 392 n.5 (7th ed. 2013) (“*In Beech Aircraft Corp. v. Rainey*, the Court indicated that Rule 106 ‘partially codified’ the completeness doctrine. The implication is that the uncodified aspect of the doctrine is still in effect in federal court.”); 21A Wright & Graham, *supra*, § 5072.1 (stating that *Beech Aircraft* “impliedly held that Rule 106 does not repeal the common law completeness doctrine”).

Further, to the extent that the common-law doctrine of completeness (which allowed even inadmissible evidence to be introduced to dispel misleading evidence of written, recorded and oral statements) applies to oral statements or conversations, commentators have recognized that, when necessary to avoid the prejudice created by introduction of misleading characterization of oral statements, inadmissible evidence should be permitted for completion purposes. One has observed:

With respect to other parts of writings and recorded statements or related writings and recorded statements, counsel may eschew Rule 106 and develop the matter on cross-examination or as part of his own case. Similarly, the remainder of oral statements and related oral statements may be introduced by an opposing party on his next examination of the same witness, whether cross or redirect. Of course, as with written or recorded statements, it is sometimes stated that the additional oral statements may be admitted only if otherwise admissible. Clearly, the principle of completeness does not give an adverse party an unqualified right to introduce an omitted part of a conversation or related conversation otherwise inadmissible merely on the ground that the opponent has “opened the door.” To the extent however that such evidence, otherwise inadmissible, tends to deny, explain, modify, qualify, counteract, repel, disprove or shed light on the evidence

⁴ The Court resorted to the common-law rule of completeness to reverse the trial court’s exclusion of evidence necessary to dispel a “distorted and prejudicial impression” of a witness’s letter brought about by a law-enforcement officer’s testimony. *Beech Aircraft*, 488 U.S. at 170. The Court noted that Rule 106 only “partially codified” the doctrine of completeness and brushed away arguments that completion was not required because Rule 106 did not apply: “While much of the controversy in this suit has centered on whether Rule 106 applies, we find it unnecessary to address that issue. Clearly the concerns underlying Rule 106 are relevant here, but, as the general rules of relevancy permit a ready resolution to this litigation, we need go no further in exploring the scope and meaning of Rule 106.” *Id.* at 172.

offered by the opponent, the evidence may be admitted provided its explanatory value is not substantially outweighed by the dangers of unfair prejudice, confusion of the issues, misleading the jury, or waste of time, Rule 403.

2 Michael H. Graham, *Handbook of Federal Evidence* § 106:2 (7th ed. 2012) (footnotes omitted); *see also* Broun, *supra*, § 56 (“It is sometimes stated that the additional material may be introduced only if it is otherwise admissible. However, as a categorical rule, that statement is unsound. In particular, the statement is sometimes inaccurate as applied to hearsay law. At least when the other passage of the writing or *statement* is so closely connected to the part the proponent contemplates introducing that it furnishes essential context for that party, the passage becomes admissible on a nonhearsay theory.” (emphasis added) (footnotes omitted)); 1 Christopher B. Mueller & Laird C. Kirkpatrick, *Federal Evidence* § 1:43 (4th ed. 2013) (“Rule 106 does not say whether additional statements (or parts) may be admitted when necessary to provide context if they would otherwise be excludable under other rules, such as the hearsay doctrine. . . . It seems that hearsay objections should not block use of a related statement . . . when it is needed to provide context for statements already admitted. Thus a statement should be admissible if it is needed to provide context under Rule 106 and to prevent misleading use of related statements even if the statement would otherwise be excludable hearsay”); 1 Stephen A. Saltzburg et al., *Federal Rules of Evidence Manual* §106.02[3] (11th ed. 2015) (“[Rule 106] does not on its face state that hearsay is admissible. This has led some courts to hold that Rule 106 operates solely as a timing device, affecting the order of proof—it does not make admissible what would otherwise be excluded. We believe these rulings are misguided and contrary to the completeness principle embodied in Rule 106. A party should not be able to admit an incomplete statement that gives an unfair impression, and then object on hearsay grounds to completing statements that would rectify the unfairness.”).

2. Rule 611's Connection to Rule 106

Courts, too, have found the means to rectify abuses of the adversary system caused by incomplete or misleading renditions of oral statements by resorting to Fed. R. Evid. 611(a), which provides, in relevant part:

The court should exercise reasonable control over the mode and order of examining witnesses and presenting evidence so as to: (1) make those procedures effective for determining the truth.

In *United States v. Pacquette*, 557 F. App'x 933 (11th Cir. 2015), the court held “Rule 106 does not apply to oral statements. However, we have extended the fairness standard in Rule 106 to oral statements ‘in light of Rule 611(a)’s requirements that the district court exercise reasonable control over witness interrogation and the presentation of evidence to make them effective vehicles for the ascertainment of truth.’ ” *Id.* at 936 (internal quotation marks and citation omitted) (quoting *United States v. Baker*, 432 F.3d 1189, 1223 (11th Cir. 2005)); *see also United States v. Verdugo*, 617 F.3d 565, 579 (1st Cir. 2010) (noting that the district court “retained substantial discretion under Fed. R. Evid. 611(a) to apply the rule of completeness to oral statements”); *United States v. Collicott*, 92 F.3d 973, 983 n.12 (9th Cir. 1996) (noting, without disagreement, that other circuits have held that Rule 611(a) gives district courts the same authority regarding oral statements that Rule 106 gives regarding to recorded statements); *United States v. Branch*, 91 F.3d 699, 727–28 (5th Cir. 1996) (noting, without disagreement, that “[o]ther circuits have held that Rule 611(a) imposes an obligation for conversations similar to what rule 106 does for writings”); *United States v. Li*, 55 F.3d 325, 329 (7th Cir. 1995) (holding that Rule 106 does not apply to oral statements, but observing “we . . . have held that Fed. R. Evid. 611(a) grants district courts the same authority regarding oral statements which Fed. R. Evid. 106 grants regarding written and recorded statements”); *United States v. Haddad*, 10 F.3d

1252, 1258 (7th Cir. 1993) (“[Rule 106] refers to written or recorded statements. However, Rule 611(a) gives the district courts the same authority with respect to oral statements and testimonial proof.”); *Alvarado*, 882 F.2d at 650 n.5 (holding that Rule 106 applies to writings, but Rule 611(a) “renders it substantially applicable to oral testimony as well”).

The evidence commentators agree. 1 Broun, *supra*, § 56, at 394 n.7 (observing that while Rule 106 only applies to writings and recordings, “[n]evertheless, the trial judge appears to have the same power to require the introduction of [the] remainder of oral conversations under Federal and Revised Uniform Rule of Evidence (1974) 611(a)”; 2 Graham, *supra*, § 106:2 (“Under unusual circumstances, the court may require the proponent to introduce contemporaneously other parts of oral conversation pursuant to the general authority of the court to control the mode and order of interrogating witnesses and presentation of evidence [Rule 611(a)].”); 1 Mueller & Kirkpatrick, *supra*, § 1:43 (“It seems that basic notions of relevancy embodied in Rule 401, coupled with the principle in Rule 403 that evidence can be excluded if it is misleading or overly prejudicial, both complemented by the power of trial judges acknowledged in Rule 611 to exercise reasonable control’ of the presentation of evidence in order to aid in ‘determining the truth,’ provide ample basis to apply the completeness principle more broadly. Hence courts can indeed apply essentially the same principle to proof of oral statements, even if they were not recorded or written down, and in cases where they are recorded or written down but the proponent has chosen to prove them by other means, such as testimonial accounts.”); Saltzburg et al., *supra*, § 106.02[2] (“While Rule 106 by its terms applies only to writings and recordings, the principle of completeness embodied in the rule has been applied to testimony about oral statements as well (such as a police officer’s selective rendition of a defendant’s oral statement). Whether this is mandated by Rule 106 or by Rule 611 is unimportant. The important point is

that where a party introduces a portion of an oral statement, the adversary is entitled to have omitted portions introduced at the same time, insofar as that is necessary to correct any misimpression that the initially preferred portion would create.” (footnote omitted)); 1 Jack B. Weinstein & Margaret A. Berger, *Weinstein’s Federal Evidence* § 106.02[3] (Joseph M. McLaughlin, ed., 2d ed. 2015) (“[T]he trial court does have an essentially equivalent control [as in Rule 106] over testimonial proof, as part of a judge’s general power to control the mode and order of interrogating witnesses and presenting evidence [referencing Rule 611(a)].”); 21A Wright & Graham, *supra*, § 5072.2 (“Rule 611 is another rule that must be considered along with Rule 106. Indeed, it is frequently said that Rule 106 is a ‘specialized application’ of Rule 611. . . . Perhaps the most expansive use of Rule 611 to supplement Rule 106 is the courts who used Rule 611 to justify continuation of the common law completeness doctrine.” (footnotes omitted)).

3. Rule 403

Finally, Fed. R. Evid. 403 should not be overlooked when considering the implications of the rule of completeness as it relates to writings, recordings, and oral statements. Rule 403 states:

The court may exclude relevant evidence if its probative value is substantially outweighed by the danger of one or more of the following: unfair prejudice, confusion the issues, misleading the jury, undue delay, wasting time, or needlessly presenting cumulative evidence.

Even in circuits (such as the Fourth Circuit) that seem to limit Rule 106 to written or recorded statements and that do not appear to allow the introduction of evidence under the rule of completeness to rectify the unfairness caused by the introduction of a misleadingly incomplete description of the content of a writing, recording, or oral statement unless it is independently admissible, *Hassan*, 742 F.3d at 134–35; *Wilkerson*, 84 F.3d at 696, a trial court is not powerless

to address an abuse of the adversary system. If allowing a government witness to testify only to a defendant's inculpatory statements, without being subject to cross examination about the exculpatory portions of the same statement (because they are not independently admissible) would leave the jury with a misleading understanding of the defendant's statement to the extent that it would cause unfair prejudice, the court may give the government a choice: either allow cross examination to provide a complete picture of what the defendant said; or exclude the testimony of the incomplete portion of the statement.

Rule 403 should not be used in this manner, however, unless the testimony regarding the defendant's statement is unfairly incomplete, when measured by the factors discussed above. And, if a defendant seeks to introduce excluded portions of his statement (either during cross examination or in his own case) in order to complete the record, the same factors should be used by the court to ensure that only what is actually necessary to dispel the misleading impression is permitted.

Conclusion

So, what lessons may be drawn from this discussion? First, the rule of completeness, like its common-law predecessor, is more than just an obscure procedural rule governing the timing of the introduction of writings and recordings. It is tied to the very purpose of the adversary system, which allows the parties to strike blows that are hard but not unfair. The adversary system finds its most important application in the trial of a criminal case. The government has nearly unlimited resources to investigate and bring charges. With that power comes the obligation to prove the charges beyond a reasonable doubt. We take pains to instruct criminal juries that the government bears the entire burden of proof. The defendant is presumed to be innocent, and is not required to prove anything, or even testify. We admonish juries to draw no

adverse inference when a defendant elects not to testify in his case. We also esteem the defendant's right not to be compelled to incriminate himself and take precautions to avoid the chilling effect that comes with any comment in front of the jury that suggests that they should take note of the fact that he chose not to testify.

If a prosecutor introduces an incomplete version of the defendant's written or oral statement to the investigating officers by eliciting only the inculpatory portions, while leaving out exculpatory ones that, in fairness, would paint a more complete picture and dispel a misleading impression that the jury may have reached having heard only the incomplete portions, then the defendant is at a serious disadvantage. If he is unable to introduce the parts of his statement that the government omitted at the same time that the incomplete version is presented to the jury (or instead very shortly thereafter on cross examination, or even later during his own case) because the court rules that the omitted parts are inadmissible hearsay or (if the statement was an oral one) that Rule 106 is inapplicable to oral statements, then he has only two remaining options: (1) allow the misleading version to stand unchallenged; or (2) waive his rights against self-incrimination and testify—but only after the government has completed its case. This is a high price to pay to correct misleading information. If one accepts, as the language of the Rule requires, that Rule 106 may only be invoked in the first place to correct an unfair presentation of incomplete information, then construing Rule 106 the way that many courts have done countenances an abuse of the adversary system that the common-law rule of completeness was designed to prevent. That is why the better-reasoned cases have held that, where necessary to redress an unfairly incomplete rendition of a written, recorded or oral statement, evidence that would otherwise be inadmissible may be introduced.

Second, the goal of Rule 106 and the common-law rule of completeness is to level the playing field, not tilt it in favor of the defendant. For that reason, it should only come into play when it is clear that the incomplete version of a written, recorded or oral statement is unfairly misleading. And only information that is essential to dispel the misleading impression should be admitted. This is especially true if, as the better-reasoned cases have concluded, inadmissible evidence may be used for this purpose. For this reason, judges have an obligation to carefully examine both the assertedly misleading information and the proffered completing information to insure that the evidence that was introduced requires clarification or explanation, and the proffered evidence is essential to clarify or explain. Careful consideration of the factors that courts and commentators have developed will allow a judge to strike the right balance, and offset any concern about the use of inadmissible evidence where necessary to correct unfairly incomplete evidence. *See supra*, § II.A.2.

Third, there is little persuasive justification for not applying the same principles to oral statements that Rule 106 applies to written or recorded ones. A misleading oral statement is no less unfair than a written one. And the cases that have allowed the use of Rule 611(a) to achieve this result seem better reasoned than the ones that have not. *See supra*, § II.B.2. Similarly, it seems ill-advised to conclude, as some courts have done, that only admissible evidence may be used under Rule 106 or the common law rule of completeness without first considering the underlying purpose of the rule, which is to prevent an abuse of the adversary system. *See supra*, § II.A.1. One can hardly claim the moral high ground through a willingness to accept an unfair result in the name of evidentiary purity. As the D.C. Circuit noted in *Sutton*, “Rule 106 can adequately fulfill its function only by permitting the admission of some otherwise inadmissible evidence when the court finds in fairness that the offered evidence should be considered

contemporaneously. A contrary construction raises the specter of distorted and misleading trials, and creates difficulties for both litigants and the trial court.” 801 F.2d at 1368–69.

Finally, if a trial court is compelled by reason of the governing circuit authority to restrict Rule 106 to writings and recorded statements (and precluded from using Rule 611(a) to adopt the protections of Rule 106 for oral statements), or is prevented from admitting inadmissible evidence when necessary to dispel an unfairly misleading version of a written or oral statement introduced by the prosecutor, the court should carefully consider Rule 403. *See supra*, § II.B.3. If the incomplete version offered by the government would cause unfair prejudice to the defendant, or tend to mislead the jury, then the court—unable because of restrictions imposed by circuit authority to redress the prejudice—should prevent the government from introducing the unfairly misleading evidence to the jury.

The ultimate conclusions that I reach in light of the foregoing discussion are:

- (1) Rule 106 only covers writings or recordings, but its codification does not preempt the application of the common-law rule of completeness for oral statements and conversations. If the common-law rule is applied to oral statements and conversations, the court should consider the factors discussed at § II.A.2 to determine whether the completing information is required at the same time that the incomplete information is introduced or whether it should be admitted at cross examination or later.
- (2) As an alternative means of dealing with oral statements or conversations, Rule 611(a) allows the trial judge to apply the same underlying logic of Rule 106.
- (3) Neither Rule 106 nor the common-law rule of completeness is triggered unless some clearly identifiable unfairness would exist without allowing the party that would be prejudiced the opportunity to offer information that would clarify or explain. The trial

judge must carefully examine both the incomplete and completing information to insure that fairness does require the correction, and limit the correcting information to that actually needed to eliminate the unfairness. The factors discussed in § II.A.2 should be used by the judge in conducting this analysis.

- (4) When the fairness principles that underlie Rule 106 and the common-law rule of completeness require application of the doctrine, both admissible and inadmissible information should be available to set the record straight. While there is Fourth Circuit authority holding that inadmissible evidence may not be used, *Hassan*, 742 F.3d at 134–35; *Wilkerson*, 84 F.3d at 696, there also is authority holding that it may, *Gravelly*, 840 F.2d at 1163, and until this split in authority has been resolved, a court may allow inadmissible evidence under the completeness doctrine, subject to the restrictions mentioned in my third conclusion above.
- (5) If the Fourth Circuit should clarify that inadmissible evidence is not available to complete the record under Rule 106, the common law, or Rule 611(a), then the trial court should carefully consider Rule 403, and if the unfairness that would result from the proponent’s introduction of the incomplete information cannot adequately be addressed by other means, exclude the misleading information pursuant to Rule 403.

Date: May 24, 2017

/S/
Paul W. Grimm
United States District Judge

TAB 7

TAB 7A

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Memorandum To: Advisory Committee on Evidence Rules
From: Daniel J. Capra, Reporter
Re: Proposed Amendment to Delete Rule 609(a)(1)
Date: October 1, 2017

Hon. Timothy Rice, a Magistrate Judge in the Eastern District of Pennsylvania and a former member of the Criminal Rules Committee, has proposed that the Evidence Rules Committee consider an amendment that would abrogate Rule 609(a)(1).¹ Rule 609 covers the use of prior convictions to impeach a witness's character for truthfulness. Rule 609(a) covers recent convictions---less than ten years between the date of trial and the witness's release from confinement. Rule 609(a) divides recent convictions into two types --- those that are grounded in dishonesty and those that are not. Rule 609(a)(1) covers the latter.

Rule 609(a) currently provides as follows:

Rule 609. Impeachment by Evidence of a Criminal Conviction

(a) In General. The following rules apply to attacking a witness's character for truthfulness by evidence of a criminal conviction:

(1) for a crime that, in the convicting jurisdiction, was punishable by death or by imprisonment for more than one year, the evidence:

(A) must be admitted, subject to Rule 403, in a civil case or in a criminal case in which the witness is not a defendant; and

¹ Judge Rice's excellent article advocating abrogation of Rule 609(a)(1) is included in this agenda book, behind this memo.

(B) must be admitted in a criminal case in which the witness is a defendant, if the probative value of the evidence outweighs its prejudicial effect to that defendant; and

(2) for any crime regardless of the punishment, the evidence must be admitted if the court can readily determine that establishing the elements of the crime required proving—or the witness’s admitting—a dishonest act or false statement.

Note that Judge Rice proposes no changes to Rule 609(a)(2), the rule providing for automatic admissibility of prior convictions based on dishonesty or false statement. His attack is on the provision that allows impeachment of a witness’s character for truthfulness even though the conviction had nothing to do with truth-telling.

Judge Rice’s argument for abrogating Rule 609(a)(1) is grounded in what he recognizes as a movement in America toward restorative justice. As applied here, the concept is that criminals who serve their time should be restored as full members of society and should not be saddled with disabilities that are unrelated to societal security or some other valid social policy. So, for example, punishing felon gun possession would be permissible, but denying felons the right to vote would not. Allowing a felon’s character to be attacked, by a conviction that is not very probative of a character for truthfulness, would fall on the impermissible side of the restorative justice model.

Judge Rice argues that the probative value of a prior conviction, if it is not based on dishonesty, is minimal. The purpose for admitting such a conviction is to allow the jury to draw the inference that because the witness was convicted, he has a bad character for truthfulness; but Judge Rice finds that to be a dubious proposition when the crime itself is not based on dishonesty. Judge Rice notes that “[n]umerous scholars cite the absence of a direct correlation between a witness’s non-dishonesty felony convictions and propensity to lie.”

Accordingly, Judge Rice states that “principles of restorative justice justify eliminating the use of a prior felony unrelated to truthfulness to impeach returning citizens who testify as witnesses.” That move would be consistent with restorative justice programs that strive “to break the cycle of reoffending through a variety of practices designed to help returning citizens resume productive, law-abiding lives within the broader community.”

The rest of this memorandum is divided into four parts. Part One provides a short discussion of the legislative history of Rule 609(a). This is particularly important because Rule 609(a) was the most discussed, and most fought-over, provision in all of the Federal Rules of Evidence. Part Two provides a short discussion of state variations on Rule 609(a). Part Three evaluates Judge Rice’s premises and considers some consequences of abrogating Rule 609(a)(1). Part Four shows what an abrogation or other limitation might look like in terms of rule-drafting.

I. Legislative History: The Dispute in Congress on Rule 609(a)

Rule 609(a) is a product of a legislative compromise, and that might bear on any question of amending it. What follows is a quick account of that history, much of it taken from Wright and Gold, *Federal Practice and Procedure* §6131.

The legislative history of Rule 609(a) indicates deep disagreement among the Advisory Committee, the House, and the Senate about the value of prior conviction impeachment, particularly when the witness is the accused. Congress spent more time on Rule 609(a) than on any other evidence rule. While the debate was often couched in narrow terms, the argument in Congress became increasingly broad and ideological, mostly focusing on how to balance the rights of an accused against the rights of society to defend itself from criminals.²

Rule 609(a) in the Preliminary Draft of the Federal Rules of Evidence would have provided a rule that all convictions for crimes involving dishonesty or false statements, as well as all felony convictions, were automatically admissible. The drafters made no provision within the proposed rule for discretionary exclusion preventing unfair prejudice or unnecessary delay. In proposing this rule, the Advisory Committee was consistent with the common law, under which all felonies, and all misdemeanors involving false statements, were automatically admissible to impeach all witnesses.

Public comment on the Advisory Committee's Preliminary Draft focused on the absence of any discretion to exclude, no matter how serious, the threat of prejudice to an accused in a criminal case. Rule 6-09(a) was unfavorably compared to the approach of a then-recent D. C. Circuit Court of Appeals decision, *Luck v. United States*, 348 F.2d 763 (D.C.Cir. 1965). In *Luck*, the court construed a provision of the District of Columbia Code as permitting discretionary exclusion of convictions offered to impeach an accused. (The D.C. Rule provided that prior convictions "may" be admitted). The Advisory Committee responded to the public criticism by adding a section to Rule 609(a) in the Revised Draft of the Federal Rules of Evidence, providing for the exclusion of conviction evidence if its probative value was substantially outweighed by the danger of unfair prejudice. The drafters also revised their committee note to make clear their reliance on the *Luck* doctrine.

² It should be noted that the practice of impeaching criminal defendants with felony convictions was not originally intended to be punitive. At one time under the common law, felons were considered incompetent to testify. The Supreme Court, in *Rosen v. United States*, 246 U.S. 461, 471 (1918), abandoned this rule of incompetency, stating that "the truth is more likely to be arrived at by hearing the testimony of all persons of competent understanding who may seem to have knowledge of the facts involved in a case, leaving the credit and weight of such testimony to be determined by the jury." Thus the concern over the character of a felon-witness was seen (as it is today) as a question of credibility and not competency. The practice of impeachment with prior convictions was considered to be a more targeted way to address the problem of a felon-witness's credibility than a complete bar to testimony; it "was a byproduct of a progressive reform that removed rather than added to the obstacles facing convicts (including, of course, many criminal defendants) who sought to testify." Jeffrey Bellin, *Circumventing Congress: How the Federal Courts Opened the Door to Impeaching Criminal Defendants with Prior Convictions*, 42 U.C. Davis L.Rev. 289, 295 (2008).

Unfortunately for the drafters, less than a year before promulgation of the Revised Draft, Congress had amended the District of Columbia Code for the purpose of eliminating the *Luck* doctrine. (The language was changed from “may be admitted” to “shall be admitted”). The drafters apparently had been unaware of that amendment. Senator McClellan, a powerful member of the Judiciary Committee, the point man on the Evidence Rules in the Senate, and an outspoken advocate for prosecutorial interests, adamantly objected to Rule 609(a) in the Revised Draft, characterizing it as an intentional effort by the drafters to undermine congressional policy as expressed in its amendment to the District of Columbia Code. This supposed affront to congressional will contributed to Senator McClellan's subsequent legislative attempt to limit the rulemaking power of the Supreme Court, a proposal that threatened the entire project to create a Federal Rules of Evidence. The drafters reacted to Senator McClellan's ire by returning, in the next draft, to the form of Rule 609(a) employed in the Preliminary Draft — i.e., automatic admissibility of all felonies and all convictions based on dishonesty or false statement. The Advisory Committee's Note was rewritten to explain that the purpose of this reversal was to make the rule consistent with congressional policy as manifested in the 1970 amendments to the District of Columbia Code. The Supreme Court submitted subdivision (a) to Congress in this form.

Significant discussion of Rule 609(a) took place during hearings held by a subcommittee of the House Judiciary Committee. Most witnesses and correspondents favored a return to the Revised Draft approach by recognizing judicial discretion to exclude any conviction for unfair prejudice. The House subcommittee was at least partially swayed by the tenor of these comments. In the first Committee Print of June 28, 1973, a provision was added to Rule 609(a) giving the courts discretion to exclude convictions for “crimes punishable by death or imprisonment in excess of one year.” No similar discretion was recognized for crimes “involving dishonesty or false statement.” Thus, the subcommittee chose a middle ground between the Revised Draft's grant of discretion to exclude for unfair prejudice in all cases and the Supreme Court Draft's absolute denial of discretion.

The full House Judiciary Committee approved yet another version of subdivision (a), rejecting the subcommittee version because it did not adequately protect an accused from abuse. The Committee's version permitted convictions to be admitted “only if the crime involved dishonesty or false statement.” No provision was made for balancing prejudice and probative value for those falsity-based convictions. (This is essentially the version that Judge Rice now advocates.) One member of the Committee complained in a statement in the Committee Report that the balance now had been weighted too heavily in favor of the accused.

The floor debate in the House over Rule 609(a) focused upon the appropriate balance between society's interests in seeing the guilty convicted and the accused's right to testify. An amendment was proposed that substituted the language of the original Supreme Court version, eliminating discretion to exclude for unfair prejudice and permitting admission of all felony convictions, as well as any crime involving dishonesty or false statement. That amendment was

defeated and the House Judiciary Committee's version of Rule 609 was passed: i.e., only falsity-based convictions would be admissible, but automatically so.

Proceedings in the Senate also reflected the diversity of viewpoints on Rule 609(a). The Senate Judiciary Committee heard from witnesses and correspondents favoring the House version, the Revised Draft, and the Supreme Court Draft. The Committee attempted to compromise by endorsing yet another version of Rule 609(a) which borrowed elements from each of these predecessors. (That version provided for balancing of all convictions, but non-falsity felonies would not be admissible against criminal defendants). Senator McClellan proposed on the Senate floor an amendment reminiscent of the Supreme Court Draft in that it made all felony convictions and all falsity-based convictions of any kind admissible, and eliminated the power to exclude any of those convictions for unfair prejudice. McClellan's amendment was narrowly approved. This left the Conference Committee with the task of reconciling the two versions of Rule 609(a) which, from all those proposed, defined the scope of admissibility most narrowly and most broadly. The narrow position was that only falsity-based convictions would be admissible, with no reference to judicial balancing. The broad version was that all felony convictions and all falsity-based convictions would be automatically admissible. The Committee compromised by making crimes involving dishonesty or false statement admissible with no discretion to exclude for unfair prejudice, while also making felony convictions for crimes not involving dishonesty or false statement admissible --- but only if probative value outweighed unfair prejudice "to the defendant." Thus there was a special protection intended for accused-witnesses, more protective than the Rule 403 test. Apparently exhausted, both houses acceded and enacted Rule 609(a).

What is the relevance of all the legislative history? One could argue that a rule that went through so much fire and came out as a compromise should be given some deference before that compromise is undone. It's true, though that the work done by Congress happened almost 50 years ago, and it could be argued that the compromise was one that ended up with a rule that made no sense in at least one respect (i.e., "to the defendant" could also protect civil defendants, for no reason).³ And the history may be thought to be undermined by societal developments and changed understandings --- such as a recent interest in restorative justice.

Another possible way to think about the legislative history is that even as a compromise, there was a special attempt to protect criminal defendants as witnesses. If that protection is not

³ The language "to the defendant" was intended to protect criminal defendants but by its terms civil defendants were protected as well. This resulted in an imbalance in the impeachment rules in civil cases --- defendant-witnesses were protected by a balancing test but plaintiff-witnesses were not. The Supreme Court, in *Green v. Bock Laundry*, 490 U.S. 504 (1989), rejected this literal interpretation as being nonsensical, and called upon rule makers to rectify the anomaly. A 1990 amendment to Rule 609(a)(1) limited the balancing test of "probative value must outweigh the prejudice" to *criminal* defendants who are testifying. But it also, importantly, made clear that Rule 403 applied to non-falsity convictions offered against any witness other than a criminal defendant. The 1990 Committee Note (prepared by the Criminal Rules Committee because there was no Evidence Rules Committee at the time) states that "the danger of prejudice from the use of prior convictions is not limited to criminal defendants" and that "it is desirable to protect all litigants from the unfair use of prior convictions."

working out --- if criminal defendants are being impeached too easily, or being kept off the stand too broadly—then perhaps the balance struck is not working out and should be rethought. These matters are discussed in the following sections.

II. State Variations

Four states have rules that reject impeachment with criminal convictions that are not dishonesty-based. If the Committee decides to proceed with a consideration of a possible amendment to Federal Rule 609(a)(1), then the Reporter will look into the practice in these states to see how these rules are being applied and how practice is affected.

1. *Hawaii Rev. Stat. Ann. §626-1, Rule 609(a):*

For the purpose of attacking the credibility of a witness, evidence that the witness has been convicted of a crime is inadmissible except when the crime is one involving dishonesty. However, in a criminal case where the defendant takes the stand, the defendant shall not be questioned or evidence introduced as to whether the defendant has been convicted of a crime, for the sole purpose of attacking credibility, unless the defendant has oneself introduced testimony for the purpose of establishing the defendant's credibility as a witness, in which case the defendant shall be treated as any other witness as provided in this rule.

Comment:

This rule goes even further than abrogating Rule 609(a)(1). It also abrogates Rule 609(a)(2), at least as applied to criminal defendants who are witnesses (unless they open the door).

2. *Michigan Rule of Evidence 609*

(a) General Rule. For the purpose of attacking the credibility of a witness, evidence that the witness has been convicted of a crime shall not be admitted unless the evidence has been elicited from the witness or established by public record during cross-examination, and

(1) the crime contained an element of dishonesty or false statement, or

(2) the crime contained an element of theft, and

(A) the crime was punishable by imprisonment in excess of one year or death under the law under which the witness was convicted, and

(B) the court determines that the evidence has significant probative value on the issue of credibility and, if the witness is the defendant in a criminal trial, the court further determines that the probative value of the evidence outweighs its prejudicial effect.

Comment: As compared to Federal Rule 609(a)(1), Michigan covers only one set of crimes --- those that contain an element of theft. If Rule 609(a)(1) is to be limited, the Michigan version is not a bad idea, as it is based on differentiating probative value among crimes. Michigan is saying that theft-related crimes are more likely to be probative of a character for truthfulness than, say, violent crimes. The problem, though, is where do you draw the line on crimes that are “underhanded” but not actually based on a lie? Drug crimes come to mind. What about harboring a fugitive? Perhaps it is better to leave it at crimes that involve dishonesty or false statement as an element and those that do not.

Anyway, if the Michigan alternative is transferred over to the Federal Rule, Rule 609(a)(1) could look like this:

(a) In General. The following rules apply to attacking a witness’s character for truthfulness by evidence of a criminal conviction:

(1) for a crime containing an element of theft that, in the convicting jurisdiction, was punishable by death or by imprisonment for more than one year, the evidence:

(A) must be admitted, subject to Rule 403, in a civil case or in a criminal case in which the witness is not a defendant; and

(B) must be admitted in a criminal case in which the witness is a defendant, if the probative value of the evidence outweighs its prejudicial effect to that defendant;

3. Montana Rule of Evidence 609

For the purpose of attacking the credibility of a witness, evidence that the witness has been convicted of a crime is not admissible.

Comment: Montana abrogates Rule 609 entirely. The Montana Advisory Commission “does not accept as valid the theory that a person's willingness to break the law can automatically be translated into willingness to give false testimony.” The Commission conceded that committing certain crimes is probative of character for truthfulness, but “it is the specific act of misconduct underlying the conviction which is really relevant, not whether it has led to a conviction.” So this sounds like a big deal, but all that Montana has really done is shifted conviction impeachment to bad act impeachment under Rule 608(b). That makes for some differences in balancing as compared to Federal Rule 609(a) and its many balancing tests. (Rule 608(b) impeachment is governed across-the-board by Rule 403). But it is not as if Montana is prohibiting attacks on a witness’s character for truthfulness based on the wrongs that the witness has done.

4. Pennsylvania Rule of Evidence 609:

(a) In General. For the purpose of attacking the credibility of any witness, evidence that the witness has been convicted of a crime, whether by verdict or by plea of guilty or *nolo contendere*, must be admitted if it involved dishonesty or false statement.

Comment: Pennsylvania has no Rule 609(a)(1) at all. The entire rule is 609(a)(2). Essentially this would be the Federal Rule under Judge Rice’s proposal. The Pennsylvania Advisory Committee explains that the variance from Federal Rule 609 is to account for pre-existing Pennsylvania case law.

It should be noted, though, that the Pennsylvania Rule’s bar on Rule 609(a)(1) is by inference only. It doesn’t specifically say that such convictions are inadmissible. It only says what is admissible, and so relies on the maxim *expression unis exclusion alterius*. As a matter of good rulemaking --- and especially given the existing structure of the Federal Rule --- it would definitely be better to add a specific statement that non-falsity based convictions are inadmissible to impeach a witness’s character for truthfulness. That option is explored below in the drafting alternatives.

III. The Policies, Premises, and Consequences of Abrogating Rule 609(a)(1)

A. Restorative Justice

Taking an angle of restorative justice is an interesting way to think about the possibility of eliminating Rule 609(a)(1). As Judge Rice recognizes, Rule 609(a)(1) has been attacked by scholars and others from the time it was enacted. And yet it is still standing, perhaps in part because it was the result of a hard-fought compromise and so might be given deference by rule makers. But that deference might be rethought if there are new policies or social movements that render the rule questionable. As Judge Rice puts it, “[o]ur nation’s ongoing effort to assist returning citizens provides a fresh rationale for finally discarding the dubious premise of Rule 609(a)(1).”

There are, however, some arguable concerns about resting an Evidence Rule change on the restorative justice movement. First, it can be argued that there is doubt about how much of a movement restorative justice really is. Judge Rice cogently points to greater use of clemency, and the Second Chance Act of 2008, as indications that our society has committed itself to reduce mass incarceration and to ease reentry for those who have served their time. But more recent actions (if you know what I mean) can be read to indicate that the interest in limiting incarceration and easing reentry has waned. Moreover, in many states, there are still bars to reentry that are objectively more serious than Rule 609(a)(1) --- felon disenfranchisement rules come to mind. So it is somewhat unclear how strong the movement for restorative justice really is, and how that should affect any amendment to Rule 609(a)(1).

It is also unclear whether any social movement or trend --- no matter how strong or well-defined --- should have an effect on amendments to the Evidence Rules. The Advisory Committee has traditionally considered amendments on the basis of whether they will further fairness and efficiency in litigation, not on trends in society. On the other hand, some social movements have had substantial effect on rulemaking. One that comes to mind is the victim's rights movement, which influenced extensive amendments to the criminal rules.

In the end, though, even if restorative justice is not sufficient to justify eliminating Rule 609(a)(1), Judge Rice's proposal deserves evaluation on the merits. And the merits means: would abrogation improve practice and further fairness in trials and settlements? Put another way, should the proposal be pursued simply because it is a good idea? That question is addressed in the next section.

B. The Validity of Impeachment With Non-Falsity Convictions

As Judge Rice notes, the traditional reason for allowing impeachment with non-falsity based prior convictions is that a person who has been convicted of such a crime is thought to have shown a willingness to place his own interests above those of society. That disregard of societal interests is considered probative of the witness's willingness to disregard the oath and testify falsely. To state the extreme hypothetical, a witness who has been convicted of several murders is unlikely to worry much about laws on telling the truth.

Judge Rice notes that some research indicates that "moral conduct in one situation is not *highly* correlated with moral conduct in another" (emphasis added), and it is surely true that the probative value of a non-dishonesty conviction is less probative than that of a falsity-based conviction. But Rule 609(a), of course, recognizes the diminished probative value of non-falsity based convictions. Not all of them are admissible, and, of course, with respect to the accused, there is a balancing test that is more protective than that for any other witness. Judge Rice notes the balancing test but states that "it fails to address the core flaw in Rule 609(a)(1): a felony conviction's presumed relevance based on the witness's evil propensity."

Beyond the attack on probative value, a second prong of the critique on Rule 609(a)(1) --- emphasized by Judge Rice and other scholars --- is the concern that the threat of overuse of prior convictions deters many criminal defendants from testifying. That concern has received fuel from a study done of all the defendants who have been exonerated by DNA testing. It turns out that 39% of them did not testify, and 91% of that group had prior convictions that would probably have been admissible, or were ruled to be admissible, under broad impeachment rules like Rule 609(a). John Blume, *The Dilemma of the Criminal Defendant with a Prior Record--Lessons from the Wrongfully Convicted*, 5 J. Empirical Legal Stud. 477, 484-86 (2008). There are several caveats to this data. First, Professor Blume did not consider whether the convictions in those cases were admitted (or admissible) anyway under Rule 404(b) --- if they were, then Rule 609 wasn't doing any deterring. Second, there are many reasons for a defendant not to testify --- most notably the fear of cross-examination --- and nothing in the study rules out

alternative causes. Third, there is no showing that the impeachment would have been non-falsity based --- if they were falsity-based, then Rule 609(a)(1) is not the problem. All that said, it is hard to deny that the risk of impeachment with prior convictions could have had an effect in some of the cases. *See also* Gordon Van Kessel, *Adversary Excesses in the American Criminal Trial*, 67 Notre Dame L. Rev. 403, 482 (1992) (noting that “[t]he threat of felony conviction impeachment can be a powerful deterrent to taking the witness stand” and citing empirical evidence that “a defendant [i]s almost three times more likely to refuse to testify if he ha[s] a criminal record than if not”).

It is of course for the Committee to determine whether it agrees with Judge Rice (and a number of other scholars cited by Judge Rice) on the lack of probative value of a prior conviction covered by Rule 609(a)(1), and on whether the Rule is currently unfairly deterring criminal defendants from testifying.⁴

C. Empirical Data

Judge Rice asked Professor Michael Saks to submit a summary of empirical studies which, according to Professor Saks, “inquire into the impact of prior convictions on jurors’ thinking about the case at bar, and the (apparent lack of) impact of limiting instructions directing jurors to employ the prior conviction evidence for the purposes of assessing credibility and not for the purpose of estimating the probability that the defendant committed the crime currently charged.” What follows is the summary he provided:

Correlational Analyses of Actual Trials

Kalven and Zeisel, *The American Jury* (1966).

Drawing on data from 3576 trials from state courts around the U.S., observed that conviction rates were 27 percent higher for cases in which prior conviction evidence was presented than for those cases in which such evidence was presented.

Myers, *Rule Departures and Making Law: Juries and Their Verdicts*, 13 *Law & Soc’y Rev.* 781 (1979).

Statistical analysis of 201 Indiana jury trials; finding a statistically significant association between the number of a defendant’s prior convictions and the likelihood of conviction; juries were more likely to convict defendants who had numerous prior convictions; apparently, however, in only 36 of these jury trials did the jury learn of the priors directly through testimony (suggesting that the past crimes are good predictors of conviction for a current crime even if the jury does not learn about the prior crimes).

⁴ One might think that if such convictions did completely lack probative value, they would never be admitted under the Rule 609(a)(1) balancing tests in the first place. But from a court’s perspective, that would probably be a non-starter, because a court would have to assume that at least Congress thought that there was probative value in such convictions.

Eisenberg & Hans, Taking a Stand On Taking the Stand: The Effect of a Prior Criminal Record On the Decision to Testify and On Trial Outcomes, 94 Cornell L. Rev. 1353 (2009).

From a database compiled by the National Center for State Courts, statistical analysis of 382 actual trials in four large counties around the U.S. in which prior crimes were at issue in the decision of a defendant whether to testify; finding statistically significant associations (1) between the existence of a criminal record and the decision to testify at trial, (2) between the defendant's testifying at trial and the jury's learning about the defendant's prior record, and (3), in cases with weak evidence, between the jury's learning of a criminal record and conviction (from under 20% to over 50%); in cases with strong evidence against defendants, learning of criminal records is not strongly associated with conviction rates; finding little evidence that prior record information causes reduction in credibility assessments; authors conclude from the pattern of findings that that criminal records are relied on to convict when other evidence in the case normally would not support conviction.

Mock Juror and Jury Experiments Simulating Criminal Cases

Doob & Kirshenbaum, Some Empirical Evidence on the Effect of s. 12 of the Canada Evidence Act Upon an Accused, 15 Crim. L.Q. 88 (1972).

Mock juror (non-deliberating individuals) experiment; individuals were recruited from various locations in Toronto; finding increase in rate of convictions when jurors were aware of a prior conviction for a similar crime; limiting instructions did not prevent the effect.

Cornish & Sealy (L.S.E. Jury Project), Juries and the Rules of Evidence, 1973 Crim. L. Rev. 208.

Mock jury (deliberating groups) experiments in England using 646 community members; finding an increase in the proportion of guilty verdicts in a theft case and (for one of two defendants) in a rape case when jurors learned of a defendant's previous record for crimes similar to that charged; when prior conviction was for a dissimilar crime, no increase in conviction rate occurred; instructing jurors to "disregard" the prior record evidence reduced the effect of the prior record.

Hans & Doob, Section 12 of the Canada Evidence Act and the Deliberations of Simulated Juries, 18 Crim. L.Q. 235 (1976).

Mock jury experiment in Canada involving 160 residents or visitors to the Toronto area (of whom 40 were University of Toronto students), deliberating as 4-person juries; finding that juries which learned that the defendant had previously been convicted of the

same crime were significantly more likely to find the defendant guilty than were jurors who had no information about his prior record.

Clary & Shaffer, Effects of Evidence Withholding and a Defendant's Prior Record on Juridic Decisions, 112 *J. Soc. Psychol.* 237 (1980).

Mock juror experiment, using 132 undergraduate students; varied defendant witness's legal history (previous conviction for attempted armed robbery, previous acquittal, no record) and whether witness appeared to try to evade answering questions versus answered in a straightforward manner; finding that defendants who appeared to withhold evidence were far more likely to be judged guilty (recommended verdict) and guiltier (ratings of guiltiness) of the charged crimes (armed robbery and murder) than those who answered forthrightly; the prior crime conditions had no statistically significant effect on guilt judgments. The authors "suggest that the act of the withholding evidence in the courtroom is such a powerful piece of 'extralegal' information that it may overwhelm any influence the defendant's prior legal history might otherwise have had."

Wissler & Saks, On the Inefficacy of Limiting Instructions: When Jurors Use Prior Conviction Evidence to Decide on Guilt, 9 *Law & Hum. Behav.* 37 (1985).

Mock juror experiment using 160 adults recruited from various locations in Boston; finding that evidence of similar prior crime increased conviction rate compared to no prior crime or dissimilar prior; also, same-crime prior led to higher rate of convictions than did a prior for perjury; on measures of witness credibility, defendants were invariably rated the lowest, and those ratings were unaffected by prior conviction information, including prior conviction for perjury; despite judges' instructions regarding proper use of prior conviction evidence, the defendant's "credibility was not significantly higher with no prior conviction nor lower with a prior conviction for perjury" and the "credibility rating of the defendant was significantly lower" than that of all other witnesses.

Greene & Dodge, The Influence of Prior Record Evidence on Juror Decision Making, 19 *Law & Hum. Behav.* 67 (1995).

Mock jury experiment using adult participants recruited from persons called for jury duty in Colorado; jurors were more likely to convict if they learned of a prior conviction, compared to a prior acquittal or no conviction information at all; 17% of mock jurors convicted the accused based on just the facts, while 40% convicted when in addition they learned of the defendant's prior record; limiting instructions by the judge were ineffective in bringing about legally proper use of the prior record evidence.

Lloyd-Bostock, The Effects on Juries of Hearing about the Defendant's Previous Criminal Record: A Simulation Study, 2000 *Crim. L. Rev.* 734.

British mock jury experiment; varied the presence, similarity, and recency of prior convictions; finding that jurors who learned of a recent similar conviction rated the probability that the defendant committed the crime as higher, estimating the probability of guilt as 66% compared to 52% for those who did not hear of the prior; recent similar convictions increased the likelihood of conviction and dissimilar convictions showed a comparative decline; knowing of prior conviction versus control did not affect credibility ratings (however, jurors who learned of a recent dissimilar record said that they were more likely to believe the defendant than jurors in any of the other conditions); most assumed that defendants probably had prior convictions even if no evidence or priors was given; author suggests the different patterns for similar and dissimilar prior convictions imply that jurors primarily use criminal-record evidence to infer propensity rather than to assess credibility.

Lloyd-Bostock, *The Effects on Lay Magistrates of Hearing That the Defendant Is of “Good Character,” Being Left to Speculate, or Hearing That He Has a Previous Conviction*, 2006 *Crim. L. Rev.* 189.

British experiment in which lay magistrates watched video depiction of trial and deliberated in groups of three (as they normally do); compared to a defendant with no prior record, magistrates judged the same defendant with a record as significantly more guilty of the present charge; like the majority of the mock jurors, 69% of the magistrates assumed defendants had prior criminal records even when no evidence of that was given.

Professor Saks also cites some studies of mock jury results in civil cases but concludes that “their results are weak, complex, and perhaps of little relevance.”⁵ He concludes that “the relevance of a prior crime to a tort claim is more tenuous than it is to a subsequent criminal charge.”

There are arguments that the data cited above should be viewed with caution. First, the data is about jurors learning of a defendant’s conviction *in any way*. Thus the studies do not sort out the impact of Rule 609(a)(1), because many convictions admissible under that Rule are admissible under Rule 404(b) even if the defendant never testifies. Second, the studies generally do not investigate the *type* of conviction that is admitted. If the conviction involves falsity, it is admissible under Rule 609(a)(2) and so the data is not directed to the impact of Rule 609(a)(1). Third, some of the data seems internally inconsistent. For example, there is a finding that factfinders are more likely to favor a defendant without a criminal record; but the same studies show that factfinders believed that the defendant had a criminal record even though no evidence to that effect was admitted. That second finding seems to render the first nonsensical. Fourth, with all due respect, mock jury studies are just that --- mock. When nothing is at stake, the results are likely to differ from what will happen in real life. Finally, the two basic conclusions

⁵ Professor Sax cites Tanford & Cox, *Decision Processes in Civil Cases: The Impact of Impeachment Evidence on Liability and Credibility Judgments*, 2 *Social Behavior* 165 (1987); Tanford & Cox, *The Effects of Impeachment Evidence and Limiting Instructions on Individual and Group Decision Making*, 12 *Law & Hum. Behav.* 477 (1988); and Stanchi & Bowen, *This is Your Sword: How Damaging are Prior Convictions to Plaintiffs in Civil Trials?*, 89 *Washington L. Rev.* 901 (2014).

from the data are that convictions are prejudicial and limiting instructions have little effect --- one might have thought that you don't really need a study to tell you those things. Everybody knows that prior convictions are prejudicial; and very few think that limiting instructions will do very much to alleviate the prejudice. The question in a criminal case is whether the probative value of the conviction when offered for impeachment justifies the danger of prejudice. The next section considers that question.

D. The Rule 609(a)(1) Balancing Test

If the Committee determines that convictions currently covered by Rule 609(a)(1) have *some* probative value as to the truthfulness of a witness, the question would then be whether the current balancing tests are correctly set and being correctly applied. All would presumably agree that even if somewhat probative, convictions should be excluded if there are countervailing problems of prejudice, confusion, and deterring testimony --- especially from the accused. But the question would be how to set that balance and whether it could be applied fairly and consistently.

Currently the balance is set more favorably for the accused than for all other witnesses. This has resulted in a number of cases at the appellate level in which admitting non-falsity based convictions for impeachment has been found to be error --- especially where the conviction offered for impeachment is similar to the crime charged, or where the conviction is for conduct that is especially inflammatory. *See, e.g., United States v. Caldwell*, 760 F.3d 267 (3rd Cir. 2014) (prior felon-firearm conviction could not be admitted to impeach the accused in a felon-firearm prosecution); *United States v. Sanders*, 964 F.2d 295 (4th Cir. 1992) (error to admit evidence of prior convictions for assault and contraband possession in a prosecution for assault with a dangerous weapon); *United States v. Martinez*, 555 F.2d 1273 (5th Cir. 1977) (error to admit prior narcotics conviction in a prosecution for conspiracy to distribute cocaine); *United States v. Kemp*, 546 F.3d 759 (6th Cir. 2008) (error to admit prior convictions for taking indecent liberties with a minor in a prosecution for felon-firearm possession); *United States v. Bagley*, 772 F.2d 482 (9th Cir. 1985) (error to admit prior robbery convictions in a prosecution for bank robbery). *See also United States v. Brackeen*, 969 F.2d 827 (9th Cir. 1992) (in a bank robbery prosecution, the trial judge excluded the defendant's prior bank robbery convictions under Rule 609(a)(1), but improperly admitted them under Rule 609(a)(2)).

On the other hand, there are many examples in reported cases in which prior convictions have been found properly admitted against an accused under Rule 609(a)(1), sometimes even when the conviction is identical to the crime charged, and sometimes when the conduct is especially inflammatory. *See, e.g., United States v. Brito*, 427 F.3d 53 (1st Cir. 2005) (no error to admit drug-trafficking convictions in a prosecution for possession of a firearm by an illegal alien; noting that drug-trafficking crimes "are generally viewed as having some bearing on veracity"; that the defendant's credibility was very important because the case hinged on a credibility choice; and that the prejudice was minimized because the convictions were not similar to the crime charged); *United States v. Hayes*, 553 F.2d 824 (2nd Cir. 1977) (prior conviction for drug

smuggling was properly admitted in a prosecution for bank robbery: the crime was recent; drug smuggling “ranks relatively high on the scale of veracity-related crimes, although not so high as to fall clearly within the second prong of Rule 609(a)”; and prejudice was diminished because the conviction was dissimilar from the crime charged); *United States v. Shaw*, 701 F.3d 367 (5th Cir. 1983) (prior convictions for rape and assault were properly admitted to impeach a defendant in a murder prosecution); *United States v. Jackson*, 546 F.3d 801 (7th Cir. 2008) (prior conviction for receiving stolen property was properly admitted to impeach a defendant charged with insurance fraud; the conviction reflected conduct bearing on the defendant’s truthfulness, even though it was not automatically admissible under Rule 609(a)(2)); *United States v. Hernandez*, 106 F.3d 737, 740 (7th Cir. 1997) (acknowledging that similarity of prior conviction to the charged offense was “a factor that requires caution” but concluding that it was outweighed by “the importance of the credibility issue in this case”); *United States v. Headbird*, 461 F.3d 1074 (8th Cir. 2006) (prior convictions for violent felonies were properly admitted to impeach a defendant in a felon-firearm prosecution: “One who has transgressed society’s norms by committing a felony is less likely than most to be deterred from lying under oath.”); *United States v. Givens*, 767 F.2d 574 (9th Cir. 1985) (no error to admit prior robbery convictions to impeach the defendant in a prosecution for armed robbery); *United States v. Smith*, 10 F.3d 724 (10th Cir. 1993) (prior convictions for robbery and burglary were properly admitted to impeach the defendant in a bank robbery prosecution).⁶

The Rule 609(a)(1) balancing test, as applied in most courts, looks at the following factors:

(1) the kind of crime involved (including its probative value as to witness-truthfulness) and its similarity to the charged crime); (2) when the conviction occurred; (3) the importance of the defendant’s testimony to the case; and (4) the importance of the credibility of the defendant.

United States v. Caldwell, 760 F.3d 267 (3rd Cir. 2014). *See also United States v. Mahone*, 537 F.2d 922 (7th Cir. 1976) (using the same factors but splitting up the first factor into two --- probative value as to credibility and similarity of the crime --- and thus applying five factors).

⁶ This memorandum highlights the appellate cases on Rule 609(a)(1), but it should be noted that it is relatively rare for negative Rule 609 rulings in the trial court to be appealed by an accused. That is because the negative ruling ordinarily occurs *in limine*, and in order to preserve the claim of error the defendant must actually testify and be impeached with the conviction on cross-examination. *Luce v. United States*, 469 U.S. 38 (1984) (defendant who does not testify waives the right to complain about an *in limine* ruling holding prior convictions to be admissible); *Ohler v. United States*, 529 U.S. 753 (2000) (defendant who raises an objectionable prior conviction on direct examination waives the right to complain that its admission was error). It appears that in many cases, if the trial court rules *in limine* that a conviction will be admissible to impeach him should he testify, the defendant decides not to testify, and an appellate court never reviews the trial court’s ruling.

If the Committee decides that it wishes to further pursue Judge Rice’s proposal, the Reporter will conduct a thorough search of district court case law on Rule 609(a)(1) for the next meeting.

These factors are obviously malleable and they can lead to disparate results with similar facts --- as seen in the examples from the circuit courts cited above, and the examples cited by Judge Rice in footnote 74 of his article.

Another problem with the balancing test is that two of the factors seem to cancel each other out, in cases where the criminal defendant's testimony would be important to the resolution (which is surely most cases). On the one hand, the court must factor in that importance as a factor toward exclusion, because there is an interest in having the accused testify. But on the other hand, the credibility of the accused is very important (given the importance of his testimony) and that is a factor cutting in favor of admitting the prior conviction.⁷ The court in *Caldwell, supra*, "acknowledge[d] the tension" between these two factors, but continued to apply them --- as do other federal courts.⁸

Amending the Rule 609(a)(1) Balancing Test?

One option, short of abrogation, is to try to do something about this balancing test. Professor Jeffrey Bellin suggests that the balancing test promulgated by the courts --- which was derived from pre-Federal Rules case law --- in fact subverts the intent of Congress, which was to allow only very limited use of non-falsity based prior convictions, especially as against criminal defendants. He sees the more favorable balancing test for criminal defendants as

[a] Rule that seeks to strictly limit prior conviction impeachment of criminal defendants. By virtue of the legal terminology chosen by Congress ("probative value" and "prejudicial effect"), the placement of these concepts on equal footing in the relevant balance, and the assignment of the burden of persuasion to the prosecution, [Rule 609(a)(1)] sets up a contest that is really no contest at all, strongly favoring the defense in most cases.

Bellin criticizes "a three-decade-long trend in the federal courts toward replacing the facially anti-impeachment text of the Rule with a decidedly pro-impeachment, five-factor analytical framework that places an almost insurmountable burden on defendants attempting to exclude prior convictions." Bellin, *Circumventing Congress: How the Federal Courts Opened the Door*

⁷ See Jeffrey Bellin, *Circumventing Congress: How the Federal Courts Opened the Door to Impeaching Criminal Defendants with Prior Convictions*, 42 U.C. Davis L.Rev. 289, 318 (2008) ("In essence, the factors cancel each other out. To the extent the defendant's testimony is 'important' * * * his credibility becomes 'central' in equal degree, leading to a curious equipoise.").

⁸ It can also be argued that the ruling in *Luce, supra* --- that only defendants who testify can appeal impeachment-by-conviction rulings --- renders the third factor (importance of the witness's testimony) nonsensical on appeal. That factor is designed to get the court thinking about not deterring the accused from testifying. But at the appellate level, only those defendants who *have* testified will be able to appeal. How does an appellate court apply the deterrence factor to a situation where, by definition, the accused was not deterred from testifying? See Bellin at 323: "Even if the trial court considers the defendant's testimony to be of critical importance to the jury, it no longer follows that impeachment should be rejected on that ground. The jury will hear the defendant's testimony (in fact, has already heard that testimony) regardless of whether the trial court admits the impeachment for use in cross-examination."

to Impeaching Criminal Defendants with Prior Convictions, 42 U.C. Davis L.Rev. 289, 318 (2008).

Professor Bellin advocates a more focused, “case-specific” approach in substitution of the pretty flimsy multi-factor balancing test currently used by the courts. The goal would be to require the court to identify “the aspects of each conviction and the facts of the particular case that could potentially justify the counterintuitive conclusion that a prior conviction’s ‘probative value’ as impeachment outweighs its ‘prejudicial effect to the accused.’” Professor Bellin explains that two-step inquiry as follows:

First, focusing on a conviction’s probative value, the trial court must recognize that the defendant’s credibility as a witness is always minimal, even without impeachment evidence [because the jury is already aware that the defendant has his liberty at stake and thus has a motive to falsify]. Consequently, the first question under Rule 609 is not whether a prior conviction has some relevance as impeachment, but rather: what will the introduction of the defendant’s prior conviction add to the jury’s evaluation of the defendant’s testimony? For a conviction to be considered more than marginally probative under this analysis, its evidentiary significance must be based on something more than a speculative “readiness to do evil.” That consideration is easily subsumed by the more compelling fact of the defendant’s abiding interest in acquittal. Rather, the analysis must rest on the specific facts of the case or of the conviction itself. For example, a conviction would be more than marginally probative when the defendant, on direct examination, attempts to create an impression of having led a law abiding life (i.e., trying to appear as “a Mother Superior”); makes some claim that is directly inconsistent with the existence of a prior conviction (e.g., “I have never seen drugs before in my life,” or “I am not a crook”); or where the defense utilizes prior convictions to impeach government witnesses, creating a false contrast between the defendant and his accusers.

With respect to the prejudice inquiry, the trial court should ask a similar case-specific question, recognizing that the admission of the defendant’s prior offenses as impeachment will virtually always result in some “prejudicial effect to the accused.” Specifically, the court must inquire: why is the prejudicial effect of the prior conviction diminished (or enhanced) in this case? A diminished risk of prejudice might be present when a relatively minor conviction (e.g., theft) is offered to impeach a defendant charged with a dissimilar and significantly more serious crime (e.g., murder); where the evidence introduced at trial has already identified the defendant as a prior offender (e.g., a crime committed in prison); or where the defendant’s prior conviction will be admitted for other purposes (e.g., to establish an element of the offense). In contrast, in circumstances where prejudicial effect is unusually high, such as where a prior conviction is for an identical or particularly infamous crime (e.g., child molestation), the trial court must begin with a presumption of inadmissibility under Rule 609 due to the sheer implausibility that the probative value of such evidence could ever outweigh its prejudicial effect.

In the vast run of cases, where the above analysis does not reveal any case-specific factors that enhance a proffered felony conviction's probative value and diminish its prejudicial effect, Rule 609 dictates exclusion. A straight comparison of: (i) the prejudicial effect of the jury's learning of a defendant's criminal past; against (ii) the probative value of informing the jury that the defendant has slightly less credibility than his status as an interested party already suggests, strongly favors exclusion, particularly in light of the fact that the burden of persuasion lies with the prosecution.

There is a good argument that Professor Bellin's narrowing of the analysis could result in an improvement in the implementation of the Rule 609(a)(1) balancing test as it applies to criminal defendants. The analysis would be more focused on the factors that Congress actually laid out in Rule 609(a)(1) --- probative value of the conviction and prejudicial effect to the accused. And limiting the number of factors might be thought useful because experience seems to show that the more factors for a court to employ, the more likely there will be a free-for-all with little consistency of application.

Assuming *arguendo* that such a change should be made, the question is whether it is one that could be made in rulemaking. The rulemaking challenge seems especially daunting, given that there are two separate balancing tests in Rule 609(a)(1), and the change would presumably apply only to the test involving criminal defendants --- that has always been the major focus of the reform efforts in the scholarship, and the critique of the case law that applies these balancing factors is exclusively directed to cases in which the criminal defendant is being impeached.

Here is what a change in text, to implement Professor Bellin's more focused test, might look like:

Rule 609. Impeachment by Evidence of a Criminal Conviction

(a) **In General.** The following rules apply to attacking a witness's character for truthfulness by evidence of a criminal conviction:

(1) for a crime that, in the convicting jurisdiction, was punishable by death or by imprisonment for more than one year, the evidence:

(A) must be admitted, subject to Rule 403, in a civil case or in a criminal case in which the witness is not a defendant; and

(B) must be admitted in a criminal case in which the witness is a defendant, if the probative value of the evidence (when considered in light of the witness's status as an interested party and other available impeachment evidence) outweighs its prejudicial effect to that defendant (when considered in light of any similarity of the conviction to the crime charged and the nature of the conviction to be offered); and

Here is a draft Committee Note for an amendment that would provide a more focused balancing test.⁹

A testifying defendant's prior convictions are admissible under Rule 609(a)(1)(B) only if their probative value in assessing character for truthfulness outweighs their prejudicial effect. While this balancing test is facially unweighted, two practical considerations tilt the calculus toward exclusion. First, the prosecution needs little help to undermine a defendant's credibility. The jury is keenly aware of the defendant's status as a party to the case, whose liberty is at stake, and that status directly impeaches self-serving testimony. A prior conviction offered indirectly as evidence of the defendant's general character for truthfulness compounds the damage, but the marginal effect (i.e., probative value) is slight. See Advisory Committee Note to Rule 403 (emphasizing the availability of other means of establishing the same point as a factor in assessing probative value). Second, as the general prohibition of prior crimes as character evidence in Rule 404 attests, prior convictions engender powerful prejudicial effects. Even a properly instructed jury will have difficulty restricting its consideration of such evidence to the narrow chain of inferences condoned by Rule 609. Jurors may instead be tempted to consider the evidence as reflecting a testifying defendant's "criminal propensities."

In light of these concerns, and a widely-shared perception that courts routinely admit prior convictions of testifying defendants, practitioners, scholars, and judges regularly urge abolition of the rule. The problems identified, however, stem from the Rule's application, not the Rule itself. In many courts, the Rule's command is distorted by a multi-factored framework that includes amorphous considerations like the "centrality of credibility" and the "importance of the defendant's testimony." These factors, derived from case law that predates Rule 609, undermine the Congressionally-enacted "special balancing test for the criminal defendant who chooses to testify." Advisory Committee Note to 1990 Amendment.

The Rule has been amended to refocus the analysis on the original, straightforward calculus intended by Congress -- probative value versus prejudicial effect. The amended rule, of course, "does not forbid all use of convictions to impeach a defendant," *id.*, but it highlights considerations that should render the admission of prior convictions not involving a dishonest act or false statement, and particularly those similar to the charged crime, an infrequent occurrence.

There are other possible ways to amend the balancing test that might limit unwarranted admission of prior convictions against the accused. One such alternative is to tip the balancing

⁹ This draft Note was prepared by Professor Bellin at the Reporter's request.

test further in favor of exclusion. That could be done by amending Rule 609(a)(1)(B) as follows:

(a)In General. The following rules apply to attacking a witness's character for truthfulness by evidence of a criminal conviction:

(1) for a crime that, in the convicting jurisdiction, was punishable by death or by imprisonment for more than one year, the evidence:

(A) must be admitted, subject to Rule 403, in a civil case or in a criminal case in which the witness is not a defendant; and

(B) must be admitted in a criminal case in which the witness is a defendant, but only if the probative value of the evidence substantially outweighs its prejudicial effect to that defendant; and

This would provide essentially the same balancing test --- reverse 403 --- that is applicable to old convictions under Rule 609(b).

It can be argued though, that any attempt to restructure a long-employed balancing test is doomed to failure for any number of reasons --- the most important one being that courts might well have a tendency to drift back to the old test after a bit, so that all an amendment would do is roil the waters for a while.

If a change to the balancing test is either not feasible or not worth the costs, the question then remains what, if anything, should be done about the status quo. It is fair to state that Rule 609 has been a prime target of criticism of scholars for many years, and that the Rule 609(a)(1) five-factor balancing test has been roundly derided by scholars and has led to inconsistent results --- and probably more impeachment than Congress intended. Assuming that the status quo is not acceptable, and that rulemaking is not a good fix, one might come full circle back to Judge Rice's position --- if the rule is based on a dubious premise in the first place, and the balancing test is not workable, it might be best just to call it a day and eliminate it. Of course that is a question for the Committee.

E. Impeaching Other Witnesses

The focus of the scholarly attacks on Rule 609 has always been impeachment of criminal defendants with their prior convictions --- and that was also the focus of Congress. But of course there are other witnesses with convictions; how should they be treated?

Under Judge Rice's proposal, the result is simple. No conviction currently covered by Rule 609(a)(1) would be admissible to impeach any witness's character for truthfulness, because that Rule would be completely eliminated. That consequence is consistent with Judge Rice's reliance on restorative justice --- the premise being that a person who has served his time should be restored to society without imposing legal disabilities unrelated to a legitimate government

purpose. Under that theory, any felon-witness in any case should be free from the stigma of impeachment with felonies that are unrelated to dishonesty.

It should be noted, though, that one consequence of elimination would be that criminal defendants will no longer be able to impeach government witnesses with convictions that are now admissible under Rule 609(a)(1). It's true that in some cases, Rule 609(a)(1) is not necessary, because prior convictions might be admissible anyway to show bias. But that is surely not all the cases. There are many defenses which run something like, "the prosecution case is based on nothing but testimony from some really bad people." And such defenses would be impaired by eliminating Rule 609(a)(1). In some cases, it might be argued that even after an elimination of Rule 609(a)(1), the accused could argue that his constitutional right to confront witnesses would require the court to admit a non-falsity-based conviction. But those cases would be relatively rare. Courts routinely uphold limitations on cross-examination and impeachment if they are reasonable. *See, e.g., United States v. Sanders*, 708 F.3d 976, 991 (7th Cir. 2013) ("a limitation on cross-examination implicates the core of the Confrontation Clause when the defense is completely forbidden from exposing the witness's [credibility]"); *United States v. Domina*, 784 F.2d 1361, 1366 (9th Cir. 1986) ("Domina claims that the district court improperly limited his cross-examination of Purnell by not permitting the defense to explore whether drug use adversely affected Purnell's credibility. The Sixth Amendment to the United States Constitution guarantees an accused in a criminal prosecution the right to cross-examine adverse witnesses. * * * This right is subject to the broad discretion of a trial judge to preclude harassment or unduly prejudicial interrogation. * * * The district judge did not abuse his discretion in balancing the probative value of the desired cross-examination against its potential prejudice, and the restriction of the cross-examination did not violate the confrontation clause of the sixth amendment."). The end result of an elimination of Rule 609(a)(1) is likely to be some loss of impeachment evidence that criminal defendants would want to use against government witnesses.

One possibility --- one that would run counter to Judge Rice's restorative justice theory --- would be to eliminate Rule 609(a)(1) only insofar as applied against criminal defendants. That is, the Committee might consider leaving a one-way use for non-falsity-based convictions. But many of the attacks on Rule 609(a)(1) would seem to apply to impeachment of government witnesses as well. The basic attack is: 1) such convictions lack sufficient probative value in predicting whether a person will lie under oath; and 2) such convictions unfairly brand a witness as a bad person, causing unfair prejudice to the party whose testimony the witness favors. It is difficult to see how those concerns are inapplicable as applied to prosecution witnesses.

Perhaps it could be argued that the major problem with Rule 609(a)(1) is the special one of criminal defendants who are being deterred from testifying --- after all they have a constitutional right to do so and the jury would surely want to hear from them. The uniqueness of the criminal defendant's situation might arguably call for an abrogation that would be limited to them. But if that argument is accepted, there would be no similar justification in eliminating Rule 609(a)(1)

as applied to witnesses *called* by the defendant to testify. So, if the Committee were to consider a limitation on the applicability of Rule 609(a)(1), rather than a total elimination, the only logical limitation would be one that excludes convictions of a criminal-defendant who seeks to testify, but preserves possible admissibility for convictions of witnesses called by the defense.

F. The Impact in Civil Cases

In all the hubbub about Rule 609, very little is ever said about its use in civil cases. Judge Rice's proposal would eliminate Rule 609(a)(1) in civil cases --- a position grounded in the restorative justice ideal discussed above. Professor Bellin, along with other scholars, would apparently leave civil cases where they found them, because the major (only?) problem with Rule 609(a)(1) is its abuse in cases where the criminal defendant seeks to testify and is impeached with prejudicial convictions that lack real probative value.

There are a fair number of reported civil cases involving Rule 609(a)(1) issues. Most are civil rights cases. *See, e.g., Donald v. Wilson*, 847 F.2d 1191 (6th Cir. 1988) (in an excessive force case, there was no error in admitting the plaintiff's prior rape conviction to impeach his character for truthfulness); *Murr v. Stinson*, 752 F.2d 233 (6th Cir. 1985) (in an excessive force case, the sheriff was properly impeached with cocaine convictions); *Romanelli v. Suliene*, 615 F.3d 847 (7th Cir. 2010) (in a suit for the violation of a prisoner's right to receive medical care, there was no error in admitting the prisoner's prior convictions for sexual assault and bail jumping, to impeach him).

On the one hand, it could be argued that there is no reason to eliminate Rule 609(a)(1) in a civil case. Nobody has pointed to any serious or widespread problem in applying or using the Rule in civil cases. And of course the unique problem of a criminal defendant who wishes to exercise his constitutional right to testify is not applicable. On the other hand, if it is concluded that the Rule is simply wrong --- because it allows evidence of little to no probative value to be admitted, at the expense of unfair prejudice through improper and inflammatory character inferences --- then there would be no good reason to continue applying Rule 609(a)(1) to civil cases. This is of course a question for the Committee --- and can be the subject of further research should the Committee wish to continue consideration of an amendment to Rule 609(a)(1).

G. The Impact on Rule 608(b)

Assume that Rule 609(a)(1) is abrogated. Thus, a criminal-defendant could not be impeached with, say, his felony conviction for stealing a car. But what if he takes the stand and the prosecutor asks: "Isn't it true that you stole a car?" The prosecutor argues that he can ask that question because he is not asking whether the defendant was convicted. He is asking about whether he committed a bad act under Rule 608(b).

Rule 608(b) allows a cross-examiner to inquire into bad acts of a witness, in order to attack the witness's character for truthfulness, subject to Rule 403 --- meaning that the question is

allowed unless the probative value of the bad act in showing the witness's character for untruthfulness is substantially outweighed by the risk of unfair prejudice suffered by the party whose testimony the witness favors. Both the original Advisory Committee Note and the Committee Note to the 2003 amendment specify that impeachment with bad acts is permissible subject to Rule 403. *See United States v. Abair*, 746 F.2d 260, 263 (7th Cir. 2014) (cross-examination with bad acts to attack a witness's character for truthfulness "remains subject to the overriding protection of Rule 403").

If Rule 609(a)(1) is to be abrogated, the Committee would need to deal with the possibility of parties using Rule 608(b) as an end-run. There are some courts that currently allow Rule 608(b) as an end run on an important limitation found in Rule 609 --- that when a conviction is allowed, the jury does not get to hear the details of the underlying acts, only the crime of which the witness was convicted and the date of the conviction. Some courts have held that a cross-examiner can in fact raise the details of these acts simply by citing Rule 608(b). *See, e.g., Elcock v. Kmart Corp.*, 233 F.3d 734 (3rd Cir. 2000); *United States v. Barnhart*, 599 F.3d 737 (7th Cir. 2010). Other courts disagree, concluding that the limitations imposed on the details of the conviction would have no effect if the cross-examiner could simply ask about the underlying acts under Rule 608(b). *See, e.g., United States v. Osazuwa*, 564 F.3d 1169 (9th Cir. 2009) (impeachment with prior convictions is within the exclusive purview of Rule 609). If Rule 609(a)(1) is deleted, it would not be surprising for parties, in the courts that permit it, to use Rule 608(b) to raise the acts underlying the otherwise inadmissible conviction.

Surely it would make no sense to promulgate a rule that could be so easily evaded. Therefore elimination of Rule 609(a)(1) --- either in whole or in part, as discussed above --- would have to be accompanied by, at minimum, by a Committee Note which clearly states that the acts underlying the now-barred conviction may not be raised under Rule 608. Though it is probably preferable that the point be made in the text of the abrogation itself --- because Committee Notes are not rules, and the Standing Committee has an unwritten rule that you can't put something in a Note that is not in the text of the Rule.

But even if there is something in the text or the Note that prohibits a Rule 608(b) end-run, there will be a remaining anomaly. That prohibition will apply only to bad acts that underlie a conviction --- it will not apply to bad acts for which the witness was never convicted. Here is a hypothetical that shows the anomaly: Joe is charged with bank robbery and he wants to testify. He has been previously convicted of bank robbery. If Rule 609(a)(1) is eliminated and the necessary no-end-run rule is added, Joe can testify free of any impeachment regarding the prior bank robbery. Now Bill is charged with bank robbery and he wants to testify. The prosecution has good faith proof that he committed a prior bank robbery, for which he has not been

charged.¹⁰ If the court finds that the prejudicial effect does not substantially outweigh the probative value, the prosecution may ask about the bank robbery despite any abrogation of Rule 609(a)(1).

That result makes no sense. It would mean that a defendant who has been convicted of a crime is in a better place than one who has not. That's just silly.

It could be argued that it is in fact unlikely for a court to allow the prosecution to ask the question about the prior bank robbery as its probative value would in fact be substantially outweighed by its prejudicial effect. But if that is true, why would Rule 609(a)(1) need to be eliminated? That Rule has a more protective balancing test for criminal defendants than the Rule 403 test. If a court under Rule 608(b) would exclude the bad act, it should follow *a fortiori* that it would exclude the prior conviction for the bad act.

It might be argued that it is acceptable to allow bad acts under Rule 608(b) even though the conviction is not admissible under Rule 609(a), because under Rule 608(b), the witness can just deny that the bad act occurred. No extrinsic evidence is allowed to disprove the denial. But the difference in the rules as to extrinsic evidence does not support the principle that bad acts can be addressed on cross-examination where the conviction is not admissible under Rule 609. That is because even though the witness can deny it, the cross-examiner still gets to raise it, and the jury is fully exposed to the prejudicial information of bad character. Moreover, denying a bad act that was the basis of a conviction is grounds for a perjury charge.

In the end, it would appear logically impossible to decouple Rule 608(b) and Rule 609(a)(1). That means that any elimination of Rule 609(a)(1) would probably require a comparable change to Rule 608(b). But that would not mean *elimination* of Rule 608(b) because it must remain to cover the bad acts that are falsity-based --- such as those that underlie the convictions that will remain automatically admissible under Rule 609(a)(2).

The solution would appear to be a limitation to Rule 608(b) impeachment that tracks the language in Rule 609(a)(2). Something like the following:

Rule 608. A Witness's Character for Truthfulness or Untruthfulness

* * *

(b) Specific Instances of Conduct. Except for a criminal conviction under Rule 609, extrinsic evidence is not admissible to prove specific instances of a witness's conduct in order to attack or support the witness's character for truthfulness. But the court may, on cross-examination, allow them to be inquired into if they ~~are probative of the character for truthfulness or untruthfulness of~~ involve dishonesty or false statement and are acts of:

(1) the witness; or

¹⁰ Good faith proof is all that is required to ask a question about bad acts. See, e.g., *United States v. Whitmore*, 359 F.3d 609, 622 (D.C. Cir. 2004) ("the general rule is that the questioner must be in possession of some facts which support a general belief that the witness committed the offense or the degrading act to which the question relates").

- (2) another witness whose character the witness being cross-examined has testified about.

By testifying on another matter, a witness does not waive any privilege against self-incrimination for testimony that relates only to the witness's character for truthfulness.

Assuming Rule 609(a)(1) is abrogated, this drafting solution has a number of benefits. Most importantly, it avoids the use of Rule 608(b) as an end-run of an elimination of Rule 609(a)(1). More importantly, it serves the same purpose as any elimination of Rule 609(a)(1) --- it protects a party from impeachment of witnesses with acts that have little probative value as to truthfulness, and that carry prejudice from improper character inferences. Finally, it resolves a conflict in the courts as to whether Rule 608(b) permits inquiry into underlying acts when evidence of the conviction is barred by Rule 609 --- and the resolution of the conflict is correct on the merits.

If the Committee is interested in pursuing an amendment to Rule 608(b) that would be part of a package with an amendment to Rule 609(a)(1), the Reporter will prepare a formal draft of text and Committee Note for next meeting. Again, it appears that any limitation on the current Rule 609(a)(1) will probably have to be accompanied by a corresponding amendment to Rule 608(b).

H. Rule 403 Still Applicable?

A principle that runs through the Evidence Rules is that Rule 403 balancing is applicable unless a rule says otherwise. So for example, Rule 403 balancing is applicable to prior bad acts after the government establishes a non-character purpose for those acts under Rule 404(b). And Rule 403 balancing is applicable after a plaintiff establishes a proper purpose for a subsequent remedial measure. *See, e.g., Stallworth v. Illinois Cent. G. R.R.*, 690 F.2d 858 (11th Cir. 1982) (even though a subsequent remedial measure was relevant to feasibility, the trial court had discretion to exclude it under Rule 403). And, impeachment by bias is covered by Rule 403 even though there is no Evidence Rule that specifically covers bias. *United States v. Abel*, 469 U.S. 45 (1984).

So there is a risk that a simple or "mere" abrogation of Rule 609(a)(1) could lead to a litigant arguing that Rule 403¹¹ remains applicable to impeachment with non-falsity-based convictions. That would not be a strong argument, after an elimination of Rule 609(a)(1), but it is one that should be guarded against by careful rulemaking. One way to address the possible problem is to do more than simply abrogate Rule 609(a)(1). Instead of a vacuum, Rule 609(a)(1) could be amended to provide specifically that convictions currently covered by the Rule are not admissible to impeach a witness. That would assure that any Rule 403 argument would be put to rest. The drafting example for that proposition is set forth in the next section.

¹¹ More specifically, Rule 402, which provides that all relevant evidence is admissible.

IV. Drafting Examples

A. Abrogating Rule 609(a)(1)

This subsection assumes that the Committee has determined that all convictions currently found admissible under Rule 609(a)(1) should be found inadmissible.¹² As stated above, it will not do to simply delete the language of Rule 609(a)(1). This is so for at least two reasons: 1. It will raise questions about the continued applicability of Rule 403; and 2. It will put a big hole in the Rule, as there will be no (a)(1), but (a)(2) will remain. So there must be affirmative language of exclusion in place of the current language of admissibility under Rule 609(a)(1). What follows are two possible versions of an amendment --- one that retains the structure of the existing Rule 609(a)(1) and the other that essentially makes Rule 609(a)(2) the Rule.

1. Version 1: Retaining the Structure

The virtue of this version is that retaining the structure provides constancy for electronic searches, and for the nomenclature that has been used for 40 years. That is to say, Rule 609(a)(2) remains Rule 609(a)(2). The drawback of this version is that it is a bit awkward. It starts with a general rule of inadmissibility but then shifts to a rule of automatic admissibility.

Rule 609. Impeachment by Evidence of a Criminal Conviction

(a) In General. The following rules apply to attacking a witness's character for truthfulness by evidence of a criminal conviction:

~~(1) the evidence generally may not be admitted; but for a crime that, in the convicting jurisdiction, was punishable by death or by imprisonment for more than one year, the evidence :~~

~~(A) must be admitted, subject to Rule 403, in a civil case or in a criminal case in which the witness is not a defendant; and~~

~~(B) must be admitted in a criminal case in which the witness is a defendant, if the probative value of the evidence outweighs its prejudicial effect to that defendant; and~~

~~(2) for any crime regardless of the punishment, the evidence must be admitted if the court can readily determine that establishing the elements of the crime required proving—or the witness's admitting—a dishonest act or false statement.~~

2. Different structure, single rule:

The virtue of this alternative is that it is a simple and direct rule, allowing admissibility only for convictions involving dishonesty or false statement. The downside is that the numeric structure has been altered, so it is disruptive to electronic searches and imposes dislocation costs.

¹² A proposal to refine and narrow the balancing test that is currently applied to Rule 609(a)(1) convictions is set forth in an earlier section.

Rule 609. Impeachment by Evidence of a Criminal Conviction

(a) **In General.** ~~The following rules apply to attacking Evidence of a criminal conviction offered to attack a witness's character for truthfulness by evidence of a criminal conviction:~~

~~(1) for a crime that, in the convicting jurisdiction, was punishable by death or by imprisonment for more than one year, the evidence:~~

~~(A) must be admitted, subject to Rule 403, in a civil case or in a criminal case in which the witness is not a defendant; and~~

~~(B) must be admitted in a criminal case in which the witness is a defendant, if the probative value of the evidence outweighs its prejudicial effect to that defendant; and~~

~~(2) for any crime regardless of the punishment, the evidence must be admitted, but only if the court can readily determine that establishing the elements of the crime required proving—or the witness's admitting—a dishonest act or false statement.~~

Note: This alternative should take care of the “residual Rule 403 problem” because it states that admissibility is conditioned on the conviction being falsity-based, and so should be reasonably read to bar the court from employing Rules 402 and 403 to admit convictions that are not based on a dishonest act or false statement. Another possibility is to say that convictions are generally inadmissible, but must be admitted if they involve a dishonest act or false statement.

3. Draft Committee Note

The draft Committee Note can probably be the same for both of the above alternatives. Here is a possible Note:

Rule 609(a) has been amended to preclude admissibility of convictions that do not involve a dishonest act or false statement, when offered to impeach a witness's character for truthfulness. Congress allowed such impeachment but imposed important limitations, especially when the witness is the accused. Experience has shown that the congressional intent to limit admissibility of such convictions has not been realized. Moreover, the Committee has concluded that the probative value of such convictions is minimal when offered as a prediction that the witness will lie on the stand, and the prejudicial effect of such convictions can be profound --- especially where the consequence in criminal cases is that the defendant may be deterred from testifying at all. The Committee has determined that it is better to bar admission of such convictions than to employ a balancing test that has ended up to be insufficiently protective. The Rule retains automatic admissibility for those convictions that are the most probative, i.e., those that involve a dishonest act or false statement.

While Rule 609 governs evidence of convictions, this amendment also has an impact on admissibility of the bad acts that underlie the convictions. If a conviction is inadmissible under this Rule as amended, it is inappropriate to allow a party to inquire about the bad acts

underlying the conviction. Accordingly, Rule 608(b) has been amended to impose a limitation on bad act impeachment that tracks the provisions of Rule 609(a).

The amendment imposes no limitations on the use of convictions for other forms of impeachment, such as for contradiction, or to establish bias.

B. Protecting Accused-Witnesses Only

Rule 609. Impeachment by Evidence of a Criminal Conviction

(a) **In General.** The following rules apply to attacking a witness's character for truthfulness by evidence of a criminal conviction:

(1) for a crime that, in the convicting jurisdiction, was punishable by death or by imprisonment for more than one year, the evidence:

(A) must be admitted, subject to Rule 403, in a civil case or in a criminal case in which the witness is not a defendant; and

(B) ~~must~~ may not be admitted in a criminal case in which the witness is a defendant; ~~if the probative value of the evidence outweighs its prejudicial effect to that defendant;~~ and

(2) for any crime regardless of the punishment, the evidence must be admitted if the court can readily determine that establishing the elements of the crime required proving—or the witness's admitting—a dishonest act or false statement.

Draft Committee Note

Rule 609(a) has been amended to preclude admissibility of convictions that do not involve a dishonest act or false statement, when offered to impeach a witness's character for truthfulness and that witness is the accused. Congress allowed such impeachment but imposed important limitations. Experience has shown that the congressional intent to limit admissibility of such convictions when offered against a defendant in a criminal case has not been realized. Moreover, the Committee has concluded that the probative value of such convictions is minimal when offered as a prediction that a criminal defendant will lie on the stand (given that defendants in criminal cases are already impeached due to their stake in the action); and the prejudicial effect of such convictions can be profound --- especially where the consequence is often that the defendant may be deterred from testifying at all. The Committee has determined that it is better to bar admission of such convictions against a defendant in a criminal case than to employ a balancing test that has ended up to be insufficiently protective. The amendment does not affect the existing rules on impeachment of other witnesses, and retains automatic admissibility for those convictions that are the most probative, i.e., those that involve a dishonest act or false statement.

While Rule 609 governs evidence of convictions, this amendment also has an impact on admissibility of the bad acts that underlie the convictions of a defendant in a criminal case. If a conviction is inadmissible under this Rule as amended, it is inappropriate to allow a party to

inquire about the bad acts underlying the conviction. Accordingly, Rule 608(b) has been amended to impose a limitation on bad act impeachment that tracks the provisions of Rule 609(a).

The amendment imposes no limitations on the use of convictions for other forms of impeachment, such as for contradiction, or to establish bias.

C. Applying the Bar in Criminal Cases Only

Rule 609. Impeachment by Evidence of a Criminal Conviction

(a) In General. The following rules apply to attacking a witness's character for truthfulness by evidence of a criminal conviction:

(1) for a crime that, in the convicting jurisdiction, was punishable by death or by imprisonment for more than one year, the evidence:

(A) must be admitted, subject to Rule 403, in a civil case ~~or in a criminal case in which the witness is not a defendant~~; and

(B) ~~must~~ may not be admitted in a criminal case ~~in which the witness is a defendant, if the probative value of the evidence outweighs its prejudicial effect to that defendant~~; and

(2) for any crime regardless of the punishment, the evidence must be admitted if the court can readily determine that establishing the elements of the crime required proving—or the witness's admitting—a dishonest act or false statement.

Draft Committee Note

Rule 609(a) has been amended to preclude admissibility of convictions that do not involve a dishonest act or false statement, when offered to impeach a witness's character for truthfulness in a criminal case. Congress allowed such impeachment but imposed important limitations. Experience has shown that the congressional intent to limit admissibility of such convictions has not been realized in criminal cases. Moreover, the Committee has concluded that the probative value of such convictions is minimal when offered as a prediction that the witness will lie on the stand, and the prejudicial effect of such convictions can be profound --- especially where the consequence is often that the witness is the defendant, who may be deterred from testifying at all. The Committee has determined that it is better to bar admission of such convictions against defendants in criminal cases than to employ a balancing test that has ended up to be insufficiently protective. Yet it would be unfair to allow the bar to run only one-way in criminal cases.

The amendment does not affect the existing rules on impeachment in civil cases, and retains automatic admissibility for those convictions that are the most probative, i.e., those that involve a dishonest act or false statement.

While Rule 609 governs evidence of convictions, this amendment also has an impact on admissibility of the bad acts that underlie the convictions that are barred. If a conviction is inadmissible under this Rule as amended, it is inappropriate to allow a party to inquire about the bad acts underlying the conviction. Accordingly, Rule 608(b) has been amended to impose a limitation on bad act impeachment that tracks the provisions of Rule 609(a).

The amendment imposes no limitations on the use of convictions for other forms of impeachment, such as for contradiction, or to establish bias.

TAB 7B

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ARTICLES

RESTORING JUSTICE:

PURGING EVIL FROM FEDERAL RULE OF EVIDENCE 609

*Timothy R. Rice**

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Passage of the Second Chance Act¹ in 2008 helped launch a revolutionary transformation in how society views the more than 650,000 men and women released from prison each year.² As a result, an era of mass incarceration is fading,³ ex-offenders are now known as “returning citizens,” and the criminal

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He would like to thank his law clerks, Anna Kessler, Esq., Nina Russakoff, Esq., and Leslie Kramer, Esq.; Professor Jules Epstein; and numerous judicial colleagues for their contributions to this Article.

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1. Second Chance Act of 2007, Pub. L. No. 110-199, 122 Stat. 657 (2008) (codified as amended in scattered sections of 42 U.S.C.); *see also* Press Release, Office of the Press Sec’y, President Bush Signs H.R. 1593, the Second Chance Act of 2007 (Apr. 9, 2008), <http://georgewbush-whitehouse.archives.gov/news/releases/2008/04/20080409-2.html> [<http://perma.cc/6Q5J-FZ3B>] (President Bush, before signing the Second Chance Act, commenting on high recidivism rate and government’s responsibility to help prisoners return as contributing members of their communities).

2. *See* NAT’L INST. OF CORR. INFO. CTR., U.S. DEP’T OF JUSTICE, REENTRY ANNOTATED BIBLIOGRAPHY 1 (2016), www.nicic.gov/Library/026286 [<http://perma.cc/2CLH-SH7D>]; E. ANN CARSON, BUREAU OF JUSTICE STATISTICS, U.S. DEP’T OF JUSTICE, PRISONERS IN 2014, at 10 (2015), <http://www.bjs.gov/content/pub/pdf/p14.pdf> [<http://perma.cc/J6DB-8JA5>].

3. *See* CARSON, *supra* note 2, at 1 (finding that the U.S. prison population decreased by one

justice system has embraced bipartisan efforts to help rebuild lives interrupted by lengthy prison terms.⁴ In 2016, the Department of Justice for the first time celebrated National Reentry Week to highlight its efforts to assist returning citizens.⁵ Research shows that reentry programs work: they reduce reincarceration by helping men and women released from prison obtain employment and education, and reunite with their families.⁶ Further, the

percent between 2013 and 2014, with a third of the decrease “due to fewer prisoners under the jurisdiction of the Federal Bureau of Prisons”); Jessica M. Eaglin, *Against Neorehabilitation*, 66 SMU L. Rev. 189, 190–91 (2013) (noting that “more than half of the states are considering implementing or are implementing . . . criminal justice reform” and are reconsidering punitive policies that created mass incarceration, including emergency state sentencing reforms to reduce growing prison populations); Neil Eggleston, *President Obama Has Now Commuted the Sentences of 348 Individuals*, WHITE HOUSE (June 3, 2016, 3:30 PM), <http://obamawhitehouse.archives.gov/blog/2016/03/30/president-obama-has-now-commuted-sentences-348-individuals> [<http://perma.cc/BA8Y-ABE6>] (explaining that President Obama “commuted the sentences of more individuals than the past 7 presidents combined”); Sari Horwitz, *Justice Department Set to Free 6,000 Prisoners, Largest One-Time Release*, WASH. POST (Oct. 6, 2015), http://www.washingtonpost.com/world/national-security/justice-department-about-to-free-6000-prisoners-largest-one-time-release/2015/10/06/961f4c9a-6ba2-11e5-aa5b-f78a98956699_story.html [<http://perma.cc/LT7L-LUCM>] (reporting on the release of 6,000 inmates “in an effort to reduce overcrowding and provide relief to drug offenders who received harsh sentences”); *Materials on 2014 Drug Guidelines Amendment*, U.S. SENT’G COMMISSION, <http://www.ussc.gov/policymaking/amendments/materials-2014-drug-guidelines-amendment> (last visited May 5, 2017) [<http://perma.cc/HWZ9-2SF7>] (describing Sentencing Commission’s 2014 vote to reduce sentencing guidelines for most federal drug trafficking offenders); *Policy Shifts Reduce Federal Prison Population*, U.S. COURTS (Apr. 25, 2017), <http://www.uscourts.gov/news/2017/04/25/policy-shifts-reduce-federal-prison-population> [<http://perma.cc/PS78-85P6>] (explaining that because of a reduction in federal prosecutions and sentences for drug-related crimes, “[t]he federal prison population fell from a peak of nearly 219,300 inmates in 2013 to 188,800 in April 2017”).

4. See Email Interview with David L. Smith, Counsel for Legal Initiatives, Executive Office for United States Attorneys (June 13, 2016) (stating that fifty-five of ninety-four federal judicial districts feature some type of reentry court to assist ex-offenders); Zoe Tillman, *Federal Courts Focus on High-Risk Ex-Offenders*, NAT’L L.J. (June 7, 2016), <http://www.nationallawjournal.com/id=1202759416650/Federal-Courts-Focus-on-HighRisk-ExOffenders?slreturn=20160520103311> [<http://perma.cc/UZ48-GL8G>] (“D.C. joins federal district courts in more than 30 states that have launched [reentry courts] over the past decade.”).

5. See Press Release, The White House, Office of the Press Sec’y, FACT SHEET: During National Reentry Week, Reducing Barriers to Reentry and Employment for Formerly Incarcerated Individuals (Apr. 29, 2016), <http://www.whitehouse.gov/the-press-office/2016/04/29/fact-sheet-during-national-reentry-week-reducing-barriers-reentry-and> [<http://perma.cc/L37U-DK9H>] (“As part of National Reentry Week, the Administration has taken a series of steps to reform the federal approach to reentry by addressing barriers to reentry, supporting state and local efforts to do the same, and engaging the private sector to provide individuals who have earned a second chance the opportunity to participate in the American economy.”); see also Press Release, Dep’t of Justice, Office of Pub. Affairs, Department of Justice to Launch Inaugural National Reentry Week (Apr. 22, 2016), <http://www.justice.gov/opa/pr/department-justice-launch-inaugural-national-reentry-week> (describing participants in DOJ’s National Reentry Week in Philadelphia, including community leaders, public housing advocates, and legal services providers).

6. CAITLIN J. TAYLOR, PROGRAM EVALUATION OF THE FEDERAL REENTRY COURT IN THE EASTERN DISTRICT OF PENNSYLVANIA 16–17 (2016) (finding positive impact of reentry program on criminal justice system); Caitlin J. Taylor, *Ending the Punishment Cycle by Reducing Sentence Length and Reconsidering Evidence-Based Reentry Practices*, 89 TEMP. L. REV. 747, 759–62 (2017); Jean

“restorative justice”⁷ movement helps to heal the damage caused by crime and gradually removes barriers created by imprisonment and punitive justice.⁸

Despite such initiatives, returning citizens remain burdened with a stigma from one of the most sacrosanct provisions in federal jurisprudence: Federal Rule of Evidence 609(a)(1).⁹ It endorses the use of any felony conviction to

Friedman-Rudovsky, *Where Some of the Most Housing-Challenged Philadelphians Find Help*, NEXT CITY (May 1, 2017), <http://nextcity.org/features/view/philadelphia-prisons-reentry-finding-housing> [<http://perma.cc/8APG-3P3T>] (explaining that the Supervision to Aid Reentry (STAR) program works to combat the challenge of housing to reduce recidivism). *But see* DAVID RAUMA, FED. JUDICIAL CTR., *EVALUATION OF A FEDERAL REENTRY PROGRAM MODEL 2*, 36–37 (2016) (describing a study of three federal reentry programs in Florida, New York, and Wisconsin, and finding no impact on revocations or recidivism).

On February 21, 2017, the Committee on Criminal Law of the Judicial Conference of the United States reviewed the Federal Judicial Center’s May 2016 study and acknowledged that the Center’s findings were “clearly not dispositive on the issue of reentry court programs’ effectiveness or that of other types of ‘problem-solving courts.’” *See* Letter from Hon. Ricardo S. Martinez, Chair, Criminal Law Comm. on FJC Study of Federal Reentry Court Programs to 1–2 (Feb. 21, 2017) (on file with author). Judge Martinez’s letter included a staff paper from the Administrative Office of U.S. Courts titled *Judge-Involved Supervision Programs in the Federal System: Background and Research (January 2017)*. *Id.* The Administrative Office staff paper acknowledged the research of Caitlin J. Taylor on the reentry program in the Eastern District of Pennsylvania. *See* Admin. Office of U.S. Courts, *Judge-Involved Supervision Programs in the Federal System: Background and Research (January 2017)* 14–15 (Jan. 2017) (on file with author).

7. *See* HOWARD ZEHR, *THE LITTLE BOOK OF RESTORATIVE JUSTICE* 37 (2002) (“Restorative justice is a process to involve, to the extent possible, those who have a stake in a specific offense and to collectively identify and address harms, needs, and obligations, in order to heal and put things as right as possible.”); Kurt M. Denk, *Restorative Justice and Catholic Social Thought: Challenges as Opportunities for Society, Church, and Academy*, Address at the Lane Center for Catholic Studies and Social Thought, University of San Francisco Spring Lecture Series 5 (Feb. 29, 2008) (describing restorative justice as the interweaving of theory and application, and a “*process approach* to dealing with crime and violence”).

8. *See* *United States v. Dokmeci*, No. 13-CR-00455, 2016 WL 915185, at *3 (E.D.N.Y. March 9, 2016) (discussing a “grassroots movement” in federal courts to reduce the punitive costs of over-incarceration); Joan Gottschall & Molly Armour, *Second Chance: Establishing a Reentry Program in the Northern District of Illinois*, 5 DEPAUL J. FOR SOC. JUST. 31, 33–34 (2011) (“[T]here is now a growing popular and institutional recognition that releasees’ chances for successful reintegration and continued law-abiding behavior require more intensive intervention than we have provided in the past.”).

In August 2016, the White House’s Federal Interagency Reentry Council touted the merits of reentry initiatives: “Without effective reentry policies, we risk perpetuating cycles of violence, victimization, incarceration and poverty in our neighborhoods. We risk wasting the potential of millions of Americans whose past mistakes continue to exclude them from the chance to contribute to their communities.” *See* Fed. Interagency Reentry Council, *A Record of Progress and a Roadmap for the Future* iii (2016); *id.* at 3 (noting the adverse collateral consequences of a criminal record for returning citizens attempting to reenter the community); *id.* at 11 (“Effective reentry policies not only lower recidivism and future victimization, but also save government resources . . .”).

9. Federal Rule of Evidence 609(a)(1) provides:

(a) In General. The following rules apply to attacking a witness’s character for truthfulness by evidence of a criminal conviction:

(1) for a crime that, in the convicting jurisdiction, was punishable by death or by imprisonment for more than one year, the evidence:

impeach any witness, including criminal defendants, regardless of the conviction's link to untruthfulness.¹⁰ Rule 609(a)(1) codifies as law an inherent bias against the men and women who continue to be stereotyped as evil and unworthy of belief based solely on a prior felony conviction.¹¹

Although felony convictions unrelated to truthfulness might, in some cases, have some marginal relevance to credibility,¹² this Article challenges the Rule's underlying premise that such felonies are always relevant to the credibility of all witnesses in all cases. Moreover, this Article suggests that principles of restorative justice justify eliminating the use of a prior felony unrelated to truthfulness to impeach returning citizens who testify as witnesses.

Proposals to reform Rule 609 are not new.¹³ Suggested amendments to

(A) must be admitted, subject to Rule 403, in a civil case or in a criminal case in which the witness is not a defendant; and

(B) must be admitted in a criminal case in which the witness is a defendant, if the probative value of the evidence outweighs its prejudicial effect to that defendant . . .

FED. R. EVID. 609(a)(1).

10. See *United States v. Garber*, 471 F.2d 212, 214 (5th Cir. 1972) (“The danger arising from evidence of prior criminal convictions is that the jury may be unable to restrict the use of this evidence to the proper purpose.”); Jeffrey Bellin, *Circumventing Congress: How the Federal Courts Opened the Door to Impeaching Criminal Defendants with Prior Convictions*, 42 U.C. DAVIS L. REV. 289, 295, 303, 335 (2008) (noting the “devastating impact” and “prejudice” of prior conviction impeachments, and the existence of empirical data “demonstrating that admission of a defendant’s prior convictions ‘substantially increase[s] the likelihood that the jury will convict the defendant’” (alteration in original) (quoting L. Timothy Perrin, *Pricking Boils, Preserving Error: On the Horns of a Dilemma After Ohler v. United States*, 34 U.C. DAVIS L. REV. 615, 651–52 (2001))).

11. See *Campbell v. Greer*, 831 F.2d 700, 707 (7th Cir. 1987) (“Rule 609 and the common law tradition out of which it evolved rest on the common-sense proposition that a person who has flouted society’s most fundamental norms, as embodied in its felony statutes, is less likely than other members of society to be deterred from lying under oath in a trial by the solemnity of the oath”); *Gertz v. Fitchburg R.R. Co.*, 137 Mass. 77, 78 (1884) (finding that a jury may infer a witness’s propensity to lie under oath based on a “general readiness to do evil” stemming from a prior felony conviction). *But see* MICHAEL J. SAKS & BARBARA A. SPELLMAN, *THE PSYCHOLOGICAL FOUNDATIONS OF EVIDENCE LAW* 169 (2016) (“The research suggests, then, that prior conviction evidence contributes little or nothing to credibility assessment of defendants who take the witness stand, while at the same time creating the risk that jurors will draw improper propensity inferences.”).

12. For example, from a pure relevance perspective, a fact finder might logically consider a serial felon less likely to keep an oath to testify truthfully based on his propensity to repeatedly violate the law. Use of such multiple felonies for impeachment purposes, however, would likely be unfairly prejudicial and therefore excluded under Rule 609 because the evidence would inflame the jury. See FED. R. EVID. 609(a)(1)(B).

13. See, e.g., *Garber*, 471 F.2d at 215 (surveying criticism by “a growing number of judges and commentators” of the use of prior conviction evidence to impeach); John H. Blume, *The Dilemma of the Criminal Defendant with a Prior Record—Lessons from the Wrongfully Convicted*, 5 J. EMPIRICAL LEGAL STUD. 477, 482–83 (2008) (noting reform efforts to limit and ban use of prior convictions for impeachment); *id.* at 492–93 (proposing modification to Rule 609 so that prosecution could not impeach criminal defendant with prior conviction unless defendant was convicted of perjury and court engages in balancing test, or defendant opens the door by offering evidence of his or her character for truthfulness); Teree E. Foster, *Rule 609(a) in the Civil Context: A Recommendation for Reform*, 57 FORDHAM L. REV. 1, 1 (1988) (“No rule of evidence has provoked commentary so passionate or

eliminate Rule 609(a)(1) have been summarily rejected or ignored for decades,¹⁴ primarily justified by the common law notion that those who commit felonies are less likely to obey the law, and therefore are more likely to lie under oath.¹⁵ The implications of Rule 609(a)(1) are vast and often punitive. The Rule deters defendants from testifying at their own criminal trials based on a fear that jurors will punish them for criminal propensity,¹⁶ potentially increases the risk of

profuse as that which permits impeachment of a testifying witness in a criminal case by introducing that witness' previous convictions.”); *see also, e.g.*, Richard D. Friedman, *Character Impeachment Evidence: Psycho-Bayesian [!?] Analysis and a Proposed Overhaul*, 38 UCLA L. REV. 637, 691 (1991); James H. Gold, *Sanitizing Prior Conviction Impeachment Evidence to Reduce Its Prejudicial Effects*, 27 ARIZ. L. REV. 691, 693 (1985) [hereinafter James H. Gold, *Sanitizing*] (proposing “sanitizing” Rule 609 by prohibiting prosecution from “eliciting or presenting any information except that the defendant was previously convicted of an unnamed crime”); Anna Roberts, *Impeachment by Unreliable Conviction*, 55 B.C. L. REV. 563, 563, 579–80 (2014) (proposing that before a conviction is used for impeachment, it should be assessed as a reliable “indicator of relative culpability”); Edward E. Gainor, Note, *Character Evidence by Any Other Name . . . : A Proposal to Limit Impeachment by Prior Conviction Under Rule 609*, 58 GEO. WASH. L. REV. 762, 769–70 (1990) (“Rule 609(a) should be revised to strictly limit the use of evidence of prior convictions for impeachment purposes to those crimes that bear directly on the criminal defendant’s credibility, and to establish a clear, uniformly applicable test of probative value versus prejudicial effect.”); Tarleton David Williams, Jr., Comment, *Witness Impeachment by Evidence of Prior Felony Convictions: The Time Has Come for the Federal Rules of Evidence to Put on the New Man and Forgive the Felon*, 65 TEMP. L. REV. 893, 897, 929 (1992) (proposing revision of Rule 609 to exclude evidence of any witness’s “non-dishonesty felony convictions”).

14. The first attempts to limit Rule 609 to impeachment by convictions only involving acts of untruthfulness occurred during the initial drafting and passage of the Rule during House and Senate proceedings. *See* Victor Gold, *Impeachment by Conviction Evidence: Judicial Discretion and the Politics of Rule 609*, 15 CARDOZO L. REV. 2295, 2301 (1994) [hereinafter Victor Gold, *Impeachment*] (citing *Proposed Rules of Evidence: Hearings Before the Spec. Subcomm. on Reform of Fed. Criminal Laws of the H. Comm. on the Judiciary*, 93d Cong. 223, 234–35 (1973) (statement of John J. Cleary, Executive Director, Federal Defenders of San Diego, Inc.); *id.* at 305, 307 (statement of James F. Schaeffer, Association of Trial Lawyers of America); *Proposed Rules of Evidence: Hearings Before the Subcomm. on Criminal Justice of the H. Comm. on the Judiciary* (Supp.), 93d Cong. 25 (1973) (letter from Charles R. Halpern & George T. Frampton, Jr., Center for Law and Social Policy (Apr. 13, 1973)); *id.* at 304–05 (letter from Jack H. Simmons (Aug. 2, 1973))). Although several substantive changes have been made to Rule 609(a) since its enactment, none of those changes have incorporated the idea of limiting the Rule to impeachment by crimes of dishonesty. *See id.* at 2308–09 (describing three amendments to Rule 609); James H. Gold, *Sanitizing*, *supra* note 13, at 694–95 (describing several types of proposals to limit or prohibit the admissibility of prior convictions for impeachment and their very limited effect); Roberts, *supra* note 13, at 565, 579 (summarizing four forms of critiques of Rule 609, and noting that although Rule 609 “has been amended several times, its core remains unchanged, and the liberal judicial admission of convictions continues”).

15. *See Campbell*, 831 F.2d at 707 (highlighting the “common-sense proposition” that an individual who has committed a felony will be less “deterred from lying under oath”); *Williams v. United States*, 3 F.2d 129, 130 (8th Cir. 1924) (“At common law persons convicted of infamous crimes were incompetent to be witnesses at all, on the theory that they were so destitute of moral honesty that truth could not within them dwell.”); *Gertz*, 137 Mass. at 78 (noting that the jury may infer a witness’s “bad character” and “readiness to lie” if he has been convicted of a crime).

16. *Bellin*, *supra* note 10, at 334–35 (noting that “defendants in criminal courts across the country are deterred from testifying based on erroneous rulings (or anticipated rulings) as to the admissibility of their prior convictions”); *Blume*, *supra* note 13, at 486, 493 (describing the risk of the

wrongful convictions,¹⁷ and subjects returning citizens called as witnesses to character attack in every type of criminal and civil litigation.¹⁸

Our nation's ongoing effort to assist returning citizens provides a fresh rationale for finally discarding the dubious premise of Rule 609(a)(1). A restorative justice approach to Rule 609, as embodied by many reentry programs, would vest returning citizens with a new presumption: instead of being branded as felons prone to evil, they not only would be welcomed back into society but also would be free from character attacks based on felonies that bear no nexus to truthfulness.¹⁹ Returning citizens who have renounced their criminal pasts would no longer be stigmatized when testifying as witnesses.

The Federal Rules of Evidence, and similar state rules, should adopt the view of several states, including Pennsylvania,²⁰ that permit impeachment using

jury inferring that a testifying defendant is a bad person and is therefore lying, or is a bad person and therefore has done bad things in the past, making it more likely he or she committed the charged offense); *see also* SAKS & SPELLMAN, *supra* note 12, at 168 (“The available empirical research is unanimous in finding that, notwithstanding judicial instructions to the contrary, most people travel the forbidden path of using prior crimes evidence to make substantive inferences about the likelihood that the testifying defendant committed the current crime charged.”).

17. Blume, *supra* note 13, at 493 (arguing that prior record impeachment may contribute to wrongful convictions where “jury draws the propensity inference”).

18. The Rule permits a returning citizen to be impeached with any felony conviction when he or she testifies to witnessing almost any event, such as a traffic accident, employment discrimination, or criminal conduct by others. *See* FED. R. EVID. 609(a)(1). For example, if a returning citizen is the only eyewitness to a terrorist act, he or she could be impeached with any prior felony conviction, such as drug possession, and could be branded a liar based solely on the prior felony.

19. Rule 609(a)(1), therefore, is inconsistent with a view that law and punishment must be measured by its effect on the lives of human beings. *See* GERALD AUSTIN MCHUGH, CHRISTIAN FAITH AND CRIMINAL JUSTICE: TOWARD A CHRISTIAN RESPONSE TO CRIME AND PUNISHMENT 206 (1978) (“Theories of justice are useless if those theories do nothing to prevent the infliction of needless suffering on thousands of people.”). Impeaching a witness with a felony conviction unrelated to truthfulness publicly condemns that witness's character and allows society to extract another round of needless suffering for an offense that already has been punished.

Based on public safety concerns, Congress has imposed other restrictions on the civil liberties of individuals who are convicted of serious crimes, such as limiting the right of convicted felons to possess firearms. *See* 18 U.S.C. § 922(g) (2012). The right of an individual who committed a serious crime to possess firearms is not subject to restoration based on the passage of time or evidence of rehabilitation. *See* *Binderup v. Attorney Gen.*, 836 F.3d 336, 350 (3d Cir. 2016) (en banc) (holding that the Second Amendment right to bear arms is not restored for individuals who committed serious crimes based on “the passage of time or evidence of rehabilitation”). Rule 609(a)(1) impeachment, however, implicates no such public safety concerns and is based solely on the common law's negative character evidence premise.

20. Pa. R. Evid. 609(a) (“For the purpose of attacking the credibility of any witness, evidence that the witness has been convicted of a crime, whether by verdict or by plea of guilty or *nolo contendere*, must be admitted if it involved dishonesty or false statement.”); *accord, e.g.*, Haw. Rev. Stat. Ann. § 626-1, R. 609(a) (West 2016) (“For the purpose of attacking the credibility of a witness, evidence that the witness has been convicted of a crime is inadmissible except when the crime is one involving dishonesty.”); Mich. R. Evid. 609(a) (“For the purpose of attacking the credibility of a witness, evidence that the witness has been convicted of a crime shall not be admitted unless the evidence has been elicited from the witness or established by public record during cross-examination, and (1) the crime contained an element of dishonesty or false statement, or (2) the crime contained an

only those convictions involving a dishonest act or a false statement,²¹ as set forth in Rule 609(a)(2).²² Principles of restorative justice, including its focus on reconciliation and healing,²³ outweigh the negative-character rationale underlying Rule 609(a)(1)'s expansive view of relevance for all felony convictions. The Judicial Conference of the United States Advisory Committee on Rules of Evidence, and its state counterparts, should propose an amendment eliminating Rule 609(a)(1) and limiting impeachment to convictions related to truthfulness. Elimination of Rule 609(a)(1), of course, would not preclude use of a felony conviction for another relevant purpose, such as to establish bias,²⁴ to impeach a witness by rebutting a witness's false claim that he has led a law-abiding life,²⁵ or to disprove a witness's testimony.²⁶

element of theft . . .").

21. Such crimes are often referred to as *crimen falsi* offenses. FED. R. EVID. 609(a) advisory committee's note to 1974 enactment (explaining that the term includes crimes involving "some element of deceit, untruthfulness, or falsification bearing on the accused's propensity to testify truthfully"). Rule 609(a)(2) now expressly requires that such offenses have proof of, or an admission to, a dishonest act or false statement. FED. R. EVID. 609(a)(2).

22. Rule 609(a)(2) provides that to attack a witness's character for truthfulness by evidence of a criminal conviction "for any crime regardless of the punishment, the evidence must be admitted if the court can readily determine that establishing the elements of the crime required proving—or the witness's admitting—a dishonest act or false statement." FED. R. EVID. 609(a)(2).

Although at least one scholar has advocated a broader reform that includes amending Rule 609(a)(2), *see* Blume, *supra* note 13, at 493, 493 n.59, even that view acknowledges the significant probative value of a perjury conviction in assessing a witness's credibility, *see id.* at 495 ("[E]xcept where the defendant has been previously convicted of perjury, there is no reason to believe that individuals with a prior record are more likely to lie under oath than defendants without prior records.").

23. *See* ZEHR, *supra* note 7, at 40–41 (describing "signposts" of restorative justice, including focusing "on the harms of the crime," restoring and empowering victims, providing "opportunities for dialogue . . . between victim and offender as appropriate," and encouraging "collaboration and reintegration of both victims and offenders"); Denk, *supra* note 7, at 5 (citing ZEHR, *supra* note 7, at 37).

24. *See* United States v. Abel, 469 U.S. 45, 51 (1984) (holding that "it is permissible to impeach a witness by showing his bias under the Federal Rules of Evidence").

25. *See, e.g.,* United States v. Payne, 635 F.2d 643, 647 (7th Cir. 1980) ("[T]rial judge was correct in holding that the defense had 'opened the door' to this line of inquiry by putting in issue appellant's reputation for the traits of truthfulness and law-abiding citizenship"); United States v. Lundy, 416 F. Supp. 2d 325, 337 n.5 (E.D. Pa. 2005) ("[I]f the character witness testifies to the Defendant's reputation as a law-abiding citizen, questions that pertain to prior arrests or convictions may be permitted.").

26. *See* United States v. Gilmore, 553 F.3d 266, 272 (3d Cir. 2009) (noting that evidence of a prior conviction may be admissible for "impeachment by contradiction" under Rules 402 and 403 regardless of the admissibility of a conviction under Rule 609); United States v. Cavender, 228 F.3d 792, 799 (7th Cir. 2000) (concluding that the trial court abused its discretion under Rule 609 by excluding evidence of a government witness's felony drug possession conviction after witness testified on direct and cross-examination that he did not use drugs during period of time encompassing time of conviction).

I. A RULE BUILT UPON A STEREOTYPE

Rule 609 is derived from the common law's disqualification of felons from testifying as witnesses.²⁷ Although such prohibitions disappeared more than a century ago, the notion that convicted felons lack credibility remains firmly ensconced in the law.²⁸ Oliver Wendell Holmes championed this view while sitting on the Massachusetts Supreme Judicial Court in 1884. Justice Holmes equated a criminal conviction to a "general readiness to do evil," which would permit a jury to conclude that a witness convicted of a crime has a "readiness to lie" under oath because of his "bad character."²⁹

Justice Holmes's view of a felon's evil character and propensity to lie persists in Rule 609(a)(1) and its state law counterparts.³⁰ Rule 609(a)(1) endorses using evidence of bad character (i.e., a propensity for bad acts based on a prior felony conviction) to infer untruthfulness regardless of the underlying nature of the crime.³¹ As one court has observed, "that crookedness and lying are correlated is the premise of Rule 609(a), is not for us to question."³² Trial judges expressly cite criminal propensity as the relevant link between prior felonies and lying under oath.³³

Deeming all felony convictions relevant to prove untruthfulness, however, ignores the legal evolution of felonious conduct, which has expanded far beyond

27. *Green v. Bock Laundry Mach. Co.*, 490 U.S. 504, 511 (1989).

28. *Williams v. United States*, 3 F.2d 129, 130 (8th Cir. 1924) ("In nearly all of the states of the Union this disqualification of the witness is now removed, and one who has been convicted of crime is a competent witness, but the general provision of state statutes is that the conviction may be shown to affect credibility."); Bellin, *supra* note 10, at 296–97 (describing the gradual disappearance of the disqualification of witnesses, including the common law's categorical bar of prior felons, in the late nineteenth and early twentieth centuries, which "culminated in the Supreme Court's pronouncement in 1918 . . . that 'the truth is more likely to be arrived at by hearing the testimony of all persons of competent understanding who may seem to have knowledge of the facts involved in a case, leaving the credit and weight of such testimony to be determined by the jury'" (quoting *Rosen v. United States*, 245 U.S. 467, 471 (1918))).

29. *Gertz v. Fitchburg R.R. Co.*, 137 Mass. 77, 78 (Mass. 1884); *see also* Bellin, *supra* note 10, at 301–02 (outlining the chain of inferences supporting Holmes' relevancy argument for use of felony convictions to impeach a witness).

30. *See* ROGER PARK & TOM LININGER, *THE NEW WIGMORE: A TREATISE ON EVIDENCE: IMPEACHMENT AND REHABILITATION* § 3.4, at 3 (Supp. 2017) (providing a survey of state-level jurisdictions' categorical rules on using convictions to impeach); *see, e.g.*, Mo. Ann. Stat. § 491.050 (West 2016) ("[A]ny prior criminal convictions may be proved to affect [a witness's] credibility in a civil or criminal case . . .").

31. For example, Rule 609(a)(1) gives the court discretion to allow impeachment of an eyewitness with the witness's felony drug conviction. The only permissible inference the jury would be permitted to draw from the prior drug conviction is that as a convicted felon, the witness is more likely to give untruthful testimony.

32. *Campbell v. Greer*, 831 F.2d 700, 707 (7th Cir. 1987).

33. *See, e.g.*, *United States v. Lipscomb*, 702 F.2d 1049, 1054 (D.C. Cir. 1983) (upholding trial judge's exercise of discretion in admitting felony conviction for impeachment on the theory that a "desperate person who would commit an armed robbery would also lie under oath" (internal quotation marks omitted)).

the narrow category of offenses punishable by death that had previously justified the common law's skepticism toward returning citizens.³⁴ That skepticism, as expressed by Justice Holmes, equates criminality to untruthfulness without any distinction for the underlying cause or nature of crimes unrelated to truthfulness.³⁵

At least one scholar has labeled laws permitting impeachment with criminal convictions an "ancient precept of the law of evidence" that is contrary to common experience.³⁶ Numerous scholars cite the absence of a direct correlation between a witness's non-dishonesty felony convictions and propensity to lie,³⁷ and this view has growing support in the scientific community.³⁸ Research shows that "moral conduct in one situation is not highly correlated with moral conduct in another."³⁹ Notwithstanding a lack of empirical testing, Rule 609(a)(1) persists. Moreover, it is at odds with the Federal Rules of Evidence's ban on the use of character or character traits to prove a person's propensity to act consistent with that character, absent some link to untruthfulness.⁴⁰

34. See Roberts, *supra* note 13, at 588 (explaining that at common law, "[f]elonies were a narrow group of offenses, all punishable by death, and all deemed to be 'inherently morally wrong,'" but today the definition of felony has expanded (footnotes omitted) (quoting James J. Tomkovicz, *The Endurance of the Felony Murder Rule: A Study of the Forces that Shape Our Criminal Law*, 51 WASH. & LEE L. REV. 1429, 1445–56 (1994)).

35. See *id.* at 588–89 (noting that some felonies "can occur in the absence of any understanding that the law is being broken," and suggesting that the common law view of felony impeachment based on a readiness to do evil "may be out of step with the current shape of criminal justice"). Holmes's view of the links between felons, their evil propensities, and lying comports with his understanding of human nature in other contexts. See *Buck v. Bell*, 274 U.S. 200, 207 (1927) ("It is better for all the world, if instead of waiting to execute degenerate offspring for crime, or to let them starve for their imbecility, society can prevent those who are manifestly unfit from continuing their kind.").

36. H. Richard Uviller, *Credence, Character, and the Rules of Evidence: Seeing Through the Liar's Tale*, 42 DUKE L.J. 776, 813 (1993). The United States Supreme Court recently observed that "[i]t is the mark of a maturing legal system that it seeks to understand and to implement the lessons of history." *Pena-Rodriguez v. Colorado*, No. 15-606, slip op. at 21 (U.S.S.C. March 6, 2017) (holding that the Sixth Amendment allows impeachment of jury verdicts if a juror clearly states he or she relied on racial stereotypes or animus to convict a defendant).

37. Williams, *supra* note 13, at 895, 895 n.10 (collecting authorities).

38. See, e.g., PARK & LININGER, *supra* note 30, § 3.4 at 2 (describing situationist personality theory and the "classic study of cross-situational lying" that showed "dishonest behaviour in one situation . . . was only modestly related to dishonest behaviour in other situations"); see also SAKS & SPELLMAN, *supra* note 11, at 168–69 (outlining empirical research undermining Rule 609's premise that prior convictions can be used by the jury exclusively to evaluate witness credibility); Roberts, *supra* note 13, at 577.

39. *Campbell v. Greer*, 831 F.2d 700, 707 (7th Cir. 1987) (citing Roger V. Burton, *Generality of Honesty Reconsidered*, 70 PSYCHOL. REV. 481 (1963); Robert G. Lawson, *Credibility and Character: A Different Look at an Interminable Problem*, 50 NOTRE DAME LAW. 758 (1975) (citing other studies)); see also Blume, *supra* note 13, at 481 (describing rationale behind "anti-propensity doctrine" based on danger that jury will punish defendant for offenses other than those for which he or she is on trial and because defendant is a "bad person"); Foster, *supra* note 13, at 29–30 (noting trait-oriented psychologists' attempts to "buttress their theory with empirical data have failed utterly," and their theories have been discredited by "situationism").

40. Colin Miller, *Impeachable Offenses?: Why Civil Parties in Quasi-Criminal Cases Should Be*

Attempts to excise convictions unrelated to truthfulness from the impeachment arsenal gained support in the 1940s, influenced by the American Law Institute (ALI)⁴¹ and Professor Mason Ladd.⁴² Professor Ladd contended that felonies unrelated to truthfulness had no relevance to credibility and should be excluded.⁴³ The American Bar Association (ABA) endorsed that view in 1953.⁴⁴

Treated Like Criminal Defendants Under the Felony Impeachment Rule, 36 PEPP. L. REV. 997, 1001 (2009) (“Rule 609(a)(1) is the sole aberration in the constellation of Federal Rules of Evidence” that makes it difficult to admit character evidence to prove propensity). Federal Rule of Evidence 404 states in part:

- (a) Character Evidence.
 - (1) Prohibited Uses. Evidence of a person’s character or character trait is not admissible to prove that on a particular occasion the person acted in accordance with the character or trait.
 - ...
- (b) Crimes, Wrongs, or Other Acts.
 - (1) Prohibited Uses. Evidence of a crime, wrong, or other act is not admissible to prove a person’s character in order to show that on a particular occasion the person acted in accordance with the character.
 - ...

FED. R. EVID. 404.

Federal Rule of Evidence 608(a) states:

A witness’s credibility may be attacked or supported by testimony about the witness’s reputation for having a character for truthfulness or untruthfulness, or by testimony in the form of an opinion about that character. But evidence of truthful character is admissible only after the witness’s character for truthfulness has been attacked.

FED. R. EVID. 608(a).

41. In 1942, members of the ALI’s Committee on Evidence drafted and proposed Model Code of Evidence Rule 106, which allowed prior conviction impeachment only for convictions involving false statement or dishonesty. Rule 106 provides:

- (1) Subject to Paragraphs (2) and (3), for the purpose of impairing or supporting the credibility of a witness, any party including the party calling him may examine him and introduce extrinsic evidence concerning any conduct by him and any other matter relevant upon the issues of his credibility as a witness, . . . [E]xtrinsic evidence shall be inadmissible . . .
- (b) of his conviction of crime not involving dishonesty or false statement, . . .
- (3) If an accused who testifies at the trial introduces no evidence for the sole purpose of supporting his credibility, no evidence concerning his commission or conviction of crime shall, for the sole purpose of impairing his credibility, be elicited on his cross-examination or be otherwise introduced against him; if he introduces evidence for the sole purpose of supporting his credibility, all evidence admissible under Paragraph (1) shall be admissible against him.

MODEL CODE OF EVIDENCE 106 (AM. LAW INST. 1942), *reprinted in* Williams, *supra* note 13, at 908 n.102.

42. *See* Williams, *supra* note 13, at 908–09 (describing Professor Ladd’s influence on the ALI’s Committee on Evidence).

43. *See id.* (“Professor Ladd challenged the prevailing notion that prior felony conviction evidence had some bearing on a witness’s propensity for truth and veracity.”).

44. *See* Green v. Bock Laundry Mach. Co., 490 U.S. 504, 513 (1989) (describing ABA’s endorsement of a rule that limited witness impeachment to convictions for crimes involving dishonesty).

Efforts persisted in various forms to enact the limitations advocated by the ALI and the ABA until Congress adopted the Federal Rules of Evidence in 1975.⁴⁵ Congress compromised⁴⁶ by enacting the discretionary model used today, vesting the judiciary with broad discretion to balance the impeachment value of felony convictions with the risk of unfair prejudice.⁴⁷ Senator John Little McClellan, the leading advocate for a broad impeachment provision, summarized Congress's rejection of the efforts to limit impeachment only to crimes related to untruthfulness.⁴⁸ He maintained that a "person who has committed a serious crime—a felony—will just as readily lie under oath as someone who has committed a misdemeanor involving lying."⁴⁹

II. THE RULE 609 MODEL

Rule 609(a) allows for the use of convictions for "attacking a witness's character for truthfulness."⁵⁰ A court must admit evidence of any crime within ten years⁵¹ regardless of the degree of punishment if the crime involved "a dishonest act or false statement."⁵² For crimes not involving dishonesty, the rule sets forth a calibrated balancing process.⁵³ Felony convictions for any witness in a civil or criminal case "must be admitted" under Rule 609(a)(1)(A), subject only to the limitation of Rule 403, which provides that relevant evidence may be excluded "if its probative value is substantially outweighed by a danger" of factors such as unfair prejudice, misleading the jury, wasting time, or confusing the issues.⁵⁴ When the witness is the defendant in a criminal case, Rule 609(a)(1)(B) requires that a felony conviction be admitted "if the probative value of the evidence outweighs its prejudicial effect to that defendant."⁵⁵

or false statement).

45. See Victor Gold, *Impeachment*, *supra* note 14, at 2298–308 (describing history of enactment of Rule 609(a) and debate over the probative value of conviction evidence versus its unfair prejudice).

46. See *Green*, 490 U.S. at 519–20 (describing Congress's "compromise" between the "automatic admissibility approach" and the "impeachment only by *crimen falsi* evidence" approach); Bellin, *supra* note 10, at 306 (noting that Rule 609 "embodies a compromise between 'two diametrically opposed positions'" (quoting Roderick Surratt, *Prior-Conviction Impeachment Under the Federal Rules of Evidence: A Suggested Approach to Applying the "Balancing" Provision of Rule 609(a)*, 31 SYRACUSE L. REV. 907, 920 (1980))).

47. See *Green*, 490 U.S. at 519–20 (describing Rule 609(a)(1)'s balance); Bellin, *supra* note 10, at 312 ("[T]he Rule relies on trial judges to strike the appropriate balance in particular cases by weighing the 'probative value' and 'prejudicial effect' of each proffered conviction.").

48. See *United States v. Lipscomb*, 702 F.2d 1049, 1075 (D.C. Cir. 1983) (MacKinnon, J., concurring) (citing 120 Cong. Rec. 37076–77 (1974)).

49. *Id.* (quoting 120 CONG. REC. 37076–77).

50. FED. R. EVID. 609(a).

51. The ten-year period is measured from the time of "the witness's conviction or release from confinement for it, whichever is later." FED. R. EVID. 609(b).

52. FED. R. EVID. 609(a)(2).

53. See FED. R. EVID. 609.

54. FED. R. EVID. 609(a)(1)(A).

55. FED. R. EVID. 609(a)(1)(B); see also George Fisher, *Plea Bargaining's Triumph*, 109 YALE

Rule 609(b)(1) creates a more stringent balancing test for felony convictions beyond ten years.⁵⁶ Such a conviction is admissible only if “its probative value, supported by specific facts and circumstances, substantially outweighs its prejudicial effect,” and the proponent gives notice of its intent to impeach the witness with the conviction.⁵⁷ Impeachment with juvenile adjudications carries even stricter limitations.⁵⁸ Rule 609(d) limits the use of juvenile adjudications only to non-defendant witnesses in criminal cases and instructs that an adult conviction for that offense would be admissible to attack the adult’s credibility.⁵⁹ It also demands that “admitting [evidence of the juvenile adjudication be] necessary to fairly determine guilt or innocence.”⁶⁰

III. ILLUSORY GUIDES TO FAIRNESS

Rule 609(a)(1) seems to create safeguards by requiring the court to weigh prior felony convictions pursuant to Rule 403 and, in the case of a defendant witness, only admitting prior conviction evidence if the probative value outweighs the prejudicial effect to the defendant.⁶¹ Rule 403, however, is a rule of inclusion, favoring the admission of relevant evidence.⁶² Absent the link between a felony conviction and a tendency to lie, prior felony convictions have no relevance and would be otherwise excluded under the Rules of Evidence as pure propensity evidence subject to significant risk of misuse by the jury.⁶³ Moreover, courts often have difficulty quantifying unfair prejudice from impeaching a witness, as opposed to a defendant, with a felony conviction.⁶⁴ The Rule’s analytical model renders any witness vulnerable to impeachment with

L.J. 857, 979–80 (2000) (noting Rule 609(a)(1)’s limit on impeachment of defendants due to risk that juries will misuse prior convictions as evidence of guilt); Roberts, *supra* note 13, at 568 (noting the increased protection for defendants under Rule 609).

56. See FED. R. EVID. 609(b)(1).

57. FED. R. EVID. 609(b).

58. See FED. R. EVID. 609(d).

59. See *id.*

60. FED. R. EVID. 609(d)(4).

61. See FED. R. EVID. 609(a)(1).

62. United States v. Udeozor, 515 F.3d 260, 264–65 (4th Cir. 2008) (“Rule 403 is a rule of inclusion, generally favor[ing] admissibility.” (internal quotation marks omitted)).

63. See Gainor, *supra* note 13, at 767 (“Rule 609, permitting use of evidence of a criminal defendant’s prior convictions ‘[f]or the purpose of attacking the credibility of a witness,’ is an *exception* to the general policy of Rule 404 that character evidence ‘is not admissible for the purpose of proving that [a person] acted in conformity therewith.’” (alterations in original) (first quoting FED. R. EVID. 609(a); then quoting FED. R. EVID. 404(a))); Roberts, *supra* note 13, at 564 (explaining that Rule 609 “impeachment relies on the assumption that a felony conviction in itself has some probative worth on the issue of credibility: the conviction is viewed as indicating the defendant’s willingness to violate the law, and thus suggesting a willingness to violate the laws of perjury”).

64. See James H. Gold, *Sanitizing*, *supra* note 13, at 695 (arguing that the “discretionary balancing approach” has not been effective at “reducing the prejudicial impact of impeachment with prior convictions,” and surveying “appellate court opinions upholding the discretionary admission of prior convictions under circumstances in which suppression would seem most appropriate”).

prior felonies.⁶⁵ For example, if a returning citizen witnessed an armed robbery, he or she would be impeached with a prior felony conviction unrelated to truthfulness unless the court could articulate how the probative value of the impeachment was substantially outweighed by the dangers enumerated in Rule 403. Balancing the impeachment value of the felony conviction of a government witness requires the court to shift its inquiry to how the government, not the defendant, would be unfairly prejudiced. It is more difficult to articulate how impeachment of a witness would be unfairly prejudicial to the government, waste time, or confuse the jury, absent unique factual circumstances.⁶⁶

To guide courts in balancing the probative value of prior felony convictions under Rule 609(a)(1) with the dangers of jurors misusing the evidence, courts have devised a multifaceted inquiry.⁶⁷ Although the test has various formulations, the underlying inquiry usually focuses on four central factors: (1) the type of crimes involved, (2) when the convictions occurred, (3) the significance of the witness's testimony to the case, and (4) the importance of the defendant-witness's credibility.⁶⁸ In the United States Court of Appeals for the Third Circuit, for example, the balancing test is derived from the factors articulated in the Seventh Circuit's opinion in *United States v. Mahone*,⁶⁹ which relied on *Gordon v. United States*,⁷⁰ a case decided before adoption of the Federal Rules of Evidence. Both cases cited a five-factor inquiry: (1) the impeachment value of the crime, (2) the point in time of the conviction and the witness's subsequent history, (3) the similarity between the past crime and the charged crime, (4) the importance of the defendant's testimony, and (5) the centrality of the credibility issue.⁷¹

Those inquiries represent "an apparent attempt to foster uniformity" in the

65. See, e.g., *United States v. Estrada*, 430 F.3d 606, 617 (2d Cir. 2005) ("District courts, in applying Rule 609(a)(1), are thus required to examine which of a witness's crimes have elements relevant to veracity and honesty and which do not.")

66. See *id.* at 620 ("[T]he [Advisory Committee] notes emphasize that impeachment evidence relating to a government witness should be excluded under Rule 609(a)(1) only when there is a real danger that such prejudice substantially outweighs the probative value of a witness's felony convictions as they relate to his or her propensity for truthfulness."); cf. *United States v. Chaika*, 695 F.3d 741, 744–45 (8th Cir. 2012) (barring impeachment of government witness with eight-year-old conviction for felony sex offense in fraud trial because evidence had minimal relevance, and defense possessed other, less prejudicial impeachment evidence).

Although eliminating Rule 609(a)(1) would preclude a defendant from impeaching a government informant or cooperating witness with a felony conviction, numerous other impeachment tools remain, such as questioning government witnesses on plea agreements, grants of immunity, government payments or favors, bias, and prior inconsistent statements. See, e.g., *id.* at 745 (stating that impeachment on "guilty plea, promise to cooperate, and hoped-for leniency was far more potent 'ammunition'" on cross-examination of government witness than a felony conviction).

67. See, e.g., *United States v. Greenidge*, 495 F.3d 85, 97 (3d Cir. 2007) (outlining the test used for balancing the probative value of prior felony convictions under Rule 609(a)(1)).

68. See *id.*

69. 537 F.2d 922, 929 (7th Cir. 1976).

70. 383 F.2d 936, 940 (D.C. Cir. 1967).

71. See *Mahone*, 537 F.2d at 929; *Gordon*, 383 F.2d at 940.

district courts' application of Rule 609.⁷² Courts begin their analysis with a presumption that the felony conviction is relevant, leaving the balance of the inquiry to discern the impact of the unfair prejudice arising from the inescapable criminal propensity inference injected into the trial.⁷³ Even in similar factual scenarios, however, an examination of the various factors can yield disparate results among judges and courts.⁷⁴ Although courts routinely engage in the multi-factor balancing, scholars criticize the exercise as a “citation-friendly, albeit facially ambiguous, framework (again without analysis),”⁷⁵ which is “fraught with confusion.”⁷⁶

Regardless of whether a balancing test leads to consistent results or effectively informs judicial discretion, it fails to address the core flaw in Rule 609(a)(1): a felony conviction's presumed relevance based on the witness's evil propensity. Although decades of judicial decisions have presumed the validity of Rule 609(a)(1)'s propensity-based rationale, the recent emphasis on restorative justice principles in criminal law offers a new justification for severing the Rule's unsupported logical chain linking evil character to lying.⁷⁷

IV. RESTORATIVE JUSTICE TRENDS

Howard Zehr, widely regarded as the nation's leading restorative justice theorist and practitioner, describes restorative justice as a process to help those with a stake in a specific offense to “collectively identify and address harms, needs, and obligations, in order to heal and put things as right as possible.”⁷⁸ A

72. Bellin, *supra* note 10, at 312.

73. See *Green v. Bock Laundry Mach. Co.*, 490 U.S. 504, 510 (1989) (“Evidence that a litigant or his witness is a convicted felon tends to shift a jury's focus from the worthiness of the litigant's position to the moral worth of the litigant himself.”).

74. See *United States v. Pettiford*, 238 F.R.D. 33, 42 (D.D.C. 2006) (noting the “general trend towards admissibility under Rule 609(a)”); Roberts, *supra* note 13, at 569–70 (describing courts' application of balancing factors as “fraught with confusion” and “trend[ing] toward admissibility”). Compare *Diaz v. Aberts*, No. 10-5939, 2013 WL 2322485, at *7–8 (E.D. Pa. May 28, 2013) (denying admission of prior convictions of plaintiff in excessive force civil rights case because credibility would be crucial inquiry), with *Prater v. City of Phila.*, No. 11-CV-00667, 2012 WL 3930063, at *2–3 (E.D. Pa. Sept. 7, 2012) (admitting prior convictions of plaintiff in excessive force civil rights case because credibility would be crucial inquiry).

75. Bellin, *supra* note 10, at 317.

76. Roberts, *supra* note 13, at 569.

77. The restorative justice model is based on an understanding that the causes of criminal behavior include a variety of factors, including the “disintegration of family life,” poverty and illness, and poor individual choices. See Reverend Ricardo Ramirez, Bishop of Las Cruces, Catholic Social Teaching on Restorative Justice, Address at the Villanova University Academic Symposium 8–9 (Sept. 18, 2009), <http://www.priestsforlife.org/magisterium/bishops/09-09-28-ramirez.pdf> [<http://perma.cc/3J44-A6WU>]; see also Fed. Interagency Reentry Council, *supra* note 8, at 8–9 (outlining the “[k]ey drivers behind incarceration rates” in the United States).

78. See Zehr, *supra* note 7, at 37. Restorative justice “recognizes that a successful criminal sanction must be both backward-looking—condemning the offense and uncovering its causes—and forward-looking—making amends to the victim and the general community while actively facilitating moral development and pro-social behavior in the offender.” Erik Luna & Barton Poulson,

restorative model to addressing criminal behavior posits three questions: “Who has been harmed; what are their resulting needs; and who is responsible for meeting those needs.”⁷⁹ Answers must come from the affected parties: the offender, the victim, their respective families, and the surrounding community.⁸⁰

Often this approach conflicts with traditional punitive models of criminal justice, primarily because the criminal justice system of filing charges and proceeding to a guilty plea or trial affords little or no room for dialogue and true healing.⁸¹ Some scholars, however, suggest the two approaches can be integrated based on their “numerous points of intersection.”⁸² Although both models have distinct objectives—retribution in the punitive model and “reparation of harm and community empowerment” in the restorative model—they share some common features and goals.⁸³ These “include rehabilitation, deterrence, incapacitation, and denunciation of crime.”⁸⁴ Many of those shared concepts are integrated into the punitive model, including in the factors that federal judges must weigh in imposing a sentence.⁸⁵

As one scholar has noted, restorative justice aims to “make amends” after a violent event or crime.⁸⁶ Critical to the restorative process is the goal of rebuilding relationships within the broader community, not simply between an individual offender and a victim.⁸⁷ Ultimately, a truly restorative approach to criminal justice transcends punishment and rehabilitation and achieves a broader peace or a “fundamental at-rightness and well-being of relationships” in a type

Restorative Justice in Federal Sentencing: An Unexpected Benefit of Booker?, 37 MCGEORGE L. REV. 787, 790 (2006).

79. Hadar Dancig-Rosenberg & Tali Gal, *Restorative Criminal Justice*, 34 CARDOZO L. REV. 2313, 2318 (2013).

80. *Id.* Luna and Poulson argue that the Supreme Court’s decision in *United States v. Booker*, 543 U.S. 220 (2005), which rendered the United States Sentencing Guidelines advisory rather than mandatory, “open[ed] the door for new and progressive options” in sentencing, “including the incorporation of restorative justice programs.” Luna & Poulson, *supra* note 78, at 796.

81. See Dancig-Rosenberg & Gal, *supra* note 79, at 2319–20.; Gottschall & Armour, *supra* note 8, at 38–39 (explaining that unlike reentry courts’ attempt “to address the special problems of former prisoners returning to the community,” criminal courts “traditionally find the facts and apply the law” with little concern for “the effect of their actions on defendants, their families and their victims”).

82. *E.g.*, Dancig-Rosenberg & Gal, *supra* note 79, at 2315.

83. *Id.*

84. *Id.*

85. For example, 18 U.S.C. § 3553(a) requires judges to consider not only the need for deterrence, protection of the public, and punishment, but also the needs of the defendant and the defendant’s history and characteristics. See 18 U.S.C. § 3553(a) (2012). The jurisprudence of U.S. District Court Judge John Gleeson illustrates how restorative justice principles can guide sentencing. See, e.g., *United States v. Dokmeci*, No. 13-CR-00455, 2016 WL 915185 (E.D. N.Y. March 9, 2016); *United States v. Holloway*, 68 F. Supp. 3d 310 (E.D.N.Y. 2014); *United States v. Leitch*, No. 11-CR-00609, 2013 WL 753445 (E.D.N.Y. Feb. 28, 2013).

86. Denk, *supra* note 7, at 5 (citing Tony F. Marshall, *Restorative Justice: An Overview*, in *A RESTORATIVE JUSTICE READER* 28, 28 (Gerry Johnstone ed., 2003)).

87. See *id.* at 7.

of “transformative social vision” featuring truly peaceful communities.⁸⁸

Reentry programs designed to assist returning citizens effectively combine the characteristics of the traditional punitive model and the restorative model.⁸⁹ Such programs are often designed with the dual objective of reducing recidivism and ameliorating the societal harms caused by mass incarceration.⁹⁰ Reentry programs exist in myriad forms through the state and federal criminal justice systems.⁹¹ At their core, they share a common theme of striving to break the cycle of reoffending through a variety of practices designed to help returning citizens resume productive, law-abiding lives within the broader community.⁹²

For example, one of the earliest reentry programs to address violent crime was formed in the Eastern District of Pennsylvania in 2007.⁹³ Known as STAR, or Supervision to Aid Reentry, the program offers a wide array of services to help returning citizens overcome obstacles to successful reentry in areas such as accountability, employment, healthcare, legal services, housing assistance, education, family life, decision making, and social networks.⁹⁴ One study has found that the STAR Program decreased the odds of supervision revocation by sixty-one percent, increased employment, and reduced the excessive costs and criminogenic effects of continued imprisonment.⁹⁵ Such positive results have led former U.S. Attorney General Eric Holder to promote the STAR reentry model throughout the nation.⁹⁶

88. *Id.* at 8.

89. See Dancig-Rosenberg & Gal, *supra* note 79, at 2315.

90. See Gottschall & Armour, *supra* note 8, at 37.

91. See NAT’L INST. OF CORR. INFO. CTR., *supra* note 2, at 4–9 (listing reentry programs); RAUMA, *supra* note 6, at 3 (describing prisoner reentry as “an amorphous concept that can encompass many aspects of a former prisoner’s reintegration,” including “[e]mployment, sobriety, family stability, mental health, and criminal associations”); Gottschall & Armour, *supra* note 8, at 42–55 (discussing examples of federal reentry courts that “vary greatly in terms of participants and structure”); Jamie M. Ware, *The Supervision to Aid Reentry (STAR) Program: Helping Previously Incarcerated Federal Prisoners Succeed in Transitioning Back to the Community*, PHILA. SOC. INNOVATIONS J., May 2011, at 6–7 (describing the creation of initial “state- and-county-level jurisdiction reentry courts” and the subsequent expanded use of reentry courts).

Other courts seek to address similar issues in “no reentry” courts that focus on assisting a defendant before sentencing and sometimes result in dismissal of charges or non-custodial sentences. See, e.g., *United States v. Dokmeci*, No. 13-CR-00455, 2016 WL 915185 at *3 (E.D.N.Y. March 9, 2016) (describing “no reentry” drug court in the Eastern District of New York).

92. See Gottschall & Armour, *supra* note 8, at 38–39 (arguing that reentry courts are an “enormous departure” from the normal criminal justice model, which fails to concern “the effect of their actions on defendants, their families[,] and their victims”); Ware, *supra* note 91, at 6 (“Reentry courts are based on a therapeutic model of justice.”).

93. Gottschall & Armour, *supra* note 8, at 40 n.34, 48–51.

94. Taylor, *supra* note 6, at 759–62; Kristin Brown Parker, *The Missing Pieces in Federal Reentry Courts: A Model for Success*, 8 DREXEL L. REV. 397 (2016); Ware, *supra* note 91, at 7–9; Friedman-Rudovsky, *supra* note 4.

95. TAYLOR, *supra* note 6, at 16–17.

96. See *Outreach this Quarter*, U.S. ATT’Y’S Q. (Office of the U.S. Att’y for the Eastern Dist. of Pa.), Winter 2014, at 3, [http://www.justice.gov/sites/default/files/usao-edpa/legacy/2014/10/22/Winter%](http://www.justice.gov/sites/default/files/usao-edpa/legacy/2014/10/22/Winter%20Quarter%20Outreach%20this%20Quarter.pdf)

The focus of reentry programs on providing returning citizens with a fresh start stands in stark contrast with Rule 609(a)(1)'s premise that returning citizens possess an evil character flaw that makes them inclined to lie. Impeachment using a felony conviction is more than simply posing a question to a returning citizen. Rather, it rekindles a psychological barrier to a returning citizen's full integration into the community by labeling the witness as possessing bad character.⁹⁷ Each time a person who has successfully reentered our community is impeached with a prior felony unrelated to truthfulness, society renews its condemnation of that person's character and undermines restorative efforts aimed at rehabilitation and healing.

Any marginal relevance of such impeachment fails to justify the ongoing punishment of returning citizens called to testify in our courts. Unlike the restorative approach, Rule 609(a)(1) impeachment focuses on a theory of relevance based exclusively on criminal propensity. Continuing to stereotype returning citizens as having a propensity to lie based on past crimes, as codified in Rule 609(a)(1), undermines the restorative goal of healing within the broader community impacted by crime. Once an offender accepts punishment and serves a sentence, the restorative model helps to ensure a smooth return to the community and to limit the risk of recidivism.⁹⁸ Impeachment with a prior felony, however, impedes that restorative process by imposing an ongoing stigma

202014%2C%20Publication%2017.pdf [http://perma.cc/8CU4-JX4G] (discussing Attorney General Holder's visit to the Eastern District of Pennsylvania's STAR Program); Press Release, Dep't of Justice, Office of Pub. Affairs, Attorney General Eric Holder Convenes Inaugural Cabinet-Level Reentry Council (Jan. 5, 2011), <http://www.justice.gov/opa/pr/attorney-general-eric-holder-convenes-inaugural-cabinet-level-reentry-council> [http://perma.cc/527S-RSTB] (explaining that Holder convened cabinet-level Reentry Council to "leverage resources across agencies to reduce recidivism and victimization; identify evidence-based practices that advance the council's mission; promote changes to federal statutes, policies and practices that focus on reducing crime; and identify federal policy opportunities and barriers to improve outcomes for the reentry community"); *id.* ("In Fiscal Year 2010, the Department of Justice awarded \$100 million to support 178 state and local reentry grants to provide a wide range of services."); Press Release, Dep't of Justice, Office of Pub. Affairs, Attorney General Eric Holder Speaks About the Department of Justice's Priorities and Mission (Apr. 25, 2011), <http://www.justice.gov/opa/speech/attorney-general-eric-holder-speaks-about-the-department-justice-s-priorities-and-mission> [http://perma.cc/7DSK-G4HJ] (discussing the "economic imperative" and "moral obligation" to provide "support to those who've served their time and are struggling to rejoin and contribute to their communities").

The White House has also recognized the benefits of the STAR Program. *See* Fed. Interagency Reentry Council, *supra* note 8, at 53 (outlining the comprehensive reentry efforts of the STAR Program and highlighting its impact on two program graduates).

97. *See* Ted Chiricos et al., *The Labeling of Convicted Felons and Its Consequences for Recidivism*, 45 CRIMINOLOGY 547, 547, 572 (2007) (arguing that labeling a person as a felon "could increase the likelihood of recidivism" and increase stigmatization effects); Andrea Noble, *Justice Department Program to No Longer Use 'Disparaging' Terms 'Felons' and 'Convicts'*, WASH. TIMES (May 4, 2016), <http://www.washingtontimes.com/news/2016/may/4/justice-dept-no-longer-use-terms-felon-convict/> [http://perma.cc/J57Z-GSLN] (noting the psychological barriers that labels such as "felony" and "convict" have on reentry).

98. *See supra* notes 81–92 and accompanying text for a discussion of the advantages of the restorative model.

that burdens the returning citizen with reminders of a criminal past.⁹⁹

A restorative justice approach to Rule 609 would acknowledge society's changing understanding of crime and returning citizens and finally discard the outdated historical premise of evil character upon which Rule 609(a)(1) rests. Eliminating Rule 609(a)(1) will conform Rule 609 to the Federal Rules of Evidence's overall ban on the use of propensity evidence and will move our nation a step closer to achieving a truly restorative criminal justice system that sheds dehumanizing labels and practices associated with punishment for past offenses.¹⁰⁰

99. See MCHUGH, *supra* note 19, at 191 (noting that it is meaningless to preach reconciliation to prison inmates if the individual finds upon release that he or she "has no place in the community"). Such collateral consequences create barriers that "persist long after an individual has served his or her sentence" and can have adverse impacts. Fed. Interagency Reentry Council, *supra* note 8, at 10 (discussing the negative impact of the collateral consequences of criminal convictions on "employment, education, mental and behavioral health services, housing, social services, public benefits, and occupational licenses").

100. See MCHUGH, *supra* note 19, at 163 (acknowledging that as prisoners, individuals "often come to accept the dehumanizing labels which are pinned on them," and noting that there "are few easily won victories" in the effort to transform the criminal justice system).

TAB 8

TAB 8A

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Memorandum To: Advisory Committee on Evidence Rules
From: Daniel J. Capra, Reporter
Re: Proposed Rule on Illustrative Aids and the Treatment of “Demonstrative Evidence”
Date: October 1, 2017

Attached to this memo is an article that proposes an amendment to the Evidence Rules that would specifically treat “demonstrative” or illustrative evidence. The article uses as its poster child case for the need for reform a 2013 opinion from the 7th Circuit, *Baugh v. Cuprum S.A. de C.V.*, 730 F.3d 701, 703 (7th Cir. 2013) (Hamilton, J.). In *Baugh*, the trial court allowed an “exemplar” of the ladder involved in the accident at issue to be presented at trial, but only for the purpose of helping the defense expert to illustrate his testimony. Over objection, the trial court allowed the jury to inspect and walk on the ladder during deliberations. The 7th Circuit found that while allowing the ladder to be used for illustrative purposes was within the court’s discretion, it was error to allow it to be provided to the jury for use in its deliberations. The court drew a line between exhibits admitted into evidence to prove a fact, and demonstrative exhibits used only to illustrate a party’s argument or a witness’s testimony; it stated that the “general rule is that materials not admitted into evidence simply should not be sent to the jury for use in its deliberations.”

The *Baugh* court hypothesized that the problem it faced might have been caused by the vagueness of the term “demonstrative evidence”:

The term “demonstrative” has been used in different ways that can be confusing and may have contributed to the error in the district court. In its broadest and least helpful use, the term “demonstrative” is used to describe any physical evidence. *See, e.g., Finley v. Marathon Oil Co.*, 75 F.3d 1225, 1231 (7th Cir.1996) (using “demonstrative evidence” as synonym for physical exhibits). When the term is used in this way, demonstrative exhibits may range from Shakespeare's version of Marc Antony's funeral oration displaying the bloody toga in *Julius Caesar*, as noted in *Finley*, to the knife in *Twelve Angry Men*. As jurors have become more visually oriented, counsel in modern trials seek

to persuade them with an ever-expanding array of objects, maps, charts, displays, summaries, video reconstructions, computer simulations, and so on. *See United States v. Burt*, 495 F.3d 733, 740 (7th Cir.2007).

As Professors Wright and Miller lament, the term, “demonstrative” has grown “to engulf all the prior categories used to cover the use of objects as evidence.... As a result, courts sometimes get hopelessly confused in their analysis.” 22 Charles Alan Wright & Arthur R. Miller, *Federal Practice and Procedure* § 5172 (2d ed.); see also 5 Christopher B. Mueller & Laird C. Kirkpatrick, *Federal Evidence* § 9:22 (3d ed.) (identifying at least three different uses and definitions of the term “demonstrative” evidence, ranging from all types of evidence, to evidence that leaves firsthand sensory impressions, to illustrative charts and summaries used to explain or interpret substantive evidence). The treatises struggle to put together a consistent definition from the multiple uses in court opinions and elsewhere. See 2 McCormick on Evidence § 212 n. 3 (Kenneth S. Broun ed., 7th ed.) (recognizing critique of its own use of “single term ‘demonstrative evidence,’ ” noting that this approach “joins together types of evidence offered and admitted on distinctly different theories of relevance”).

The *Baugh* court declined to “reconcile” all the definitions of “demonstrative” evidence but did delineate the distinction between exhibits that are admitted into evidence to prove a fact and those that are introduced only to illustrate a witness’s opinion or a party’s presentation. [If nomenclature might be helpful, the categories could be broken down into (substantive) demonstrative evidence – such as a product demonstration to prove causation or the lack of it --- and illustrative aids that do just that --- illustrate a witness’s testimony or a party’s presentation, e.g., closing argument, summation, etc.]

The article uses the *Baugh* case as a springboard for an argument that the Federal Rules of Evidence should address the topic of “demonstrative” evidence on two fronts: 1. The rule should provide a uniform terminology for this evidence, as the term “demonstrative evidence” is currently subject to varying definitions that cover both admissible evidence and illustrative information; and 2. The rule should clarify what can and cannot be submitted to the jury for deliberations (the specific question addressed by the *Baugh* court).

The authors do not actually propose text for a rule amendment, nor do they specifically suggest where the rule should be located.¹ But they do note that one state, Maine, has a rule that governs “illustrative aids.”

¹ At one point the authors suggest an addition to Rule 403 --- a subdivision (b) that would provide a balancing test for whether exhibits should be submitted to the jury. But messing around with Rule 403 to deal with the narrow problem of illustrative evidence seems like rulemaking heresy. At another point they suggest a Committee Note, that could be added to some rule, without accompanying rule text. That option is definitely rulemaking heresy. It is contrary to 28 U.S.C. §2073(d), which contemplates that committee notes are to be issued only in accompaniment with rule changes.

At another point the authors suggest that a provision be added, presumably to Rule 101, to define “evidence” --- because illustrative aids are not, in their opinion, currently within any definition of “evidence.” But a proposal to define what is “evidence” seems to be a project that is way too late in the game; it could also lead to the need to amend other rules, such as Rule 611(a), which refers to the court’s authority to control the presentation of “evidence” but which has been used more broadly to allow trial court control over information that is not directly admissible as evidence, such as pedagogical charts, and questioning by jurors. *See, e.g., United States v. Stiger*, 371 F.3d 732 (10th Cir. 2004) (presentation of summary charts, not admissible under Rule 1006, was

This memo consists of four parts. Part One provides a short description of the case law on “demonstrative evidence” and illustrative aids. Part Two sets forth Maine Rule 616 and provides some comment on it. Part Three provides a short discussion of the costs and benefits of an amendment and where it might be placed. Part Four sets forth a drafting alternative. Familiarity with the attached article is presumed. This memo is intended to be an introduction to the subject. If the Committee is interested in further consideration of a possible amendment, a supporting memo with a more formal proposal will be submitted for the next meeting.

I. Federal Case Law on “Demonstrative Evidence” and “Illustrative” Evidence

As indicated by the court in *Baugh*, and by the authority it cites, there is no single definition for the term “demonstrative” evidence; and it is of course not optimal to have a term bandied about to cover a number of different evidentiary concepts --- everything from physical evidence in the case, to evidence offered circumstantially to prove how an event occurred, to information offered as an illustrative aid, i.e., a pedagogical device to assist the jury in understanding a witness’s testimony or a party’s presentation. The fluidity of the nomenclature can certainly lead to problems like that found in *Baugh*, where the trial court started out on the right path in allowing the ladder to be introduced to help illustrate the expert’s testimony, but then switched tracks and treated it as “demonstrative” evidence of a fact.

That said, there is plenty of federal authority to indicate that the lines are drawn pretty clearly even if the nomenclature is slippery. A fair statement of most federal cases is as follows:

1. For evidence offered to prove a disputed issue of fact, it must: 1) withstand a Rule 403 analysis of probative value balanced against prejudicial effect; 2) satisfy the hearsay rule; and 3) be authenticated. Rule 403 is usually the main rule that comes into play when the term “demonstrative” is used. The question will be whether the demonstration is similar enough to the facts in dispute that it withstands the dangers of prejudice and jury confusion it presents. If the evidence satisfies Rule 403 and it is in tangible or electronic form, it will be submitted to the jury for consideration as substantive evidence during deliberations.

2. For information offered only for pedagogical or illustrative purposes, the trial judge has discretion to allow it to be presented, depending on how much it will actually assist the jury in understanding a witness’s testimony or a party’s presentation; that assessment of assistance value is balanced against how likely the jury might misuse the information as evidence of a fact as well as other factors such as confusion and delay. This balance is conducted by most courts explicitly under Rule 403, but some courts also cite Rule 611(a), providing the trial court the authority to exercise “reasonable control over the mode and order of examining witnesses and presenting evidence.” It is clear, however, that Rule 403 prevents the court from admitting a pedagogical aid where the risk of prejudice, confusion and delay substantially outweigh its helpfulness in understanding a witness’s testimony or a party’s presentation. That is because Rule 403 runs underneath all the rules of evidence, including Rule 611(a), unless its application is specifically altered or prohibited.² The bottom line is that the aid cannot be unfairly

permissible under Rule 611(a) because they assisted the jury in synthesizing testimony in a complex trial); *United States v. Bush*, 47 F.3d 511 (2d Cir. 1995) (relying on Rule 611(a), stating that trial court has discretion to allow jurors to ask questions, but imposing limitations on the practice).

² The authors intimate that Rule 403 is not applicable to illustrations and pedagogical devices because they are not “evidence” and even if they were, they would not be “relevant” to prove a fact in dispute and so they are not admissible under Rule 401. But that is surely a hyper-technical view that gets you nowhere. Rule 611(a) is

representative, as that could lead the jury to confusion or to draw improper inferences. If the information satisfies this balancing test, it is presented at trial, but, as the court held in *Baugh*, it may not be given to the jury for use in deliberations.

3. There is another related type of evidence that raises the substantive/pedagogical line: summaries and charts. Here, the line is the same though there is an additional rule involved: Rule 1006 covers summaries if they are to be admitted substantively. The conditions for admission under Rule 1006 are: 1) the underlying information must be substantively admissible; 2) the evidence that is summarized must be too voluminous to be conveniently examined in court; 3) the originals or duplicates must be presented for examination and copying by the adversary. But the courts distinguish summaries that are offered only for pedagogical purposes. *See, e.g., United States v. Posada-Rios*, 158 F.3d 832, 835 (5th Cir. 1998) (“Since the government did not offer the charts into evidence and the trial court did not admit them, we need not decide whether...they were not admissible under Fed. R. Evid. 1006....Where, as here, the party using the charts does not offer them into evidence, their use at trial is not governed by Fed. R. Evid. 1006.”); *White Indus. v. Cessna Aircraft Co.*, 611 F. Supp. 1049 (W.D. Mo. 1985) (“[T]here is a distinction between a Rule 1006 summary and a so-called ‘pedagogical’ summary. The former is admitted as substantive evidence, without requiring that the underlying documents themselves be in evidence; the latter is simply a demonstrative aid which undertakes to summarize or organize other evidence already admitted.”). Summaries offered for non-substantive purposes are admissible subject to Rule 611(a) and 403. That is to say they may be considered by the factfinder so long as they are consistent with the evidence and not misleading. *See, e.g., United States v. Wood*, 943 F.2d 1048 (9th Cir. 1991) (in a complex tax fraud case, the trial court allowed a government witness to testify to his opinion of Wood’s tax liability, as summarized by two charts, but prohibited the defendant’s witness from using his own charts; Rule 1006 was not applicable, because the charts were pedagogical devices and not substantive evidence; the court found no error in allowing the use of the prosecution’s chart but prohibiting the use of the defense’s chart, because the prosecution’s chart was supported by the proof, while the chart prepared by the defense witness was based on an incomplete analysis). *See also United States v. Bakker*, 925 F.2d 728 (4th Cir. 1991) (the defendant’s summaries were properly excluded because they did not fairly represent the evidence).³

grounded in the presentation of “evidence” as well. So the conclusion from this view is that there is no rule that regulates the presentation of information offered to illustrate a point. If a party wants to bring a circus in to illustrate a breach of contract, the court is powerless to respond. That just cannot be, and as will be seen below, the courts have not at all considered themselves hamstrung in regulating information offered for pedagogical or illustrative purposes.

³ The court in *United States v. Bray*, 139 F.3d 1104, 1111 (6th Cir. 1998), gives some helpful guidance on the use of pedagogical aids, as distinct from summaries that are admitted under Rule 1006:

We understand the term “pedagogical device” to mean an illustrative aid such as information presented on a chalkboard, flip chart, or drawing, and the like, that (1) is used to summarize or illustrate evidence, such as documents, recordings, or trial testimony, that has been admitted in evidence; (2) is itself not admitted into evidence; and (3) may reflect to some extent, through captions or other organizational devices or descriptions, the inferences and conclusions drawn from the underlying evidence by the summary’s proponent. This type of exhibit is more akin to argument than evidence since it organizes the jury’s examination of testimony and documents already admitted in evidence. Trial courts have discretionary authority to permit counsel to employ such pedagogical-device “summaries” to clarify and simplify complex testimony or other information and evidence or to assist counsel in the presentation of argument to

But as stated in *Baugh*, when summaries are offered only for illustration, they cannot be submitted to the jury during deliberations. See also *Pierce v. Ramsey Winch Co.*, 753 F.2d 416, 421 (5th Cir. 1985) (distinguishing between summaries that are admitted under Rule 1006 and “other visual aids that summarize or organize testimony or documents that have already been admitted in evidence”; concluding that summaries admitted under Rule 1006 should go to the jury room with other exhibits but the other visual aids should not be sent to the jury room without the consent of the parties).

While it can of course not be said that there is absolute uniformity in applying the lines drawn above, and while there is admittedly confusion about what “demonstrative” means, the fact is that most courts are hewing to the difference between substantive evidence of a fact and illustrative aids, with the latter not going to the jury. And it by no means follows that a party will be allowed to make an unfair presentation simply by saying it is “illustrative.” An example of courts policing “demonstrative” evidence --- both substantively and for illustrative purposes --- is found in *Fusco v. General Motors Corp.*, 11 F.3d 259 (1st Cir. 1983). Fusco brought a product liability action arising from an accident in which her car veered out of control over an icy roadway and hit a telephone pole. The major dispute between the parties was whether a key component of the steering system — the front left “ball stud” — had broken from metal fatigue, separated from the tie rod, and caused the accident. General Motors contended that the breaking of a ball stud would not have caused the car to go out of control. To prove this point, General Motors proffered two related videotapes. In one tape, a GM expert who testified at trial used a car mounted on a lift to display the function of the ball stud and tie rod and showed how the test vehicle had been altered so that the stud could be deliberately released from inside the car. The test car was a Chevette, the same model driven by Fusco. In the follow-up tape, the expert drove the test car on a test track, and intentionally disconnected the ball stud from the tie rod. The film showed that the car did not veer out of control or hit the track barrier.

Fusco moved to exclude the demonstration under Rule 403, on the ground that it was not a fair depiction of the disputed event: the test track conditions did not duplicate the road conditions at the time of her accident. GM argued that the dissimilarity went to weight and not admissibility. The trial court excluded the tapes, and the Court of Appeals affirmed. The Court of Appeals in *Fusco* concluded that the trial court had not abused its wide discretion in excluding the evidence as offered to prove causation. The test was done on a dry test track, with a driver anticipating that the ball stud would be disengaged, “and with a doctored piece of equipment rather than one that actually broke.” GM argued in the alternative that it had tried to offer the tapes not so much to *recreate* the accident (i.e., substantively) as to explain certain scientific principles to the jury --- therefore the demonstration need not have been made under conditions substantially similar to the accident. It relied on *Gilbert v. Cosco, Inc.*, 989 F.2d 399, 404 (10th Cir. 1993), where the court stated that “experiments which purport to recreate an accident must be conducted under conditions similar to that accident, while experiments which demonstrate general principles used in forming an expert’s opinion are not required to adhere strictly to the conditions of the accident.”

The *Fusco* court responded to GM’s “pedagogical device” argument by expressing doubt as to whether the test was really intended as an abstract demonstration of scientific principles. But even if that

the court or jury. This court has held that Fed.R.Evid. 611(a) provides an additional basis for the use of such illustrative aids, as an aspect of the court’s authority concerning the mode of interrogating witnesses and presenting evidence.

were the case, the court concluded that “the critical point is not one of labels.” That is, the demonstration still had to satisfy Rule 403 for the “illustrative” purpose for which it was offered. On that point, the court found that the test conducted by GM was “rife with misunderstanding” because it looked “very much like a recreation of the event that gave rise to the trial.” Accordingly, the trial court did not err in excluding the tapes even as an abstract recreation of scientific principles.

In sum, the *Fusco* court found that GM’s taped demonstration was neither fish nor fowl. It was not a legitimate accident replication because the conditions were not substantially similar to the conditions existing at the time of the accident. On the other hand, it was not an admissible illustration of abstract scientific principles because it looked too much like an attempt to recreate the accident. *See also Finchum v. Ford Motor Co.*, 57 F.3d 526, 530 (7th Cir. 1995) (video of a crash test could not be admitted to illustrate an expert’s opinion, because it was “just similar enough to the Finchums’ accident to confuse the jury and leave jurors with the prejudicial suggestion that the Finchums flipped over backwards during the crash.”).

Gilbert v. Cosco, Inc., *supra*, can be usefully compared to *Fusco* on the question of presentation of an illustrative aid. *Gilbert* was an action against a manufacturer of a child restraint device for injuries resulting in a car accident. The trial court allowed the defendant to present evidence about a test that it had conducted, in which the car seat was placed on a sled and sent down a hill. The *Gilbert* court found that the test was properly admitted solely to illustrate the scientific principles that formed the basis of the conclusions of the defendant’s expert. It was clear that the sled test was in no way an attempt to recreate the car accident.

There are many cases that can be cited that hew to the line between substantive demonstrations and illustrative aids. Again, for substantive demonstrative evidence, the evidence must be substantially similar; for illustrative aids, the information must be fairly representative and not such that the jury may be misled into using the information as evidence of a fact. And if it is admitted for illustration, it cannot be submitted to the jury for deliberation. *See, e.g., Dunn v. Nexgrill Indus., Inc.*, 636 F.3d 1049 (8th Cir. 2011) (experiments regarding a fire that started were not offered solely to explain scientific principles, so they had to be conducted under conditions substantially similar to those at the time of the accident, and they were not --- and they were properly excluded under Rule 403); *Robinson v. Missouri Pac. R.R. Co.*, 16 F.3d 1083 (10th Cir. 1994) (no abuse of discretion in admitting video animation illustrating the plaintiff’s theory; it did not have to be substantially similar to the accident, and while details were left out of the presentation, and there was some risk of prejudice, on balance the presentation was a proper illustration and the trial court gave an instruction not to use it as evidence of a fact).⁴

In sum, the Federal case law shows that while the trial courts are not perfect, they generally hew to the line between substantive evidence of a fact and illustration when it comes to “demonstrative” evidence. And in those occasions when they do not, they are subject to correction by appellate courts, as shown in *Baugh*. It’s worth noting that with the exception of *Baugh*, the authors don’t cite any cases in which a federal court got this line-drawing wrong. The *Baugh* court did note, and criticized, some scattered cases that found no error when an illustrative aid was used by the jury in deliberations. *See United States v. Downen*, 496 F.2d 314 (10th Cir.1974); *Big John, B.V. v. Indian Head Grain Co.*, 718 F.2d 143, 148–49 (5th Cir.1983). The *Baugh* court viewed *Downen* and *Big John* “as cases that

⁴ These are just examples. The Federal Rules of Evidence Manual, beginning at 403-163, annotate over 50 appellate cases that essentially hew to the substantive/illustrative line that is described in text --- the latter being barred from consideration by the jury during deliberations.

departed from longstanding practice in this and other circuits and the learned treatises cited above, and as having done so with only the most tenuous support. In any event, we are aware of no case authorizing what happened here, where the district court overruled objections to an exhibit on the ground that it would be used only for demonstrative purposes and then, during jury deliberations, reversed course and treated the exhibit as if it had been admitted into evidence.” The *Baugh* court noted that the Fifth Circuit, which decided *Little John*, has since come back into the fold by holding that illustrative aids may not be submitted to the jury for use in deliberations. See *United States v. Harms*, 442 F.3d 367, 375 (5th Cir.2006) (stating that illustrative aids “should not go to the jury room absent consent of the parties”). So while there are a few decisions to the contrary (at least with respect to the jury deliberation question) the general rules discussed above are pretty solid and uniform.

It should also be noted, though, that this discussion involves only the reported appellate cases. As the authors note, many decisions about demonstrative evidence will be made that never get published or reviewed. If the Committee wants to continue to consider a possible amendment to deal with demonstrative evidence and illustrative aids, the Reporter will try to drill further down into cases, particularly district court cases, and provide a memo on the case law for the next meeting.

II. Maine Rule 616

Maine Rule of Evidence 616 is the only rule of evidence in the country that is specifically designed to treat any aspect of “demonstrative” evidence. It is designed to regulate the use of evidence referred to in this memo as “illustrative” or “pedagogical” i.e., offered to assist the jury in understanding a witness’s testimony or a party’s argument. Rule 616 is entitled “Illustrative Aids”; and its placement as Rule 616 indicates an attempt to place it close to Rule 611(a), the rule that many courts have cited as a source of authority for admitting illustrative information.⁵

Maine Rule 616 provides as follows:

Rule 616. Illustrative Aids

- (a) Otherwise inadmissible objects or depictions may be used to illustrate witness testimony or counsel’s arguments.
- (b) The court may limit or prohibit the use of illustrative aids as necessary to avoid unfair prejudice, surprise, confusion, or waste of time.
- (c) Opposing counsel must be given reasonable opportunity to object to the use of any illustrative aid prepared before trial.
- (d) The jury may use illustrative aids during deliberations only if all parties consent, or if the court so orders after a party has shown good cause. Illustrative aids remain the property of the party that prepared them. They may be used by any party during the trial. They must be preserved for the record for appeal or further proceedings upon the request of any party.

Comment: This seems to be a helpful and clear statement about how illustrative evidence should be treated. It could be improved in a few ways, however:

⁵ If placement near Rule 611(a) was the goal, one might think a better choice would have been to make it part of Rule 611(a) itself. That possibility is explored for a Federal Rule in the next section.

- 1) Subdivision (b) could more clearly track the Rule 403 test, e.g., “the court may limit or prohibit the use of an illustrative aid if its value in assisting the jury is substantially outweighed by the risk of unfair prejudice, confusion or delay.”
- 2) The last three sentences of subdivision (d) should be a separate subdivision as they are about a different matter than the first sentence. The first sentence is about allowing the jury to use the aid in deliberation. That should be a separate point. The remaining three sentences are about procedural details.
- 3) If you’re going to all the trouble to write a specific rule, you should include a requirement that the court must upon request give a limiting instruction as to the proper use of the illustrative aid.
- 4) Under federal rulemaking, the subdivisions would each need a caption.

Maine Rule 616 contains a substantial and detailed Committee Note. It’s as if the Rule, which is relatively spare and pretty obvious, was an excuse for a “best practices” Committee Note. **The Committee Note to Maine Rule 616 provides as follows:**

This rule is intended to authorize and regulate the use of “illustrative aids” during trial.

Objects, including papers, drawings, diagrams, the blackboard and the like which are used during the trial to provide information to the finder of fact can be classified in two categories. The first category, admissible exhibits, are those objects, papers, etc., which in themselves have probative force on the issues in the case and hence are relevant under Rule 401. Such objects are admissible in evidence upon laying the foundation necessary to establish authenticity and relevancy and to avoid the strictures of the hearsay rule and other evidentiary screens. Usually the jury is permitted to take these objects with them to the jury room, to study them and to draw inferences directly from them relating to the issues in the case.

The second class of objects are those objects which do not carry probative force in themselves, but are used to assist in the communication of facts by a lay or expert witness testifying or by counsel arguing. These may include blackboard drawings, pre-prepared drawings, video recreations, charts, graphs, computer simulations, etc. They are not admissible in evidence because they themselves have no relevance to the issues in the case. Their utility lies in their ability to convey relevant information which must be provided directly from some actual evidentiary source, whether that source be witness or exhibit which is admissible in evidence. The ultimate credibility and scope of the information conveyed is that of the source, not that of the illustrative media.

This latter group of objects can be referred to as “illustrative aids.” Sometimes they have been referred to as “demonstrative exhibits” or even “chalks.”

Frequently voluminous evidentiary data is summarized in tabular, or even graphic form, and is offered as a summary under Rule 1006. A summary which presents the data substantially in its original form would be admissible in evidence. A summary which presents the data in a tabular or graphic form to “argue” the case or support specific inferences would be an illustrative aid and would be governed by this rule.

While such aids do not have evidentiary force in themselves, they can be extremely helpful in assisting the trier of fact to visualize evidentiary material which is otherwise difficult to

understand. For the same reason, illustrative aids can also be subject to abuse. Sometimes the form of the illustrative may be grossly or subtly distorted to “improve” upon the underlying testimony, to oversimplify, or to provide subliminal messages. The opportunity for inventiveness and creativity in illustrative aids may exaggerate the effect of disparities in financial resources between parties.

The proposed rule addresses some of the most common issues associated with the use of illustrative aids.

First of all, Rule 616(a) permits the use of illustrative aids for the purpose of illustrating the testimony of witnesses or the arguments of counsel. In the case of witness testimony, the foundation for the use of an illustrative aid would be testimony to the effect that the aid would assist the witness in illustrating her testimony. It is clear that the object need not be admissible in evidence to be useful as an illustrative aid. Thus there is no need to establish the authenticity of an illustrative aid or even its accuracy as long as it has no probative force beyond that of illustrating a witness’s testimony.

Paragraph (b) of the proposed rule makes clear, however, that the court retains the discretion to condition, restrict or exclude the use of any illustrative aid in order to avoid the risk of unfair prejudice, surprise, confusion or waste of time. This is similar to the discretion exercised by the court under Rule 403 in dealing with objects which are admissible in evidence. Because of the multiplicity of potential problems which may be encountered, it is deemed wiser to allow the court a measure of discretion in applying general standards rather than to establish a legal test for utilization of these media.

Some of the problems associated with the use of illustrative aids can include the following:

1. Cases where the illustrative aid is so crafted as to have probative force of its own. Few people would attribute much probative force to a blackboard drawing which is used to illustrate a witness’s testimony. However, with a precisely drawn chart, or even more a computer video display, the perceived quality of the media may impart to the information conveyed a degree of authority, accuracy and credibility much greater than the source from which the information originally came. If the court finds that the use of illustrative aids results in a “dressing up” of testimony to a level of perceived dignity, accuracy or quality greater than it deserves and this works an unfair prejudice, the aid could be limited or excluded under Rule 616(b).

2. Sometimes illustrative aids are used to take advantage of and heighten a disparity in economic resources. The entertainment quality of certain media may give an edge to a wealthy litigant which is entirely unjustified by the actual facts.

3. There is risk that the jury may draw inferences from the illustrative aids different from those for which the illustrative aid was created and offered. This is especially likely to be a risk if the jury takes the aids with them in the jury room to experiment with or scrutinize.

4. Use of illustrative aids often makes a more informative visual presentation which is difficult to capture on an oral record. Problems of ownership and control of the aids may make it impossible to document in the transcript a meaningful record on appeal.

5. Ordinary discovery procedures concentrate on the actual information possessed by the witnesses and known exhibits. Illustrative aids as such are not usually subject to discovery and

often are not prepared far enough in advance of trial. Their sudden appearance at trial may not give sufficient opportunity for analysis, particularly if they are complex, and may cause unfair surprise.

Illustrative aids may themselves become issues in the case leading to waste of time quibbling over the fairness of the illustrative aid, or battles between opponents marking up each other's illustrative aid, and the like.

One of the primary means of safeguarding and regulating the use of the illustrative aids is to require advance disclosure. The rules proposes that illustrative aids prepared before use in court be disclosed prior to use so as to permit reasonable opportunity for objection. The rule applies to aids prepared before trial or during trial before actual use in the courtroom. Of course, this would not prevent counsel from using the blackboard or otherwise creating illustrative aids right in the courtroom.

“Reasonable opportunity” for objection means reasonable under the circumstances. In a case where the aid is simple and is generated shortly before or even during trial, disclosure immediately before use would allow reasonable opportunity for the opponent to check out the aid. On the other hand counsel proposing to use a computer simulation or other complex illustrative media should be expected to make the aid and any information necessary to check its accuracy available sufficiently far in advance of use so as to permit a realistic appraisal and understanding of the proposed aid. The idea is to permit opposing counsel the opportunity to raise any issues of fairness or prejudice with the court out of the presence of the jury and before the jury may have been tainted by the use of the illustrative aid. This requirement of prior disclosure should be applied to both prosecution and defense in criminal cases consistent with constitutional rights of criminal defendants. The rule also provides that illustrative aids are not to go to the jury room unless all parties agree or unless the court orders. In many cases, it is likely that the parties will agree that certain illustrative aids might go to the jury room to aid the jury in their understanding of the issues. In other cases, it is possible that, despite the protest of one party, the court may determine that the jury's consideration of the issues might be so aided by an illustrative aid used during the trial that it should go with the jury to the jury room. But in the absence of such agreement or specific order, the residual rule would be that illustrative aids may be used in the courtroom only.

A recurrent problem with the use of illustrative aids arises from the fact that these are often proprietary items prepared by a particular party to give that party an advantage in the courtroom presentation. However, when a witness has relied heavily on an illustrative aid in giving her testimony, it is often impossible to cross-examine that witness effectively without the use of the same illustrative aid. Similarly, if an illustrative aid has been important in the presentation of one side, the other side ought to have access to that illustrative aid in meeting the testimony illustrated. “Use” of an illustrative aid does not mean despoiling it. Mutual courtesy and respect, reinforced if necessary by court supervision and aided by mylar overlays and the like, should suffice to preserve each party's illustrative aids from detracting markings by opposing counsel or witnesses.

The authorization here provided for the use of non-admissible “illustrative aids” does not prevent a party from using an actual probative exhibit also as an illustrative aid. For instance, a witness might be asked to indicate by marking on a photograph the location of an object which was not present at the time the photograph was taken. The photograph, as an exhibit, would be

probative in itself. The jury could draw inferences directly from it. But the marks added by the witnesses would be a visual form of witness testimony. The preservation of that particular testimony in visual form for later inspection by the jury during deliberations might give that testimony undue weight and durability under the circumstances. Thus the court would have the discretion under this rule to withhold from the jury room an exhibit to which illustrative markings had been added if the markings would give undue weight to a witness's testimony on a disputed issue or otherwise would have some unfairly prejudicial effect.

The court would also have the discretion under this rule to restrict or prohibit marking on an evidentiary exhibit if the effect would be to remove the exhibit from the jury room during deliberations. Thus, if a counsel wishes to mark or to enhance an admitted exhibit or add additional material as an illustrative aid, it probably should be done on another counterpart of the exhibit or with a mylar overlay or some other suitable removable means so that the exhibit could be considered in the jury room in its original state.

Reporter Comments

This Committee Note is pretty darned helpful, though much more detailed than Federal Notes have been in recent years. If an amendment is thought to be necessary to cover "demonstrative" evidence and illustrative aids, there is much from this Note that could be used. The text and the Note together seem helpful in working out some of the nomenclature --- differentiating "demonstrative" evidence writ large and vaguely, and the more particularized problem that is at the heart of the cases, which is regulating illustrative information and preventing it from going into the deliberation room if it is introduced at trial.

The authors of the article criticize Rule 616 as being "analytically infirm" because it allows "irrelevant" information to be presented at trial, despite the bar of Rule 402. The proper criticism is not that supposed analytical infirmity, but that the note simply has it wrong in concluding that an illustrative aid is "irrelevant." Relevance is defined as evidence that has any tendency to make a fact more or less probable than it would be without the evidence. An illustrative aid, to the extent it assists the jury in understanding the testimony of a witness or the presentation of a party, does exactly that --- it makes it more likely than without the information that the jury will find a fact in favor of the party who presents the illustration. Everybody knows that the definition of "relevance" under Rule 401 is intended to be broad, so why shouldn't it cover illustrative evidence that improves the offering party's presentation of facts in dispute? The Committee Note to Rule 401 clearly supports a conclusion that illustrative aids can be relevant even though not offered directly to prove a fact in dispute. The Committee Note states:

Evidence which is essentially background in nature can scarcely be said to involve disputed matter, yet it is universally offered and admitted as an aid to understanding. Charts, photographs * * * and many other items of evidence fall into this category. A rule limiting admissibility to evidence directed to a controversial point would invite the exclusion of this helpful evidence, or at least the raising of endless questions over its admission.

So instead of using the term "irrelevant" the Maine Committee Note would have been better off saying something like "not offered to prove directly any fact in dispute."

The authors of the article keep getting stuck by the technicality that illustrative evidence is declared at the outset to be "not admissible" because "irrelevant" but then it is subject to a second, "shadow Rule 403" test to determine whether it can be admitted anyway --- but not formally so, and not for purposes of jury deliberation. In fact this seems all perfectly understandable in terms of what we mean by "relevant" --- speaking broadly as the rule intends --- and by the fact that the Rule 403 balancing

always works differently depending on the purpose for which the evidence is offered. If it is offered to prove a fact in dispute, the question is its probative value in proving that fact, balanced against the risk that the jury will be confused or unfairly prejudiced. Generally in the case of demonstrative evidence of a fact in dispute the prejudice will mean that the jury will make more of the evidence than it is really worth (because, for example, there are differences between the demonstration and the actual event that the jury might gloss over, as in *Fusco*).⁶ If the information is offered for illustrative purposes only, then the Rule 403 balance is to figure out probative value (how helpful it is to the jury in understanding a witness's testimony or a party's argument) against the risk of prejudice or confusion (which in this instance is likely to mean that the jury may actually consider the information as proof of a fact asserted in it).⁷

There seems to be no reason to get hung up on the theoretical question of “what is evidence” and “what is relevance”? Certainly the courts are not doing that kind of evidentiary navel-gazing. So the question of adding a rule on demonstrative evidence is instead whether it would be helpful to solve a real problem. If so, Maine Rule 616 would appear to be a good starting point toward a rule, with the provisos discussed above, and recasting the problem as one not of “irrelevant” evidence but rather as evidence not offered to prove any fact that is asserted in the presentation.

III. Costs and Benefits of a Rule on Demonstrative Evidence

The costs and benefits of an amendment would definitely depend on what the amendment would be trying to do. If the intent is to define “evidence” and resolve the supposed conundrum of making “irrelevant” evidence admissible, then there is little benefit balanced against the general costs of an amendment --- i.e., transaction costs of learning the new rule. The benefit of such an amendment is slight because the courts are definitely not being tripped up by the supposed conceptual difficulties that haunt the authors. And the courts are rightly not being tripped up because Rule 401's broad definition of relevance comfortably accommodates illustrative evidence that is helpful to the jury's understanding.⁸

On the other hand, if the goal is to try to provide some clarity and procedural regulation --- and user-friendliness --- to the use of illustrative aids, then it is possible to conclude that an amendment could well be helpful. It would be a clarification, and creation of a convenient location for standards, as opposed to a change in the law. It would certainly help the neophyte figure out the limits of Rule 1006 and the distinction between summaries admissible under that rule and illustrative aids. And it would mean that the neophyte would not have to master the case law distinguishing “demonstrative evidence” offered to prove causation from other demonstrations that are offered only to illustrate an expert's opinion or the party's argument. Finally, while the courts are generally hewing to the line between substantive evidence

⁶ But there could also be unfair prejudice from the demonstration itself in some cases involving extreme or inflammatory conduct. See, e.g., *United States v. Gaskell*, 985 F.2d 1056, 1063 (11th Cir. 1993) (in a case involving shaken baby syndrome, the trial court erred in allowing an expert to shake a doll with a higher degree of force than would have been necessary to cause the syndrome in a real baby).

⁷ And again, there might be unfair prejudice from the presentation itself. For example, the presentation in *Gaskell*, note 6 supra, purported to be a scientific illustration on how shaken baby syndrome occurs.

⁸ It should be noted that the original Advisory Committee Note to Rule 611(a) states that the rule is a source of authority for regulating “the use of demonstrative evidence” and it seems clear that by the citation to McCormick the Advisory Committee was thinking of evidence that is used for illustrative purposes. If that is so, was the Advisory Committee just plain wrong in thinking that a court should be allowed to admit “irrelevant” evidence? That seems unlikely. The point is that the Advisory Committee saw nothing inconsistent with Rule 401 and the possibility of admitting helpful illustrative information. That is especially so given the Rule 401 Committee Note indicating that “illustrative” evidence could be found relevant even though not offered to prove a fact in dispute.

and illustrative aid, it is undeniable that the terms used are often slippery and vague, and that mistakes are sometimes made, as in *Baugh*. And as noted above, there are some contrary cases providing that illustrative aids can be sent to the jury over an objection. So in particular it might be valuable to provide in a rule that if information is admitted only for illustrative purposes, it cannot be provided to the jury in deliberation unless all parties agree. That limiting principle would not only be a helpful statement but would also resolve whatever conflict exists in the case law. Moreover, that limiting principle is already found in Rules 803(5) and 803(18) --- which are both designed to prevent the jury from being more influenced by the information than should be permitted given the purpose for which it is offered (in those cases the hearsay is offered as trial testimony, which is not provided to the jury in deliberations). Thus, a rule preventing use of certain evidence by jurors in deliberations is not foreign to the Evidence Rules.

The cost of such an amendment is not zero --- because an amendment by definition imposes transaction costs. But on the other hand, the amendment imposes less cost than most. No established law or rule would appear to be changed by the amendment --- other than a poorly decided case or two, as to which there is no cost but rather benefit in uniformity. Nobody has a settled or fair expectation that information offered for illustrative purposes will be properly used as substantive proof, or should be provided to the jury during deliberations. To the extent there is wayward language in some of the cases (as the court in *Baugh* noted) there will be little cost (and actual benefit) in clarifying the law going forward.

Assuming an amendment to address illustrative aids would be a worthwhile addition, the question is where to put it. As stated above, adding a Rule 616 is an understandable move, but perhaps a better place is Rule 611(a) itself. That is where the Advisory Committee thought the court's authority to admit illustrative information would lie.⁹ That is where the federal courts have found the authority to regulate summaries that are offered only as pedagogical aids rather than proof of the underlying records. As seen below, adding a new subdivision to Rule 611(a) would require renumbering/re-lettering of the existing rule. But that should not be too much of a disrupting factor to electronic searches and the like. For one thing, Rule 611(a) is rarely cited. For another, the current enumeration within Rule 611(a) has only been in effect for 6 years --- it was a part of the Restyling effort.

Application in the Maine Laboratory --- Costs and Benefits?

The Maine practice under Rule 616 might give some indication of whether a similar amendment to the Federal Rules would be useful. There is an intangible, though: the effect would not be in result as much as in nomenclature and user-friendliness. With that proviso, here is a discussion of the handful of reported decisions on Maine Rule 616:

Irish v. Gimbel, 743 A.2d 736 (Me. 2000): In a medical malpractice case, the trial judge allowed the defendant to use a two foot by three foot blowup of the finding of a medical malpractice panel. The court held that under Rule 616, this blowup could be used by counsel in argument, but could only be put up while counsel was referring to it. In the previous trial in this case, the court had found error under Rule 616 when the blowup was left facing the jury during the entirety of the trial. The case did not present the question of submitting the illustrative aid to the jury during deliberations.

Merrill v. Sugarloaf Mtn. Corp., 745 A.2d 378 (Me. 2000): The plaintiff was injured on a ski slope and brought an action against the ski resort. The defendant was allowed to use an illustrative aid depicting unrelated areas of the ski slope for the purpose of educating the jury on the difference between groomed and ungroomed snow conditions. The court found no error, saying only that under Rule 616,

⁹ See Advisory Committee Note to Rule 611(a), discussed in Note 8, *supra*.

“use of an illustrative aid is within the trial court’s discretion.” There was no issue about submitting the aid to the jury.

State v. Irving, 818 A.2d 204 (Me. 2003): The defendant was charged with vehicular manslaughter. At trial the government was allowed to put up the high school graduation photo of the victim during its opening argument. It was a blowup placed on an easel and it was taken down after the opening. The court found no error under Rule 616 and had this to say:

An illustrative aid is a depiction or object which illustrates testimony or argument. M.R. Evid. 616(a). It does not go into the jury room unless counsel agree or by order of the court for good cause. While it does not have to meet the requirements of admissibility, *id.* 616(a), it has to be related to the testimony or argument which it illuminates. When used to illustrate argument, the aid must not be used for an improper purpose just as an opening statement or closing argument cannot contain improper references. * * * An illustrative aid used during argument that diverts a jury from the evidence or injects a risk of unfair prejudice would be improper.

Because there is no transcript of the State’s opening statement, there is nothing in the record that demonstrates that the State did not relate its display of the photograph to its statement. Furthermore, on this record, neither an improper purpose for displaying the photograph nor a risk of unfair prejudice is apparent. Irving argues that the photograph risked sidetracking the jury into comparing the defendant and the victim, but nothing in this record supports that assertion. By allowing the State a narrowly restricted use of Massey’s photograph, the court did not abuse its discretion. The court obviously retained control over the manner in which the State used the photograph and could have restricted its use further if the State’s comments about it during the opening statement gave the court concern about improper use or unfair prejudice.

Thus the court made clear that the decision to allow an illustrative aid is a question to be decided under Rule 403-type principles.

Jacob v. Kippax, 10 A.3d 1159 (Me. 2011): In a medical malpractice action, as in *Irish, supra*, defense counsel used a blowup of the medical malpractice panel opinion, this time during closing argument. The court found no error, stating that “the display of the enlargement for limited periods during Kippax’s closing * * * was permissible pursuant to *Irish* and M.R. Evid. 616, which allows the use of illustrative aids in certain circumstances.”

State v. Corbin, 759 A.2d 727 (Me. 2000): In a trial on charges of theft and tax evasion, the government used a summary chart that was an enlargement of a list of several checks used by the defendant to embezzle funds. That chart was allowed into the jury room for deliberations. The court found no error because the chart was offered as evidence of acts of the defendant. So as it was not being used as an illustrative aid, and Rule 616 was inapplicable.

Summary Comment on Maine Cases:

It appears that since 1997, when Rule 616 was enacted, there has been very little (reported) litigation over its meaning or application. This may be due to the fact that the line between illustrative aid and demonstrative evidence that is substantive proof is one that can be fairly easily understood, and also because the Rule serves more to clarify and provide a location for the law on the subject, rather than to change it.

The Committee has “sources” in Maine that can be tapped to see how the rule is working at the trial court level. If the Committee wishes to proceed further with considering an amendment like Maine Rule 616, those sources will be contacted before the next meeting.

IV. A Draft for Consideration

What follows is a possible draft and Committee Note for a new Rule 611(a)(2). It could also be a freestanding rule, as in Maine, but as discussed above it would seem to be best placed in Rule 611(a) itself.

The draft uses Maine Rule 616, and its extensive Committee Note, as a model, but it makes a number of changes in light of the comments and suggestions strewn throughout this memo.

Rule 611. Mode and Order of Examining Witnesses and Presenting Evidence

(a) Control by the Court; Purposes.

(1) In General. The court should exercise reasonable control over the mode and order of examining witnesses and presenting evidence so as to:

- ~~(1)~~ (A) make those procedures effective for determining the truth;
- ~~(2)~~ (B) avoid wasting time; and
- ~~(3)~~ (C) protect witnesses from harassment or undue embarrassment.

* * *

(2) Illustrative Aids. Any kind of information may be used as an illustrative aid for a witness’s testimony or the proponent’s presentation if:

- (A) its utility in helping the jury to understand the testimony or presentation is not substantially outweighed by the danger of unfair prejudice, confusing the issues, misleading the jury, undue delay, wasting time, or needlessly presenting cumulative evidence;
- (B) all adverse parties are notified in advance of its use and given a reasonable opportunity to object to its use; and
- (C) it is not provided to the jury during deliberations unless all parties consent.

Comments:

1. Maine Rule 616 talks in terms of illustrative aids as being “otherwise inadmissible” but that is what gets everyone confused. The benefit of a new rule would be to get courts and parties thinking directly about a different kind of “evidence” --- offered only to illustrate --- the consequence of which is that the information is presented only for that purpose at trial and then is kept from the jury during deliberations. (In the same way that lawyers and witnesses are kept from the jury during its deliberations).

2. Subparagraph (2)(A) basically tracks the Rule 403 test. So why not just say “Rule 403”? Because the whole innovation is that Rule 403 has a different focus when it comes to illustrative aids --- the “probative value” to be considered is whether it assists the jury in understanding a witness or a party’s presentation. It is not an assessment of how far it proves a substantive fact based on the information contained in the presentation. In this way the test is articulated like the one added to Rule 703 in 2000 ---

which tracked (albeit in reverse) the Rule 403 balancing test but went further and described what the evidence was supposed to be probative for. That articulation received good reviews, and the above proposal applies the same kind of articulation of probative value.

3. The last three sentences of the Maine provision are deleted. Those were procedural details, and they are best placed in the Committee Note.

Draft Committee Note

The amendment establishes a new subdivision within Rule 611(a) to provide standards for the use of illustrative aids in a jury trial. The new rule is derived from Maine Rule of Evidence 616. The term “illustrative aid” is used instead of the term “demonstrative evidence,” as that latter term is vague and has been subject to differing interpretation in the courts.

Writings, objects, charts, or other presentations that are used during the trial to provide information to the jury can be classified in two categories. The first category is evidence that is offered to prove a disputed fact; admissibility for such evidence is dependent upon laying the foundation necessary to establish authenticity and relevancy and to avoid the strictures of Rule 403, the hearsay rule, and other evidentiary screens. Usually the jury is permitted to take this evidence to the jury room, to study it and to use it to help determine the disputed facts.

The second category --- the category covered by this Rule --- is information that is offered for the narrow purpose of illustrating a witness’s testimony or a party’s argument or presentation, thus assisting the jury to understand what is being communicated to them by the witness or party. Examples include blackboard drawings, photos, diagrams, powerpoint presentations, video depictions, charts, graphs, computer simulations, etc. These kinds of presentations, referred to in the Rule as “illustrative aids,” have also been labelled “pedagogical devices” and sometimes (and less helpfully) “demonstrative presentations” --- that latter term being unhelpful because the purpose for presenting the information is not to “demonstrate” how an event occurred but rather to assist in the presentation of another source of evidence or argument.

There is thus a distinction, as the courts have recognized, between a summary of voluminous, admissible information to prove a fact, and a summary of evidence or argument that is offered solely to assist the jury in evaluating the evidence. The former is subject to the strictures of Rule 1006. The latter are illustrative aids, which the courts have regulated pursuant to the broad standards of Rule 611(a), and which are now to be regulated by the more particularized requirements of this Rule 611(a)(2).

While an illustrative aid is by definition not offered directly to prove a fact in dispute, this does not of course mean that it is free from regulation by the court. Experience has shown that illustrative aids can be subject to abuse. It is possible that the illustrative aid may be grossly or subtly prepared to distort the testimony or argument, to oversimplify, to stoke unfair prejudice, or to provide subliminal messages. The Rule requires the court to assess the value of the substantive aid in assisting the jury to understand the witness’s testimony or the proponent’s presentation. Cf. Fed.R.Evid. 703; *see* Adv. Comm. Note to the 2000 amendment to Rule 703. Against that beneficial effect, the court must weigh the dangers that courts take into account in balancing evidence offered to prove a fact under Rule 403. If those dangers substantially outweigh the value of the aid in assisting the jury, the trial court should exercise its discretion to prohibit or limit the presentation of the illustrative aid. And if the court does allow the aid to be

presented at trial, the adverse party has a right to have the jury instructed about the limited purpose for which the illustrative aid may be used. See Rule 105.

One of the primary means of safeguarding and regulating the use of the illustrative aids is to require advance disclosure. The Rule provides that illustrative aids prepared before use in court must be disclosed in advance in order to allow a reasonable opportunity for objection. The rule applies to aids prepared before trial or during trial before actual use in the courtroom.

Because an illustrative aid is not offered directly to prove a fact in dispute, and is only admissible in accompaniment with testimony or presentation by the proponent, the Rule provides that illustrative aids are not to go to the jury room unless all parties agree. This rule is consistent with the holdings of the vast majority of federal and state courts. Allowing the jury to use the aid in deliberations, free of the constraint of accompaniment with witness testimony or presentation, runs the serious risk that the jury may confuse the import, usefulness, and purpose of the illustrative aid. *See Fed.R.Evid. 803(5), (18).*

The Rule does not prevent a party from using evidence offered to prove a disputed fact as an illustrative aid. For instance, a witness might be asked to indicate by marking on a photograph the location of an object which was not present at the time the photograph was taken. The photograph, if properly authenticated and probative of a fact, could be admissible as substantive evidence. The jury could draw inferences directly from it. But the marks added by the witnesses would be a visual form of witness testimony. The preservation of that particular testimony in visual form for later inspection by the jury during deliberations might give that testimony undue weight and durability under the circumstances. Thus the court would have the discretion under this Rule to withhold from the jury room an exhibit to which illustrative markings had been added if the markings would give undue weight to a witness's testimony on a disputed issue or otherwise would have some unfairly prejudicial effect. The court would also have the discretion under this rule to restrict or prohibit marking on an evidentiary exhibit if the effect would be to remove the exhibit from the jury room during deliberations.

Illustrative aids remain the property of the party that prepared them, but they may be used by any party during the trial. They must be preserved for the record for appeal or further proceedings upon the request of any party.

TAB 8B

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BRINGING DEMONSTRATIVE EVIDENCE IN FROM THE COLD: THE ACADEMY'S ROLE IN DEVELOPING MODEL RULES

To this day, judges and advocates struggle with the definition and use of “demonstrative evidence.” The ambiguity of this term (or its close cousins “illustrative evidence” and evidence offered “for illustrative purposes only”) infects the judicial process with uncertainty, hindering advocates when preparing for trial and, in some cases, producing erroneous verdicts. For example, the Seventh Circuit recently reversed a case for improper use of a demonstrative exhibit, and on retrial the result swung from a defense verdict to an \$11 million plaintiff's victory.

Uncertainty about the admission and use of demonstrative evidence has festered for decades. Lawyers innovate in presenting their cases, forcing judges to make case-by-case rulings. This is increasingly significant as technology becomes commonly used throughout trial practice. Law professors in turn solidify this unpredictable practice by teaching subsequent generations that the admission of demonstrative evidence is subject only to the unbounded discretion of the trial court.

*While this confusion has been long acknowledged and ably documented, it has not galvanized reform. Trial advocacy and evidence professors should meet at this intersection of their respective areas of scholarship and teaching; they should capitalize on their collective knowledge and influence and propose to the Advisory Committee on the Federal Rules of Evidence a set of uniform, analytically sound *514 Model Rules for Demonstrative Evidence. Until evidence rules are amended to address the problem, professors should teach the Model Rules alongside the current unpredictable, ad hoc practice. Exposure to such standardized criteria during law school will influence a generation of future lawyers and judges, promoting consistency in the handling of demonstrative evidence in the courtroom.*

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*515 INTRODUCTION

“You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete.”

- R. Buckminster Fuller

Sixty years ago, seeds of an evidence revolution were sown by mavericks in the trenches of trial practice. Chicago trial lawyer Joseph H. Hinshaw wrote:

Many texts have been written on rules of evidence, and our casebooks are full of decisions which have turned upon points of evidence alone. On the other hand, there is little in the books which furnishes a guide for the proper supervision of the introduction and use of many new forms of demonstrative evidence.¹ Hinshaw understood that clarification of the law of demonstrative evidence was necessary for trial lawyers to adequately evaluate and prepare their cases. Six decades later, however, litigants and their lawyers continue to face settlement negotiations and trials unprepared, having to gamble on the admissibility and use of evidence that may or may not be classified by a court as demonstrative. Too frequently, predicting a court's ruling is tantamount to flipping a coin. In the 2015 case of plaintiff John Baugh, it was an \$11 million coin flip -- and he ultimately won.

It was a products liability case . John Baugh was working on his house in the summer of 2006 and used his Cuprum ladder to reach the gutters. Or at least he tried. Baugh was found sitting in his driveway, bleeding, with his ladder lying dented beside him. Baugh sued Cuprum, alleging defective design, but, tragically, in his fall Baugh suffered severe brain injuries rendering him unable to testify. There were no other eyewitnesses to Baugh's fall.²

The case proceeded to trial. Two years after discovery had closed, and only three months before trial, Cuprum informed Baugh that it intended to use an exemplar of the ladder used by Baugh, built to the exact specifications of Baugh's ladder. Over the plaintiff's objection, the ladder was marked as an exhibit “for demonstrative purposes.” Cuprum maintained that the ladder was “not substantive evidence,” and Cuprum's expert used the ladder during his *516 testimony at trial.³

At first, the ladder was not sent back to the jury room. Soon, however, the jury asked to see the exemplar ladder. The plaintiff renewed his objection based upon the demonstrative character of the evidence, and that he had developed his trial strategy on the basis that the exemplar ladder was not substantive evidence. Tellingly, he noted that “the practice

in this courthouse, as far as [he had] known” was that demonstrative exhibits did not go back to the deliberation room.⁴ The judge initially agreed with plaintiff’s counsel, but, after a few days, permitted the ladder to go back to the jury room. A few hours after the ladder arrived in the jury room, the jury returned a verdict for the defendant.⁵ The Seventh Circuit reversed, noting that the ladder, as a demonstrative exhibit, should have never been permitted in the jury room.⁶ On retrial, the jury found for the plaintiff and awarded him over \$11 million in damages.⁷

The *Baugh* case is a cautionary tale, indeed. Despite Hinshaw’s prescience on the need for discourse and agreement on the subject of demonstrative evidence, little progress has been made. Scholars either ignored the concept of demonstrative evidence or greatly limited its definition to some version of derivatively relevant, nonsubstantive evidence.⁸ Demonstrative exhibits were acknowledged as permissible “assists” to witnesses’ oral testimonies, but scholars wrote little about the evidentiary status of such exhibits.

Notwithstanding scant academic discussion of the subject, trial lawyers began experimenting with the use of visual aids at trial, borrowing lessons learned from social science research used to good effect on Madison Avenue. Peer-to-peer teaching on the subject blossomed, with early pioneers of demonstrative aids sharing anecdotal data fresh from recent courtroom victories.⁹ In using this “new” tool, trial lawyers’ imaginations were boundless -- both as to what could be used as a visual aid to maximize information transfer to jurors and to persuade them as to the significance of those facts. It was a grand experiment: the courtroom was the laboratory, the advocates were the scientists, the proposed use of the full spectrum of demonstrative evidence was the experiment, and the judges’ rulings were the data.

The data demonstrated that without a uniform lexicon and agreed-upon rules, trial judges arrived at vastly different conclusions about the categorization, admissibility, and use of demonstrative evidence. A number of inconsistent *517 judge-made “practice rules” developed over time whereby judges, faced with a new form of proof not addressed in the Federal Rules of Evidence or most state analogues,¹⁰ navigated the waters of admissibility and use by way of trial and error. In essence, judges were left to figure out the proper evidentiary treatment of demonstrative exhibits and hammer out common sense conclusions. They used the discretion allotted to them under federal rules of evidence and their state counterparts to put that conclusion into effect.

In articulating the rationale for these ad hoc “laws of trial advocacy,” judges employed language evocative of the various aspects of [Federal Rules of Evidence 105, 403, and 611](#) that impart tremendous authority to trial judges over the presentation of evidence. Judges recognized that the probative value of demonstrative evidence validated its consideration by a jury, but they were concerned about delivering demonstrative exhibits to jurors during deliberations along with other admitted exhibits. These concerns centered on the risks that jurors would overvalue or misunderstand the demonstrative evidence.

Mounting inconsistencies in the definition and use of demonstrative evidence did not go unnoticed. Scholars and commentators wrote articles attempting to reconcile and explain these inconsistencies in an effort to decipher an orderly pattern that offered advocates some degree of predictability of judicial rulings.¹¹ Others called for modification of the evidence rules to create a uniform standard of admissibility.¹² The Advisory Committee on Rules of Evidence (Advisory Committee), however, has not considered any amendments to the Federal Rules of Evidence on this issue.¹³

Given this scholarly commentary, why this stagnation? Why do evidence and trial advocacy professors continue to teach the muddled status quo? Most evidence texts gloss over demonstrative evidence and its foundations, while trial advocacy texts perpetuate the existing confusion by teaching students that practice is inconsistent, varying from judge to judge, and jurisdiction to jurisdiction.¹⁴

*518 Law professors should confer and agree on Model Rules for Demonstrative Evidence (Model Rules). They should present proposed amendments both to the Advisory Committee and to their state counterparts for consideration, debate, and adoption. This is not to suggest, however, that once Model Rules have been agreed upon and presented legal teachers should rest on their laurels.¹⁵ Law professors should straightaway introduce to their students these Model Rules along with the conventional understanding of practice that is the “law of trial advocacy.” In doing so, professors have an opportunity to explain the analytic and practical superiority of the Model Rules and engage the next generation of trial lawyers in a discussion of the issues. Exposure in law school to a set of model rules and the analytic justification for them would, in turn, influence a future generation of lawyers and judges. The goal would be to have an immediate positive impact on the consistency of judicial rulings regarding the admissibility and use of demonstrative evidence, and eventual clarification of the standards for admissibility in the rules of evidence.

Section I of this Article documents the current practice across jurisdictions, noting that differences in nomenclature lead to confusion as to practice, which results in unpredictable results. Section II traces the roots of this doctrinal confusion, paying particular attention to the role of professors in perpetuating the confusion. Section III documents the magnitude of the problem and illustrates why the issue will likely worsen. Finally, Section IV highlights the privileged position of professors to identify a solution by examining the role of the academy in developing the Federal Rules of Evidence. Section IV also examines [Maine Rule of Evidence 616](#), which addresses demonstrative evidence directly, and the lessons gleaned from Maine's experiment.

I. TODAY'S JURISDICTIONS ARE INCONSISTENT IN THEIR IDENTIFICATION AND USE OF DEMONSTRATIVE EVIDENCE

Judges are the masters of their courtrooms. They have broad discretion as to the conduct of trials and control over how lawyers present their cases.¹⁶ They also generally have great latitude when evaluating the probative value of offered evidence and balancing that against the risks of admission.¹⁷ Underlying this discretion of the trial court is a codified standard -- be it a broad balancing test as in [Federal Rule of Evidence 403](#) or a more strict restriction as in [Federal Rule of Evidence 412](#). These standards, supplemented by case law, cabin a judge's discretion and promote consistent evidentiary rulings.

*519 The admission and use of demonstrative evidence lacks these formal standards. The federal rules of evidence (and all state evidence rules except for Maine's) offer no direction, as they are silent. Other guidance -- such as it is -- in case law, jury instructions, academic writings, and textbooks is limited, piecemeal, and inconsistent, leading to unpredictable judge-specific rules of admission.

A. Present-Day Judges Have Wide and Varied Definitions of Demonstrative Evidence

That judges struggle with the term demonstrative evidence¹⁸ is not surprising: the Federal Rules of Evidence and state analogues, with the exception of Maine's, have not given rule-based guidance to judges regarding the use of such visual aids. Nor do legal dictionaries or scholars offer useful guidance.¹⁹ Black's Law Dictionary defines demonstrative evidence as “[p]hysical evidence that one can see and inspect,” while noting that the physical object “does not play a direct part in the incident in question.”²⁰ In the very next sentence, Black's notes that “[t]his term sometimes overlaps with and is used as a synonym of real evidence,” and that this evidentiary universe may also be referred to as “illustrative evidence; autoptic evidence; autoptic proference; real evidence; [and] tangible evidence.”²¹

Scholars acknowledge the confusion. For example, Professors Christopher Mueller and Laird Kirkpatrick highlight existing definitional confusion in their treatise, stating:

There are at least three definitions of demonstrative evidence in current use. One describes demonstrative evidence as anything that “appeals to the senses,” but this definition seems too broad because it reaches essentially everything (even testimony must be heard to be understood). An intermediate definition says that evidence is demonstrative if it conveys a “firsthand sense impression,” thus excluding testimony because it is a secondhand recounting of the witness[’s] perceptions. An even narrower definition equates demonstrative evidence with “illustrative evidence,” thus limiting its scope to evidence used to explain or illustrate testimony (or other evidence) but lacking any substantive force of its own. Under such a definition, demonstrative evidence serves merely to add color, clarity, and interest to a party’s proof.²²

***520** This terminology turmoil unsurprisingly appears in judicial decisions. Some judges use the term demonstrative evidence to refer to any physical evidence,²³ while others restrict the term’s use to any nonadmissible exhibit to aid in understanding testimony or argument,²⁴ and still others use the words demonstrative evidence to describe substantive physical evidence (such as the weapon in a murder trial).²⁵ To add to the confusion, some judges use the term “illustrative” to refer to an entire subset of this evidentiary universe,²⁶ sometimes using the terms demonstrative and illustrative interchangeably,²⁷ yet at other times to describe discrete subparts of this evidentiary universe.²⁸ Still other jurisdictions talk of “admitting” demonstrative evidence as shorthand for permitting its use at trial without formally admitting it into evidence.²⁹

In addition to definitional problems, there is disagreement on theories of admissibility and use. Federal courts seem to address demonstrative evidence through the lens of [Federal Rule of Evidence 611\(a\)](#), which permits a trial court to “exercise reasonable control over . . . presenting evidence so as to . . . make those procedures effective for determining the truth.”³⁰ Some federal courts speak of “authorizing” the use of “pedagogical aids,” as opposed to admitting these items into evidence.³¹ Other jurisdictions address demonstrative evidence ***521** by focusing on its relevance.³² Other courts seem to conflate a showing of relevance with one of authenticity. In doing so, they address the authenticity of a demonstrative object, implicitly acknowledging its relevance, in that the evidence presented to establish authenticity would, in nearly every circumstance, serve to establish the object’s relevance.³³

B. Contemporary Confusion About the Definition Results in Different Uses of Demonstrative Evidence

Confusion as to nomenclature, characterization, and admissibility adds to the uncertainty as to whether demonstrative evidence is formally admitted into evidence and whether jurors get to review the object in their deliberations.³⁴ If a demonstrative exhibit is admitted without limitation, then the advocate’s use throughout the trial and the jury’s use during deliberations presents no controversy. Confusion blossoms when the court permits some limited uses of the demonstrative exhibit short of admitting it in evidence for all purposes. This can happen, for example, when evidence is admitted for “illustrative purposes,” or when evidence is *used* during the trial (presumably under the judge’s authority to control presentation of evidence under rules such as [Federal Rule of Evidence 611](#)), and yet not formally admitted into evidence.³⁵ The approaches of jurisdictions vary widely, from barring such evidence from entering the jury room,³⁶ to permitting it if the evidence meets a certain evidentiary threshold of ***522** probity and fairness,³⁷ to permitting it wholesale with only a limiting instruction.³⁸ Yet others provide no guidance to the trial court, leaving the matter completely within the trial court’s discretion.³⁹

Differing standards for use of demonstrative evidence (in many cases without any criteria to guide a judge in her decision) are further complicated when trial and appellate courts conflate the concepts of admission and use. Admission of exhibits

in evidence requires relevance,⁴⁰ authenticity,⁴¹ and reliability (through the hearsay⁴² and best evidence⁴³ rules). “Authorized for use” is theoretically a lower standard.⁴⁴ For example, a chart summarizing various criminal counts and the evidence therefore may not meet the voluminous requirement of [Federal Rule of Evidence 1006](#) (and thus would be otherwise inadmissible as hearsay), but could still be “authorized for use” under [Federal Rule of Evidence 611\(a\)](#). Yet the reports are replete with appellate courts “admitting” demonstrative aids into evidence.⁴⁵ Moreover, many courts explicitly cite [Federal Rule of Evidence Rule 611\(a\)](#) (or a state equivalent) as the basis for “admitting” the evidence.⁴⁶ The inconsistency in lexicon and definition *523 leads to further confusion as to admissibility and use because appellate courts' discussions of acceptable discretionary practice rules for one type of evidence labeled demonstrative often conflict with other courts' practice rules.

C. The Inconsistent Practice Risks Inconsistent Case Results in Today's Courts

There are at least three ways that the doctrinal confusion surrounding demonstrative evidence risks inconsistency and inaccuracy. The uncertainty as to nomenclature casts the status of the proffered evidence into doubt. This uncertainty is magnified when courts fail to enforce the barrier between exhibits admitted into evidence and aids authorized for use in the courtroom. The unpredictability is amplified when a judge charges a jury and determines which exhibits will accompany the jury: confusion about the status of the evidence makes it difficult to predict whether an admitted demonstrative exhibit will be available to the jurors during deliberations along with other admitted exhibits. In addition, as noted by the Seventh Circuit, it could actually affect the outcome of the case as previously inadmissible exhibits are physically present in the jury deliberation room.⁴⁷

The lack of a cognizable standard across these decision points undermines accurate pretrial settlement valuation of a case and an advocate's trial preparation and presentation strategy. How does a trial lawyer know the value of her case if she is unsure of the strength of her evidence? Is the evidence coming in at trial or not? How will the advocate be permitted to use the evidence? What technical foundation is called for admission? What persuasive foundation will be needed to convey the information to the jurors? A lawyer planning to show the jury a diagram, for example, will need to know in advance whether a diagram is admissible under any (and what) conditions or whether a diagram properly authenticated is admissible for purposes of sufficiency of the evidence only as an illustrative exhibit. The advocate's examination of the foundational witness in the former circumstance will be vastly different than that of the latter. In essence, differing approaches to the admission and use of demonstrative evidence increase the risk of inconsistent verdicts.⁴⁸

However, unlike a situation where the appellate court may disagree with the application of a particular rule (even a rule which leaves the trial court with *524 considerable discretion such as [Federal Rule of Evidence 403](#)),⁴⁹ leaving the admission and use of demonstrative exhibits solely to a trial court's discretion (without accompanying criteria) creates a criterion-less standard which makes advocacy or oversight nearly impossible.

II. HOW THIS TANGLED WEB WAS WOVEN: THE EVOLUTION OF JUDGE-SPECIFIC, DISCRETION-BASED GUIDELINES

Several factors contributed to the evolution and persistence of inconsistent practices within and across jurisdictions governing the use of demonstrative evidence at trial. The entering argument, of course, is that there are not any rules or standards governing the admissibility and use of demonstrative evidence.⁵⁰ Against this backdrop, scholars have failed to agree on the nomenclature and on the use and admissibility of various visual aids, using terms such as “demonstrative aid,” “demonstrative exhibit,” “illustrative exhibit,” and “exhibit admitted for illustrative purposes only” to describe similar evidentiary objects.⁵¹ Advocates capitalized on this uncertainty by pushing the envelope. In the absence of an evidence rule or united scholarly direction, trial judges developed a “common-sense common law of trial advocacy.”

Lacking focused guidance from evidentiary rules and stymied by the contradictory direction from scholars of evidence and trial advocacy, judges created court-specific, discretion-based guidelines for the use of visual aids at trial that are inconsistent across jurisdictions and courtrooms. This confusion is perpetuated by evidence and trial advocacy teachers who teach that each jurisdiction (and each judge) is unique in its approach.

****525 A. Before “Demonstrative” There Was “Visual” Evidence -- and Scholars Never Agreed on Rules for Its Use or Admission***

Early evidence scholars gave little attention to the concept of demonstrative evidence.⁵² This is unsurprising given that the history of evidence dating back to the common law recognized testimonial evidence (oral testimony from a competent witness with personal knowledge about the facts at issue in a case) and certain types of tangible evidence, commonly referred to as “real” evidence.⁵³ The nature of tangible, extratestimonial evidence was originally limited to documents at issue in a case (the contract, the lease, the bank note, the publication in a defamation suit) and other items involved in the events of the case (the gun, the knife, the stolen property).⁵⁴

The idea of something beyond either the oral testimony of a witness with personal knowledge or the production of a tangible item that itself played a part in the underlying dispute seems to have been little contemplated. One notable outlier of academics' bimodal thinking about evidence was John Wigmore, who referred to visual aids used during testimony as “non-verbal testimony.”⁵⁵ For Wigmore, the concept of nonverbal testimony recognized that a witness could communicate to a jury wordlessly by using physical demonstrations, diagrams, maps, photographs, and models.⁵⁶

Meanwhile, in the courtroom, the concept of “real” evidence was expanded to include not just items that played a role in the case themselves, but items with independent “real” probative value vis-à-vis the issues in the case. While not “the thing” at issue in the case, the evidence was admitted as providing direct, independent value supporting a fact useful to the determination of the issues in the case.⁵⁷ These items came to be viewed as an extension of those tangible items -- such as contracts, deeds, or guns -- that had an active “role” in the underlying controversy.⁵⁸ For example, a map documenting property parcels, created by city engineers and filed with the city, where the underlying controversy concerned the ownership or use of the property (such as a boundary dispute underlying a cause of adverse possession or trespass), was now treated as “real” evidence worthy of unqualified admission and consideration by a jury.⁵⁹

This development invited advocates to try to further broaden the universe of items admissible as substantive evidence. This newly-substantive evidence ***526** could be used for all purposes, including establishing sufficiency of the evidence at all stages of the proceeding and on appeal. Over time, trial lawyers offered into evidence more varied tangible items that were not themselves involved in the controversy. Instead of city engineered maps in property disputes, advocates now offered hand-drawn diagrams of the layout of a living room in a domestic violence assault case.

Scholars were reluctant to draw a hard line or adopt a unified proposal for treatment of this expanding class of evidence. Instead, there was mostly silence or adherence to a general concept that only testimonial and “real” exhibit evidence -- that which provided direct evidence in a matter -- was admissible.

Later scholars faced with this explosion of nontestimonial evidence fell primarily into three categories: (1) those who ignored the topic; (2) those who used the term “demonstrative evidence” to describe any admissible, derivative evidence; and (3) those who used the term to refer to visual aids that assisted witness testimony but were not themselves evidence.⁶⁰ Scholars began to create various lexicons to describe similar items, inconsistently using the terms visual aids, demonstrative aids, illustrative aids, demonstrative evidence, illustrative evidence, and exhibits admitted for illustrative purposes. This variable labeling led, in part, to multiple, inconsistent formulae for evidentiary consideration and admission of such items at trial.⁶¹

B. Practitioners Creatively Expanded the Use of Demonstrative Evidence, Importing Lessons from Madison Avenue into the Courtroom

As trial lawyers began to experiment with the use of visual aids at trial, they lamented the lack of clarity surrounding the admissibility and use of demonstrative evidence.⁶² This call to the academy for help went largely unanswered.⁶³ Academics either ignored the concept of demonstrative evidence or greatly limited the definition to some version of “derivatively relevant evidence” that is admissible, but for the limited purpose of augmenting a witness's oral testimony. The examination and analysis of the nature and use of such visual evidence by scholars in the area is quite cursory. A survey of *527 evidence textbooks reveals that none accord more than a few pages of text to the concept.⁶⁴

The transformation of trial practice in the 1960s, through the 1990s, and the 2010s was dramatic in terms of the type and quantity of visual material lawyers wanted to share with juries. Trial lawyers born after World War II grew with television as a source of both information and entertainment. They were also influenced by the advertising revolution spawned by postwar affluence that encouraged consumerism. Advocates were influenced by the social science data that followed the explosion of visual information delivery in mass media.⁶⁵ Early writing on the subject was generally found in professional journals, while later books like Robert Cialdini's *Influence: The Psychology of Persuasion* were national best sellers aimed at the general public.

Innovative trial lawyers, seeking an advocative advantage, began experimenting with the use of visual aids at trial, leveraging the social science lessons to deliver information in the same manner contemporary jurors were accustomed to receiving entertainment. The practice quickly spread, with early adopters of demonstrative aids, such as personal injury attorney Melvin Belli, sharing lessons from the trenches of trial and encouraging fellow practitioners to push the envelope as far as trial judges would permit.⁶⁶

Evolution of visual aids at trial went from the early days of two-dimensional charts, graphs, and diagrams,⁶⁷ to the use of three-dimensional anatomical displays and to-scale dioramas of intersections replete with model cars, to the use of comprehensive computer animations visually conveying facts about everything from product manufacture methods to car, train, and aviation accidents. Trial lawyers' imaginations as to what could be used as a visual aid both to maximize information transfer to jurors and to persuade them as to what those facts meant seemed without limit.

C. Judges Responded Using the Discretion Provided Under the Evidence Rules to Create a Judge-Specific “Law of Trial Advocacy”

Faced with this ever-expanding universe of evidentiary objects, judges were left to figure out the proper evidentiary treatment of such objects. Judges who ascended to the bench were poorly indoctrinated by their law school professors and early practice mentors on the expanding use of visual materials, if at all. Consequently, when faced with an onslaught of novel visual evidence, they used the discretion allotted them under the evidence rules to fashion court-specific *528 guidelines.

The existing rules of evidence provided little assistance in this endeavor. Rule 402 provides that relevant evidence is admissible unless barred by the Constitution, federal statutes, or the rules of the Supreme Court, including the evidence rules. So, unless some valid bar exists, the court must admit relevant evidence. Relevant evidence is defined in Rule 401 as evidence that “has any tendency to make a fact more or less probable than it would be without the evidence” and “the fact is of consequence in determining the action.”⁶⁸ This definition provides an extremely low threshold for admissibility: no category of evidence is excluded, no particular characteristics are required.⁶⁹

Given the relatively low bar of relevance, judges were faced with an expanding universe of evidence without training or experience to guide them. For example, exhibits such as diagrams drawn by a testifying witness and not to scale met the low threshold of relevance under Rule 401 and so were presumptively admissible under Rule 402. There was, however, a discomfort among judges who had not received training about the admissibility and use of such evidence, either in law school or in practice. This discomfort led to a wariness about the evidence itself: yes, it was relevant, but it did not seem to fit historic categories of testimonial or real evidence as defined and discussed in the scholarly literature. Judges recognized that the probative value of such evidence validated its consideration by a jury, but they were concerned about delivering demonstrative exhibits to jurors during deliberations along with other admitted exhibits. These concerns centered on the risks that jurors would overvalue or misunderstand the demonstrative evidence.

Judges faced unattractive options under the rules. Judges could exclude a hand-drawn diagram under Rule 403 as cumulative, on the theory that a witness already testified to the scene; this rationale, however, would make a diagram of roadways in an automobile accident similarly inadmissible, even one produced by a city engineer. Judges could admit a diagram for a limited purpose and give a limiting instruction to a jury under Rule 105, but this would result in the diagram being delivered to the jury deliberation room with the other admitted exhibits. This also seemed like a wrong result: after all, a hand-drawn diagram was an *529 extension of a witness's oral testimony, which was itself unavailable to the jurors for review during deliberations. In some jurisdictions, then, a practice developed that such exhibits would be “admitted,” but for “illustrative purposes” only: the exhibits were “admitted” into evidence, the jury would see the exhibits during the trial, the exhibits were part of the evidentiary record both on appeal and at trial for a challenge to the sufficiency of evidence, the exhibits could be used in summation, but the exhibits would not be delivered to the jury deliberation room as were the other admitted exhibits in the case.⁷⁰

A common judicial analysis for admitting demonstrative exhibits into evidence but excluding them from the jury deliberation room seemed to be a form of Rule 403, applied as a secondary afterthought to “admission” -- in essence, a “shadow Rule 403.” The first round of Rule 403 balancing was applied to determine if the evidence should reach the jury at all. Having determined the answer to be “yes,” judges admitted the evidence and then seemed to perform a second, “off-the-books” Rule 403 analysis to determine if the “admitted” evidence should be delivered to the jurors during deliberations.

In reaching this split-the-baby approach, some judges relied on the broad discretion afforded them to control courtroom proceedings, including discretionary regulation of the mode of presentation of evidence. The language underlying this reasoning reflected that of Federal Rule of Evidence 611.⁷¹ Additionally, some judges admitted the demonstrative evidence “for illustrative purposes only” and then instructed the jury as to the limited nature of the evidence. This language was similar to that of Federal Rule of Evidence 105.⁷² In essence, judges were left to figure out the proper evidentiary treatment of such visual aids and, having arrived at a commonsense conclusion, primarily used the *530 discretion allotted to them under Federal Rules of Evidence 403 and 611 and their state counterparts to put that conclusion into effect.⁷³

D. The Snake Comes Full Circle: Law Professors Now Teach that Admissibility and Use of Demonstrative Evidence Is Judge-Dependent, Not Standard-Dependent

The persistent, uncertain state of demonstrative evidence, which the Seventh Circuit stated “may have contributed to the error in the district court,”⁷⁴ is unsurprising, considering the array of scholarship on this topic. Evidence treatises are replete with resigned statements. Professors Mueller and Kirkpatrick note that “[t]here is no consensus on the proper definition or scope of demonstrative evidence,”⁷⁵ while Professor Kenneth McCormick cautions that “the use of any single term to denominate all such evidence can be at best confusing and at worst harmful to a clear analysis of what should be required to achieve its admission into evidence.”⁷⁶ Professor Wigmore refused to even use the term

“demonstrative.”⁷⁷ As recently as 2012, one commentator lamented that “[a]s demonstrative exhibits have become increasingly more powerful, one might expect courts to have responded by becoming more vigilant about what the exhibits depict. This has not been the case.”⁷⁸

Most treatise and textbook authors do not address the landscape with a normative analysis, but rather identify the accepted trial procedure in their respective jurisdiction. They do not advocate for a particular approach, but rather acknowledge the lack of consensus across jurisdictions.⁷⁹ Some academics teach that demonstrative exhibits can constitute substantive evidence under certain circumstances,⁸⁰ some consider visual aids to be admissible as exhibits *531 with a limited use, for “illustrative purposes only,” while others argue that any visual evidence is derivative, and thus inadmissible, even where testimonial foundation has been laid establishing both its authenticity and relevance to the issues in the case. Some evidence textbooks do not list demonstrative evidence in either the table of contents or the index, and others reference it only in brief passing.⁸¹ Stanford Professor George Fisher and University of Washington Professor Peter Nicolas, for example, do not discuss demonstrative evidence in their texts, although each author includes a case that illustrates specific evidentiary issues that intersect with the concept of demonstrative evidence.⁸²

By 2010, authoritative academic works catalogued multiple evidentiary statuses of various tangible items, such as photographs or diagrams produced to scale.⁸³ A survey of evidence and trial advocacy texts and treatises reveals at least five differing characterizations of a photograph offered into evidence: “real *532 evidence,”⁸⁴ “tantamount to real evidence,”⁸⁵ “substantive evidence,”⁸⁶ “representative evidence,”⁸⁷ and “demonstrative evidence.”⁸⁸ The different characterizations, in turn, produce different instruction as to the nature and use of a photograph at trial. This is particularly notable, given that “[s]ome students of photographic evidence estimate that photographs are used in roughly half the cases in the United States.”⁸⁹ One text highlights an Indiana case in which the court considered competing definitions and evidentiary uses of photographs.⁹⁰ The Indiana court noted that photographs fall within the “‘pictorial testimony theory’ of photographic evidence,” and, as such, are not evidence in themselves, as contrasted with the “silent witness theory” for the admission of photographs that qualifies the photo as substantive evidence.⁹¹ The text's authors posit: “Given the impressive scientific evidence of the reliability of the photographic process, doesn't it seem logical that a photograph should qualify as substantive evidence?”⁹²

Similarly, a survey of texts and treatises reveals conflicting characterizations of a hand-drawn diagram or map: it is described as a “visual aid” used for explanatory or illustrative purposes only;⁹³ “representative evidence” that represents another thing;⁹⁴ an “illustrative exhibit” that is “relevant; so long as it fairly and accurately depicts the portrayed scene”;⁹⁵ “demonstrative evidence” that can be taken to the jury deliberation room if the judge finds “it is particularly helpful . . . and is not too argumentative.”⁹⁶ These conflicting characterizations have led to inconsistent conclusions with respect to relevance and admissibility: “the use of such evidence is usually left to the discretion of the trial court”;⁹⁷ a diagram is no different than a photograph, and like a photograph, should be admitted into evidence;⁹⁸ and a diagram need not be to *533 scale and “the mere fact that the drawing is hand-drawn during the course of trial and fails to get the size and distance exactly right is ordinarily a matter that goes to the weight of the evidence and not its admissibility.”⁹⁹

Not only do definitions and uses of demonstrative evidence differ between texts, there exist inconsistencies within single sources. For example, one text categorizes photographs as demonstrative evidence, which the authors define as generally “ha[ving] no probative value,” but nonetheless states that such nonprobative evidence can be admitted into evidence.¹⁰⁰ This conflicts with the prohibition of Rule 402, which dictates that nonprobative evidence is irrelevant and inadmissible.¹⁰¹

Not only do scholars document the state of confusion, they also perpetuate it. Having left judges to their own devices to create court-specific discretionary guidelines for demonstrative evidence, professors have solidified the resulting confusion by teaching the next generation that demonstrative evidence lives outside the rules of evidence. In the classroom, in textbooks, and at continuing legal education seminars, those reared to accept the standardless status quo pass that acceptance to the next generation. The lack of uniform standards on admissibility and use of demonstrative evidence is particularly apparent when evidence professors, trial advocacy teachers, lawyers, and judges come together to teach trial skills in such programs as those sponsored by the National Institute of Trial Advocacy.¹⁰² When the question of how to use demonstrative evidence in the courtroom comes up, as it inevitably does at such training seminars, confusion reigns. Conflicting statements of “the law of trial advocacy” erupt, with the experts either disavowing any reliable practice or espousing contradictory views of “the way it’s done.” A sampling of current authoritative works and law school texts illustrate this:

While all jurisdictions allow the use of demonstrative aids throughout the trial, there is some diversity of judicial opinion concerning their precise evidentiary status. Some jurisdictions treat such items as admissible exhibits which may be reviewed on appeal and sometimes viewed by the jury during deliberations. Other courts treat them differently, either admitting them for “demonstrative purposes” only or refusing to admit them at all as exhibits. These courts then differ on *534 whether to allow them into the jury room during deliberations.¹⁰³

Judges exercise discretion over what evidence, if any, the jurors may take to the jury room. Judges often allow the jury to take into the jury room real and documentary evidence that has been admitted into evidence. Sometimes they permit the jury to take demonstrative evidence, if it is particularly helpful in organizing the facts of a complex case and is not too argumentative.¹⁰⁴

The only limits on the use of demonstrative evidence are the trial judge’s discretion and the trial attorney’s imagination.¹⁰⁵

Despite the solid case support for visual evidence, lawyers often feel anxious about foundational and ethical questions. The concerns and questions feeding this discomfort include the following: . . . What category does this evidence fall in -- real or demonstrative? . . . What is the potential for impeachment over foundation details?”¹⁰⁶

Most judges in exercising judicial discretion will permit the use of visual aids if it can be demonstrated in advance that these aids can properly be used.¹⁰⁷

Conflicting practices exist on whether jurors may take exhibits into deliberations. Explicit rules on the subject do not exist in many jurisdictions . . .¹⁰⁸

The introduction and use of demonstrative evidence is subject to a variety of approaches depending upon the practice in a jurisdiction and the preferences of the judge¹⁰⁹

The status of diagrams . . . is somewhat uncertain in many jurisdictions. . . . [T]here are wide variations In some states, illustrations of a witness's testimony such as diagrams, models, and computer simulations are treated as visual testimony. . . . In other states, this kind of media is considered as “demonstrative evidence” and is admitted as a special category of evidence, sometimes with a limiting instruction to the effect that the diagram should be given no greater weight than the *535 supporting witness's testimony. In some states, diagrams seem to be treated as ordinary tangible evidence.¹¹⁰

The admissibility status of demonstrative exhibits varies. What does it mean when a judge “admits” the exhibit in evidence? . . . This difference in judicial views means that when a demonstrative exhibit is offered and “admitted” in evidence, a lawyer must determine if the judge will allow the exhibit to be used only with the witness, allow it to be used during closing arguments, and allow it to go to the jury during deliberations.¹¹¹

Even though scholars have ably identified the problem, they have not yet unified in an effort towards resolution. Some scholars have attempted to articulate the foundation required for demonstrative evidence,¹¹² although by doing so they serve to perpetuate the confusion as to the “admissibility” of demonstrative evidence.¹¹³ Other scholars attempted to define the universe of demonstrative evidence,¹¹⁴ yet their proposals have not gained universal or even grudging acceptance.

The result of such discord is that each generation of law students is indoctrinated into the “evidentiary rules of trial advocacy” through the prism of law school textbooks and by professors who impart their localized, anecdotal opinions on the “rules” regarding the use and admissibility of demonstrative evidence at trial. Students schooled on these principles, in turn, continue those definitions and terms of use when they enter practice and when they become judges.

III. THE DOCTRINAL CONFUSION, THOUGH SEEMINGLY MINOR, HAS REAL-WORLD NEGATIVE CONSEQUENCES

Although those who have been advocating within, administering, or teaching the status quo may downplay the impact of this confusion, it is already *536 having a negative effect on trial practice. Additionally, as the judge-made “law of trial advocacy” is solidified into pattern jury instructions, the potentially inconsistent practice is reinforced. Finally, multiple innovations in trial practice can combine with unintended and undesirable results.

A. The Relative Silence on the Issue Belies the Seriousness of the Situation

To some extent, the seeming acceptance of scholars, judges, lawyers, and rules drafters regarding the murky and inconsistent “rules” of demonstrative evidence might be chalked up to a collective ennui, expressed through inaction, amounting to “what's the big deal?” It may be that this type of proof -- whether referred to as a visual aid, demonstrative aid, illustrative aid, demonstrative exhibit, illustrative exhibit, or exhibit admitted for illustrative purposes only -- is reflexively categorized and marginalized as a mere persuasive device in the tool box of the trial advocate. This

classification as a trial technique may explain why demonstrative proof is often sidelined from rigorous evidentiary analysis. The oversimplification in definition produces an oversimplified and inconsistent approach to evaluating the relevance and admissibility of the proof.

This ennui appears to be borne out by the relative absence of this issue from appellate reports. But that absence is unsurprising, because there is a long error chain that must remain unbroken to have the issue reviewed and documented. First, the confusion about the admission or use of demonstrative evidence must result in some type of error.¹¹⁵ Second, this error must be of such a magnitude as to potentially affect the outcome of a trial, and a losing party must expend the resources to pursue an appeal. Additionally, there must be sufficient evidence in the record to demonstrate an abuse of discretion to make an appeal worthwhile. Third, the issue must be sufficiently identified (and not lost among other assignments of error) to merit an appellate court's attention. If any of the links in this chain are broken, the demonstrative evidence issue will not see the light of day. While this may seem to diminish this problem, this long error chain in fact magnifies the importance of this predicament. And even with the relative difficulty of these issues coming to light, trial courts are still incorrectly admitting or using demonstrative exhibits, requiring appellate review, and, in some cases, reversal.¹¹⁶ Whatever the source of the hands-off approach, the potential for real-world, negative consequences exists, and the problem further develops with the calcification (if not codification) of this judge-made "law of trial advocacy" into pattern jury instructions.

***537 B. Pattern Jury Instructions Perpetuate the Problem by Implying a Standard**

Over the years, oral jury instructions were developed to notify jurors during trial that an "illustrative exhibit" being used with a witness would not be available to them during deliberations.¹¹⁷ This was to distinguish these visual aids from other exhibits admitted in the case, because in some jurisdictions judges instruct juries at the beginning of a trial that exhibits admitted into evidence will go back to the jury deliberation room at the conclusion of the trial for the jurors' consideration. In Washington State, for example, one jury instruction reads:

I am allowing [this exhibit] [exhibit number] to be used for illustrative purposes only. This means that its status is different from that of other exhibits in the case. This exhibit is not itself evidence. Rather, it is one [[party's] [witness's] [summary] [explanation] [illustration] [interpretation], offered to assist you in understanding and evaluating the evidence in the case. Keep in mind that actual evidence is the testimony of witnesses and the exhibits that are admitted into evidence.

Because it is not itself evidence, this exhibit will not go with you to the jury room when you deliberate. The lawyers and witnesses may use the exhibit now and later on during this trial. You may take notes from this exhibit if you wish, but you should remember that your decisions in the case must be based upon the evidence.¹¹⁸

The title of this instruction is "Exhibit Admitted for Illustrative Purposes," even though the text of the instruction states that the exhibit "is not itself evidence."¹¹⁹ The language of the instruction thus suggests contradictorily that the exhibit both is and is not admitted into evidence.¹²⁰ Not only does this codify the confusion, but also communicates to judges and practitioners alike the state of uncertainty in this area. This should, standing alone, provide sufficient impetus to address this issue; when combined with other developments in trial practice, this state of affairs can produce unintended and undesirable results.

***538 C. The Combination of Innovations in Both Jury Instructions and Trial Practice Produces Anomalous Results**

While jurisdictions developed approaches to demonstrative evidence (either judge by judge or through pattern jury instructions), there were other independent developments that few foresaw would produce anomalous, unknowable “shadow evidence” to be relied on by juries beyond the eyes of judges and lawyers. One such development was the advent of note taking by jurors.

All jurisdictions have addressed note taking by jurors during trial. There are thirteen states where note taking must be allowed during trial.¹²¹ There are twenty-six states where juror note taking lies in a judge's discretion.¹²² There are six states where the language is ambiguous, but clearly note taking is allowed and preferred.¹²³ Finally, there are seven where the rule is currently unclear.¹²⁴

***539** The rationale for these rules is well-founded: jurors have limited capacity to remember and a strong desire to render a just verdict based on the evidence. Note taking reduces anxiety in some jurors, knowing that they can record facts they find important without fear of forgetting them. Note taking also allows jurors to engage in a robust discussion in the jury deliberation room about the evidence presented to them. The soundness of juror note taking is widely accepted.

The combination of the common jury instruction regarding exhibits admitted for illustrative purposes only, discussed above, with the newly devised rules allowing jurors to take notes during trial produced several unforeseen and undesirable results. One example is when a witness -- let's say a domestic violence victim -- is testifying to the events that occurred in her apartment. The prosecutor asks her to describe the apartment: the size, the furniture, and the distances. In the process of doing so, she indicates she could better explain the layout of her apartment to the jury if she could draw the apartment. With the court's permission, the witness sketches a diagram -- clearly not to scale -- of her apartment. It is marked as an exhibit and offered into evidence. It is objected to by the defense counsel on the basis of foundation. It is, after all, not to scale. The prosecutor, having learned well at school, revises her offer and states: “We offer it for illustrative purposes only your honor.” The court accepts the offer and “admits” the exhibit.

It is at this point that a judge-made “law of trial advocacy” allowing use but not full admission of such a hand-drawn diagram, a pattern jury instruction regarding “exhibits admitted for illustrative purposes only,” and a court rule on juror note taking come together to risk an extremely odd and most unintended and undesirable evidentiary result. The prosecutor is allowed to share the witness's diagram with the jury during her testimony; at that time the judge reads the jury instruction alerting the jury that this “exhibit,” unlike the other exhibits introduced at trial, will not be going back to the jury deliberation room; the jurors -- recognizing the importance of the diagram and now knowing it will not later be available to them -- pull out their note pads and start sketching the diagram. The jurors are incited to try to reproduce on the fly, with divided attention and no direct knowledge of the scene they reproduce, the floorplan drawn by the witness on the stand. So instead of receiving a single hand-drawn diagram in the jury deliberation room, one to which the witness has attested under oath to be accurate, the jurors now have up to twelve secondary iterations of a diagram to which they had limited temporal exposure and no knowledge of the underlying facts portrayed therein. This is exactly the type of anomalous result, contrary to the goals of the rules of evidence, that Seventh Circuit noted in its decision in *Baugh ex rel. Baugh v. Cuprum S.A. de C.V.*¹²⁵

***540** There are scores of other anecdotal examples of chaotic and presumably unintended consequences of the lack of agreement on the nature and use of demonstrative evidence. There are, also, the documented facts of the *Baugh* case. In any event, the lack of data on the frequency of disparate rulings on admissibility and use of demonstrative evidence, or data quantifying harm resulting to parties or the system, is not reason for inaction.¹²⁶ Many of the federal rules of evidence were drafted not to solve in-court problems of admissibility left to judicial discretion under [Rule 403](#), but to proactively ensure consistent, fair rulings. For example, Federal Rule 406's addressing of habit evidence was not necessitated by the mischaracterization or misuse of habit evidence by judges: on the contrary, the Advisory Committee's

note to Rule 406 states that the rule “is consistent with prevailing views” and that there was general agreement “that habit evidence [was] highly persuasive as proof of conduct on a particular occasion.”¹²⁷ There was no pressing corrective need for Rule 406, as habit by its terms is distinguishable from character evidence and is thus not subject to Rule 404. The drafters' decision to expressly include constitutional rights in the text of some evidence rules¹²⁸ is further confirmation that rules may be crafted as a prophylactic measure without documenting chaos in the courts. There is no evidence that there was empirical data that judges were depriving litigants of their constitutional rights in applying the rules of evidence; rather, the inclusion has been characterized as a congressional reminder that due process considerations may extend beyond those enumerated in the text of the rules.¹²⁹

IV. LEADING THE WAY: EVIDENCE AND TRIAL ADVOCACY TEACHERS SHOULD DEBATE THE ISSUES AND ENDORSE A SET OF MODEL RULES

Confusion as to the evidentiary status of demonstrative evidence has been long acknowledged by law professors. They have identified this confusion as a problem that needs to be addressed, although usually from their own discipline's point of view.¹³⁰ Trial advocacy professors and practitioners advance the Melvin Belli omnibus theory of demonstrative evidence: do what is necessary to employ this powerful communication tool.¹³¹ On the other hand, scholars, if they address *541 demonstrative evidence at all, are more likely to focus on the distinction between real and substantive evidence, often addressed through the lens of relevance.¹³² Some professors have even proposed solutions, including modification of the definition of relevance set forth in the evidence rules.¹³³ Scholarly calls for action in law journals, however, have not been answered with reform, at least not by the Advisory Committee, or by the drafters of state evidence rules, with the notable exception of the state of Maine.¹³⁴

However, evidence and trial advocacy teachers are exceptionally well situated to pool their expertise and work together, taking an active role in shaping the future of demonstrative trial evidence. Their respective areas of scholarship and teaching intersect pointedly on the subject of demonstrative evidence. As scholars and teachers, they presumptively have the time, the motivation, and the resources to study this complex issue: they can survey and evaluate practices across jurisdictions and wrestle with the analytical and practical implication of various suggestions for reform. Academic institutions encourage and support such discussion and debate of issues relevant to law professors' areas of teaching and scholarship.

The relevant issues are also ripe for reform. The unrelenting interest of trial lawyers in using demonstrative exhibits,¹³⁵ the reasonable expectation of jurors to receive information via easily understood modalities,¹³⁶ as well as the rapidly expanding universe of digital and computer-assisted evidence,¹³⁷ all signal a need for clarifying the rules of evidence. A preliminary set of Model Rules could provide the needed impetus and basis for a wider, robust dialogue with lawyers and judges who would, in turn, bring their experiences and expertise to bear.

***542 A. Law Professors Were Contributing Architects of the Original Federal Rules of Evidence**

Law professors are particularly well equipped to wrestle with the issues presented by demonstrative evidence and help craft proposed rules for consideration by the Advisory Committee. They were integrally involved in the formation of the original Federal Rules of Evidence, enacted in 1975.¹³⁸ The creation of agreed-upon rules did not happen overnight: it took over thirty-five years. The history of the federal rules not only testifies to how long the road to a uniform set of evidence rules can be, but also highlights the critical importance of law professors in providing a foundational analysis and guidance on that journey.

In 1938, a year after the enactment of the Federal Rules of Civil Procedure, former Attorney General William D. Mitchell proposed that an advisory committee draft a set of uniform evidence rules.¹³⁹ Over the next twenty years, journals such as the *Vanderbilt* and *Harvard* law reviews published articles discussing the creation of uniform evidence rules.¹⁴⁰ Dean Ladd of the University of Iowa said that “[a]ll of the law of evidence needs clarification and simplification. . . . A review of the history of evidence, with its spotted and often accidental growth, is persuasive proof of the need of introspective study of the law of evidence with a view to far-reaching improvement.”¹⁴¹ Judges, too, advocated for uniform evidence rules.¹⁴² Several sets of rules were proposed over the years, but agreement took decades.

In 1961, the Judicial Conference created an advisory committee, which ***543** formed a special committee to study the advisability and feasibility of uniform evidence rules.¹⁴³ Chief Justice Earl Warren included law professors on the committee.¹⁴⁴ The committee endorsed uniform rules as “both advisable and feasible.”¹⁴⁵ Lawyers, judges, and scholars then provided feedback on the committee's report.¹⁴⁶ The feedback confirmed the special committee's conclusions, and an advisory committee drafted the first uniform federal rules of evidence. The advisory committee consisted of trial lawyers, federal judges, and law professors, and met for the first time in June 1965.¹⁴⁷ It took almost four years to finish the first preliminary draft of the rules.¹⁴⁸ On completion, the committee acknowledged the valuable contributions of the American Law Institute Model Code of Evidence, the Uniform Rules of Evidence, and the state evidence rules of California and New Jersey.¹⁴⁹ Those model codes and rules provided a working template for the advisory committee as it began its work.¹⁵⁰

This history of the Federal Rules of Evidence underscores the importance of community discussion and debate on proposed evidence rules, and the value of legal scholars being actively engaged in that process. Moreover, the contributions of other entities and jurisdictions (such as the American Law Institute, California, and New Jersey) highlight the benefits of an iterative, deliberative process that builds upon previous attempts at solving this problem. And yet, on the topic of demonstrative evidence the state of Maine stands alone as having enacted a rule-based solution.

B. A Case Study: Maine Rule of Evidence 616

Maine is the first and only jurisdiction to have grappled with the murky status of demonstrative evidence and fashioned an evidence rule to provide guidance.¹⁵¹ While the rule is crisp in clarifying administrative aspects of use,¹⁵² it is less successful clarifying when and how these demonstrative exhibits may be ***544** used at trial. In the same way that analysis of the New Jersey and California rules of evidence aided the development of the Federal Rules of Evidence, analysis of Maine Rule 616 is helpful in constructing an agenda for scholars tackling the Model Rules of Demonstrative Evidence. Specifically, the Maine rule provides information as to the rule's placement in the evidence rules, the definition of demonstrative or illustrative evidence, and a judge's discretion in the use of illustrative evidence in a trial. The Maine rule provides:

RULE 616.

ILLUSTRATIVE AIDS

(a) Otherwise inadmissible objects or depictions may be used to illustrate witness testimony or counsel's arguments.

(b) The court may limit or prohibit the use of illustrative aids as necessary to avoid unfair prejudice, surprise, confusion, or waste of time.¹⁵³

Maine's demonstrative evidence rule is sited in close proximity to its [Rule 611](#),¹⁵⁴ the rule that outlines a trial court's broad discretion to control courtroom proceedings in controlling the mode and order of presenting evidence.¹⁵⁵ [Rule 611](#) requires that the control be "reasonable" and that it serve the general objectives of ascertaining the truth, avoiding needless consumption of time, and protecting witnesses from harassment and embarrassment.¹⁵⁶ Of course, any discretion exercised by a judge pursuant to [Rule 611](#) cannot circumvent other rules of evidence.¹⁵⁷

The text of Maine Rule 616 does not provide affirmative definitions of "illustrative aids" or demonstrative exhibits.¹⁵⁸ Rather, the rule states what they are *not*: they are depictions and objects *not* admissible as evidence.¹⁵⁹ This definition appears unintentionally overbroad in that it facially includes *all* inadmissible objects, even when the bar to admissibility is relevance, authentication, best evidence, or unfair prejudice (or other bars under [Rule 403](#)). The advisory committee note (ACN) to the rule offers additional guidance on the definition, explaining that illustrative aids, or demonstrative exhibits, are

those objects which do not carry probative force in themselves, but are used to assist in the communication of facts by a lay or expert witness testifying or by counsel arguing. . . . They are not admissible in *545 evidence because they themselves have no relevance to the issues in the case.¹⁶⁰

[Rule 616](#) states that this inadmissible, irrelevant nonevidence may be shared with a jury to illustrate the testimony of witnesses or the arguments of counsel unless a court, in its discretion, rules otherwise.¹⁶¹

[Rule 616](#) addresses three areas of potential use by advocates of demonstrative exhibits at trial: (1) before the presentation of evidence (opening statements), (2) after the presentation of evidence (closing arguments), and (3) during the presentation of evidence (witness examinations). [Rule 616](#)'s expansion of Rule 611-like discretion to expressly address the administrative aspects and use of demonstrative exhibits in opening statements and closing arguments is both helpful and consistent with the other rules of evidence. To the extent evidence is previewed in an opening statement, subject to constraints that there is a good faith basis for the admissibility of the facts previewed, or admitted evidence is reviewed and explained in a closing argument, the use of demonstrative exhibits under a court's supervision with the guidelines set forth in [Rule 616](#) is analytically sound.

The rule is analytically infirm, however, when applied to the use of demonstrative exhibits during the presentation of evidence. Neither [Rule 616](#) nor the ACN attempts to reconcile the requirements of Maine Rule 402¹⁶² with the discretionary authority granted a trial judge under [Rule 616](#) when it comes to the presentation of exhibits to a jury during witness examination. Rule 402 prohibits the admission of irrelevant evidence, presumably for consideration by jurors, while [Rule 616](#) permits the presentation of irrelevant, inadmissible evidence to jurors. For jurors to view demonstrative exhibits during the presentation of evidence with the approval of the court, the absolute prohibition of Rule 402 of admission (and juror consideration) of irrelevant evidence is presumptively overcome. However, that premise contradicts the core definition of "illustrative evidence" under [Rule 616](#)-- that it is irrelevant.

The language of the rule, and the ACN confirming the rule's intention to give trial judges a form of Rule 403-like discretion in allowing jurors to view irrelevant and inadmissible evidence, seems to be an alternative version of the judge-

made “shadow Rule 403” analysis adopted in other jurisdictions. As discussed above, some judges perform a first round of Rule 403 balancing to *546 determine if the evidence should reach the jury at all.¹⁶³ Having determined the answer to be “yes,” judges admit the evidence and then seem to perform a second, “off-the-books” Rule 403 analysis to determine if the “admitted” evidence should be delivered to jurors during deliberations. Under Maine Rule 616, the reverse seems to be the case: a judge first determines if the evidence is *inadmissible* because it is irrelevant and then proceeds to determine if this irrelevant, inadmissible evidence should be shared with the jury during the presentation of evidence.

Nonetheless, the state of Maine broke ground in drafting a rule of demonstrative evidence in 1993 and deserves credit for doing so. Peter L. Murray, an accomplished trial lawyer, visiting evidence professor at Harvard Law School, and coauthor of a treatise on Maine evidence,¹⁶⁴ was an architect of the rule.¹⁶⁵ Professor Murray was a visionary and an activist: he saw in his own trial practice the state of confusion when it came to the use of demonstrative exhibits and he set out to correct it.¹⁶⁶ He lent his considerable knowledge and experience, both in the courtroom and the classroom, to the work of the Maine advisory committee. Without this experience-based, scholarly input, the rule on demonstrative evidence might never have been proposed.

C. Law Schools Market Leadership, Law Professors Should Deliver on This Promise

A core value of most law schools, often prominently figured in their mission statements, is a commitment to cultivating public leadership.¹⁶⁷ Law schools tout that they educate leaders, creating “a bridge from scholarship and service to leadership and practice.”¹⁶⁸ Law professors have an opportunity to lead by example and build a set of Model Rules for Demonstrative Evidence to be submitted for consideration and debate by the Advisory Committee on the Federal Rules of Evidence. Progress may not be swift, but it can be steady, and without effort, the problem is likely to worsen as legal practice becomes increasingly digital and reliant on technology.

Evidence and trial advocacy teachers should exchange drafts and comments on proposed demonstrative evidence rules. Professors can post proposed rules on Social Science Research Network (SSRN) for comment, or they can circulate them by email, either directly or through the American Association of Law Schools, the Society of American Law Teachers, the American Bar Association, *547 or other professional organizations. Professors can circulate draft rules to pattern jury instruction committees nationally, which commonly include judges and lawyers. Professors could come together for an academic conference to discuss model evidence rules for demonstrative evidence.¹⁶⁹ It may be that widespread discussion of a set of model rules ultimately produces only a modest proposed amendment to the Federal Rules of Evidence. On the other hand, a robust debate among judges, lawyers, and scholars on the many issues triggered by this subject could effectuate significant change.

When outlining this Article, the authors drafted a working proposal for Model Rules for Demonstrative Evidence. Our intention was to conclude the Article with our concise, analytically sound Model Rules and advocate for their adoption. Initially, we championed no change at all to the existing Federal Rules of Evidence. Rather, we proposed a new Advisory Committee note clarifying that the rules do not recognize or differentiate between various categories of evidence (e.g., real and demonstrative): all evidence is either admissible under the rules or it is not. This “light touch” is consistent with the overarching approach of the Federal Rules of Evidence:

The Federal Rules of Evidence do not form a *code* in the usual sense of that term. . . . [T]hey are neither lengthy nor comprehensive in coverage. The entire set of rules can be fit into a short pamphlet. A number of areas of evidence law are left to judicial development. Even where rules govern particular areas, they are often written in general, rather than specific, language.¹⁷⁰

However, after months of work on this Article, and deep discussion with lawyers, judges, and scholars who read drafts of our work and provided insightful feedback, our proposal has morphed and continues to evolve as this Article goes to press.

A continuing point of debate is whether the Federal Rules of Evidence should endeavor to define the term “evidence.” The California Evidence Code sets forth the following definition: “‘Evidence’ means testimony, writings, material objects, of other things presented to the senses that are offered to prove the existence or nonexistence of a fact.”¹⁷¹ A definition could clarify what fell within the reach of the rules, particularly Rules 401 to 403, in that there would be a single category of “evidence,” all of which would be subject to the same rules of use and admission. This should eliminate the artificial distinction that has developed in practice between real and demonstrative evidence based on a theory of “direct” versus “derivative” probative value. Evidence defined under the rules to include both real and demonstrative exhibits would then be subject to the same analysis under Rules 401, 402, and 403. There would not be differing *548 standards or an “off the books” shadow 403 determination by a court after admission but prior to submission to a jury.

While we do not have a set of Model Rules to propose at this time, the discussion going forward should include, at a minimum, the topics of terminology and juror use during deliberations. More specifically, the following items should be addressed in any model rule:

Clarifying terminology. Should visual aids bear different labels depending on whether they are employed during opening statement, during the presentation of evidence, or during closing argument? Perhaps jettisoning the terms “illustrative evidence” and “demonstrative evidence” entirely in favor of a new lexicon would be valuable, especially when used in reported appellate decisions. Perhaps items used during opening statements could be labeled “preview aids.” Items used during witness examinations could be called “nonverbal testimony” (if they are adopted by the witness as his testimony and merely communicate the content of that testimony to the jurors nonverbally) or “testimonial aids” otherwise. Items used during closing arguments might be called “argument aids.” **Clarifying what goes to the jury deliberation room.** Current practice is built largely on the general premise that admitted exhibits are delivered to jurors for review during deliberations. Should this continue to be the rule? It made immense sense that early practice was to deliver admitted exhibits to the jurors and not testimony. After all, two hundred years ago, there were far fewer exhibits admitted than is the case today in a large commercial lawsuit. As such, those exhibits would have been quite easy to deliver to the jurors, and easy for the jurors to review. Conversely, recordation and retrieval of oral testimony was much more involved and cumbersome. Considering there is no more value in a written letter admitted into evidence than the testimony of its author as to the underlying facts contained therein, the mere logistical difficulty in delivering these separate pieces of evidence seems to have been the driver for differentiating between exhibits and testimony.¹⁷² Now that many courts have the capability of recording testimony and producing an easy-to-access DVD (replete with an index), the logistical challenges are all but obviated. This is particularly true in cases with hundreds or thousands of admitted exhibits.

Perhaps the ever-increasing volume of exhibits in modern litigation supports a wholesale change in the basic presumption that all admitted exhibits are delivered to a jury during deliberations.¹⁷³ It may better further the goals of *549 the evidence rules¹⁷⁴ to require parties to identify which exhibits (and perhaps testimony) they propose be delivered to jurors for consideration during deliberations. Opposing counsel could then object to the request, and a judge could perform a 403-like balancing test, weighing the value to jurors' deliberations against the risks of juror confusion, misuse, or overreliance. This would be similar to the “shadow 403” analysis currently conducted by many judges who allow demonstrative evidence to be shared with a jury during trial but prohibit its delivery to the deliberation room. Rule 403 could be divided into two parts: 403(a) would be the rule as currently drafted, allowing the exclusion of evidence otherwise admissible where the probative value is substantially outweighed by risks of harm. Rule 403(b) would provide a court a “second look” at evidence to determine, after performing a similar balancing test, if it should be submitted to the jury deliberation room.

CONCLUSION

The unsettled state of demonstrative evidence has caused problems for trial courts, practitioners, and academics alike. The confusion surrounding the characterization and use of demonstrative exhibits produces results that can undermine the aspiration underlying the Federal Rules of Evidence: to “administer every proceeding fairly, eliminate unjustifiable expense and delay, and promote the development of evidence law, to the end of ascertaining the truth and securing a just determination.”¹⁷⁵ While jurors have changed how they accept and process information, the formal rules of evidence have not kept pace. This state of affairs promises to worsen as technology improves. A unified approach is needed: evidence rules should be amended to address demonstrative evidence, and trial advocacy and evidence teachers can lay the groundwork for reform. Law professors are in a unique and privileged position to be able to articulate and advocate for a unified solution because they can both understand the scope of the problem and have access to the next generation of lawyers, judges, and academics.

Footnotes

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¹ Joseph H. Hinshaw, *Use and Abuse of Demonstrative Evidence: The Art of Jury Persuasion*, 40 A.B.A. J. 479, 479 (1954).

² [Baugh v. Cuprum S.A. De C.V., No. 08 C 4204, 2015 WL 9304338, at *1 \(N.D. Ill. Dec. 22, 2015\)](#).

³ [Baugh ex rel. Baugh v. Cuprum S.A. de C.V., 730 F.3d 701, 703 \(7th Cir. 2013\)](#).

⁴ *Id.* at 704 (emphasis added).

⁵ *Id.*

⁶ *Id.* at 711.

⁷ [Baugh, 2015 WL 9304338, at *1](#).

⁸ See, e.g., [ME. R. EVID. 616](#) advisers' note to 1976 amendment (“[Demonstrative exhibits] are not admissible in evidence because they themselves have no relevance to the issues in the case. Their utility lies in their ability to convey relevant information which must be provided directly from some actual evidentiary source....”).

⁹ A representative list of such articles may be found in Robert D. Brain & Daniel J. Broderick, *The Derivative Relevance of Demonstrative Evidence: Charting Its Proper Evidentiary Status*, 25 U.C. DAVIS L. REV. 957 nn.145-46 (1992).

- 10 *Id.* at 962 n.13. Many states have rules based on the Federal Rules of Evidence. Unless otherwise noted, references to the Federal Rules of Evidence encompass references to those state analogues.
- 11 *See, e.g.*, Michael Sudman, Comment, *The Jury Trial: History, Jury Selection, and the Use of Demonstrative Evidence*, 1 J. LEGAL ADVOC. & PRAC. 172, 183-84 (1999) (discussing trends in judicial treatment of demonstrative evidence in trial courts).
- 12 *See, e.g.*, Brain & Broderick, *supra* note 9, at 1018-19 (proposing that Rule 401 be revised to recognize different admissibility standards for what the authors term “primarily relevant evidence” and “derivatively relevant proof”).
- 13 A search of the archives of the Advisory Committee on the Federal Rules of Evidence reveals that not only has no one suggested revising the Federal Rules of Evidence to address demonstrative evidence, but also the issue has never been addressed in any comments. *See Archived Rules Comments*, U.S. COURTS, [http://www.uscourts.gov/rules-policies/records-and-archives-rules-committees/archived-rules-comments?committee=44&year\[value\]\[year\]=&page=3](http://www.uscourts.gov/rules-policies/records-and-archives-rules-committees/archived-rules-comments?committee=44&year[value][year]=&page=3) (last visited Apr. 1, 2016); *Archived Rules Suggestions*, U.S. COURTS, <http://www.uscourts.gov/rules-policies/records-and-archives-rules-committees/archived-rules-suggestions?committee=44&year%5Bvalue%CC5D%CC5Byear%5D=> (last visited Apr. 1, 2016).
- 14 *See infra* Part II.D for an analysis of the academic confusion surrounding demonstrative evidence and law schools' contributions to the lack of standards in this area.
- 15 The Advisory Committee has been criticized as taking an historically “hands off” approach to its oversight responsibilities such that “only the most egregious issues are addressed, leaving many other short-comings in the Rules intact.” *See* Paul R. Rice & Neals-Erik William Delker, *Federal Rules of Evidence Advisory Committee: A Short History of Too Little Consequence*, 191 F.R.D. 678, 682-83 (2000).
- 16 *See* FED. R. EVID. 611. The trial court's broad discretion remains subject to due process and other constitutional principles, of course.
- 17 *See, e.g., id.* 403.
- 18 *Baugh ex rel. Baugh v. Cuprum S.A. de C.V.*, 730 F.3d 701, 706 (7th Cir. 2013) (“The term ‘demonstrative’ has been used in different ways that can be confusing....”).
- 19 *See, e.g.*, Brain & Broderick, *supra* note 9, at 960, n.7 (“[A]lmost all the academic commentary that has focused on demonstrative evidence has mischaracterized it.”); *id.* at 1002-10 (discussing confusion over both the definition and use of demonstrative evidence); *see also* RICHARD D. FRIEDMAN, THE ELEMENTS OF EVIDENCE 153 (3d ed. 2004) (“The term *demonstrative* evidence is sometimes used to include pretty much all non-testimonial evidence. But the term is often used in a narrower sense, to distinguish it from *real* evidence.”).
- 20 *Demonstrative Evidence*, BLACK'S LAW DICTIONARY (10th ed. 2014).
- 21 *Id.*
- 22 CHRISTOPHER B. MUELLER & LAIRD C. KIRKPATRICK, EVIDENCE § 9.32, at 1142 (5th ed. 2012) (footnotes omitted) (first citing Melvin Belli, *Demonstrative Evidence: Seeing Is Believing*, 16 TRIAL 70 (1980); then citing *Demonstrative Evidence*, BLACK'S LAW DICTIONARY (6th ed. 1990); then citing Brain & Broderick, *supra* note 9, at 968-69; then citing Thomas R. Mulroy, Jr. & Ronald J. Rychlak, *Use of Real and Demonstrative Evidence at Trial*, 33 TRIAL LAW.'S GUIDE 550, 555 (1989); and then citing 2 KENNETH S. BROUN, MCCORMICK ON EVIDENCE § 214 (6th ed. 2006)).
- 23 *E.g., Finley v. Marathon Oil Co.*, 75 F.3d 1225, 1231 (7th Cir. 1996) (“Physical exhibits (*'demonstrative evidence'*) are a very powerful form of evidence....” (emphasis added)).
- 24 *See, e.g., Gomez v. Great Lakes Steel Div. Nat'l Steel Corp.*, 803 F.2d 250, 257 (6th Cir. 1986).
- 25 *See, e.g., State v. Parks*, 977 So. 2d 1015, 1027-28 (La. Ct. App. 2008) (“Before it can be admitted at trial, demonstrative evidence must be properly identified. A sufficient foundation for the admission of evidence is established when the evidence

as a whole shows it is more probable than not that the object is one connected with the crime charged.” (citation omitted)); *see also* [State v. Mosner](#), 969 A.2d 487, 500 (N.J. Super. Ct. App. Div. 2009).

- 26 *See, e.g.*, [Hinton v. Outboard Marine Corp.](#), No. 1:09-cv-00554-JAW, 2012 WL 243210, at *2 (D. Me. Jan. 25, 2012) (referring to [ME. R. EVID. 616](#), which regulates the use of illustrative aids).
- 27 *E.g.*, [Pierce v. State](#), 718 So. 2d 806, 809 (Fla. Dist. Ct. App. 1997) (“Under Florida law, in order to admit a demonstrative exhibit, illustrating an expert’s opinion, such as a computer animation, the proponent must establish the foundation requirements necessary to introduce the expert opinion.”); [State v. Foster](#), 967 P.2d 852, 859 (N.M. 1998) (“Demonstrative exhibits are likely to be merely illustrative of other evidence.”); [State v. Lord](#), 822 P.2d 177, 193 (Wash. 1991) (“The use of demonstrative or illustrative evidence is to be favored and the trial court is given wide latitude in determining whether or not to admit demonstrative evidence.”).
- 28 *E.g.*, [State v. Swinton](#), 847 A.2d 921, 936 n.20 (Conn. 2004) (differentiating between demonstrative and illustrative evidence).
- 29 *See, e.g.*, [State v. Pangborn](#), 836 N.W.2d 790, 797 (Neb. 2013) (“We historically have discussed the use of demonstrative exhibits in terms of admissibility.... But the use of such terminology can be misleading.”).
- 30 [FED. R. EVID. 611](#).
- 31 *See, e.g.*, [United States v. Irvin](#), 682 F.3d 1254, 1262-63 (10th Cir. 2012) (explaining that some circuits have construed [Rule 611](#) to authorize summary exhibits for pedagogical purposes); [United States v. Milkiewicz](#), 470 F.3d 390, 398 (1st Cir. 2006) (discussing permissible pedagogical aids under [Rule 611](#)); [United States v. Taylor](#), 210 F.3d 311, 315 (5th Cir. 2000) (same); [United States v. Salerno](#), 108 F.3d 730, 744 (7th Cir. 1997) (stating demonstrative aids are regularly permitted under [Rule 611](#) “to clarify or illustrate testimony”); [United States v. Johnson](#), 54 F.3d 1150, 1159-60 (4th Cir. 1995) (concluding that the trial court’s admission of summary charts pursuant to [Rule 611](#) did not constitute error); [United States v. Pinto](#), 850 F.2d 927, 935 (2d Cir. 1988) (same); [United States v. Possick](#), 849 F.2d 332, 339 (8th Cir. 1988) (same); [United States v. Gardner](#), 611 F.2d 770, 776 (9th Cir. 1980) (same); *see also* [Gomez v. Great Lakes Steel Div. Nat’l Steel Corp.](#), 803 F.2d 250, 257 (6th Cir. 1986) (distinguishing summaries and charts admitted under [Rule 1006](#) from those “used as pedagogical devices which organize or aid the jury’s examination of testimony or documents which are themselves admitted into evidence”).
- 32 *See, e.g.*, [N.C. GEN. STAT. ANN. § 8-97](#) (West 2016) (permitting photographic representations after proper foundation); [Duncan v. State](#), 827 So. 2d 838, 850-51 (Ala. Crim. App. 1999) (declaring the “reasonable tendency to prove or disprove some material fact in issue” as the ultimate consideration in admitting demonstrative evidence); [Mayes v. State](#), 887 P.2d 1288, 1313 (Okla. Crim. App. 1994) (finding no error when relevant photographs were admitted); [Commonwealth v. Reid](#), 811 A.2d 530, 552 (Pa. 2002) (permitting the admission of demonstrative evidence if its relevance outweighed its prejudicial effect).
- 33 *See, e.g.*, [State v. Parks](#), 977 So. 2d 1015, 1027-28 (La. Ct. App. 2008).
- 34 Two Washington State Superior Court judges (one, a career public defender, and the other, a career prosecutor before ascending to the bench), team teaching a trial advocacy class this academic year, were surprised to discover that they disagreed on the definition and use of demonstrative evidence.
- 35 *E.g.*, [United States v. Bray](#), 139 F.3d 1104, 1111-12 (6th Cir. 1998) (“We note in passing that in appropriate circumstances not only may such pedagogical-device summaries be used as illustrative aids in the presentation of the evidence, but they may also be admitted into evidence even though not within the specific scope of [Rule 1006](#).”).
- 36 *E.g.*, [Baugh ex rel. Baugh v. Cuprum S.A. de C.V.](#), 730 F.3d 701, 708 (7th Cir. 2013) (“Demonstrative exhibits that are not admitted into evidence should not go to the jury during deliberation, at least not without consent of all parties.”); *cf.* [Johnson](#), 54 F.3d at 1161 n.11 (concluding that properly admitted evidence may be used by the jury during deliberations); [Scales](#), 594 F.2d at 564 n.3 (noting that when demonstrative evidence is not admitted to the jury it is usually because such evidence was not properly admitted).
- 37 *See, e.g.*, [United States v. Parker](#), 491 F.2d 517, 522-23 (8th Cir. 1973) (permitting the jury to use a document written by a narcotics agent during deliberations because the defense vigorously cross-examined the agent on its contents); [People v. Manley](#), 272 N.E.2d 411, 412 (Ill. App. Ct. 1971) (concluding that “[t]he taking of physical evidence into the jury room by

the jury is within the sound discretion of the trial judge,” but requiring close scrutiny because such a “procedure may be prejudicial to the defendant”).

38 *E.g.*, [United States v. Downen](#), 496 F.2d 314, 321 (10th Cir. 1974); [Shane v. Warner Mfg. Corp.](#), 229 F.2d 207, 209-10 (3d Cir. 1956); *In re Lucitte*, No. L-10-1136, 2012 WL 362002, at *17 (Ohio Ct. App. 2012).

39 *E.g.*, [Commonwealth v. Walter](#), 406 N.E.2d 1304, 1309 (Mass. App. Ct. 1980); [State v. Pangborn](#), 836 N.W.2d 790, 801 (Neb. 2013); [Commonwealth v. Moore](#), 279 A.2d 179, 184-85 (Pa. 1971).

40 *See* FED. R. EVID. 401-402.

41 *See id.* 901-903.

42 *Id.* 801-807.

43 *Id.* 1001-1008.

44 *See* 5 CHRISTOPHER B. MUELLER & LAIRD C. KIRKPATRICK, FEDERAL EVIDENCE § 9:22 (4th ed. 2012) (database updated June 2015) (“For illustrative evidence, the foundation may be easier to lay than for substantive evidence, because the proponent need only show that the item is a ‘fair depiction’ or ‘reasonable facsimile.’”).

45 *See, e.g.*, [United States v. Salerno](#), 108 F.3d 730, 744 (7th Cir. 1997) (“*Demonstrative aids* are regularly used to clarify or illustrate testimony.” (emphasis added)). The *Salerno* court cited [Roland v. Langlois](#), 945 F.2d 956, 963 (7th Cir. 1991), in which the Seventh Circuit confirmed the trial court’s admission of a life-size model of an amusement park ride into evidence, and [United States v. Towns](#), 913 F.2d 434, 445-46 (7th Cir. 1990), where the court confirmed the admission of a ski mask and gun for the demonstrative purpose of providing examples of the mask and gun used during a bank robbery, to support its conclusion.

46 *See, e.g.*, [United States v. Scales](#), 594 F.2d 558, 563-64 (6th Cir. 1979) (“Authority for [admitting] such summaries is not usually cited, but would certainly exist under Fed. R. Evid. 611(a).”); [United States v. Blackwell](#), 954 F. Supp. 944, 971 (D.N.J. 1997) (“Charts that summarize documents or testimony, already admitted into evidence, may be admissible under Rule 611(a)... as demonstrative evidence, as opposed to Rule 1006, as substantive evidence.” (emphasis added)). The issue, of course, is that Rule 611(a) is primarily a rule of procedure, in that it provides the judge control over the evidence presented in his courtroom. It is not a rule of admission. *See* [United States v. Irvin](#), 682 F.3d 1254, 1263 (10th Cir. 2012) (“In short, resort to Rule 611(a) in no way resolves the hearsay problem that renders Exhibit 1-2 inadmissible.”).

47 [Baugh ex rel. Baugh v. Cuprum S.A. de C.V.](#), 730 F.3d 701, 711 (7th Cir. 2013). The prejudicial effect of a nonadmitted exhibit in the jury deliberation room was repeatedly raised (and rejected) by opposing counsel. *Id.* at 704-05.

48 Although, it is inevitable that different judges and different juries will produce individualized, and thus perhaps inconsistent, verdicts.

49 *See, e.g.*, [United States v. McDermott](#), 245 F.3d 133, 141 (2d Cir. 2001) (“While we may disagree with a district court’s evidentiary ruling, our disagreement is not alone sufficient to reverse an otherwise rational, carefully considered and non-arbitrary decision.”). Codified standards lead to a body of case law, which in turn guides advocates and trial courts. Federal Rule of Evidence 403 (or its state analogue) has broad language merely requiring the trial court to ensure the probative value is not substantially outweighed by other concerns, including unfair prejudice. This amorphous language requires trial courts to examine the entirety of the evidence before ruling on admission or to articulate their balancing on the record. *E.g.*, [United States v. Loughry](#), 660 F.3d 965, 971 (7th Cir. 2011) (requiring examination of the entirety of the evidence); [United States v. Moran](#), 493 F.3d 1002, 1012 (9th Cir. 2007) (encouraging the trial court to state how it balanced the evidence). Case law also provides greater definition for vague terms such as “substantially outweighed” and “unfair prejudice.” *See, e.g.*, [People v. Quang Minh Tran](#), 253 P.3d 239, 244 (Cal. 2011) (elaborating on the term “substantially outweighed”); [Swajian v. Gen. Motors Corp.](#), 916 F.2d 31, 34-35 (1st Cir. 1990) (elaborating on the term “unfair prejudice”).

50 The Federal Rules of Evidence and state analogues (with the exception of the state of Maine’s) have not given rule-based guidance to judges regarding the use of such visual aids. The term “demonstrative evidence” is not found in the Federal Rules of Evidence, and it is mentioned only once in the Advisory Committee notes. *See infra* Part IV.B for a discussion of Maine’s approach to the use of demonstrative evidence.

- 51 While some scholars use the terms “demonstrative evidence” and “illustrative evidence” interchangeably, others draw a distinction. *See e.g.*, RONALD JAY ALLEN, RICHARD B. KUHNS, ELEANOR SWIFT, DAVID S. SCHWARTZ & MICHAEL S. PARDO, *EVIDENCE: TEXT, PROBLEMS, AND CASES* 192 (5th ed. 2011) (demonstrative evidence is admitted and illustrative evidence is not admitted into evidence).
- 52 *See* Brain & Broderick, *supra* note 9, at 986-1018 (discussing the history of academic treatment of demonstrative evidence).
- 53 *Id.* at 960 n.7.
- 54 *Id.* at 988-89.
- 55 *See* 1 JOHN HENRY WIGMORE, *A TREATISE ON THE SYSTEM OF EVIDENCE IN TRIALS AT COMMON LAW* 932 (1904) (indexing certain evidence as “non-verbal testimony”).
- 56 *Id.* §§ 789, 791, 792, 794, 795, 797; *see also* Brain & Broderick, *supra* note 9, at 997.
- 57 1 WIGMORE, *supra* note 55, §§ 789, 791, 792, 794, 795, 797.
- 58 *Id.*; *see also* Brain & Broderick, *supra* note 9, at 996.
- 59 1 WIGMORE, *supra* note 55, § 791; *see also* Brain & Broderick, *supra* note 9, at 996 n.117; *cf.* GRAHAM C. LILLY, DANIEL J. CAPRA & STEPHEN A. SALTZBURG, *PRINCIPLES OF EVIDENCE* 57 (6th ed. 2012) (suggesting that such a map in a boundary dispute is demonstrative evidence).
- 60 *See* Brain & Broderick, *supra* note 9, at 960-62.
- 61 *See infra* Part II.D for an analysis of the academic confusion about demonstrative evidence and law professors' contributions to the lack of standards in this area.
- 62 *See, e.g.*, Hinshaw, *supra* note 1, at 479-82, 539-43.
- 63 Conflicting definitions and sanctioned use of demonstrative evidence within and between academic circles and the practicing bar are a byproduct of the fact that the concept was developed as a utilitarian tool in courtrooms, with scholarly commentators reluctantly playing catch up. [P]ractioners' contribution to the study of the subject has largely been their consistent use of such proof at trial and their unflinching use of the term “demonstrative” to describe it. As a result, the idea of a separate branch of evidence known as “demonstrative evidence” eventually became so ingrained in our legal system that the academic writers could not ignore it. For the most part, however, practitioner-authored writings on the subject are devoid of detailed analysis of the attributes and proper role of demonstrative proof....
Brain & Broderick, *supra* note 9, at 960 n.7.
- 64 *See infra* note 81 .
- 65 As early as the 1920s, psychologists such as Walter D. Scott applied psychological theory to the field of advertising. LUDY T. BENJAMIN, JR. & DAVID B. BAKER, *FROM SÉANCE TO SCIENCE: A HISTORY OF THE PROFESSION OF PSYCHOLOGY IN AMERICA* 118-21 (2004).
- 66 *See, e.g.*, MELVIN M. BELLI, *READY FOR THE PLAINTIFF* (1956); Melvin M. Belli, *Demonstrative Evidence and the Adequate Award*, 22 *MISS. L.J.* 284 (1951); Melvin Belli, *Demonstrative Evidence: Seeing Is Believing*, *TRIAL*, July 1980, at 70.
- 67 A simple, but extremely impactful chart was used by John Gotti's defense attorney Bruce Cutler in 1987, whereby the defense illustrated the multiple convictions of the prosecution's witnesses.
- 68 **FED. R. EVID. 401.** Facts “of consequence” are those that are material to the issues in the case and are determined by looking at the claims and defenses set forth in the pleadings, and the underlying law provides the rule of decision in the case. *See Rankin v. State*, 974 S.W.2d 707, 710 (Tex. Crim. App. 1996), *opinion withdrawn in part on reconsideration* (July 8, 1998) (“[I]t appears that ‘fact of consequence’ includes either an elemental fact or an evidentiary fact from which an elemental fact can be inferred. An evidentiary fact that stands wholly unconnected to an elemental fact, however, is not a ‘fact of consequence.’”

A court that articulates the relevancy of evidence to an evidentiary fact but does not, in any way, draw the inference to an elemental fact has not completed the necessary relevancy inquiry because it has not shown how the evidence makes a 'fact of consequence' in the case more or less likely.”).

69 See [FED. R. EVID. 402](#). While unsupported by the language of [Rule 402](#) itself, some scholars, in analyzing the differential treatment of demonstrative evidence, have fashioned a concept of “derivative relevance.” See, e.g., Brain & Broderick, *supra* note 9, at 967. They concluded that only evidence that is “primarily relevant” is admissible under [Federal Rule 402](#), and that demonstrative evidence is not admissible for all purposes because its relevance is “derivative.” *Id.*

70 In allowing jurors to view and consider demonstrative evidence, judges implicitly seemed to have found that the evidence was (1) relevant, thus (2) presumptively admissible, and (3) not barred by any other rule of evidence or the Constitution. See [FED. R. EVID. 402](#). For jurors to view demonstrative exhibits during the presentation of evidence with the approval of the court, the Federal Rules' (and state analogues') absolute prohibition of admitting (and thus juror consideration of) irrelevant evidence was presumptively overcome. Further, the balancing mandated by [Federal Rule of Evidence 403](#) (requiring that the probative value of evidence outweigh the potential risks of misuse by jurors or other costs) must also implicitly have been conducted and found to weigh in favor of admissibility.

71 [FED. R. EVID. 611\(a\)\(1\)-\(3\)](#) (“The court should exercise reasonable control over the mode and order of examining witnesses and presenting evidence so as to: (1) make those procedures effective for determining the truth; (2) avoid wasting time; and (3) protect witnesses from harassment or undue embarrassment.”).

72 [Federal Rule of Evidence 105](#) provides that “[i]f the court admits evidence that is admissible against a party or for a purpose -- but not against another party or for another purpose -- the court, on timely request, must restrict the evidence to its proper scope and instruct the jury accordingly.” *Id.* 105. Some judges also misguidedly rely on this rule to craft a “limited use” doctrine with respect to demonstrative evidence, allowing it to be admitted into evidence for a limited “illustrative purpose” that restricts the advocate's use of the exhibit to the direct examination of the foundational witness and prohibits the exhibit to go to the jury during deliberations with other admitted evidence. This misuse of [Rule 105](#) misunderstands the rule's concept of admission for a “limited purpose.” Such a limit is on the points of proof the jurors may apply the exhibit to, not a limit on the use of the evidence for the point of proof for which it was offered and admitted.

73 See [ALLEN ET AL.](#), *supra* note 51, at 701 (“Although [FRE 901](#) does not fully apply because these devices are not exhibits a foundation for the accuracy of illustrative evidence must be laid, and the use of illustrative aids at trial is regulated by [FRE 611\(a\)](#) and [FRE 403](#). Many courts endorse the use of illustrative evidence as a trial management technique so long as an appropriate limiting instruction informs the jury that the chart itself is not evidence but is only an aid in evaluating the evidence.”).

74 [Baugh ex rel. Baugh v. Cuprum S.A. de C.V.](#), 730 F.3d 701, 706 (7th Cir. 2013).

75 5 [MUELLER & KIRKPATRICK](#), *supra* note 44, § 9:22. Mueller and Kirkpatrick note that the term has referred to one of three possibilities: (1) evidence that “appeals to the senses,” (2) evidence that conveys a “firsthand sense impression,” or (3) evidence used to illustrate other evidence, but lacking any independent substantive force. *Id.* (first quoting Melvin Belli, *Demonstrative Evidence: Seeing is Believing*, 16 *Trial* 70 (1980); then quoting 2 [JOHN W. STRONG, MCCORMICK ON EVIDENCE](#) § 212 (4th ed. 1991)).

76 2 [KENNETH S. BROUN, MCCORMICK ON EVIDENCE](#) § 212 (7th ed. 2013).

77 Brain & Broderick, *supra* note 9, at 997.

78 David S. Santee, *More than Words: Rethinking the Role of Modern Demonstrative Evidence*, 52 [SANTA CLARA L. REV.](#) 105, 112 (2012).

79 See, e.g., [ROGER PARK, DAVID LEONARD, AVIVA ORENSTEIN & STEVEN GOLDBERG, A STUDENT'S GUIDE TO THE LAW OF EVIDENCE AS APPLIED IN AMERICAN TRIALS](#) 583-84 (3d ed. 2011) (“Demonstrative evidence used for illustrative purposes is handled differently from jurisdiction to jurisdiction and sometimes from courtroom to courtroom.”).

- 80 See, e.g., L ILLY ET AL., *supra* note 59, at 57-58 (“[T]here is an area of overlap between ‘original’ real evidence and demonstrative evidence.”).
- 81 See, e.g., ALLEN ET AL., *supra* note 51, at 151-52, 192-95, 219 (“demonstrative evidence” mentioned in seven of 917 pages); CHRISTOPHER W. BEHAN, EVIDENCE AND THE ADVOCATE: A CONTEXTUAL APPROACH TO LEARNING EVIDENCE 49-50 (2012) (one paragraph of 695 pages); GEORGE FISHER, EVIDENCE 50-54 (3d ed. 2013) (four pages of 1085 pages) ; STEVEN I. FRIEDLAND, PAUL BERGMAN & ANDREW E. TASLITZ, EVIDENCE: LAW AND PRACTICE 743 (6th ed. 2014) [hereinafter FRIEDLAND ET AL., EVIDENCE: LAW AND PRACTICE] (one page of 823 pages); STEVEN I. FRIEDLAND & JACK P. SAHL, EVIDENCE PROBLEMS AND MATERIALS 14 (4th ed. 2012) [[[hereinafter FRIEDLAND & SAHL, EVIDENCE PROBLEMS AND MATERIALS] (one page of 570); ERIC D. GREEN, CHARLES R. NESSON & PETER L. MURRAY, PROBLEMS, CASES, AND MATERIALS ON EVIDENCE 1017-1018 (3d ed. 2000) (two pages of 1122); DEBORAH JONES MERRITT & RIC SIMMONS, LEARNING EVIDENCE: FROM THE FEDERAL RULES TO THE COURTROOM 10-13, 38 (2d ed. 2012) (five of 983 pages); DAVID P. LEONARD, VICTOR J. GOLD & GARY C. WILLIAMS, EVIDENCE: A STRUCTURED APPROACH 47, 51-52 (3d ed. 2012) (three of 647 pages); LILLY ET AL., *supra* note 59 (two of 456 pages); MUELLER & KIRKPATRICK, *supra* note 22, § 4.2 (sixteen of 1206 pages); PETER NICOLAS, EVIDENCE: A PROBLEM-BASED AND COMPARATIVE APPROACH 411-15 (3d ed. 2014) (four of 846 pages); ROGER C. PARK & RICHARD D. FRIEDMAN, EVIDENCE: CASES AND MATERIALS 36, 964-70 (12th ed. 2013) (seven of 1508 pages); PAUL R. RICE & ROY A. KATRIEL, EVIDENCE: COMMON LAW AND FEDERAL RULES OF EVIDENCE 14-15, 200-08 (6th ed. 2009) (ten of 1259 pages); OLIN GUY WELLBORN III, CASES AND MATERIALS ON THE RULES OF EVIDENCE 9, 477-79 (3d ed. 2005) (three of 606 pages); PAVEL WONSOWICZ, EVIDENCE: A CONTEXT AND PRACTICE CASEBOOK, 8, 10, 24 (2012) (three of 518 pages); IRVING YOUNGER, MICHAEL GOLDSMITH & DAVID A. SONENSHEIN, PRINCIPLES OF EVIDENCE 29-31 (3d ed. 1997) (three of 922 pages).
- 82 See FISHER, *supra* note 81, at 50-54 (noting that demonstrative evidence is discussed in the case of *Commonwealth v. Serge*, 896 A.2d 1170 (Pa. 2006), *cert. denied*, 549 U.S. 920 (2006), concerning expert opinion and computer-generated animation); NICOLAS, *supra* note 81, at 411-15 (noting that demonstrative evidence is mentioned in the case of *United States v. Bray*, 139 F.3d 1104 (6th Cir. 1998), concerning summaries authorized under FRE 1006). As discussed in Nicolas's text, the *Bray* court distinguished 1006 summaries from both “illustrative aids,” which are *not* admitted and are *not* evidence, and “secondary evidence summaries,” which are a “combination” of 1006 summaries and illustrative aids that *are* admitted into evidence -- despite failing to comply with the requirements of FRE 1006. *Id.* at 415. In its analysis, the *Bray* court notes that a jury should be told that the admitted evidence is *not* independent evidence of the underlying evidence summarized. *Id.*
- 83 See, e.g., CHRISTOPHER B. MUELLER & LAIRD C. KIRKPATRICK, EVIDENCE UNDER THE RULES: TEXT, CASES, AND PROBLEMS (8th ed. 2014); see also JACK B. WEINSTEIN, JOHN H. MANSFIELD, NORMAN ABRAMS & MARGARET A. BERGER, EVIDENCE: CASES AND MATERIALS 157-60 (9th ed. 1997) (surveying various scholarly and judicial approaches to the evidentiary status and admissibility of photographs).
- 84 See, e.g., LEONARD ET AL., *supra* note 81, at 52.
- 85 E.g., STEVEN LUBET, MODERN TRIAL ADVOCACY 351 (4th ed. 2009).
- 86 See, e.g., ROBERT J. GOODWIN & JIMMY GURULE, CRIMINAL AND FORENSIC EVIDENCE: CASES, MATERIALS, PROBLEMS 991 (4th ed. 2014).
- 87 E.g., FRIEDLAND ET AL., EVIDENCE: LAW AND PRACTICE, *supra* note 81, at 743.
- 88 See, e.g., YOUNGER ET AL., *supra* note 81, at 30; see also ALLEN ET AL., *supra* note 51, at 191-92; KENNETH S. BROUN & WALTER J. BLAKELY, EVIDENCE 95 (2d ed. 1994); ANDRE A. MOENSSENS, BETTY LAYNE DESPORTES & CARL N. EDWARDS, SCIENTIFIC EVIDENCE IN CIVIL AND CRIMINAL CASES 67 (6th ed. 2013).
- 89 RONALD CARLSON, EDWARD IMWINKELRIED, JULIE SEAMAN & ERICA BEECHER-MONAS, EVIDENCE: TEACHING MATERIALS FOR AN AGE OF SCIENCE AND STATUTES 218 (7th ed. 2012).
- 90 *Id.* at 219-20 (reprinting *Bergner v. State*, 397 N.E.2d 1012 (Ind. Ct. App. 1979)).

- 91 *Id.* (reprinting *Bergner*, 397 N.E.2d at 1016).
- 92 *Id.* at 220.
- 93 *See, e.g.*, PARK & FRIEDMAN, *supra* note 81, at 36.
- 94 *See, e.g.*, FRIEDLAND & SAHL, EVIDENCE PROBLEMS AND MATERIALS, *supra* note 81, at 15.
- 95 *See, e.g.*, BEHAN, *supra* note 81, at 294.
- 96 *See, e.g.*, MERRITT & SIMMONS, *supra* note 81, at 38.
- 97 *See, e.g.*, WELLBORN, *supra* note 81, at 485 (citing *Smith v. Ohio Oil Co.*, 134 N.E.2d 526 (Ill. App. Ct. 1956)).
- 98 *See, e.g.*, L. TIMOTHY PERRIN, H. MITCHELL CALDWELL & CAROL A. CHASE, THE ART & SCIENCE OF TRIAL ADVOCACY 273 (2003).
- 99 *Id.* at 272.
- 100 MOENSSENS ET AL., *supra* note 88, at 67.
- 101 F ED. R. E VID. 402; *see id.* 401; *see also* STEVEN GOODE & OLIN GUY WELLBORN III, COURTROOM EVIDENCE HANDBOOK 2014-2015, at 51, 54 (2014) (stating that “demonstrative or illustrative evidence.... [is] subject to the general relevancy requirements of Rules 401, 402, and 403,” and underscoring that Rule 401 requires probative value of admitted evidence); WONSOWICZ, *supra* note 81, at 10 (stating that demonstrative evidence may be used “as long as [it is] admissible pursuant to the rules of evidence”).
- 102 Professor Howard has taught trial advocacy programs coast-to-coast for over fifteen years with law professors, federal judges, state judges, federal and state prosecutors, defense lawyers, and “BigLaw” litigation partners.
- 103 KENNETH S. BROUN, GEORGE E. DIX, EDWARD J. IMWINKELRIED, D. H. KAYE, ROBERT P. MOSTELLER, E. F. ROBERTS & ELEANOR SWIFT, MCCORMICK ON EVIDENCE 485 (7th ed. 2014).
- 104 MERRITT & SIMMONS, *supra* note 81, at 38.
- 105 EDWARD J. IMWINKELRIED, EVIDENTIARY FOUNDATIONS 133 (8th ed. 2012).
- 106 WILLIAM S. BAILEY & ROBERT W. BAILEY, SHOW THE STORY: THE POWER OF VISUAL ADVOCACY 284 (2011).
- 107 *Id.* at 284 (citing ALAN E. MORRILL, TRIAL DIPLOMACY 26 (2d ed. 1973)). The authors do not identify, however, the standard for admission or the nature of a judge’s discretion with respect to the use of such aids.
- 108 MICHAEL R. FONTHAM, TRIAL TECHNIQUE & EVIDENCE 403 (4th ed. 2013).
- 109 ROGER HAYDOCK & JOHN SONSTENG, TRIAL: ADVOCACY BEFORE JUDGES, JURORS AND ARBITRATORS 453 (4th ed. 2011).
- 110 GREEN ET AL., *supra* note 81, at 1017-18.
- 111 THOMAS A. MAUET & WARREN D. WOLFSON, TRIAL EVIDENCE 317-18 (6th ed. 2016).
- 112 *See, e.g., id.* at 317 (“[T]he proponent must call a competent witness, one having firsthand knowledge of the actual thing at the relevant dates to testify that the exhibit fairly represents or shows the actual thing. To be relevant, the exhibit must help the jury understand some fact of consequence to the case.”).
- 113 *Id.* (describing the foundation of diagrams and models and concluding that the exhibits are “admissible”). In fairness, Mauet and Wolfson examine the question: “What does it mean when a judge ‘admits’ the exhibit in evidence?” *Id.* Nonetheless, by misstating that demonstrative evidence is “admissible” the seeds of confusion have already been sown.

- 114 See, e.g., 2 MCCORMICK ON EVIDENCE, *supra* note 76, § 212 (“The term ‘demonstrative aid’ will be employed here to identify these and other types of evidence whose relevance is illustrative, rather than substantive. Some courts refer to these aids as ‘pedagogic aids’ or ‘devices.’”); 2 MICHAEL H. GRAHAM, *HANDBOOK OF FEDERAL EVIDENCE* § 401:2 (7th ed. 2015) (“Demonstrative evidence... is distinguished from real evidence in that it has no probative value itself, but serves merely as a visual aid to the jury in comprehending the verbal testimony of a witness or other evidence.”).
- 115 See, e.g., *Baugh ex rel. Baugh v. Cuprum S.A. de C.V.*, 730 F.3d 701, 710 (7th Cir. 2013); *State v. Perea*, 322 P.3d 624, 637 (Utah 2013); *State v. Lord*, 822 P.2d 177, 194 (Wash. 1991).
- 116 See, e.g., *United States v. Hawkins*, 796 F.3d 843, 866 (8th Cir. 2015) (characterizing the district court's erroneous admission of a demonstrative timeline as harmless error); *Baugh*, 730 F.3d at 711 (concluding that the district court had abused its discretion by overruling objections to the use of an exhibit, on the ground that its use would be limited to demonstrative purposes only, but then allowing the exhibit's admission into evidence during jury deliberations).
- 117 See, e.g., COMM. ON PATTERN JURY INSTRUCTIONS, DIST. JUDGES ASS'N, FIFTH CIRCUIT, PATTERN JURY INSTRUCTIONS (CRIMINAL CASES) 1.43 (2015); FLA. BAR, FLORIDA STANDARD JURY INSTRUCTIONS 301.4 (2015); MINN. DIST. JUDGES ASS'N, COMM. ON CRIMINAL JURY INSTRUCTION GUIDES, JURY INSTRUCTION GUIDES -- CRIMINAL 3.26 (6th ed. 2014); COMM. ON FED. CRIMINAL JURY INSTRUCTIONS OF THE SEVENTH CIRCUIT, FEDERAL CRIMINAL JURY INSTRUCTIONS 3.17 (2012); JUDICIAL COUNCIL OF CAL. ADVISORY COMM. ON CIVIL JURY INSTRUCTIONS, CIVIL JURY INSTRUCTIONS 5020 (2012)...
- 118 WASH. STATE SUPREME COURT COMM. ON JURY INSTRUCTIONS, WASHINGTON PATTERN JURY INSTRUCTIONS -- CIVIL 6.06 (2013).
- 119 *Id.*
- 120 At the Washington Pattern Instruction Committee meeting on November 7, 2015, Professor Howard proposed to modify the instruction title from “Exhibit *Admitted* for Illustrative Purposes” to “Exhibit *Used* for Illustrative Purposes” (emphasis added), in an effort to eliminate the internal linguistic inconsistency of the exhibit being referred to as both “admitted [into evidence]” and “not evidence,” and thereby reconcile the title with the substance of the instruction. The proposal was rejected. The committee members noted that the phrasing had long been the lexicon of trial practice and that judges and lawyers understood its meaning. The Seventh Circuit appears to disagree, noting that confusion in trial courts over such demonstrative evidence has resulted in the frustration of several of the goals of the evidence rules. See *Baugh*, 730 F.3d at 708-10.
- 121 725 ILL. COMP. STAT. 5/115-4 (West 2016); LA. CODE CIV. PROC. ANN. art 1794 (2015); NEB. REV. STAT. ANN. § 25-1107.01 (West 2016); NEV. REV. STAT. ANN. § 175.131 (West 2015); ARIZ. R. CIV. P. 39(p); ARIZ. R. CRIM. P. 18.6; CAL. R. CT. 2.1031 (“Jurors must be permitted to take written notes in all civil and criminal trials.”); HAW. R. CIV. P. 47(d) (“Except upon good cause articulated by the court, jurors shall be allowed to take notes during trial.”); HAW. R. CRIM. P. 24(e) (“Except upon good cause articulated by the court, jurors shall be allowed to take notes during trial.”); IOWA R. CIV. P. 1.926; IOWA R. CRIM. P. 2.19; MO. SUP. CT. R. 69.03 (“Upon the court's own motion or upon the request of any party, the court shall permit jurors to take notes.”); PA. R. CIV. P. 223.2(a)(1) (permitting jurors to take notes “whenever a jury trial is expected to last more than two days”); PA. R. CRIM. P. 644(A) (permitting jurors to take notes “when a jury trial is expected to last more than two days”); TENN. R. CIV. P. 43A.01; TENN. R. CRIM. P. 24.1(a)(1); WASH. SUPER. CT. CRIM. R. 6.8; WASH. SUPER. CT. CIV. R. 47(j); WYO. R. CRIM. P. 24.1; WYO. R. CIV. P. 39.1(a); *Reece v. Simpson*, 437 So. 2d 68, 68 (Ala. 1983).
- 122 LA. CODE CRIM. PROC. ANN. art. 793 (2015); N.C. GEN. STAT. ANN. § 15A-1228 (West 2015); WIS. STAT. ANN. §§ 805.13, 972.10 (West 2015); CONN. SUPER. CT. CIV. R. § 16-7; ME. R. CIV. P. 47; ME. R. CRIM. P. 24; MASS. SUPER. CT. R. 8A; MICH. R. CIV. P. 2.513(H); MISS. CIR. & CTY. CT. R. 3.14; N.H. SUPER. CT. CRIM. R. 64-A; N.H. SUPER. CT. CIV. R. 38(3)(c); N.J. CT. R. 1:8-8(c); N.Y. CT. R. § 220.10; N.D. R. CT. 6.7; OHIO R. CIV. P. 47(E); OHIO R. CRIM. P. 24(I); VT. R. CIV. P. 39(e); VA. SUP. CT. R. 123.A; *Alaska State Hous. Auth. v. Contento*, 432 P.2d 117, 122 (Alaska 1967); *People v. Martinez*, 652 P.2d 174, 177 (Colo. App. 1981); *Williamson v. State*, 235 S.E.2d 643, 645 (Ga. 1977); *Johnson v. State Highway Comm'n*, 366 P.2d 282, 285 (Kan. 1961) (“It would seem to be true that there is authority that a trial judge in his discretion may allow the jury to take notes.”); *Travis v. Commonwealth*, 457 S.W.2d 481, 481 (Ky. 1970); *Wharton v.*

- State, 734 So. 2d 985 (Miss. 1998) (permitting juror note taking, but not allowing jurors to take notes into deliberations); *State v. Hage*, 853 P.2d 1251, 1254 (Mont. 1993); *Sligar v. Bartlett*, 916 P.2d 1383, 1387 (Okla. 1996); *Cohee v. State*, 942 P.2d 211, 214 (Okla. Crim. App. 1997); *State v. Rose*, 748 A.2d 1283, 1286-87 (R.I. 2000); *State v. Trent*, 106 S.E.2d 527, 530-31 (S.C. 1959); *Price v. State*, 887 S.W.2d 949, 954 (Tex. Crim. App. 1994); *State v. Triplett*, 421 S.E.2d 511, 520 (W. Va. 1992).
- 123 S.D. CODIFIED LAWS § 15-14-20 (2016) (allowing jurors in civil trials to take their notes into deliberations); ARK. R. CRIM. P. 33.5; IDAHO CRIM. R. 24.1; IND. JURY R. 20; MD. R. CIV. P. CIR. CT. 2-521(a) (“The court may, and on request of any party shall, provide paper notepads for use by sworn jurors, including any alternates, during trial and deliberations.”); MD. R. CRIM. P. 4-326 (same); OR. R. CIV. P. 59.C(4) (“Jurors may take notes of the testimony or other proceeding on the trial and may take such notes into the jury room.”).
- 124 S.D. CODIFIED LAWS § 23A-25-7 (remaining silent on juror note taking in criminal trials); see DEL. SUPER. CT. JUROR USE STANDARD 16; FLA. STANDARD CRIM. JURY INSTRUCTION 2.1(a); MINN. R. CRIM. P. 26.03 subdiv. 13; N.M. R. CRIM. UNIFORM JURY INSTRUCTION 14-9002, 14-7011, 14-7010; *Cooney-Koss v. McCracken*, No. 10C-10-230 WCC, 2012 WL 8962833 (Del. Super. Ct. 2012) (allowing jurors to take notes); *State v. Jeffs*, No. 061500526, 2007 WL 3033648 (Utah Dist. Ct. 2007) (“During this trial I will permit you to take notes. Many [c]ourts do not permit note-taking by jurors, and a word of caution is in order.”).
- 125 730 F.3d 701, 708 (7th Cir. 2013).
- 126 As a colleague in the University of Washington Computer Science Department, Dr. David Callahan, likes to say, “Multiple anecdotes are not data.”
- 127 FED. R. EVID. 406 advisory committee’s notes to 1972 proposed rules.
- 128 See, e.g., FED. R. EVID. 402, 412, 501.
- 129 See, e.g., *id.* 412(b)(1)(C) (carving out a constitutional exception within the rape shield law for “evidence whose exclusion would violate the defendant’s constitutional rights”).
- 130 See *supra* Part II.A for a discussion regarding how law professors have attempted to define demonstrative evidence. See *supra* Part II.D for a discussion of how law professors now teach the permissibility of demonstrative evidence usage as within the discretion of the trial court.
- 131 See, e.g., Karen D. Butera, *Seeing Is Believing: A Practitioner’s Guide to the Admissibility of Demonstrative Computer Evidence*, 46 CLEV. ST. L. REV. 511 (1998); Mary Quinn Cooper, *The Use of Demonstrative Exhibits at Trial*, 34 TULSA L.J. 567 (1999); Don Howarth, Suzelle M. Smith & Mary La Cesa, *Rules Governing Demonstrative Evidence at Trial: A Practitioner’s Guide*, 20 W. ST. U. L. REV. 157 (1992); Richard J. Leighton, *The Use and Effectiveness of Demonstrative Evidence and Other Illustrative Materials in Federal Agency Proceedings*, 42 ADMIN. L. REV. 35 (1990).
- 132 See, e.g., 2 MCCORMICK ON EVIDENCE, *supra* note 76 § 214; LUBET, *supra* note 85, at 335; MERRITT & SIMMONS, *supra* note 81, at 12-13; Brain & Broderick, *supra* note 9; Michael H. Graham, *Real and Demonstrative Evidence, Experiments and Views*, 46 CRIM L. BULL. 792 (2010); Santee, *supra* note 78.
- 133 See, e.g., Brain & Broderick, *supra* note 9, at 997-98.
- 134 See *infra* Part IV.B for a discussion of [Maine Rule of Evidence 616](#).
- 135 See, e.g., Carrie Leonetti & Jeremy Bailenson, *High-Tech View: The Use of Immersive Virtual Environments in Jury Trials*, 93 MARQ. L. REV. 1073 (2010); Jennifer L. Mnookin, *Repeat Play Evidence: Jack Weinstein, “Pedagogical Devices,” Technology, and Evidence*, 64 DEPAUL L. REV. 571, 578 (2015).
- 136 See John J. Delany III, David M. Governo & Mary Noffsinger, *The Generation X and Y Factors*, D.R.I. FOR DEF., Jan. 2013, at 74, 74 (“The same techniques Madison Avenue utilizes to sell products can be adopted by trial attorneys to convey effective trial themes. A trial theme should be a multi-sensual message....”).

- 137 Fredric I. Lederer, *Courtroom Technology: For Trial Lawyers, the Future Is Now*, CRIM. JUST., Spring 2004, at 14, 15 (2004) (noting the availability of technology in federal courts and its use in a variety of cases, ultimately concluding that “[s]ooner than may seem possible, technology use at trial will be commonplace”).
- 138 “The Federal Rules of Evidence are little changed from the first proposed draft in 1969.” Josh Camson, *History of the Federal Rules of Evidence*, A.B.A. LITIG. NEWS (2010), https://apps.americanbar.org/litigation/litigationnews/trial_skills/061710-trial-evidence-federal-rules-of-evidence-history.html.
Absent from the proposed draft are Rules 412, 413, 414, and 415. These rules dealing with sex offense cases, sex assault cases, and child molestation cases weren't enacted until after the initial adoption of the Federal Rules of Evidence. Rule 412 was added in 1978, and the others were added in 1994. Also missing from the proposed draft is Rule 807, the residual exception to the hearsay rule. This is because in the proposed draft, Rule 807 was the default rule. Amendments in the form of new rules, and changes in wording and meaning have all taken place over the last 35 years.
Id. In 2010, the Judicial Conference of the United States' Committee on Rules of Practice and Procedure restyled the language of the rules to simplify and clarify their meaning. *Federal Rules of Evidence -- 2011 Amendment to Restyle the Federal Rules of Evidence*, FED. EVIDENCE REV., <http://federalevidence.com/Restyling> (last visited Apr. 1, 2016).
- 139 Comm. on Rules of Practice & Procedure of the Judicial Conference of the U.S., *A Preliminary Report on the Advisability and Feasibility of Developing Uniform Rules of Evidence for the U.S. District Courts*, 30 F.R.D. 73, 81 (1962) [hereinafter *Preliminary Report*].
- 140 1 RICHARD FRIEDMAN & JOSHUA DEAHL, FEDERAL RULES OF EVIDENCE: TEXT AND HISTORY ix (2015); STEPHEN A. SALTZBURG, MICHAEL M. MARTIN & DANIEL J. CAPRA, FEDERAL RULES OF EVIDENCE MANUAL 1 (9th ed. 2006); Mason Ladd, *A Modern Code of Evidence*, 27 IOWA L. REV. 213, 214, 218 (1942); Camson, *supra* note 138 (citing Edmund M. Morgan, *Practical Difficulties Impeding Reforms in the Law of Evidence*, 14 VAND. L. REV. 725 (1961)).
- 141 Camson, *supra* note 138.
- 142 1 FRIEDMAN & DEAHL, *supra* note 140, at ix.
- 143 *Id.*
- 144 *Preliminary Report*, *supra* note 139, at 75; 1 FRIEDMAN & DEAHL, *supra* note 140, at x.
- 145 Comm. on Rules of Practice & Procedure of the Judicial Conference of the U.S., *Preliminary Draft of Proposed Rules of Evidence for the United States District Courts and Magistrates*, 46 F.R.D. 161, 177 (1969) [hereinafter *Proposed Rules for District Courts and Magistrates*].
- 146 Camson, *supra* note 138.
- 147 *See* 1 FRIEDMAN & DEAHL, *supra* note 140, at x.
- 148 There had been several prior reporter's drafts, beginning in 1965, and several revised drafts afterward, preceding the enactment of the rules on January 2, 1975 and the discharge of the Advisory Committee. *See id.* at ix; *see also FRE Legislative History Overview Resource Page*, FED. EVIDENCE REV., <http://federalevidence.com/legislative-history-overview> (last visited Apr. 1, 2016).
- 149 *Proposed Rules for District Courts and Magistrates*, *supra* note 145, at 180.
- 150 Camson, *supra* note 138; *see also* 1 FRIEDMAN & DEAHL, *supra* note 140, at xi.
- 151 Maine Rule 616 nominally addresses the use of “illustrative aids,” although the advisers' note to the rule acknowledges that these are also referred to as “demonstrative exhibits.” ME. R. EVID. 616 advisers' note to 1976 amendment.
- 152 Rule 616 states that illustrative aids (1) shall be disclosed to opposing counsel in advance; (2) may be used by any party during trial; (3) shall remain the property of the proponent; (4) shall not go back to the jury during deliberations, absent consent of all parties and good cause; and (5) shall be preserved for appeal upon request. *Id.* 616(c)-(d).

- 153 *Id.* The remainder of the rule addresses the administrative aspects of the rule, as discussed in *supra* note 152.
- 154 Maine's evidence rules are modeled on the Federal Rules of Evidence, sharing similar (if not identical) major subject headings. *State v. Williams*, 388 A.2d 500, 506 (Me. 1978) (observing that the Maine Rules of Evidence were modeled on the Federal Rules).
- 155 This discretion is, of course, subject to the requirements of due process and other constitutional considerations.
- 156 ME. R. EVID 611(a).
- 157 *See, e.g., United States v. Irvin*, 682 F.3d 1254, 1263 (10th Cir. 2012) (“In short, resort to Rule 611(a) in no way resolves the hearsay problem that renders Exhibit 1-2 inadmissible.”).
- 158 The advisers' note to the rule acknowledges that “illustrative aids” are also referred to as “demonstrative exhibits.” ME. R. EVID. 616 advisers' note to 1976 amendment.
- 159 *Id.* 616(a) (emphasis added).
- 160 *Id.* 616 advisers' note to 1976 amendment (emphases added).
- 161 *See id.* 616(a)-(b). The advisers' note to Rule 616 states:
Paragraph (b) of the proposed rule makes clear, however, that the court retains the discretion to condition, restrict or exclude the use of any illustrative aid in order to avoid the risk of unfair prejudice, surprise, confusion or waste of time. This is similar to the discretion exercised by the court under Rule 403 in dealing with objects which are admissible in evidence. Because of the multiplicity of potential problems which may be encountered, it is deemed wiser to allow the court a measure of discretion in applying general standards rather than to establish a legal test for utilization of these media.
Id. 616 advisers' note to 1976 amendment.
- 162 *Id.* 402 (“Irrelevant evidence is not admissible.”).
- 163 *See supra* Part II.C for an in-depth discussion of the admissibility balancing test.
- 164 RICHARD H. FIELD & PETER L. MURRAY, MAINE EVIDENCE (6th ed. 2007).
- 165 Professor Murray and Professor Richard H. Field were co-consultants to the Maine Advisory Committee from its inception in 1973. *See Peter Murray*, MURRAY PLUMB & MURRAY, <http://www.mpmlaw.com/lawyer/peter-murray/> (last visited Apr. 1, 2016).
- 166 E-mail from Peter L. Murray, Visiting Professor of Law, Harvard Law Sch., to Maureen A. Howard, Assoc. Professor of Law, Univ. of Wash. Sch. of Law (Dec. 29, 2015) (on file with authors).
- 167 Susan Sturm, *Law Schools, Leadership, and Change*, 127 HARV. L. REV. F. 49, 49 (2013) (“Law schools' rhetoric celebrates lawyers' leadership role.”).
- 168 *E.g., Mission and History*, N.Y. L. SCH., http://www.nyls.edu/about_the_school/mission_and_history/ (last visited Apr. 1, 2016).
- 169 Professor Howard has proposed demonstrative evidence as a topic for an AALS Discussion Group at the January, 2017 annual meeting, and she is organizing a workshop at the University of Washington School of Law in autumn 2016.
- 170 LEONARD ET AL., *supra* note 81, at 5-6.
- 171 CAL. EVID. CODE § 140.
- 172 The BBC television series *Garrow's Law* illustrates this point in its portrayal of trials at the Old Bailey in Georgian London. In addition to being educational (it is based on real legal cases from the late eighteenth century), the drama is well scripted and boasts exceptional talent, including Rupert Graves. *See* Press Release, BBC, Award-Winning Drama *Garrow's Law* Starts Shooting Second Series in Scotland (Oct. 29, 2014), http://www.bbc.co.uk/pressoffice/pressreleases/stories/2010/07_july/07

garrow.shtml; *see also* *The Proceedings of the Old Bailey, 1674-1913*, OLD BAILEY PROCEEDINGS ONLINE, <http://www.oldbaileyonline.org/> (last visited Apr. 1, 2016).

173 Similarly, the burgeoning number of exhibits at trial provided the impetus for [Rule 1006](#), which allows, under certain circumstances, the admission of summaries to prove content of voluminous writings, recordings, or photographs that cannot be conveniently examined in court. [FED. R. EVID. 1006](#).

174 *Id.* 102.

175 *Id.*

88 TMPLR 513

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TAB 9

TAB 9A

FORDHAM

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Daniel J. Capra
Philip Reed Professor of Law

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Memorandum To: Advisory Committee on Evidence Rules
From: Daniel J. Capra, Reporter
Re: Symposium on Forensic Expert Testimony, *Daubert* and Rule 702
Date: October 1, 2017

This memorandum provides some background on the symposium that is going to be held the day after the Committee's Fall 2017 meeting. The symposium is about two topics: 1) Recent challenges to forensic expert testimony; and 2) Problems in applying *Daubert* more generally. The fundamental objective as to both topics is to provide the Committee with input on what the problems are, *and whether rulemaking is a good option for trying to solve them*. So it is not intended to be a debate about the reliability of forensic disciplines.

The format of the Symposium is to allow each participant to make a presentation of around 5-10 minutes in length. There will at various points be an opportunity for questions and comments from Committee members and general discussion among the participants. The estimate is that the first panel, on forensic evidence, will run from 8:30-11:15. The second panel, on *Daubert*, is estimated to run from 11:30-1:00.

We are very thankful to Boston College Law School and Dean Rougeau for hosting this conference and Committee meeting. And we must give an extra special thanks to Dan Coquillette for all his wonderful work in making this Symposium happen.

This memorandum first sets forth the Symposium agenda --- a list of speakers and topics. Next, it provides some background about the genesis of the Symposium. Third, it discusses briefly the possible role of rulemaking in regulating forensic expert testimony.

Attached to this memorandum is the report of the President's Council of Advisors on Science and Technology (PCAST) on forensic expert testimony. That report establishes the foundation for discussion on the forensic panel. Also attached to this memo is a bio for each Symposium participant.

Symposium Participants and Presentations

Here is a list of Symposium participants, in order of speaking, and their chosen topics:¹

Panel One: Forensic Evidence

Scientists

Dr. Eric Lander, President and founding director of the Broad Institute of MIT and Harvard; co-chair of the President's Council of Advisors on Science and Technology (PCAST).

Topic: The PCAST Report and the Viability of a New Evidence Rule on Forensic Evidence.

Dr. Itiel Dror, University College London (UCL) and Cognitive Consultants International.

Topic: "Reliability and Biasability of Expert Evidence"

Expert evidence is often based on human perception, judgment, interpretation and decision making. These often include subjective elements. Subjectivity is not necessarily a bad thing, but it can introduce two major concerns. First, reliability (in the scientific sense of consistency and reproducibility), that is, will different experts reach the same conclusions (the inter- between-expert reliability); and more basic, will the same expert, examining the same data, reach the same conclusions (the intra- within-expert reliability). The second concern is biasability, the biasing influence of irrelevant contextual information, as well as target driven bias (whereby the experts work 'backward' from the 'target' suspect to the evidence, rather than the evidence itself driving the forensic work). The Hierarchy of Expert Performance (HEP) demonstrates that expert evidence suffers from both issues of reliability and biasability, even in forensic fingerprint and mixture DNA evidence.

The problem is that forensic evidence is often misrepresented in court and is incorrectly regarded by most jurors (as well as judges, and the forensic experts themselves) as objective and impartial evidence. It is therefore important to make sure that there are minimal misconceptions about the true nature and weaknesses of forensic evidence. Furthermore, that the courts make sure that steps are taken by experts to deal with those weaknesses, such as LSU - Linear Sequential Unmasking (which stipulates that experts should only be exposed to relevant information and methods for ensuring experts work from the evidence to the suspect, not backwards). When expert evidence fails to meet these standards, it is biased and unreliable, and then it should be excluded. The fear of evidence being excluded will make a much needed positive impact on the way forensic work is carried out, resulting in evidence that is more impartial and reliable.

¹ It is possible that speaker order, topics, and even speakers will change between the time this memo is distributed and the time of the Symposium.

Dr. Karen Kafadar, Commonwealth Professor & Chair of Statistics at University of Virginia.

Topic: Distinguishing Opinion and Relevance From Demonstrably Sufficient Science

Rule 702 allows a witness to testify “in the form of an opinion or otherwise” if “the testimony is based on sufficient facts or data” and “is the product of reliable principles and methods” that have been “reliably applied.” The determination of “sufficient” (facts or data), and whether the “reliable principles and methods” relate to the scientific question at hand, involve more discrimination than the current Rule 702 may suggest. Using examples from latent fingerprint matching and trace evidence (bullet lead and glass), Dr. Kafadar will offer some criteria that scientists often consider in assessing the “trustworthiness” of evidence, to enable courts to better distinguish between “trustworthy” and “questionable” evidence. The codification of such criteria may ultimately strengthen the current Rule 702 so courts can better distinguish between demonstrably scientific sufficiency and “opinion” based on inadequate (or inappurtenant) methods.

Dr. Thomas Albright, Professor and Conrad T. Prebys Chair, Salk Institute for Biological Studies.

Topic: Why Eyewitnesses Fail

Eyewitness identifications play an important role in the investigation and prosecution of crimes, but it is well known that eyewitnesses make mistakes, often with serious consequences. In light of these concerns, the National Academy of Sciences recently convened a panel of experts to undertake a comprehensive study of current practice and use of eyewitness testimony, with an eye towards understanding why identification errors occur and what can be done to prevent them. The work of this committee led to key findings and recommendations for reform, detailed in a consensus report entitled *Identifying the Culprit: Assessing Eyewitness Identification*. In this presentation, Dr. Albright will focus on the scientific issues that emerged from this study, along with brief discussions of how these issues led to specific recommendations for additional research, best practices for law enforcement, and use of eyewitness evidence by the courts.

Susan Ballou, Program Manager for the Forensic Sciences Research Program, National Institute of Standards and Technology (NIST).

Topic: Getting The Science Right – Not The Focus of Rule of Evidence 702

- Measurement science provides basis for testimony – data driven results required to justify position.
- Science is presented with increased specificity and certainty – supporting the selected principles and methods

Judiciary

Hon. Alex Kozinski, Circuit Judge, Ninth Circuit Court of Appeals

Topic: A Comment on the Science Presentations and the Role of Rule 702.

Hon. Jed S. Rakoff, District Judge, Southern District of New York

Topic: The Problem of Experts Overstating a “Match”

Hon. K. Michael Moore, Chief Judge, Southern District of Florida

Topic: The Need for a Flexible Rule

Chief Judge Moore will be discussing the need for a flexible rule to enable trial court judges to assess the admissibility of expert opinions, especially as the legal landscape evolves. Specifically, Chief Judge Moore will address recent developments in drug prosecutions pertaining to synthetic drugs and assessing the reliability of experts in this area.

Academics

Professor Ronald J. Allen, John Henry Wigmore Professor of Law, Northwestern Pritzker School of Law

Topic: Fiddling While Rome Burns: the Story of the Federal Rules and Experts.

Worrying about the “reliability” of some discipline with little assurance that it is has been applied correctly, and less assurance that the fact finder understands it, is to fiddle while Rome burns. This point derives from Professor Allen’s papers that explored the distinction between educational and deferential models of decision making.

Professor David H. Kaye, Distinguished Professor and Weiss Family Scholar, Penn State Law School

Topic: Why Has Rule 702 Failed Forensic Science?

Eight years ago, a committee of the National Academy of Sciences concluded that “[i]n a number of forensic science disciplines, forensic science professionals have yet to establish either the validity of their approach or the accuracy of their conclusions, and the courts have been utterly ineffective in addressing this problem.” The committee also observed that “[f]ederal appellate courts have not with any consistency or clarity imposed standards ensuring the application of scientifically valid reasoning and reliable methodology in criminal cases involving *Daubert* questions.” This situation, it added, was “not surprising” given that *Daubert* is so “flexible.”

This presentation will elaborate on these conclusory remarks in four ways (time permitting). First, it will describe how ambiguities and flaws in the terminology adopted in *Daubert* combined with the opaqueness of forensic-science publications and standards have been exploited to shield some test methods from critical judicial analysis. Second, to promote an improved understanding of the necessary foundations for scientific and other expert testimony, it will sketch various meanings of the terms “validity” and “reliability” in science and statistics on the one hand, and in the rules and opinions on the admissibility of expert evidence, on the other. In this regard, it will skeptically consider the two-part definition of “validity” in a 2016 report of the President’s Council of Advisors on Science and Technology and will question the report’s effort to draw a bright line for the “validity” of pattern-matching testimony. Third, it will ask if the Federal Rules of Evidence should be revised to conform more closely to the usual scientific terminology. Finally, it will identify four ways to indicate uncertainty in forensic findings and will propose requiring statements about uncertainty when reporting outcomes of scientific tests.

Professor Jonathan J. Koehler, Beatrice Kuhn Professor of Law at Northwestern Pritzker School of Law

Topic: Rule 702(b) – “sufficient facts or data” In the Context of Source Opinion Testimony by Forensic Experts.

Professor Jane Campbell Moriarty, Carol Los Mansmann Chair in Faculty Scholarship, Duquesne University School of Law

Topic: Judicial Gatekeeping of Forensic Science Feature-comparison Evidence.

Courts generally admit feature-comparison evidence, despite little proof of scientific reliability. Why are courts generally unreceptive to challenges about the reliability of such evidence? It may be that judges (like most people) perceive feature-comparison evidence as fairly straightforward and intuitively accurate. This perception may cause courts to employ heuristic approaches to the evidence—that is, cognitive shortcuts that manage complexity—which can be influenced by common cognitive biases, such as belief perseverance and confirmation bias. By understanding that feature-comparison “matching” is a complex, multifaceted process, courts might engage in a deeper, science-based review to better analyze the shortcomings and limitations of such evidence.

Professor Erin Murphy, N.Y.U. Law School

Topic: Machine-Generated Forensic Evidence

Technology has dramatically changed the shape of evidence in criminal courts. Forensic comparisons increasingly rely on machine-generated information, such as the DNA match statistics produced by a probabilistic genotyping software program or the location data reported by a cell phone tracker. This talk probes whether rules designed

for viva voce confrontation of isolated pieces of evidence require tweaking when applied to machine-generated evidence.

Professor Stephen A. Saltzburg, Wallace and Beverley Woodbury University Professor, George Washington University Law School

Title: Requiring Appointment of a Defense Expert to Challenge the Government's Forensic Expert

Professor Saltzburg will explore the question whether a defense lawyer confronting expert testimony and/or scientific tests by the government can provide effective assistance of counsel without having access to a defense expert to examine the government's forensics. The solution to the problem may be an amendment to Rule 706, or an appointment provision added to a new rule on forensic evidence.

Special Commentary by Professor Charles Fried, Beneficial Professor of Law, Harvard Law School.

Practitioners

Ted R. Hunt, Senior Advisor on Forensics, United States Department of Justice

Topic: The PCAST Report

Mr. Hunt will speak directly to the PCAST report and offer the Department's official position on the report.

Andrew Goldsmith, Associate Deputy Attorney General and National Criminal Discovery Coordinator, United States Department of Justice

Topic: The Reliability of the Adversarial System to Inform Factfinders About Any Genuine Issues as to the Reliability or Accuracy of Forensic Testimony.

Chris Fabricant, Joseph Flom Special Counsel and Director of Strategic Ligation, The Innocence Project

Topic: The 702 Requirement of Reliable Application

Mr. Fabricant will discuss 702/*Daubert* as it relates to forensic sciences, with a particular focus on FRE 702(c)'s requirement that the testimony at issue be the product of reliable principles and methods, and how this requirement has been interpreted by courts in criminal cases.

Anne Goldbach, Forensic Services Director, Committee for Public Counsel Services, Public Defender Agency of Massachusetts.

Topic: Rule 702(d) and Forensic Experts

Ms. Goldbach will discuss Rule 702(d)'s requirement that expert testimony must demonstrate that the expert has reliably applied the principles and methods to the facts of the case, and how this requirement has been interpreted in criminal cases involving forensic experts in the First Circuit and Massachusetts courts. The Massachusetts Guide to Evidence Section 702, "Testimony by Expert Witnesses", is based on Fed. R. Evid. 702 and Proposed Mass. R. Evid. 702 and reflects Massachusetts law.

Panel Two: Rule 702 and Daubert

Judiciary

Hon. Patti B. Saris, Chief Judge, District of Massachusetts

Topic: Daubert Gatekeeping and Complex Scientific Concepts

Chief Judge Saris will address the challenges to courts in addressing *Daubert* motions where the scientific concepts are complex, like patent litigation or product liability. Her perspective is that *Daubert* does not have the liberalizing effect the Supreme Court anticipated but actually makes it harder to have expert evidence introduced. She will outline different approaches courts use to understand the science (like tutors).

Hon. Jed S. Rakoff, District Judge, Southern District of New York

Topic: How Daubert is Working in Non-Forensic Cases, and How Trial Judges Seek to Avoid Daubert Rulings.

Hon. Paul W. Grimm, District Judge, District of Maryland

Topic: Structural Impediments for Judges Applying Rule 702 in Criminal Cases

Courts encounter special difficulties in making reasoned *Daubert* rulings in criminal cases. Structural impediments include: 1) the speed at which criminal cases proceed; 2) the significantly less helpful criminal expert disclosure rules as compared with the civil rules disclosures; 3) the overlay of the plea bargaining process and pressure on defendants not to file motions; and 4) resource limits on the ability of public defenders and CJA panel counsel on hiring forensic experts. These limitations make it very difficult for trial judges to get the information they need to perform a *Daubert*/Rule 702 analysis sufficiently far in advance of trial.

Practitioners

Zachary Hafer, Assistant U.S. Attorney, District of Massachusetts

Title: Daubert from the Perspective of a Prosecutor

Mr. Hafer will address Judge Grimm's remarks and speak further about the challenges of applying *Daubert* from the prosecutor's perspective.

Carrie Karis, Kirkland & Ellis, Chicago

Title: Daubert Issues in Complex Civil Litigation

Lori Lightfoot, Mayer Brown, Chicago

Title: Making the Gatekeeping Function Meaningful

Experience shows *Daubert* motions have become perfunctory, i.e. it is assumed that such motions will be filed, and not attacking an expert through a *Daubert* motion is the exception, not the rule --- which obviously is not the intent. Experience also indicates judges are very reluctant to grant a *Daubert* motion if there is even a colorable argument in support of the expert's proffered testimony. So, the challenge is how to have the rule serve as an appropriate gatekeeper without barring legitimate testimony, given the significant role that experts can play in a trial. Another issue is whether, and to what extent, the rulings on the *Daubert* motions influence the settlement decision.

Lyle Warshauer, Warshauer Law Group, Atlanta

Topic: A Notice Requirement

Ms. Warshauer will speak on a proposal to require notice of intent to challenge an expert under Rule 702, and the ability to amend.

Thomas M. Sobol, Hagens Berman, Boston

Title: Problems in the Use of Expert Screening Tools

Mr. Sobol will address two opposing forces in the use of *Daubert* and related expert screening tools. On the one hand, the perceived or actual overuse of these tools occasionally leads to a lack of focus to cull out those portions of expert testimony that truly ARE contrary to law or the relevant professional standards. On the other hand, these tools too often provide a vehicle for judicial intervention into the jury's fact finding role. The solution is more selective attacks by counsel, as opposed to shotgun motions.

Background Information on the Recent Challenges to the Reliability of Forensic Evidence and the Idea for this Symposium

The idea for this Symposium originated in a contact between Professor Charles Fried and the Reporter --- a contact suggested by Dan Coquillette. The President's Council of Advisors on Science and Technology (PCAST) was working on a report on forensic evidence, and the question arose as to whether the Advisory Committee on Evidence Rules might have a role in implementing a set of "Best Practices" for certain kinds of forensic expert testimony. This Symposium is the first step in considering that question.

The best background for considering whether rulemaking has a role in addressing the challenges to forensic expert evidence is to get some idea of what those challenges are. The PCAST report --- *Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods* --- provides an exhaustive analysis of why certain forensic comparison methods are questionable, and how at least some of them can be strengthened so that they have validity. Particular attention is given to the problem of experts overstating their results.

The PCAST report is attached to this memorandum. It is essentially the jumping-off point for the forensics panel at this conference. It is highly recommended reading. **But again, the Symposium is not about the merits or any possible critique of the PCAST findings. Rather it is about whether there is a problem with forensic evidence that can and should be addressed by rulemaking.**

As noted above, there are two separate panels for this Symposium. The second panel is on *Daubert* more generally. The genesis for this panel came from discussions with members of the Committee on Rules of Practice and Procedure, when Judge Sessions reported about the Advisory Committee's intention to hold a Symposium on forensic evidence. These members suggested that it would be fruitful to look at other problems that had arisen since the 2000 amendment to Rule 702. Moreover, the Committee had been receiving suggestions from some academics that Rule 702 was being applied incorrectly. Accordingly, the Symposium's agenda was expanded to encompass some preliminary discussions on other problems in applying Rule 702 and *Daubert*. This inquiry is a beginning and not an end --- there is no attempt to be comprehensive on all the issues that have arisen in applying *Daubert* and Rule 702; Panel Two is a sampling.

Amending the Evidence Rules to Regulate Forensic Expert Testimony Explicitly?

The PCAST report advocates a role for the Advisory Committee on Evidence Rules in regulating forensic expert testimony. Whether that role would mean proposing an amendment to the Federal Rules of Evidence is unclear, and will be a matter explored at the Conference.

While a rule amendment might not be the answer, it should at least be helpful to the discussion to set forth what a rule amendment might look like. So, for purposes of discussion, what follows below is two possibilities for amendment, both of which incorporate the suggested standards from the PCAST report. After that, consideration is given to the role of a Committee Note, and to the possibility of a freestanding Best Practices Manual.

1. Amending Rule 702:

One possibility is to add an extra section to Rule 702 to govern forensic expert testimony:

Rule 702. Testimony by Expert Witnesses

(a) In General. A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

- (1) ~~(a)~~ the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (2) ~~(b)~~ the testimony is based on sufficient facts or data;
- (3) ~~(c)~~ the testimony is the product of reliable principles and methods; and
- (4) ~~(d)~~ the expert has reliably applied the principles and methods to the facts of the case.

(b) Forensic Expert Witnesses. If a witness is testifying on the basis of a forensic examination [conducted to determine whether an evidentiary sample is similar or identical to a source sample] [or: "testifying to a forensic identification"], the proponent must prove the following in addition to satisfying the requirements of Rule 702(a):

- (1) the witness's method is repeatable, reproducible, and accurate --- as shown by empirical studies conducted under conditions appropriate to its intended use;
- (2) the witness is capable of applying the method reliably --- as shown by adequate empirical demonstration of proficiency --- and actually did so; and
- (3) the witness accurately states, on the basis of adequate empirical evidence, the probative value of [the meaning of] any similarity or match between the evidentiary sample and the source sample.

Reporter's Comments

1. Currently Rule 702 has four subdivisions, (a)-(d). Slapping on a new subdivision (e) to cover forensic evidence would be unworkable, because the standards set forth for forensic experts definitely overlap with the existing standards. (Which perhaps means that the existing standards are sufficient to treat any concern about forensic evidence, if the courts give them meaningful application.)

2. The current subdivisions would have to be changed from letters to numbers in order to have a separate subdivision covering forensic evidence. This is not ideal, because it will upset electronic searches on a Rule that is cited and applied hundreds of times a year. That concern points toward a separate rule for forensic expert testimony, assuming one is deemed necessary.

3. There will be some difficulty in defining the scope of the enterprise, i.e., what exactly is forensic expert testimony --- hence the bracketed alternatives. The PCAST report doesn't really have a working definition that could be capsulized in rule text. Defining it as "feature comparison" (from the title of the PCAST report) is probably too narrow. Breathalyzers would probably not fall under that definition, for example, nor would autopsy reports. Perhaps it is best just to leave it alone and simply refer to "forensic expert testimony" and maybe try to expound upon that term in a Committee Note.

2. A Separate Rule on Forensic Expert Testimony

Rule 707. Testimony by Forensic Expert Witnesses. If a witness is testifying on the basis of a forensic examination [conducted to determine whether an evidentiary sample is similar or identical to a source sample], [or: "testifying to a forensic identification"] the proponent must prove the following in addition to satisfying the requirements of Rule 702:

(a) the witness's method is repeatable, reproducible, and accurate --- as shown by empirical studies conducted under conditions appropriate to its intended use;

(b) the witness is capable of applying the method reliably --- as shown by adequate empirical demonstration of proficiency --- and actually did so; and

(c) the witness accurately states, on the basis of adequate empirical evidence, the probative value of [the meaning of] any similarity or match between the evidentiary sample and the source sample.

[future subdivisions might be added to codify specific forms of comparison such as ballistics. Or they might be added in separately numbered rules.]

Reporter's Comments:

1. If it is separate, it needs to be Rule 707. It would not do to bump Rules 703-706 down a notch, as that would be unnecessarily disruptive to current understandings and settled expectations.

2. Even as a separate rule, there remains a problem with the interface of the general rule and a specific rule on forensic evidence. There is unquestionably an overlap, but a freestanding rule must nonetheless refer back to Rule 702, otherwise it could be read as dispensing with the requirements of qualification and helpfulness that Rule 702 sets forth.

3. A Committee Note

The PCAST report suggests that much of the benefit that rulemaking could provide for regulating forensic expert testimony lies in a potential Committee Note. A Committee Note might establish some “best practices” that could be much more detailed than anything that could be provided in rule text. But one possible, and disappointing, impediment to a Committee Note alternative is that there is an oft-spoken (but unwritten) rule that Committee Notes are not to go beyond the text of the Rule. No citations, no treatise-like comment. A helpful Committee Note in this area might look like the Committee Note to the 2000 amendment to Rule 702 --- the most cited (and helpful) Committee Note in the Evidence Rules. But that is the kind of Committee Note that has been frowned upon in recent years. Apparently the best Committee Note that can be written is four words long: “The rules speaks for itself.” But the text of a rule cannot possibly set forth a detailed list of best practices for all the forms of forensic evidence.

Assuming that a Committee Note can provide instruction beyond the text of an amendment, a Committee Note on forensic expert testimony could usefully treat the following topics:

- Defining “forensic.”
- Distinguishing objective and subjective processes --- and specifying that with subjective processes there must be “black box” testing and an established rate of accuracy.
- Possibly rejecting certain fields with no validity, such as bitemark comparison.
- Critiquing the requirement (or the testimony) of a “reasonable degree of [forensic] certainty.”
- Specifying that the expert must articulate the rate of error.
- Providing guidance on how a court might regulate the expert’s testimony so that it does not overstate the results --- exclusion, jury instruction, etc.

No attempt is made here to draft a Committee Note to a new rule on forensic expert testimony. As the PCAST report suggests, any guidance that the Advisory Committee can give should probably be written in consultation with scientists.

4. A Freestanding “Best Practices” Report

One possibility suggested by the PCAST report is that the Advisory Committee issue a “best practices” report on forensic evidence, independent of a rule amendment. Just recently the Advisory Committee conducted a project on a best practices manual for authenticating electronic evidence. It was determined, however, that the manual should be issued without the imprimatur

of the Advisory Committee. The concern was that the best practices manual might be given, in the public mind, the status of a rule, without going through the full rulemaking process. The manual was published, but only as the work of the individual authors. The introduction to the manual did state that the project began under the auspices of the Advisory Committee. It states that: “The Judicial Conference Advisory Committee on Evidence Rules, surveying the case law, determined that the Bench and Bar would be well-served by published guidelines that would set forth the factors that should be taken into account for authenticating each of the major new forms of digital evidence that are being offered in the courts.” The Best Practices Manual on Authenticating Digital Evidence was distributed to every federal judge, and it has in its first year of issuance been cited and relied upon in a number of opinions.

That same process might be used with respect to a Best Practices Manual for forensic expert testimony. The good news is that 1) it could be widely distributed; 2) it could be influential in that it would have an Advisory Committee pedigree, if not an imprimatur; 3) it could be detailed and voluminous --- unlike a rule and Committee Note; and 4) it could be updated and revised easily--- again unlike a rule and Committee Note. The bad news is that it would not have the force of law that a rule would have --- or at least that a rule *should* have.

TAB 9B

Judicial Conference Advisory Committee on Evidence Rules
Symposium on Forensic Expert Testimony, Rule 702, and *Daubert*

Speaker Bios

Dr. Thomas D. Albright

Dr. Thomas D. Albright is Professor and Conrad T. Prebys Chair at the Salk Institute for Biological Studies in La Jolla, California. His laboratory seeks to understand the brain bases of visual perception, memory and visually-guided behavior. Albright received a Ph.D. in psychology and neuroscience from Princeton University. He is a member of the US National Academy of Sciences, a fellow of the American Academy of Arts and Sciences, and a fellow of the American Association for the Advancement of Science.

Albright served as co-chair of the US National Academy of Sciences Committee on Scientific Approaches to Eyewitness Identification, which produced the 2014 report *Identifying the Culprit: Assessing Eyewitness Identification*. He is a member of the US National Academy of Sciences Committee on Science, Technology, and Law, and serves on the US National Commission on Forensic Science.

Professor Ronald J. Allen

Professor Allen is the John Henry Wigmore Professor of Law at Northwestern University, in Chicago, IL. He did his undergraduate work in mathematics at Marshall University and studied law at the University of Michigan. He is an internationally recognized expert in the fields of evidence, criminal procedure, and constitutional law. He has published seven books and over 100 articles in major law reviews. He has been quoted in national news outlets hundreds of times, and appears regularly on national broadcast media on matters ranging from constitutional law to criminal justice. He has worked with various groups in China to help formulate proposals for legal reform, and he was recently retained by the Tanzanian Government to assist in the reform of their evidence law. He is a member of the American Law Institute, has chaired the Evidence Section of the Association of American Law Schools, and was Vice-chair of the Rules of Procedure and Evidence Committee of the American Bar Association's Criminal Justice Section.

Susan Ballou

Susan Ballou has been involved in NIST research for the past 17 years. She is the Program Manager for the Forensic Sciences Research Program within the Special Programs

Office at the National Institute of Standards and Technology (NIST), Gaithersburg, MD. She is also the Federal Officer for the NIST Forensic Science Center of Excellence based at Iowa State University and appropriately titled: the Center for Statistics and Applications in Forensic Evidence (CSAFE). Prior to NIST, she served as the lead serologist for the Montgomery County Police Department (MCPD) Crime Laboratory in Rockville, Maryland. Several of her cases have been on the highly acclaimed TV series, *Forensic Files*. Before the MCPD she worked for the Commonwealth of Virginia Division of Consolidated Laboratory Services at their Merrifield location where she conducted analysis on evidence suspected of containing illicit drugs, body fluids and hairs and fibers. Her expertise with the Virginia system grew from her prior position as chemist in the Connecticut Office of the Chief Medical Examiner under the supervision of Chief Toxicologist, Dr. Randall Baselt. She holds a Master of Science degree in Biotechnology from The Johns Hopkins University and a Criminal Justice Undergraduate degree from the University of New Haven, West Haven, Connecticut. Qualified as an Expert in 180 court cases she has ventured beyond the crime laboratory to assist with crime scene investigations and has taught this information at The Judge Advocate General's Legal School and Center in Charlottesville, Virginia. She has served on the ASTM E30 Forensic Science committee and held the position of chair receiving the prestigious ASTM International Award of Merit with the honorary title of Fellow from Committee E30. She currently is the President-Elect of the American Academy of Forensic Sciences (AAFS) a 7000 member strong association. She holds fellow status in the AAFS and received the AAFS Criminalistics Section Mary E. Cowan Outstanding Service Award. She has authored book chapters, scientific papers and participated in documentary standards development during her membership in several forensic science related scientific working groups.

Dr. Itiel Dror

After finishing his Ph.D. in psychology at Harvard University, Itiel Dror pursued his interest in expert performance. Along with his theoretical laboratory based research he has conducted fieldwork with a variety of experts (such as with U.S. Air Force pilots, frontline police officers, forensic examiners, and medical professionals). Dr. Dror's research has demonstrated that specific components in the cognitive underpinning of expertise entail vulnerabilities. Building on these insights he developed unique ways to combat these weaknesses and improve expert performance. Dr. Dror has published over 100 articles and is on the editorial board of a variety of scientific journals (such as *Science & Justice*, *Pragmatics & Cognition*, and the *Journal of Applied Research in Memory & Cognition*). He has trained judges in a variety of countries (e.g., the United States, United Kingdom, and Taiwan), as well as many forensic experts in law enforcement agencies (e.g., the FBI, NYPD, San Francisco PD, Boston PD, & LAPD in the United States, and in other countries, such as the Netherlands, Finland, Canada, Brazil,

Singapore, Taiwan, and Australia). Dr. Dror now divides his time between academic work at University College London (UCL) and applied work at Cognitive Consultants International (CCI-HQ). More information is available at: www.cci-hq.com

M. Chris Fabricant, Esq.

As the Joseph Flom Special Counsel and Director of Strategic Litigation, M. Chris Fabricant leads the Innocence Project's Strategic Litigation Department, whose attorneys develop and execute national litigation strategies to address the leading causes of wrongful conviction, including eyewitness misidentification, the misapplication of forensic sciences and false confessions. Previously, he was a clinical law professor and the director of the Criminal Justice Clinic at the Pace Law School, where he was named a "Bellows Scholar" by the Association of American Law Schools, Clinical Legal Education Section. Mr. Fabricant has over a decade of criminal defense experience at the state and federal, trial and appellate levels with The Bronx Defenders and Appellate Advocates.

Anne Goldbach, Esq.

Anne Goldbach is the Forensic Services Director for the Committee for Public Counsel Services. After graduating from Boston College Law School, Ms. Goldbach joined the Massachusetts Defenders Committee as a public defender in 1978. After the creation of CPCS, she joined the staff of Roxbury Defenders in January, 1985, where she became a supervising attorney; she was selected as Attorney in Charge of the Boston office in November, 1987. After running the Boston Trials Unit for 10 years, she became CPCS' Director of Forensic Service in November of 1997. In that capacity, she acts as a resource on forensics issues and experts for public defenders and bar advocates across the state.

Throughout her career, Ms. Goldbach has been actively involved in continuing legal education and criminal defense training programs, and has lectured on numerous forensics topics. She has been a frequent lecturer, writer and moderator for Mass. Continuing Legal Education, CPCS conferences and training programs, as well as other CLE training programs. She has served on the Board of Directors of the Mass. Council for Public Justice. She serves on the board of the Thomas J. Drinan Memorial Fellowship Fund at Suffolk University Law School. She is a non-voting member of the state's Forensic Sciences Advisory Board. She is a past president and current board member of MACDL, Massachusetts Association of Criminal Defense Lawyers.

In May 2000, Ms. Goldbach received the Hon. David S. Nelson Public Interest Law Award from the Boston College Law School Alumni Association. In May 2013, Ms. Goldbach received the Edward J. Duggan Public Defender Award from CPCS for zealous advocacy and outstanding legal services. In April 2014, Boston College Law School's Women's Law Center

gave her the annual “Woman of the Year” award and in June, 2016 she received the Clarence Gideon Award from the Massachusetts Association of Criminal Defense Lawyers.

Andrew D. Goldsmith, Esq.

Mr. Goldsmith was appointed in January 2010 as the Justice Department’s first National Criminal Discovery Coordinator. In this role, he oversees a wide range of national initiatives designed to provide federal prosecutors and other law enforcement officials with training and resources relating to criminal discovery, including electronic discovery. As Associate Deputy Attorney General, he is also responsible for topics concerning professional responsibility, recording of custodial statements, legal education, and environmental matters. Mr. Goldsmith previously served as the First Assistant Chief of DOJ’s Environmental Crimes Section, and successfully prosecuted the *Atlantic States* case in New Jersey during 2005-06, an eight-month trial that is the longest environmental crimes-related prosecution in U.S. history. His articles on criminal e-discovery have appeared in the *United States Attorneys’ Bulletin*. In 2016, Mr. Goldsmith earned his fourth Attorney General’s Award when he received the Claudia J. Flynn Award for Professional Responsibility in recognition of his efforts to ensure that department attorneys carry out their duties in accordance with the rules of professional conduct.

He previously served as an Assistant U.S. Attorney for the District of New Jersey. Mr. Goldsmith started out his legal career as an Assistant District Attorney in the Manhattan D.A.’s Office during the high crime era of the 1980’s. Mr. Goldsmith graduated *cum laude* in 1983 from Albany Law School, which presented to him in 2008 its Distinguished Alumni in Government Award. He received his B.S. degree in biology in 1979 from Cornell University, which selected him in 2014 for inclusion on its list of Distinguished Classmates.

Hon. Paul W. Grimm

Paul W. Grimm serves as a District Judge for the United States District Court for the District of Maryland. He sits at the Greenbelt, Maryland courthouse located near Washington D.C. He was appointed to the Court on December 10, 2012. Previously, he was appointed to the Court as a Magistrate Judge in February 1997 and served as Chief Magistrate Judge from 2006 through 2012. In September, 2009 the Chief Justice of the United States appointed Judge Grimm to serve as a member of the Advisory Committee for the Federal Rules of Civil Procedure where he served until September, 2015 as the chair of the Discovery Subcommittee. Judge Grimm is a member of the American Law Institute, and has been an adjunct professor of law at the University of Baltimore School of Law and the University of Maryland School of Law, where he taught courses on evidence and discovery, and he has written extensively on both topics. Judge Grimm received his BA from the University of California, Davis, his JD from the University of New Mexico, and his LLM from Duke University.

Zachary R. Hafer, Esq.

Zachary R. Hafer has extensive experience leading the investigation and prosecution of high-profile federal criminal cases, including capital murder, public corruption, RICO, mail and wire fraud, money laundering, and drug trafficking. Most recently, he was the lead prosecutor in the four-month capital retrial *United States v. Gary Lee Sampson*. During the five-week defense case in *Sampson*, the prosecution cross-examined nearly 50 witnesses, including 12 experts in the fields of neuroimaging, neuropsychology, neuropsychiatry, forensic pathology, and statistical analysis of life expectancy. Mr. Hafer has briefed and argued several appeals in the First Circuit and has twice received the Attorney General's Award: (1) in 2010 for leading a years-long international drug trafficking and money laundering investigation in which U.S. and Colombian law enforcement arrested 78 drug traffickers and seized approximately \$10 million in cash and thousands of kilograms of cocaine; and (2) in 2014 for his work as a trial AUSA in *United States v. James "Whitey" Bulger*. Mr. Hafer began his career as a law clerk for U.S. District Judge Shirley W. Kram in the Southern District of New York and was also in private practice at Debevoise & Plimpton in the firm's New York office prior to joining the Department of Justice in 2007. Mr. Hafer received a full-tuition, merit scholarship to the University of Virginia School of Law, from which he graduated in 2003. He graduated *cum laude* from Dartmouth College in 1999, with High Honors in English.

Ted R. Hunt, Esq.

Ted R. Hunt is Senior Advisor to the Department of Justice on Forensic Science. Prior to his appointment by the Attorney General, he was Chief Trial Attorney at the Jackson County Prosecutor's Office in Kansas City, Missouri, where he served for 25 years as a state level prosecutor and managed a large staff of trial attorneys. During that time, Mr. Hunt prosecuted more than 100 felony jury trials, the vast majority of which involved the presentation of forensic evidence.

Mr. Hunt is a former member of the National Commission on Forensic Science, the ASCLD/LAB Board of Directors, the Missouri Crime Lab Review Commission, the OSAC Legal Resource Committee, and the NDAA DNA Advisory Group. He also served as a member of the International Association of Chiefs of Police (IACP) Forensic Science Committee, and was an Invited Guest on the Scientific Working Group on DNA Analysis Methods (SWGDM) Next Generation Sequencing Working Group.

Dr. Karen Kafadar

Karen Kafadar is the Commonwealth Professor & Chair of Statistics at University of Virginia. She received her Ph.D. in Statistics from Princeton University, and previously held positions at NBS (now NIST), Hewlett Packard's RF/Microwave R&D Division, National Cancer Institute, University of Colorado-Denver, and Indiana University. Her research focuses on robust methods, exploratory data analysis, characterization of uncertainty in the physical, chemical, biological, and engineering sciences, and methodology for the analysis of screening trials. She served on the National Academy of Sciences' Committees that led to "Weighing Bullet Lead Evidence" (2004), "Strengthening the Forensic Science System in the United States: A Path Forward" (2009), "Review of the Scientific Approaches Used During the FBI's Investigation of the Anthrax Letters" (2011), "Evaluating Testing, Costs, and Benefits of Advanced Spectroscopic Portals" (2011), and "Identifying the Culprit: Assessing Eyewitness Reliability" (2014). She also served on the governing boards for ASA, IMS, ISI, and NISS, is a member of OSAC's FSSB, and chairs OSAC's Statistical Task Group and ASA's Advisory Committee on Statistics in Forensic Science. She is past Editor of JASA Reviews (1996-98) and Technometrics (1999-2001), is currently Health & Life Sciences Editor for The Annals of Applied Statistics, and is an Elected Fellow of the ASA, AAAS, and ISI.

Hariklia Karis, Esq.

Hariklia Karis is a litigation partner in the Chicago office of Kirkland & Ellis LLP with extensive jury and bench trial, arbitration and appellate experience in commercial litigation, product liability, insurance coverage and construction law disputes in state and federal courts throughout the country. Hariklia's successful defense of General Motors Corporation was chosen as one of the top defense wins by The National Law Journal. Hariklia was recently recognized as one of the Lead Female Trial Lawyers in large exposure civil litigation. Hariklia also serves as an Adjunct Professor at Northwestern University School of Law, where she teaches "Trial Advocacy."

Hariklia has managed and tried massive litigation arising from disasters resulting in clients facing substantial reputational and financial exposure. She served as lead trial counsel for BP for the litigation arising from Deepwater Horizon oil spill in the Gulf of Mexico as well as several regulatory agency and government investigations that resulted in numerous nationally televised and highly publicized trials. She also serves as trial counsel for General Motors LLC in state and federal cases arising out of the company's voluntary recalls related to ignition switches and other safety issues. She is a graduate of DePaul University College of Law.

Professor David H. Kaye

David H. Kaye is Distinguished Professor and Weiss Family Scholar at Penn State Law, a member of the graduate faculty of Penn State University's Program in Forensic Science, and Regents' Professor Emeritus of Law and of Life Sciences at Arizona State University. He has

held research or teaching positions at Cornell University, Duke University, the University of Chicago, the University of Virginia, and universities in England and China.

Professor Kaye was an Assistant Watergate Special Prosecutor, an associate in a private law firm in Portland, Oregon, and a law clerk to Judge Alfred T. Goodwin, U.S. Court of Appeals for the Ninth Circuit. He holds degrees in law (Yale University), astronomy (Harvard University), and physics (MIT).

Professor Kaye's research and teaching focuses on the law of evidence, statistics, criminal procedure, forensic science, and forensic genetics. His publications include textbooks on statistics and on scientific evidence; treatises on evidence and scientific evidence; and over 170 articles and letters in journals of law, philosophy, psychology, medicine, genetics, forensic science, and statistics. He is the author or a coauthor of *The Double Helix and the Law of Evidence* (Harvard University Press), the *Handbook of Forensic Statistics* (forthcoming), *McCormick on Evidence*, *The New Wigmore, Modern Scientific Evidence* (first four editions), and the Federal Judicial Center's *Reference Manual on Scientific Evidence*.

Professor Kaye has served on committees of the American Statistical Association, the National Academy of Sciences, the National Commission on Forensic Science, the National Commission on the Future of DNA Evidence, the National Institutes of Health, the National Institute of Standards and Technology, the Organization of Scientific Area Committees for Forensic Science (OSAC), and the International Conferences on Forensic Inference and Statistics. He is a recipient of the OSAC Distinguished Service Award.

Professor Jonathan J. Koehler

Jonathan “Jay” Koehler is the Beatrice Kuhn Professor of Law at Northwestern Pritzker School of Law. He has a B.A. from Pomona College (Philosophy), and an M.A. and PhD in Behavioral Sciences from the University of Chicago. His research focuses on issues in forensic science, decision theory, and juror decision making. He is an editor of *Law, Probability & Risk*, and a consulting editor of *Judgment and Decision Making*. Prior to joining Northwestern in 2010, he was a University Distinguished Teaching Professor at The University of Texas at Austin (business school), and a professor at Arizona State University (business and law schools).

Hon. Alex Kozinski

Judge Kozinski was appointed United States Circuit Judge for the Ninth Circuit on November 7, 1985, and served as Chief Judge from 2007 to 2014. He graduated from UCLA, receiving an A.B. degree in 1972, and from UCLA Law School, receiving a J.D. degree in 1975.

Prior to his appointment to the appellate bench, Judge Kozinski served as Chief Judge of the United States Claims Court, 1982-85; Special Counsel, Merit Systems Protection Board,

1981-82; Assistant Counsel, Office of Counsel to the President, 1981; Deputy Legal Counsel, Officer of President-Elect Reagan, 1980-81; Attorney, Covington & Burling, 1979-81; Attorney, Forry Golbert Singer & Gelles, 1977-79; Law Clerk to Chief Justice Warren E. Burger, 1976-77; and Law Clerk to Circuit Judge Anthony M. Kennedy, 1975-76.

Dr. Eric Lander

Eric Lander is president and founding director of the Broad Institute of MIT and Harvard. A geneticist, molecular biologist, and mathematician, he has played a pioneering role in the reading, understanding, and biomedical application of the human genome. He was a principal leader of the Human Genome Project.

With his colleagues, Lander has developed and applied powerful methods for discovering the molecular basis of rare genetic diseases, common diseases, and cancer. He has done pioneering work on human genetic variation; human population history; genome evolution; regulatory elements; long non-coding RNAs; three-dimensional folding of the human genome; and genome-wide screens to discover the genes essential for biological processes using CRISPR-based genome editing.

Lander is professor of biology at MIT and professor of systems biology at Harvard Medical School. From 2009 to 2017, he served as co-chair of the President's Council of Advisors on Science and Technology for President Barack Obama.

Lander's honors and awards include the MacArthur Fellowship, the Breakthrough Prize in Life Sciences, the Albany Prize in Medicine and Biological Research, the Gairdner Foundation International Award of Canada, the Dan David Prize of Israel, the Mendel Medal of the Genetics Society in the UK, the City of Medicine Award, the Abelson Prize from the AAAS, the Award for Public Understanding of Science and Technology from the AAAS, the Woodrow Wilson Prize for Public Service from Princeton University, and the James R. Killian Jr. Faculty Achievement Award from MIT.

Lori Lightfoot, Esq.

Lori Lightfoot is a partner at Mayer Brown in Chicago. She is a trial attorney, investigator and risk manager. Both as a civil litigator and as Assistant US Attorney in the Criminal Division of the US Attorney's Office, Northern District of Illinois (1996–2002), Lori has tried over 20 federal and state jury and bench trials. She has also argued cases in state and federal appellate courts, and she has successfully conducted numerous internal investigations. From 2002 to 2005, Lori worked with the City of Chicago as Interim First Deputy Procurement Officer, Department of Procurement Services (DPS); General Counsel and Chief of Staff, Office of Emergency Management and Communications (OEMC); and Chief Administrator, Office of

Professional Standards (OPS) of the Chicago Police Department. At OPS, Lori managed a 100-person office of civilian investigators charged with investigating police-involved shootings, allegations of excessive force and other misconduct alleged against Chicago police officers. She also coordinated joint investigations with state and federal criminal authorities and facilitated the implementation of new compliance and risk-management systems that included redesign of the disciplinary processes for sworn and civilian members, creation of a management intervention program for problem employees, and targeted tracking of litigation costs associated with complaints against department members. Lori has been associated with Mayer Brown since 2005 and, previously, between 1990 and 1996. Earlier, she served as Law Clerk to The Honorable Charles Levin, Michigan Supreme Court (1989–1990). She is a graduate of the University of Michigan and the University of Chicago Law School.

Hon. K. Michael Moore

Chief Judge K. Michael Moore received his B.A. in Economics from Florida State University in 1972 and his J.D. from Fordham Law School in 1976. Judge Moore served as an Assistant United States Attorney for the Southern District of Florida from 1976 to 1981. From 1982 to 1986 he served as Assistant United States Attorney for the Northern District of Florida and held supervisory, Chief Assistant and Court-appointed United States Attorney positions.

In 1987, he received the first of three presidential appointments requiring United States Senate confirmation when President Ronald Reagan appointed Judge Moore to be United States Attorney for the Northern District of Florida. While United States Attorney, Judge Moore was also selected to serve on the Attorney General’s Advisory Committee. As United States Attorney, Judge Moore was responsible for overseeing civil and criminal litigation on behalf of the United States for the northern third of the State of Florida.

In 1989, President George Bush appointed Judge Moore to be Director of the United States Marshals Service. In receiving this appointment, Judge Moore became the first presidentially appointed Director of our nation’s oldest law enforcement agency. As Director, Judge Moore oversaw the Marshals Service’s judicial security, witness security, fugitive apprehension, asset forfeiture, and prisoner transportation programs.

In 1992, President Bush appointed Judge Moore to the United States District Court for the Southern District of Florida. In July 2014, Judge Moore became the Chief Judge of the Southern District of Florida.

Professor Jane Campbell Moriarty

Jane Campbell Moriarty is the Carol Los Mansmann Chair in Faculty Scholarship and Professor at Duquesne University School of Law in Pittsburgh, PA. She teaches Evidence,

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Professor Erin E. Murphy

Erin Murphy’s research focuses on technology and forensic evidence in the criminal justice system. She is a nationally recognized expert in forensic DNA typing, and her work has been cited by multiple times by the Supreme Court. Her book, *Inside the Cell: The Dark Side of Forensic DNA* (Nation Books 2015), addresses the scientific, legal, and ethical challenges of forensic DNA typing. Murphy is also co-editor of the *Modern Scientific Evidence* treatise, presently serves as the Associate Reporter for the American Law Institute’s project to revise Article 213 of the Model Penal Code, and was elected to the ALI in 2013. She has shared her scholarly work with popular audiences through publications in *Scientific American*, *The New York Times*, *USA Today*, *Slate*, the *San Francisco Chronicle*, and the *Huffington Post*, and has offered commentary for numerous media outlets, including NPR, CNN, MSNBC, and NBC Nightly News.

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Hon. Jed S. Rakoff

Jed S. Rakoff has served since March 1996 as a U.S. District Judge for the Southern District of New York. He also frequently sits by designation on the 2nd and 9th Circuit Courts of Appeals. Judge Rakoff holds the position of Adjunct Professor at Columbia Law School -- where he teaches courses in white collar crime, science and the law, class actions, and the interplay of

civil and criminal law –and Adjunct Lecturer at Berkeley Law School. He has written over 145 published articles, 635 speeches, 1500 judicial opinions, and co-authored 5 books. He is also a regular contributor to the New York Review of Books.

Judge Rakoff holds a B.A. degree from Swarthmore College (1964), an M.Phil. degree from Oxford University (Balliol, 1966), and a J.D. degree from Harvard Law School (1969). Following law school, he clerked for the late Hon. Abraham L. Freedman, US Court of Appeals, Third Circuit, and was then an associate at the Debevoise law firm. From 1973-80, he served as an Assistant United States Attorney Office in the Southern District of New York, the last two years as Chief of Business & Securities Fraud Prosecutions. Thereafter, before going on the bench, he was a partner at two large law firms in New York, specializing in white collar criminal defense and civil RICO.

Judge Rakoff served on the National Commission on Forensic Science and as co-chair of the National Academy of Science’s Committee on Eyewitness Identification. He served on the New York City Bar Association’s Executive Committee and was chair of the Association’s Honors and Criminal Law Committees. He was Chair of the Second Circuit’s Bankruptcy Committee, and Chair of the Southern District of New York’s Grievance Committee and Criminal Justice Advisory Board. He served on Swarthmore College’s Board of Managers, on the Governance Board of the MacArthur Foundation’s Project on Law and Neuroscience, and on the Committee on the Development of the Third Edition of the Manual on Scientific Evidence. He has assisted the U.S. Government in the training of foreign judges in Azerbaijan, Bahrain, Bosnia, Dubai, Iraq, Kuwait, Morocco, Saudi Arabia, and Turkey. He is a Member of the American Academy of Arts and Sciences and of the American Law Institute. He is a Judicial Fellow of the American College of Trial Lawyers and the American Board of Criminal Lawyers. He was a Director of the New York Council of Defense Lawyers.

Professor Stephen A. Saltzburg

Stephen A. Saltzburg has taught at The George Washington University Law School since 1990. In January 2004, he was named the Wallace and Beverley Woodbury University Professor. From 1990-2004, he was the Howrey Professor of Trial Advocacy, Litigation and Professional Responsibility. Professor Saltzburg founded and became the Director of the Masters Program in Litigation and Dispute Resolution in 1996. Before moving to George Washington, Professor Saltzburg taught at the University of Virginia School of Law from 1972 to 1990. He was named the first Chairholder of the Class of 1962 Endowed Chair. He co-founded the University of Virginia Law School Trial Advocacy Institute in 1981, which is now the National Trial Advocacy College at the University of Virginia Law School. He continues to be the Director of the College.

Professor Saltzburg served as Reporter for and then as a member of the Advisory Committee on the Federal Rules of Criminal Procedure and as a member of the Advisory Committee on the Federal Rules of Evidence. He was the Reporter for the Civil Justice Reform Act Committee for the District of Columbia District Court and then became Chair of that

Committee. From 1987 to 1988, Professor Saltzburg served as Associate Independent Counsel in the Iran-Contra investigation. In 1988 and 1989, Professor Saltzburg served as Deputy Assistant Attorney General in the Criminal Division of the Department of Justice, and in 1989 and 1990 was the Attorney General's ex officio representative on the United States Sentencing Commission. In June, 1994, the Secretary of the Treasury appointed Professor Saltzburg as the Director of the Tax Refund Fraud Task Force, a position he held until January, 1995. Professor Saltzburg is the author of numerous books and articles on criminal law and procedure, evidence, litigation and trial advocacy. He is a member of the ABA House of Delegates from the Criminal Justice Section (which he served as Chair) and the ABA Task Force on Cyber Security.

Hon. Patti B. Saris

United States District Judge Patti B. Saris became Chief Judge of the United States District Court for the District of Massachusetts on January 1, 2013. She was Chair of the United States Sentencing Commission in Washington, DC from January, 2011 to January, 2017. She is a graduate of Radcliffe College '73 (Magna Cum Laude, Phi Beta Kappa) and Harvard Law School '76 (Cum Laude). After graduating from law school, she clerked for the Supreme Judicial Court, and then went into private practice. When Senator Edward M. Kennedy became chairman of the Senate Judiciary Committee, she moved to Washington D.C. and worked as staff counsel. She later became an Assistant United States Attorney, and eventually chief of the Civil Division. In 1986, Judge Saris became a United States Magistrate Judge, and in 1989, she was appointed as an Associate Justice of the Massachusetts Superior Court. In 1994, she was appointed to the United States District Court.

Thomas Sobol, Esq.

Thomas M. Sobol has been the Managing Partner of Hagens Berman Sobol Shapiro's Boston office for fifteen years. He has almost thirty-five years of experience in complex civil litigation. Mr. Sobol currently leads drug pricing litigation seeking to recover overcharges for individuals, health plans, state governments, and others that pay for brand name and generic drugs. Mr. Sobol has been a lead negotiator in court-approved settlements with pharmaceutical companies totaling well over one billion dollars. He currently is court-appointed lead or co-lead counsel in *In re Solodyn Antitrust Litigation*, *In re Celebrex Antitrust Litigation*, *In re Lipitor Antitrust Litigation*, *In re Effexor Antitrust Litigation*, and other matters. Mr. Sobol was appointed lead counsel in *In re New England Compounding Pharmacy Litigation Multidistrict Litigation* MDL, representing more than 700 victims who contracted fungal meningitis or suffered other serious health problems caused by contaminated products produced by NECC. To date, related settlements exceed \$200 million. Mr. Sobol was also co-lead trial counsel in the Neurontin MDL, where the jury returned a \$142 million racketeering (RICO) verdict against Pfizer.

In the 1990s, Mr. Sobol served as Special Assistant Attorney General for the Commonwealth of Massachusetts and the states of New Hampshire and Rhode Island, and served as one of the private counsel for Massachusetts and New Hampshire in ground-breaking litigation against the tobacco industry. These cases led to significant injunctive relief and to monetary recovery in excess of \$10 billion to those states. Mr. Sobol practiced at the Boston firm of Brown Rudnick for about seventeen years, where he was a litigation partner for a decade.

Mr. Sobol served as judicial clerk for then-Chief Justice Allan M. Hale of the Massachusetts Appeals Court from 1983 to 1984. Mr. Sobol is a member of the bar of Massachusetts and has been appointed *pro hac vice* in numerous federal courts across the country. He graduated *summa cum laude* from Clark University in Worcester, Massachusetts in 1980 and was elected to Phi Beta Kappa in 1979. Mr. Sobol graduated *cum laude* from Boston University School of Law in 1983.

Lyle Warshauer, Esq.

Lyle Griffin Warshauer is a founding member of the Warshauer Law Group P.C., a civil justice firm in Atlanta, Georgia with a practice limited to the representation of catastrophically injured individuals and their families in cases throughout the Southeast. Lyle's practice focuses on the areas of medical malpractice, products liability, railroad litigation and appellate work. She received her undergraduate degree from Furman University and her law degree, *magna cum laude*, from Cumberland School of Law, Samford University. Lyle is very active in the Plaintiff's Bar. Currently she is Secretary of the Georgia Trial Lawyers Association; is a member of GTLA's Legislative Affairs Committee; and is a frequent writer on the Amicus Committee. In addition to her contributions to GTLA, Lyle is very involved in the American Association for Justice. She is an active participant in a number of litigation groups, including the Medical Negligence Information Group, Birth Trauma Litigation Group and Appellate Litigation Group. Lyle is a regular speaker and has published on a variety of litigation-related issues in Georgia as well as nationally. She can be reached at lgw@warlawgroup.com.

TAB 9C



REPORT TO THE PRESIDENT
Forensic Science in Criminal Courts:
Ensuring Scientific Validity
of Feature-Comparison Methods

Executive Office of the President
President's Council of Advisors on
Science and Technology

September 2016





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President's Council of Advisors on
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About the President's Council of Advisors on Science and Technology

The President's Council of Advisors on Science and Technology (PCAST) is an advisory group of the Nation's leading scientists and engineers, appointed by the President to augment the science and technology advice available to him from inside the White House and from cabinet departments and other Federal agencies. PCAST is consulted about, and often makes policy recommendations concerning, the full range of issues where understandings from the domains of science, technology, and innovation bear potentially on the policy choices before the President.

For more information about PCAST, see www.whitehouse.gov/ostp/pcast.



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PCAST consulted with a panel of legal experts to provide guidance on factual matters relating to the interaction between science and the law. PCAST also sought guidance and input from two statisticians, who have expertise in this domain. Senior advisors were given an opportunity to review early drafts to ensure factual accuracy. PCAST expresses its gratitude to those listed here. Their willingness to engage with PCAST on specific points does not imply endorsement of the views expressed in this report. Responsibility for the opinions, findings, and recommendations in this report and for any errors of fact or interpretation rests solely with PCAST.

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EXECUTIVE OFFICE OF THE PRESIDENT
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President Barack Obama
The White House
Washington, DC 20502

Dear Mr. President:

We are pleased to send you this PCAST report on *Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods*. The study that led to the report was a response to your question to PCAST, in 2015, as to whether there are additional steps on the scientific side, beyond those already taken by the Administration in the aftermath of the highly critical 2009 National Research Council report on the state of the forensic sciences, that could help ensure the validity of forensic evidence used in the Nation's legal system.


PCAST concluded that there are two important gaps: (1) the need for clarity about the scientific standards for the validity and reliability of forensic methods and (2) the need to evaluate specific forensic methods to determine whether they have been scientifically established to be valid and reliable. Our study aimed to help close these gaps for a number of forensic "feature-comparison" methods—specifically, methods for comparing DNA samples, bitemarks, latent fingerprints, firearm marks, footwear, and hair.

Our study, which included an extensive literature review, was also informed by inputs from forensic researchers at the Federal Bureau of Investigation Laboratory and the National Institute of Standards and Technology as well as from many other forensic scientists and practitioners, judges, prosecutors, defense attorneys, academic researchers, criminal-justice-reform advocates, and representatives of Federal agencies. The findings and recommendations conveyed in this report, of course, are PCAST's alone.

Our report reviews previous studies relating to forensic practice and Federal actions currently underway to strengthen forensic science; discusses the role of scientific validity within the legal system; explains the criteria by which the scientific validity of feature-comparison forensic methods can be judged; and applies those criteria to the selected feature-comparison methods.

Based on our findings concerning the “foundational validity” of the indicated methods as well as their “validity as applied” in practice in the courts, we offer recommendations on actions that could be taken by the National Institute of Standards and Technology, the Office of Science and Technology Policy, and the Federal Bureau of Investigation Laboratory to strengthen the scientific underpinnings of the forensic disciplines, as well as on actions that could be taken by the Attorney General and the judiciary to promote the more rigorous use of these disciplines in the courtroom.

Sincerely,

Handwritten signature of John P. Holdren in black ink.

John P. Holdren
Co-Chair

Handwritten signature of Eric S. Lander in black ink.

Eric S. Lander
Co-Chair



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Executive Summary

“Forensic science” has been defined as the application of scientific or technical practices to the recognition, collection, analysis, and interpretation of evidence for criminal and civil law or regulatory issues. Developments over the past two decades—including the exoneration of defendants who had been wrongfully convicted based in part on forensic-science evidence, a variety of studies of the scientific underpinnings of the forensic disciplines, reviews of expert testimony based on forensic findings, and scandals in state crime laboratories—have called increasing attention to the question of the validity and reliability of some important forms of forensic evidence and of testimony based upon them.¹

A multi-year, Congressionally-mandated study of this issue released in 2009 by the National Research Council² (*Strengthening Forensic Science in the United States: A Path Forward*) was particularly critical of weaknesses in the scientific underpinnings of a number of the forensic disciplines routinely used in the criminal justice system. That report led to extensive discussion, inside and outside the Federal government, of a path forward, and ultimately to the establishment of two groups: the National Commission on Forensic Science hosted by the Department of Justice and the Organization for Scientific Area Committees for Forensic Science at the National Institute of Standards and Technology.

When President Obama asked the President’s Council of Advisors on Science and Technology (PCAST) in 2015 to consider whether there are additional steps that could usefully be taken on the scientific side to strengthen the forensic-science disciplines and ensure the validity of forensic evidence used in the Nation’s legal system, PCAST concluded that there are two important gaps: (1) the need for clarity about the scientific standards for the validity and reliability of forensic methods and (2) the need to evaluate specific forensic methods to determine whether they have been scientifically established to be valid and reliable.

This report aims to help close these gaps for the case of forensic “feature-comparison” methods—that is, methods that attempt to determine whether an evidentiary sample (e.g., from a crime scene) is or is not associated with a potential “source” sample (e.g., from a suspect), based on the presence of similar patterns, impressions, or other features in the sample and the source. Examples of such methods include the analysis of DNA, hair, latent fingerprints, firearms and spent ammunition, toolmarks and bitemarks, shoeprints and tire tracks, and handwriting.

¹ Citations to literature in support of points made in the Executive Summary are found in the main body of the report.

² The National Research Council is the study-conducting arm of the National Academies of Science, Engineering, and Medicine.

In the course of its study, PCAST compiled and reviewed a set of more than 2,000 papers from various sources—including bibliographies prepared by the Subcommittee on Forensic Science of the National Science and Technology Council and the relevant Working Groups organized by the National Institute of Standards and Technology (NIST); submissions in response to PCAST’s request for information from the forensic-science stakeholder community; and PCAST’s own literature searches.

To educate itself on factual matters relating to the interaction between science and the law, PCAST consulted with a panel of Senior Advisors comprising nine current or former Federal judges, a former U.S. Solicitor General, a former state Supreme Court justice, two law-school deans, and two distinguished statisticians who have expertise in this domain. Additional input was obtained from the Federal Bureau of Investigation (FBI) Laboratory and individual scientists at NIST, as well as from many other forensic scientists and practitioners, judges, prosecutors, defense attorneys, academic researchers, criminal-justice-reform advocates, and representatives of Federal agencies. The willingness of these groups and individuals to engage with PCAST does not imply endorsement of the views expressed in the report. The findings and recommendations conveyed in this report are the responsibility of PCAST alone.

The resulting report—summarized here without the extensive technical elaborations and dense citations in the main text that follows—begins with a review of previous studies relating to forensic practice and Federal actions currently underway to strengthen forensic science; discusses the role of scientific validity within the legal system; explains the criteria by which the scientific validity of forensic feature-comparison methods can be judged; applies those criteria to six such methods in detail and reviews an evaluation by others of a seventh method; and offers recommendations on Federal actions that could be taken to strengthen forensic science and promote its more rigorous use in the courtroom.

We believe the findings and recommendations will be of use both to the judiciary and to those working to strengthen forensic science.

Previous Work on Scientific Validity of Forensic-Science Disciplines

Ironically, it was the emergence and maturation of a *new* forensic science, DNA analysis, in the 1990s that first led to serious questioning of the validity of many of the traditional forensic disciplines. When DNA evidence was first introduced in the courts, beginning in the late 1980s, it was initially hailed as infallible; but the methods used in early cases turned out to be unreliable: testing labs lacked validated and consistently-applied procedures for defining DNA patterns from samples, for declaring whether two patterns matched within a given tolerance, and for determining the probability of such matches arising by chance in the population. When, as a result, DNA evidence was declared inadmissible in a 1989 case in New York, scientists engaged in DNA analysis in both forensic and non-forensic applications came together to promote the development of reliable principles and methods that have enabled DNA analysis of single-source samples to become the “gold standard” of forensic science for both investigation and prosecution.

Once DNA analysis became a reliable methodology, the power of the technology—including its ability to analyze small samples and to distinguish between individuals—made it possible not only to identify and convict true perpetrators but also to clear wrongly accused suspects before prosecution and to re-examine a number of past

convictions. Reviews by the National Institute of Justice and others have found that DNA testing during the course of investigations has cleared tens of thousands of suspects and that DNA-based re-examination of past cases has led so far to the exonerations of 342 defendants. Independent reviews of these cases have revealed that many relied in part on faulty expert testimony from forensic scientists who had told juries incorrectly that similar features in a pair of samples taken from a suspect and from a crime scene (hair, bullets, bitemarks, tire or shoe treads, or other items) implicated defendants in a crime with a high degree of certainty.

The questions that DNA analysis had raised about the scientific validity of traditional forensic disciplines and testimony based on them led, naturally, to increased efforts to test empirically the reliability of the methods that those disciplines employed. Relevant studies that followed included:

- a 2002 FBI re-examination of microscopic hair comparisons the agency's scientists had performed in criminal cases, in which DNA testing revealed that 11 percent of hair samples found to match microscopically actually came from different individuals;
- a 2004 National Research Council report, commissioned by the FBI, on bullet-lead evidence, which found that there was insufficient research and data to support drawing a definitive connection between two bullets based on compositional similarity of the lead they contain;
- a 2005 report of an international committee established by the FBI to review the use of latent fingerprint evidence in the case of a terrorist bombing in Spain, in which the committee found that "confirmation bias"—the inclination to confirm a suspicion based on other grounds—contributed to a misidentification and improper detention; and
- studies reported in 2009 and 2010 on bitemark evidence, which found that current procedures for comparing bitemarks are unable to reliably exclude or include a suspect as a potential biter.

Beyond these kinds of shortfalls with respect to "reliable methods" in forensic feature-comparison disciplines, reviews have found that expert witnesses have often overstated the probative value of their evidence, going far beyond what the relevant science can justify. Examiners have sometimes testified, for example, that their conclusions are "100 percent certain;" or have "zero," "essentially zero," or "negligible," error rate. As many reviews—including the highly regarded 2009 National Research Council study—have noted, however, such statements are not scientifically defensible: all laboratory tests and feature-comparison analyses have non-zero error rates.

Starting in 2012, the Department of Justice (DOJ) and FBI undertook an unprecedented review of testimony in more than 3,000 criminal cases involving microscopic hair analysis. Their initial results, released in 2015, showed that FBI examiners had provided scientifically invalid testimony in more than 95 percent of cases where that testimony was used to inculcate a defendant at trial. In March 2016, the Department of Justice announced its intention to expand to additional forensic-science methods its review of forensic testimony by the FBI Laboratory in closed criminal cases. This review will help assess the extent to which similar testimonial overstatement has occurred in other forensic disciplines.

The 2009 National Research Council report was the most comprehensive review to date of the forensic sciences in this country. The report made clear that some types of problems, irregularities, and miscarriages of justice cannot simply be attributed to a handful of rogue analysts or underperforming laboratories, but are systemic and pervasive—the result of factors including a high degree of fragmentation (including disparate and often inadequate training and educational requirements, resources, and capacities of laboratories), a lack of standardization of the disciplines, insufficient high-quality research and education, and a dearth of peer-reviewed studies establishing the scientific basis and validity of many routinely used forensic methods.

The 2009 report found that shortcomings in the forensic sciences were especially prevalent among the feature-comparison disciplines, many of which, the report said, lacked well-defined systems for determining error rates and had not done studies to establish the uniqueness or relative rarity or commonality of the particular marks or features examined. In addition, proficiency testing, where it had been conducted, showed instances of poor performance by specific examiners. In short, the report concluded that “much forensic evidence—including, for example, bitemarks and firearm and toolmark identifications—is introduced in criminal trials without any meaningful scientific validation, determination of error rates, or reliability testing to explain the limits of the discipline.”

The Legal Context

Historically, forensic science has been used primarily in two phases of the criminal-justice process: (1) *investigation*, which seeks to identify the likely perpetrator of a crime, and (2) *prosecution*, which seeks to prove the guilt of a defendant beyond a reasonable doubt. In recent years, forensic science—particularly DNA analysis—has also come into wide use for challenging past convictions.

Importantly, the investigative and prosecutorial phases involve different standards for the use of forensic science and other investigative tools. In investigations, insights and information may come from both well-established science and exploratory approaches. In the prosecution phase, forensic science must satisfy a higher standard. Specifically, the Federal Rules of Evidence (Rule 702(c,d)) require that expert testimony be based, among other things, on “reliable principles and methods” that have been “reliably applied” to the facts of the case. And, the Supreme Court has stated that judges must determine “whether the reasoning or methodology underlying the testimony is scientifically valid.”

This is where legal standards and scientific standards intersect. Judges’ decisions about the admissibility of scientific evidence rest solely on *legal* standards; they are exclusively the province of the courts and PCAST does not opine on them. But, these decisions require making determinations about scientific validity. It is the proper province of the scientific community to provide guidance concerning scientific standards for scientific validity, and it is on those *scientific* standards that PCAST focuses here.

We distinguish here between two types of scientific validity: foundational validity and validity as applied.

- (1) *Foundational validity* for a forensic-science method requires that it be shown, based on empirical studies, to be *repeatable*, *reproducible*, and *accurate*, at levels that have been measured and are appropriate to the intended application. Foundational validity, then, means that a method can, *in*

principle, be reliable. It is the *scientific* concept we mean to correspond to the *legal* requirement, in Rule 702(c), of “reliable principles and methods.”

- (2) *Validity as applied* means that the method has been reliably applied *in practice*. It is the *scientific* concept we mean to correspond to the *legal* requirement, in Rule 702(d), that an expert “has reliably applied the principles and methods to the facts of the case.”

Scientific Criteria for Validity and Reliability of Forensic Feature-Comparison Methods

Chapter 4 of the main report provides a detailed description of the scientific criteria for establishing the foundationally validity and reliability of forensic feature-comparison methods, including both objective and subjective methods.³

Subjective methods require particularly careful scrutiny because their heavy reliance on human judgment means they are especially vulnerable to human error, inconsistency across examiners, and cognitive bias. In the forensic feature-comparison disciplines, cognitive bias includes the phenomena that, in certain settings, humans may tend naturally to focus on similarities between samples and discount differences and may also be influenced by extraneous information and external pressures about a case.

The essential points of foundational validity include the following:

- (1) Foundational validity requires that a method has been subjected to *empirical* testing by multiple groups, under conditions appropriate to its intended use. The studies must (a) demonstrate that the method is repeatable and reproducible and (b) provide valid estimates of the method’s accuracy (that is, how often the method reaches an incorrect conclusion) that indicate the method is appropriate to the intended application.
- (2) For objective methods, the foundational validity of the method can be established by studying measuring the accuracy, reproducibility, and consistency of each of its individual steps.
- (3) For subjective feature-comparison methods, because the individual steps are not objectively specified, the method must be evaluated as if it were a “black box” in the examiner’s head. Evaluations of validity and reliability must therefore be based on “black-box studies,” in which many examiners render

³ Feature-comparison methods may be classified as either objective or subjective. By objective feature-comparison methods, we mean methods consisting of procedures that are each defined with enough standardized and quantifiable detail that they can be performed by either an automated system or human examiners exercising little or no judgment. By subjective methods, we mean methods including key procedures that involve significant human judgment—for example, about which features to select within a pattern or how to determine whether the features are sufficiently similar to be called a probable match.

decisions about many independent tests (typically, involving “questioned” samples and one or more “known” samples) and the error rates are determined.

- (4) Without appropriate estimates of accuracy, an examiner’s statement that two samples are similar—or even indistinguishable—is scientifically meaningless: it has no probative value, and considerable potential for prejudicial impact.

Once a method has been established as foundationally valid based on appropriate empirical studies, claims about the method’s accuracy and the probative value of proposed identifications, in order to be valid, must be based on such empirical studies. *Statements claiming or implying greater certainty than demonstrated by empirical evidence are scientifically invalid.* Forensic examiners should therefore report findings of a proposed identification with clarity and restraint, explaining in each case that the fact that two samples satisfy a method’s criteria for a proposed match does not mean that the samples are from the same source. For example, if the false positive rate of a method has been found to be 1 in 50, experts should not imply that the method is able to produce results at a higher accuracy.

To meet the scientific criteria for validity as applied, two tests must be met:

- (1) The forensic examiner must have been shown to be *capable* of reliably applying the method and must *actually* have done so. Demonstrating that an expert is *capable* of reliably applying the method is crucial—especially for subjective methods, in which human judgment plays a central role. From a scientific standpoint, the ability to apply a method reliably can be demonstrated only through empirical testing that measures how often the expert reaches the correct answer. Determining whether an examiner has *actually* reliably applied the method requires that the procedures actually used in the case, the results obtained, and the laboratory notes be made available for scientific review by others.
- (2) The practitioner’s assertions about the probative value of proposed identifications must be scientifically valid. The expert should report the overall false-positive rate and sensitivity for the method established in the studies of foundational validity and should demonstrate that the samples used in the foundational studies are relevant to the facts of the case. Where applicable, the expert should report the probative value of the observed match based on the specific features observed in the case. And the expert should not make claims or implications that go beyond the empirical evidence and the applications of valid statistical principles to that evidence.

We note, finally, that neither experience, nor judgment, nor good professional practices (such as certification programs and accreditation programs, standardized protocols, proficiency testing, and codes of ethics) can substitute for actual evidence of foundational validity and reliability. The frequency with which a particular pattern or set of features will be observed in different samples, which is an essential element in drawing conclusions, is not a matter of “judgment.” It is an empirical matter for which only empirical evidence is relevant. Similarly, an expert’s expression of *confidence* based on personal professional experience or expressions of *consensus* among practitioners about the accuracy of their field is no substitute for error rates estimated from relevant studies. For forensic feature-comparison methods, establishing foundational validity based on empirical evidence is thus a *sine qua non*. Nothing can substitute for it.

Evaluation of Scientific Validity for Seven Feature-Comparison Methods

For this study, PCAST applied the criteria discussed above to six forensic feature-comparison methods: (1) DNA analysis of single-source and simple-mixture samples, (2) DNA analysis of complex-mixture samples, (3) bitemarks, (4) latent fingerprints, (5) firearms identification, and (6) footwear analysis. For each method, Chapter 5 of the main report provides a brief overview of the methodology, discusses background information and studies, provides an evaluation on scientific validity, and offers suggestions on a path forward. For a seventh feature-comparison method—hair analysis—we do not undertake a full evaluation of scientific validity, but review supporting material recently released for comment by the Department of Justice. This Executive Summary provides only a brief summary of some key findings concerning these seven methods.

DNA Analysis of Single-Source and Simple-Mixture Samples

The vast majority of DNA analysis currently involves samples from a single individual or from a simple mixture of two individuals (such as from a rape kit). DNA analysis in such cases is an objective method in which the laboratory protocols are precisely defined and the interpretation involves little or no human judgment.

To evaluate the foundational validity of an objective method, one can examine the reliability of each of the individual steps rather than having to rely on black-box studies. In the case of DNA analysis of single-source and simple-mixture samples, each of the steps has been found to be “repeatable, reproducible, and accurate” with levels that have been measured and are “appropriate to the intended application” (to quote the requirement for foundational validity as stated above), and the probability of a match arising by chance in the population by chance can be estimated directly from appropriate genetic databases and is extremely low.

Concerning validity as applied, DNA analysis, like all forensic analyses, is not infallible in practice. Errors can and do occur. Although the probability that two samples from different sources have the same DNA profile is tiny, the chance of human error is much higher. Such errors may stem from sample mix-ups, contamination, incorrect interpretation, and errors in reporting.

To minimize human error, the FBI requires, as a condition of participating in the National DNA Index System, that laboratories follow the FBI’s Quality Assurance Standards. These require that the examiner run a series of controls to check for possible contamination and ensure that the PCR process ran properly. The Standards also requires semi-annual proficiency testing of all analysts who perform DNA testing for criminal cases. We find, though, that there is a need to improve proficiency testing.

DNA Analysis of Complex-Mixture Samples

Some investigations involve DNA analysis of complex mixtures of biological samples from multiple unknown individuals in unknown proportions. (Such samples arise, for example, from mixed blood stains, and increasingly from multiple individual touching a surface.) The fundamental difference between DNA analysis of complex-mixture samples and DNA analysis of single-source and simple mixtures lies not in the laboratory processing, but in the interpretation of the resulting DNA profile.

DNA analysis of complex mixtures is inherently difficult. Such samples result in a DNA profile that superimposes multiple individual DNA profiles. Interpreting a mixed profile is different from and more challenging than interpreting a simple profile, for many reasons. It is often impossible to tell with certainty which genetic variants are present in the mixture or how many separate individuals contributed to the mixture, let alone accurately to infer the DNA profile of each one.

The questions an examiner must ask, then, are, “Could a suspect’s DNA profile be present *within* the mixture profile? And, what is the probability that such an observation might occur by chance?” Because many different DNA profiles may fit within some mixture profiles, the probability that a suspect “cannot be excluded” as a possible contributor to complex mixture may be *much higher* (in some cases, millions of times higher) than the probabilities encountered for single-source DNA profiles.

Initial approaches to the interpretation of complex mixtures relied on subjective judgment by examiners and simplified calculations. This approach is problematic because subjective choices made by examiners can dramatically affect the answer and the estimated probative value—introducing significant risk of both analytical error and confirmation bias. PCAST finds that subjective analysis of complex DNA mixtures has not been established to be foundationally valid and is not a reliable methodology.

Given the problems with subjective interpretation of complex DNA mixtures, a number of groups launched efforts to develop computer programs that apply various algorithms to interpret complex mixtures in an objective manner. The programs clearly represent a major improvement over purely subjective interpretation. They still require scientific scrutiny, however, to determine (1) whether the methods are scientifically valid, including defining the limitations on their reliability (that is, the circumstances in which they may yield unreliable results) and (2) whether the software correctly implements the methods.

PCAST finds that, at present, studies have established the foundational validity of some objective methods under limited circumstances (specifically, a three-person mixture in which the minor contributor constitutes at least 20 percent of the intact DNA in the mixture) but that substantially more evidence is needed to establish foundational validity across broader settings.

Bitemark Analysis

Bitemark analysis typically involves examining marks left on a victim or an object at the crime scene and comparing those marks with dental impressions taken from a suspect. Bitemark comparison is based on the premises that (1) dental characteristics, particularly the arrangement of the front teeth, differ substantially among people and (2) skin (or some other marked surface at a crime scene) can reliably capture these distinctive features. Bitemark analysis begins with an examiner deciding whether an injury is a mark caused by human teeth. If so, the examiner creates photographs or impressions of the questioned bitemark and of the suspect’s dentition; compares the bitemark and the dentition; and determines if the dentition (1) cannot be excluded as having made the bitemark, (2) can be excluded as having made the bitemark, or (3) is inconclusive.

Bitemark analysis is a subjective method. Current protocols do not provide well-defined standards concerning the identification of features or the degree of similarity that must be identified to support a reliable conclusion

that the mark could have or could not have been created by the dentition in question. Conclusions about all these matters are left to the examiner's judgment.

As noted above, the foundational validity of a subjective method can only be established through multiple, appropriately designed black-box studies. Few studies—and no appropriate black-box studies—have been undertaken to study the ability of examiners to accurately identify the source of a bite mark. In these studies, the observed false-positive rates were very high—typically above ten percent and sometimes far above. Moreover, several of these studies employed inappropriate closed-set designs that are likely to *underestimate* the true false positive rate. Indeed, available scientific evidence strongly suggests that examiners not only cannot identify the source of bite mark with reasonable accuracy, they cannot even consistently agree on whether an injury *is* a human bite mark. For these reasons, PCAST finds that bite mark analysis is far from meeting the scientific standards for foundational validity.

We note that some practitioners have expressed concern that the exclusion of bite marks in court could hamper efforts to convict defendants in some cases. If so, the correct solution, from a scientific perspective, would not be to admit expert testimony based on invalid and unreliable methods but rather to attempt to develop scientifically valid methods. But, PCAST considers the prospects of developing bite mark analysis into a scientifically valid method to be low. We advise against devoting significant resources to such efforts.

Latent Fingerprint Analysis

Latent fingerprint analysis typically involves comparing (1) a “latent print” (a complete or partial friction-ridge impression from an unknown subject) that has been developed or observed on an item with (2) one or more “known prints” (fingerprints deliberately collected under a controlled setting from known subjects; also referred to as “ten prints”), to assess whether the two may have originated from the same source. It may also involve comparing latent prints with one another. An examiner might be called upon to (1) compare a latent print to the fingerprints of a known suspect who has been identified by other means (“identified suspect”) or (2) search a large database of fingerprints to identify a suspect (“database search”).

Latent fingerprint analysis was first proposed for use in criminal identification in the 1800s and has been used for more than a century. The method was long hailed as infallible, despite the lack of appropriate empirical studies to assess its error rate. In response to criticism on this point in the 2009 National Research Council report, those working in the field of latent fingerprint analysis recognized the need to perform empirical studies to assess foundational validity and measure reliability and have made progress in doing so. Much credit goes to the FBI Laboratory, which has led the way in performing black-box studies to assess validity and estimate reliability, as well as so-called “white-box” studies to understand the factors that affect examiners' decisions. PCAST applauds the FBI Laboratory's efforts. There are also nascent efforts to begin to move the field from a purely subjective method toward an objective method—although there is still a considerable way to go to achieve this important goal.

PCAST finds that latent fingerprint analysis is a foundationally valid subjective methodology—albeit with a false positive rate that is substantial and is likely to be higher than expected by many jurors based on longstanding claims about the infallibility of fingerprint analysis. The false-positive rate could be as high as 1 error in 306

cases based on the FBI study and 1 error in 18 cases based on a study by another crime laboratory.⁴ In reporting results of latent-fingerprint examination, it is important to state the false-positive rates based on properly designed validation studies

With respect to validity as applied, there are, however, a number of open issues, notably:

- (1) *Confirmation bias.* Work by FBI scientists has shown that examiners often alter the features that they initially mark in a latent print based on comparison with an apparently matching exemplar. Such circular reasoning introduces a serious risk of confirmation bias. Examiners should be required to complete and document their analysis of a latent fingerprint *before* looking at any known fingerprint and should separately document any additional data used during their comparison and evaluation.
- (2) *Contextual bias.* Work by academic scholars has shown that examiners' judgments can be influenced by irrelevant information about the facts of a case. Efforts should be made to ensure that examiners are not exposed to potentially biasing information.
- (3) *Proficiency testing.* Proficiency testing is essential for assessing an examiner's capability and performance in making accurate judgments. As discussed elsewhere in this report, proficiency testing needs to be improved by making it more rigorous, by incorporating it systematically within the flow of casework, and by disclosing tests for evaluation by the scientific community.

Scientific validity as applied, then, requires that an expert: (1) has undergone relevant proficiency testing to test his or her accuracy and reports the results of the proficiency testing; (2) discloses whether he or she documented the features in the latent print in writing before comparing it to the known print; (3) provides a written analysis explaining the selection and comparison of the features; (4) discloses whether, when performing the examination, he or she was aware of any other facts of the case that might influence the conclusion; and (5) verifies that the latent print in the case at hand is similar in quality to the range of latent prints considered in the foundational studies.

Concerning the path forward, continuing efforts are needed to improve the state of latent-print analysis—and these efforts will pay clear dividends for the criminal justice system. One direction is to continue to improve latent print analysis as a subjective method. There is a need for additional empirical studies to estimate error rates for latent prints of varying quality and completeness, using well-defined measures.

A second—and more important—direction is to convert latent-print analysis from a subjective method to an objective method. The past decade has seen extraordinary advances in automated image analysis based on machine learning and other approaches—leading to dramatic improvements in such tasks as face recognition and the interpretation of medical images. This progress holds promise of making fully automated latent

⁴ The main report discusses the appropriate calculations of error rates, including best estimates (which are 1 in 604 and 1 in 24, respectively, for the two studies cited) and confidence bounds (stated above). It also discusses issues with specific studies, including problems with studies that may contribute to differences in rates (as in the two studies cited).

fingerprint analysis possible in the near future. There have already been initial steps in this direction, both in academia and industry.

The most important resource to propel the development of objective methods would be the creation of huge databases containing known prints, each with many corresponding "simulated" latent prints of varying qualities and completeness, which would be made available to scientifically-trained researchers in academia and industry. The simulated latent prints could be created by "morphing" the known prints, based on transformations derived from collections of actual latent print-record print pairs.

Firearms Analysis

In firearms analysis, examiners attempt to determine whether ammunition is or is not associated with a specific firearm based on "toolmarks" produced by guns on the ammunition. The discipline is based on the idea that the toolmarks produced by different firearms vary substantially enough (owing to variations in manufacture and use) to allow components of fired cartridges to be identified with particular firearms. For example, examiners may compare "questioned" cartridge cases from a gun recovered from a crime scene to test fires from a suspect gun. Examination begins with an evaluation of class characteristics of the bullets and casings, which are features that are permanent and predetermined before manufacture. If these class characteristics are different, an elimination conclusion is rendered. If the class characteristics are similar, the examination proceeds to identify and compare individual characteristics, such as the markings that arise during firing from a particular gun.

Firearms analysts have long stated that their discipline has near-perfect accuracy; however, the 2009 National Research Council study of all the forensic disciplines concluded about firearms analysis that "sufficient studies have not been done to understand the reliability and reproducibility of the methods"—that is, that the foundational validity of the field had not been established.

Our own extensive review of the relevant literature prior to 2009 is consistent with the National Research Council's conclusion. We find that many of these earlier studies were inappropriately designed to assess foundational validity and estimate reliability. Indeed, there is internal evidence among the studies themselves indicating that many previous studies underestimated the false positive rate by at least 100-fold.

We identified one notable advance since 2009: the completion of the first appropriately designed black-box study of firearms. The work was commissioned and funded by the Defense Department's Forensic Science Center and was conducted by an independent testing lab (the Ames Laboratory, a Department of Energy national laboratory affiliated with Iowa State University). The false-positive rate was estimated at 1 in 66, with a confidence bound indicating that the rate could be as high as 1 in 46. While the study is available as a report to the Federal government, it has not been published in a scientific journal.

The scientific criteria for foundational validity require that there be more than one such study, to demonstrate reproducibility, and that studies should ideally be published in the peer-reviewed scientific literature. Accordingly, the current evidence still falls short of the scientific criteria for foundational validity.

Whether firearms analysis should be deemed admissible based on current evidence is a decision that belongs to the courts. If firearms analysis *is* allowed in court, the scientific criteria for validity as applied should be understood to require clearly reporting the error rates seen in the one appropriately designed black-box study. Claims of higher accuracy are not scientifically justified at present.

Validity as applied would also require, from a scientific standpoint, that an expert testifying on firearms analysis (1) has undergone rigorous proficiency testing on a large number of test problems to measure his or her accuracy and discloses the results of the proficiency testing and (2) discloses whether, when performing the examination, he or she was aware of any other facts of the case that might influence the conclusion.

Concerning the path forward, with firearms analysis as with latent fingerprint analysis, two directions are available for strengthening the scientific underpinnings of the discipline. The first is to improve firearms analysis as a subjective method, which would require additional black-box studies to assess scientific validity and reliability and more rigorous proficiency testing of examiners, using problems that are appropriately challenging and publically disclosed after the test.

The second direction, as with latent print analysis, is to convert firearms analysis from a subjective method to an objective method. This would involve developing and testing image-analysis algorithms for comparing the similarity of tool marks on bullets. There have already been encouraging steps toward this goal. The same tremendous progress over the past decade in image analysis that gives us reason to expect early achievement of fully automated latent print analysis is cause for optimism that fully automated firearms analysis may be possible in the near future. Efforts in this direction are currently hampered, however, by lack of access to realistically large and complex databases that can be used to continue development of these methods and validate initial proposals.

NIST, in coordination with the FBI Laboratory, should play a leadership role in propelling the needed transformation by creating and disseminating appropriate large datasets. These agencies should also provide grants and contracts to support work—and systematic processes to evaluate methods. In particular, we believe that “prize” competitions—based on large, publicly available collections of images—could attract significant interest from academia and industry.

Footwear Analysis

Footwear analysis is a process that typically involves comparing a known object, such as a shoe, to a complete or partial impression found at a crime scene, to assess whether the object is likely to be the source of the impression. The process proceeds in a stepwise manner, beginning with a comparison of “class characteristics” (such as design, physical size, and general wear) and then moving to “identifying characteristics” or “randomly acquired characteristics” (such as marks on a shoe caused by cuts, nicks, and gouges in the course of use).

PCAST has not addressed the question of whether examiners can reliably determine class characteristics—for example, whether a particular shoeprint was made by a size 12 shoe of a particular make. While it is important that studies be undertaken to estimate the reliability of footwear analysis aimed at determining class characteristics, PCAST chose not to focus on this aspect of footwear examination because it is not *inherently* a

challenging measurement problem to determine class characteristics, to estimate the frequency of shoes having a particular class characteristic, or (for jurors) to understand the nature of the features in question.

Instead, PCAST focused on the reliability of conclusions that an impression was likely to have come from a *specific* piece of footwear. This is a much harder problem because it requires knowing how accurately examiners can identify specific features shared between a shoe and an impression, how often they fail to identify features that would distinguish them, and what probative value should be ascribed to a particular “randomly acquired characteristic.”

PCAST finds that there are no appropriate black-box studies to support the foundational validity of footwear analysis to associate shoeprints with particular shoes based on specific identifying marks. Such associations are unsupported by any meaningful evidence or estimates of their accuracy and thus are not scientifically valid.

Hair Analysis

Forensic hair analysis is a process by which examiners compare microscopic features of hair to determine whether a particular person may be the source of a questioned hair. As PCAST was completing this report, the Department of Justice released for comment proposed guidelines concerning testimony on hair examination, including a supporting document addressing the validity and reliability of the discipline. While PCAST has not performed the sort of in-depth evaluation for the hair-analysis discipline that we did for other feature-comparison disciplines discussed here, we undertook a review of the DOJ’s supporting document in order to shed further light on the standards for conducting a scientific evaluation of a forensic feature-comparison discipline.

The document states that “microscopic hair comparison has been demonstrated to be a valid and reliable scientific methodology,” while noting that “microscopic hair comparisons alone cannot lead to personal identification and it is crucial that this limitation be conveyed both in the written report and in testimony.” In support of its conclusion that hair examination is valid and reliable, however, the document discusses only a handful of studies of human hair comparison, from the 1970s and 1980s. The supporting documents fail to note that subsequent studies found substantial flaws in the methodology and results of the key papers. PCAST’s own review of the cited papers finds that these studies do not establish the foundational validity and reliability of hair analysis.

The DOJ’s supporting document also cites a 2002 FBI study that used mitochondrial DNA analysis to re-examine 170 samples from previous cases in which the FBI Laboratory had performed microscopic hair examination. But that study’s key conclusion does *not* support the conclusion that hair analysis is a “valid and reliable scientific methodology.” The FBI authors actually found that, in 9 of 80 cases (11 percent) the FBI Laboratory had found the hairs to be microscopically indistinguishable, the DNA analysis showed that the hairs actually came from *different* individuals.

These shortcomings illustrate both the difficulty of these scientific evaluations and the reason they are best carried out by a science-based agency that is not itself involved in the application of forensic science within the

legal system. They also underscore why it is important that *quantitative* information about the reliability of methods (e.g., the frequency of false associations in hair analysis) be stated clearly in expert testimony.

Closing Observations on the Seven Evaluations

Although we have undertaken detailed evaluations of only six specific methods—and a review of an evaluation by others of a seventh—our approach could be applied to assess the foundational validity and validity as applied of any forensic feature-comparison method, including traditional forensic disciplines as well as methods yet to be developed (such as microbiome analysis or internet-browsing patterns).

We note, finally, that the evaluation of scientific validity is necessarily based on the available scientific evidence at a point in time. Some methods that have not been shown to be foundationally valid may ultimately be found to be reliable, although significant modifications to the methods may be required to achieve this goal. Other methods may not be salvageable, as was the case with compositional bullet lead analysis and is likely the case with bitemarks. Still others may be subsumed by different but more reliable methods, much as DNA analysis has replaced other methods in some instances.

Recommendations to NIST and OSTP

Recommendation 1. Assessment of foundational validity

It is important that scientific evaluations of the foundational validity be conducted, on an ongoing basis, to assess the foundational validity of current and newly developed forensic feature-comparison technologies. To ensure the scientific judgments are unbiased and independent, such evaluations should be conducted by an agency which has no stake in the outcome.

(A) The National Institute of Standards and Technology (NIST) should perform such evaluations and should issue an annual public report evaluating the foundational validity of key forensic feature-comparison methods.

(i) The evaluations should (a) assess whether each method reviewed has been adequately defined and whether its foundational validity has been adequately established and its level of accuracy estimated based on empirical evidence; (b) be based on studies published in the scientific literature by the laboratories and agencies in the U.S. and in other countries, as well as any work conducted by NIST's own staff and grantees; (c) as a minimum, produce assessments along the lines of those in this report, updated as appropriate; and (d) be conducted under the auspices of NIST, with additional expertise as deemed necessary from experts outside forensic science.

(ii) NIST should establish an advisory committee of experimental and statistical scientists from outside the forensic science community to provide advice concerning the evaluations and to ensure that they are rigorous and independent. The members of the advisory committee should be selected jointly by NIST and the Office of Science and Technology Policy.

(iii) NIST should prioritize forensic feature-comparison methods that are most in need of evaluation, including those currently in use and in late-stage development, based on input from the Department of Justice and the scientific community.

(iv) Where NIST assesses that a method has been established as foundationally valid, it should (a) indicate appropriate estimates of error rates based on foundational studies and (b) identify any issues relevant to validity as applied.

(v) Where NIST assesses that a method has not been established as foundationally valid, it should suggest what steps, if any, could be taken to establish the method's validity.

(vi) NIST should not have regulatory responsibilities with respect to forensic science.

(vii) NIST should encourage one or more leading scientific journals outside the forensic community to develop mechanisms to promote the rigorous peer review and publication of papers addressing the foundational validity of forensic feature-comparison methods.

(B) The President should request and Congress should provide increased appropriations to NIST of (a) \$4 million to support the evaluation activities described above and (b) \$10 million to support increased research activities in forensic science, including on complex DNA mixtures, latent fingerprints, voice/speaker recognition, and face/iris biometrics.

Recommendation 2. Development of objective methods for DNA analysis of complex mixture samples, latent fingerprint analysis, and firearms analysis

The National Institute of Standards and Technology (NIST) should take a leadership role in transforming three important feature-comparison methods that are currently subjective—latent fingerprint analysis, firearms analysis, and, under some circumstances, DNA analysis of complex mixtures—into objective methods.

(A) NIST should coordinate these efforts with the Federal Bureau of Investigation Laboratory, the Defense Forensic Science Center, the National Institute of Justice, and other relevant agencies.

(B) These efforts should include (i) the creation and dissemination of large datasets and test materials to support the development and testing of methods by both companies and academic researchers, (ii) grant and contract support, and (iii) sponsoring processes, such as prize competitions, to evaluate methods.

Recommendation 3. Improving the Organization for Scientific Area Committees Process

(A) The National Institute of Standards and Technology (NIST) should improve the Organization for Scientific Area Committees (OSAC), which was established to develop and promulgate standards and guidelines to improve best practices in the forensic science community.

(i) NIST should establish a Metrology Resource Committee, composed of metrologists, statisticians, and other scientists from outside the forensic-science community. A representative of the Metrology Resource

Committee should serve on each of the Scientific Area Committees (SACs) to provide direct guidance on the application of measurement and statistical principles to the developing documentary standards.

(ii) The Metrology Resource Committee, as a whole, should review and publically approve or disapprove all standards proposed by the Scientific Area Committees before they are transmitted to the Forensic Science Standards Board.

(B) NIST should ensure that the content of OSAC-registered standards and guidelines are freely available to any party that may desire them in connection with a legal case or for evaluation and research, including by aligning with the policies related to reasonable availability of standards in the Office of Management and Budget Circular A-119, Federal Participation in the Development and Use of Voluntary Consensus Standards and Conformity Assessment Activities and the Office of the Federal Register, IBR (incorporation by reference) Handbook.

Recommendation 4. R&D strategy for forensic science

(A) The Office of Science and Technology Policy (OSTP) should coordinate the creation of a national forensic science research and development strategy. The strategy should address plans and funding needs for:

(i) major expansion and strengthening of the academic research community working on forensic sciences, including substantially increased funding for both research and training;

(ii) studies of foundational validity of forensic feature-comparison methods;

(iii) improvement of current forensic methods, including converting subjective methods into objective methods, and development of new forensic methods;

(iv) development of forensic feature databases, with adequate privacy protections, that can be used in research;

(v) bridging the gap between research scientists and forensic practitioners; and

(vi) oversight and regular review of forensic-science research.

(B) In preparing the strategy, OSTP should seek input from appropriate Federal agencies, including especially the Department of Justice, Department of Defense, National Science Foundation, and National Institute of Standards and Technology; Federal and State forensic science practitioners; forensic science and non-forensic science researchers; and other stakeholders.

Recommendation to the FBI Laboratory

Recommendation 5. Expanded forensic-science agenda at the Federal Bureau of Investigation Laboratory

(A) *Research programs.* The Federal Bureau of Investigation (FBI) Laboratory should undertake a vigorous research program to improve forensic science, building on its recent important work on latent fingerprint analysis. The program should include:

- (i) conducting studies on the reliability of feature-comparison methods, in conjunction with independent third parties without a stake in the outcome;
- (ii) developing new approaches to improve reliability of feature-comparison methods;
- (iii) expanding collaborative programs with external scientists; and
- (iv) ensuring that external scientists have appropriate access to datasets and sample collections, so that they can carry out independent studies.

(B) *Black-box studies.* Drawing on its expertise in forensic science research, the FBI Laboratory should assist in the design and execution of additional empirical ‘black-box’ studies for subjective methods, including for latent fingerprint analysis and firearms analysis. These studies should be conducted by or in conjunction with independent third parties with no stake in the outcome.

(C) *Development of objective methods.* The FBI Laboratory should work with the National Institute of Standards and Technology to transform three important feature-comparison methods that are currently subjective—latent fingerprint analysis, firearm analysis, and, under some circumstances, DNA analysis of complex mixtures—into objective methods. These efforts should include (i) the creation and dissemination of large datasets to support the development and testing of methods by both companies and academic researchers, (ii) grant and contract support, and (iii) sponsoring prize competitions to evaluate methods.

(D) *Proficiency testing.* The FBI Laboratory, should promote increased rigor in proficiency testing by (i) within the next four years, instituting routine blind proficiency testing within the flow of casework in its own laboratory, (ii) assisting other Federal, State, and local laboratories in doing so as well, and (iii) encouraging routine access to and evaluation of the tests used in commercial proficiency testing.

(E) *Latent fingerprint analysis.* The FBI Laboratory should vigorously promote the adoption, by all laboratories that perform latent fingerprint analysis, of rules requiring a “linear Analysis, Comparison, Evaluation” process—whereby examiners must complete and document their analysis of a latent fingerprint *before* looking at any known fingerprint and should separately document any additional data used during comparison and evaluation.

(F) *Transparency concerning quality issues in casework.* The FBI Laboratory, as well as other Federal forensic laboratories, should regularly and publicly report quality issues in casework (in a manner similar to the practices employed by the Netherlands Forensic Institute, described in Chapter 5), as a means to improve quality and promote transparency.

(G) *Budget.* The President should request and Congress should provide increased appropriations to the FBI to restore the FBI Laboratory's budget for forensic science research activities from its current level to \$30 million and should evaluate the need for increased funding for other forensic-science research activities in the Department of Justice.

Recommendations to the Attorney General

Recommendation 6. Use of feature-comparison methods in Federal prosecutions

(A) The Attorney General should direct attorneys appearing on behalf of the Department of Justice (DOJ) to ensure expert testimony in court about forensic feature-comparison methods meets the scientific standards for scientific validity.

While pretrial investigations may draw on a wider range of methods, expert testimony in court about forensic feature-comparison methods in criminal cases—which can be highly influential and has led to many wrongful convictions—must meet a higher standard. In particular, attorneys appearing on behalf of the DOJ should ensure that:

(i) the forensic feature-comparison methods upon which testimony is based have been established to be foundationally valid with a level of accuracy suitable to their intended application, as shown by appropriate empirical studies and consistency with evaluations by the National Institute of Standards and Technology (NIST), where available; and

(ii) the testimony is scientifically valid, with the expert's statements concerning the accuracy of methods and the probative value of proposed identifications being constrained by the empirically supported evidence and not implying a higher degree of certainty.

(B) DOJ should undertake an initial review, with assistance from NIST, of subjective feature-comparison methods used by DOJ to identify which methods (beyond those reviewed in this report) lack appropriate black-box studies necessary to assess foundational validity. Because such subjective methods are presumptively not established to be foundationally valid, DOJ should evaluate whether it is appropriate to present in court conclusions based on such methods.

(C) Where relevant methods have not yet been established to be foundationally valid, DOJ should encourage and provide support for appropriate black-box studies to assess foundational validity and measure reliability. The design and execution of these studies should be conducted by or in conjunction with independent third parties with no stake in the outcome.

Recommendation 7. Department of Justice guidelines on expert testimony

(A) The Attorney General should revise and reissue for public comment the Department of Justice’s (DOJ) proposed “Uniform Language for Testimony and Reports” and supporting documents to bring them into alignment with scientific standards for scientific validity.

(B) The Attorney General should issue instructions directing that:

(i) Where empirical studies and/or statistical models exist to shed light on the accuracy of a forensic feature-comparison method, an examiner should provide quantitative information about error rates, in accordance with guidelines to be established by DOJ and the National Institute of Standards and Technology, based on advice from the scientific community.

(ii) Where there are not adequate empirical studies and/or statistical models to provide meaningful information about the accuracy of a forensic feature-comparison method, DOJ attorneys and examiners should not offer testimony based on the method. If it is necessary to provide testimony concerning the method, they should clearly acknowledge to courts the lack of such evidence.

(iii) In testimony, examiners should always state clearly that errors can and do occur, due both to similarities between features and to human mistakes in the laboratory.

Recommendation to the Judiciary

Recommendation 8. Scientific validity as a foundation for expert testimony

(A) When deciding the admissibility of expert testimony, Federal judges should take into account the appropriate scientific criteria for assessing scientific validity including:

(i) foundational validity, with respect to the requirement under Rule 702(c) that testimony is the product of reliable principles and methods; and

(ii) validity as applied, with respect to requirement under Rule 702(d) that an expert has reliably applied the principles and methods to the facts of the case.

These scientific criteria are described in Finding 1.

(B) Federal judges, when permitting an expert to testify about a foundationally valid feature-comparison method, should ensure that testimony about the accuracy of the method and the probative value of proposed identifications is scientifically valid in that it is limited to what the empirical evidence supports. Statements suggesting or implying greater certainty are not scientifically valid and should not be permitted. In particular, courts should never permit scientifically indefensible claims such as: “zero,” “vanishingly small,” “essentially zero,” “negligible,” “minimal,” or “microscopic” error rates; “100 percent certainty” or proof “to a reasonable degree of scientific certainty;” identification “to the exclusion of all other sources;” or a chance of error so remote as to be a “practical impossibility.”

(C) To assist judges, the Judicial Conference of the United States, through its Standing Advisory Committee on the Federal Rules of Evidence, should prepare, with advice from the scientific community, a best practices manual and an Advisory Committee note, providing guidance to Federal judges concerning the admissibility under Rule 702 of expert testimony based on forensic feature-comparison methods.

(D) To assist judges, the Federal Judicial Center should develop programs concerning the scientific criteria for scientific validity of forensic feature-comparison methods.



1. Introduction

“Forensic science” has been defined as the application of scientific or technical practices to the recognition, collection, analysis, and interpretation of evidence for criminal and civil law or regulatory issues.⁵ The forensic sciences encompass a broad range of disciplines, each with its own set of technologies and practices. The National Institute of Justice (NIJ) divides those disciplines into twelve categories: general toxicology; firearms and toolmarks; questioned documents; trace evidence (such as hair and fiber analysis); controlled substances; biological/serology screening (including DNA analysis); fire debris/arson analysis; impression evidence; blood pattern evidence; crime scene investigation; medicolegal death investigation; and digital evidence.⁶ In the years ahead, science and technology will likely offer additional powerful tools for the forensic domain—perhaps the ability to compare populations of bacteria in the gut or patterns of search on the Internet.

Historically, forensic science has been used primarily in two phases of the criminal-justice process: (1) *investigation*, which seeks to identify the likely perpetrator of a crime, and (2) *prosecution*, which seeks to prove the guilt of a defendant beyond a reasonable doubt. (In recent years, forensic science—particularly DNA analysis—has also come into wide use for challenging past convictions.) Importantly, the investigative and prosecutorial phases involve different standards for the use of forensic science and other investigative tools. In investigations, insights and information may come from both well-established science and exploratory approaches.⁷ In the prosecution phase, forensic science must satisfy a higher standard. Specifically, the Federal Rules of Evidence require that expert testimony be based, among other things, on “reliable principles and methods” that have been “reliably applied” to the facts of the case.⁸ And, the Supreme Court has stated that judges must determine “whether the reasoning or methodology underlying the testimony is scientifically valid.”⁹

This is where legal standards and scientific standards intersect. Judges’ decisions about the admissibility of scientific evidence rest solely on *legal* standards; they are exclusively the province of the courts. But, the overarching subject of the judges’ inquiry is scientific validity.¹⁰ It is the proper province of the scientific community to provide guidance concerning scientific standards for scientific validity.¹¹

⁵ Definition of “forensic science” as provided by the National Commission on Forensic Science in its Views Document, “Defining forensic science and related terms.” Adopted April 30-May 1, 2015. www.justice.gov/ncfs/file/786571/download.

⁶ See: National Institute of Justice. *Status and Needs of Forensic Science Service Providers: A Report to Congress*. 2006. www.ojp.usdoj.gov/nij/pubs-sum/213420.htm.

⁷ While investigative methods need not meet the standards of reliability required under the Federal Rules of Evidence, they should be based in sound scientific principles and practices so as to avoid false accusations.

⁸ Fed. R. Evid. 702.

⁹ *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579 (1993) at 592.

¹⁰ *Daubert*, at 594.

¹¹ In this report, PCAST addresses solely the *scientific* standards for scientific validity and reliability. We do not offer opinions concerning *legal* standards.

A focus on the scientific side of this intersection is timely because it has become increasingly clear in recent years that lack of rigor in the assessment of the scientific validity of forensic evidence is not just a hypothetical problem but a real and significant weakness in the judicial system. As recounted in Chapter 2, reviews by competent bodies of the scientific underpinnings of forensic disciplines and the use in courtrooms of evidence based on those disciplines have revealed a dismaying frequency of instances of use of forensic evidence that do not pass an objective test of scientific validity.

The most comprehensive such review to date was conducted by a National Research Council (NRC) committee co-chaired by Judge Harry Edwards of the U.S. Court of Appeals for the District of Columbia Circuit and Constantine Gatsonis, Director of the Center for Statistical Sciences at Brown University. Mandated by Congress in an appropriations bill signed into law in late 2005, the study launched in the fall of 2006 and the committee released its report in February 2009.¹²

The 2009 NRC report described a disturbing pattern of deficiencies common to many of the forensic methods routinely used in the criminal justice system, most importantly a lack of rigorous and appropriate studies establishing their scientific validity, concluding that “much forensic evidence—including, for example, bitemarks and firearm and toolmark identifications—is introduced in criminal trials without any meaningful scientific validation, determination of error rates, or reliability testing to explain the limits of the discipline.”¹³

In 2013, after prolonged discussion of the NRC report’s findings and recommendations inside and outside the Federal government, the Department of Justice (DOJ)—in collaboration with the National Institute of Standards and Technology (NIST)—established the National Commission on Forensic Science (NCFS) as a Federal advisory body charged with providing forensic-science guidance and policy recommendations to the Attorney General. Co-chaired by the Deputy Attorney General and the Director of NIST, the NCFS’s 32 members include eight academic scientists and five other science Ph.D.s; the other members include judges, attorneys, and forensic practitioners. To strengthen forensic science more generally, in 2014 NIST established the Organization for Scientific Area Committees for Forensic Science (OSAC) to “coordinate development of standards and guidelines...to improve quality and consistency of work in the forensic science community.”¹⁴

In September 2015, President Obama asked his Council of Advisors on Science and Technology (PCAST) to explore, in light of the work being done by the NCSF and OSAC, what additional efforts could contribute to strengthening the forensic-science disciplines and ensuring the scientific reliability of forensic evidence used in the Nation’s legal system. After review of the ongoing activities and the relevant scientific and legal literatures—including particularly the scientific and legal assessments in the 2009 NRC report—PCAST concluded that there are two important gaps: (1) the need for clarity on the scientific meaning of “reliable principles and methods” and “scientific validity” in the context of certain forensic disciplines, and (2) the need to evaluate

¹² National Research Council. *Strengthening Forensic Science in the United States: A Path Forward*. The National Academies Press. Washington DC. (2009).

¹³ *Ibid.*, 107-8.

¹⁴ See: www.nist.gov/forensics/organization-scientific-area-committees-forensic-science.

specific forensic methods to determine whether they have been scientifically established to be valid and reliable.

Within the broad span of forensic disciplines, we chose to narrow our focus to techniques that we refer to here as forensic “feature-comparison” methods (see Box 1).¹⁵ While one motivation for this narrowing was to make our task tractable within the limits of available time and resources, we chose this particular class of methods because: (1) they are commonly used in criminal cases; (2) they have attracted a high degree of concern with respect to validity (e.g., the 2009 NRC report); and (3) they all belong to the same broad scientific discipline, *metrology*, which is “the science of measurement and its application,” in this case to measuring and comparing features.¹⁶

BOX 1. Forensic feature-comparison methods

PCAST uses the term “forensic feature-comparison methods” to refer to the wide variety of methods that aim to determine whether an evidentiary sample (e.g., from a crime scene) is or is not associated with a potential source sample (e.g., from a suspect) based on the presence of similar patterns, impressions, features, or characteristics in the sample and the source. Examples include the analyses of DNA, hair, latent fingerprints, firearms and spent ammunition, tool and toolmarks, shoeprints and tire tracks, bitemarks, and handwriting.

PCAST began this study by forming a working group of six of its members to gather information for consideration.¹⁷ To educate itself about factual matters relating to the interaction between science and law, PCAST consulted with a panel of Senior Advisors (listed in the front matter) comprising nine current or former Federal judges, one former U.S. Solicitor General and State supreme court justice, two law school deans, and two statisticians, who have expertise in this domain. PCAST also sought input from a diverse group of additional experts and stakeholders, including forensic scientists and practitioners, judges, prosecutors, defense attorneys, criminal justice reform advocates, statisticians, academic researchers, and Federal agency representatives (see Appendix B). Input was gathered through multiple in-person meetings and conference calls, including a session

¹⁵ PCAST notes that there are issues related to the scientific validity of other types of forensic evidence that are beyond the scope of this report but require urgent attention—including notably arson science and abusive head trauma commonly referred to as “Shaken Baby Syndrome.” In addition, a major area not addressed in this report is scientific methods for assessing causation—for example, whether exposure to substance was likely to have caused harm to an individual.

¹⁶ *International Vocabulary of Metrology – Basic and General Concepts and Associated Terms* (VIM 3rd edition) JCGM 200 (2012).

¹⁷ Two of the members have been involved with forensic science. PCAST Co-chair Eric Lander has served in various scientific roles (expert witness in *People v. Castro* 545 N.Y.S.2d 985 (Sup. Ct. 1989), a seminal case on the quality of DNA analysis discussed on p. 25; court’s witness in *U.S. v. Yee*, 134 F.R.D. 161 in 1991; member of the NRC panel on forensic DNA analysis in 1992; scientific co-author with a forensic scientist from the FBI Laboratory in 1994; and a member of the Board of Directors of the Innocence Project from 2004 to the present). All of these roles have been unremunerated. PCAST member S. James Gates, Jr. has been a member, since its inception, of the National Commission on Forensic Science.

at a meeting of PCAST on January 15, 2016. PCAST also took the unusual step of initiating an online, open solicitation to broaden input, in particular from the forensic-science practitioner community; more than 70 responses were received.¹⁸

PCAST also shared a draft of this report with NIST and DOJ, which provided detailed and helpful comments that were carefully considered in revising the report.

PCAST expresses its gratitude to all those who shared their views. Their willingness to engage with PCAST does not imply endorsement of the views expressed in the report. Responsibility for the opinions, findings and recommendations expressed in this report and for any errors of fact or interpretation rests solely with PCAST.

The remainder of our report is organized as follows.

- Chapter 2 provides a brief overview of the findings of other studies relating to forensic practice and testimony based on it, and it reviews, as well, Federal actions currently underway to strengthen forensic science.
- Chapter 3 briefly reviews the role of scientific validity within the legal system. It describes the important distinction between legal standards and scientific standards.
- Chapter 4 then describes the scientific standards for “reliable principles and methods” and “scientific validity” as they apply to forensic feature-comparison methods and offers clear criteria that could be readily applied by courts.
- Chapter 5 illustrates the application of the indicated criteria by using them to evaluate the scientific validity of six important “feature-comparison” methods: DNA analysis of single-source and simple-mixture samples, DNA analysis of complex mixtures, bitemark analysis, latent fingerprint analysis, firearms analysis, and footwear analysis. We also discuss an evaluation by others of a seventh method, hair analysis.
- In Chapters 6–9, we offer recommendations, based on the findings of Chapters 4–5, concerning Federal actions that could be taken to strengthen forensic science and promote its more rigorous use in the courtroom.

¹⁸ See: www.whitehouse.gov/sites/default/files/microsites/ostp/PCAST/pcast_forensics_request_for_information.pdf.



2. Previous Work on Validity of Forensic-Science Methods

Developments over the past two decades—including the exoneration of defendants who had been wrongfully convicted based in part on forensic-science evidence, a variety of studies of the scientific underpinnings of the forensic disciplines, reviews of expert testimony based on forensic findings, and scandals in state crime laboratories—have called increasing attention to the question of the validity and reliability of some important forensic methods evidence and testimony based upon them. (For definitions of key terms such as scientific validity and reliability, see Box 1 on page 47-8.)

In this chapter, we briefly review this history to inform our assessment of the current state of forensic science methods and their validity and the path forward.¹⁹

2.1 DNA Evidence and Wrongful Convictions

Ironically, it was the emergence and maturation of a new forensic science, DNA analysis, that first led to serious questioning of the validity of many of the traditional forensic disciplines. When defendants convicted with the help of forensic evidence from those traditional disciplines began to be exonerated on the basis of persuasive DNA comparisons deeper inquiry into scientific validity began. How this came to pass provides useful context for our inquiry here.

When DNA evidence was first introduced in the courts, beginning in the late 1980s, it was initially hailed as infallible. But the methods used in early cases turned out to be unreliable: testing labs lacked validated and consistently-applied procedures for defining DNA patterns from samples, for declaring whether two patterns matched within a given tolerance, and for determining the probability of such matches arising by chance in the population.²⁰

When DNA evidence was declared inadmissible in *People v. Castro*, a New York case in 1989, scientists—including at the U.S. National Academy of Sciences and the Federal Bureau of Investigation (FBI)—came together

¹⁹ In producing this summary we relied particularly on the National Research Council 2009 report, *Strengthening Forensic Science in the United States: A Path Forward* and the National Academies of Sciences, Engineering, and Medicine 2015 report, *Support for Forensic Science Research: Improving the Scientific Role of the National Institute of Justice*.

²⁰ See: Lander, E.S. “DNA fingerprinting on trial.” *Nature*, Vol. 339 (1989): 501-5; Lander, E.S., and B. Budowle. “DNA fingerprinting dispute laid to rest.” *Nature*, Vol. 371 (1994): 735-8; Kaye, D.H. “DNA Evidence: Probability, Population Genetics, and the Courts.” *Harv. J. L. & Tech*, Vol. 7 (1993): 101-72; Roberts, L. “Fight erupts over DNA fingerprinting.” *Science*, Vol. 254 (1991): 1721-3; Thompson, W.C., and S. Ford. “Is DNA fingerprinting ready for the courts?” *New Scientist*, Vol. 125 (1990): 38-43; Neufeld, P.J., and N. Colman. “When science takes the witness stand.” *Scientific American*, Vol. 262 (1991): 46-53.

to promote the development of reliable principles and methods that have enabled DNA analysis of single-source samples to become the “gold standard” of forensic science for both investigation and prosecution.²¹

Both the initial recognition of serious problems and the subsequent development of reliable procedures were aided by the existence of a robust community of molecular biologists who used DNA analysis in non-forensic applications, such as in biomedical and agricultural sciences. They were also aided by judges who recognized that this powerful forensic method should only be admitted as courtroom evidence once its reliability was properly established.

Once DNA analysis became a reliable methodology, the power of the technology—including its ability to analyze small samples and to distinguish between individuals—made it possible not only to identify and convict true perpetrators but also to clear mistakenly accused suspects before prosecution and to re-examine a number of past convictions. Reviews by the National Institute of Justice (NIJ)²² and others have found that DNA testing during the course of investigations has cleared tens of thousands of suspects. DNA-based re-examination of past cases, moreover, has led so far to the exonerations of 342 defendants, including 20 who had been sentenced to death, and to the identification of 147 real perpetrators.²³

Independent reviews of these cases have revealed that many relied in part on faulty expert testimony from forensic scientists who had told juries that similar features in a pair of samples taken from a suspect and from a crime scene (e.g., hair, bullets, bitemarks, tire or shoe treads, or other items) implicated defendants in a crime with a high degree of certainty.²⁴ According to the reviews, these errors were not simply a matter of individual examiners testifying to conclusions that turned out to be incorrect; rather, they reflected a systemic problem—the testimony was based on methods and included claims of accuracy that were cloaked in purported scientific respectability but actually had never been subjected to meaningful scientific scrutiny.²⁵

²¹ *People v. Castro* 545 N.Y.S.2d 985 (Sup. Ct. 1989). The case, in which a janitor was charged with the murder of a woman in the Bronx, was among the first criminal cases involving DNA analysis in the United States. The court held a 15-week-long pretrial hearing about the admissibility of the DNA evidence. By the end of the hearing, the independent experts for both the defense and prosecution unanimously agreed that the DNA evidence presented was not scientifically reliable—and the judge ruled the evidence inadmissible. See: Lander, E.S. “DNA fingerprinting on trial.” *Nature*, Vol. 339 (1989): 501-5. These events eventually led to two NRC reports on forensic DNA analysis, in 1992 and 1996, and to the founding of the Innocence Project (www.innocenceproject.org).

²² DNA testing has excluded 20-25 percent of initial suspects in sexual assault cases. U.S. Department of Justice, Office of Justice Programs, National Institute of Justice. *Convicted by Juries, Exonerated by Science: Case Studies in the Use of DNA Evidence to Establish Innocence after Trial*, (1996): xxviii.

²³ Innocence Project, “DNA Exonerations in the United States.” See: www.innocenceproject.org/dna-exonerations-in-the-united-states.

²⁴ For example, see: Gross, S.R., and M. Shaffer. “Exonerations in the United States, 1989-2012.” National Registry of Exonerations, (2012) available at: www.law.umich.edu/special/exoneration/Documents/exonerations_us_1989_2012_full_report.pdf. See also: Saks, M.J., and J.J. Koehler. “The coming paradigm shift in forensic identification science.” *Science*, Vol. 309, No. 5736 (2005): 892-5.

²⁵ Garrett, B.L., and P.J. Neufeld. “Invalid forensic science testimony and wrongful convictions.” *Virginia Law Review*, Vol. 91, No. 1 (2009): 1-97; National Research Council. *Strengthening Forensic Science in the United States: A Path Forward*. The National Academies Press. Washington DC. (2009): 42-3.

2.2 Studies of Specific Forensic-Science Methods and Laboratory Practices

The questions that DNA analysis had raised about the scientific validity of traditional forensic disciplines and testimony based on them led, naturally, to increased efforts to test empirically the reliability of the methods that those disciplines employed. Scrutiny was directed, similarly, to the practices by which forensic evidence is collected, stored, and analyzed in crime laboratories around the country. The FBI Laboratory, widely regarded as one of the best in the country, played an important role in the latter investigations, re-assessing its own practices as well as those of others. In what follows we summarize some of the key findings of the studies of methods and practices that ensued in the case of the “comparison” disciplines that are the focus in this report.

Bullet Lead Examination

From the 1960s until 2005, the FBI used compositional analysis of bullet lead as a forensic tool of analysis to identify the source of bullets. Yet, an NRC report commissioned by the FBI and released in 2004 challenged the foundational validity of identifications based on the discipline. The technique involved comparing the quantity of various elements in bullets found at a crime scene with that of unused bullets to determine whether the bullets came from the same box of ammunition. The 2004 NRC report found that there is no scientific basis for making such a determination.²⁶ While the method for determining the concentrations of different elements within a bullet was found to be reliable, the report found there was insufficient research and data to support drawing a connection, based on compositional similarity between a particular bullet and a given batch of ammunition, which is usually the relevant question in a criminal case.²⁷ In 2005, the FBI announced that it would discontinue the practice of bullet lead examinations, noting that while it “firmly supports the scientific foundation of bullet lead analysis,” the manufacturing and distribution of bullets was too variable to make the matching reliable.²⁸

²⁶ National Research Council. *Forensic Analysis: Weighing Bullet Lead Evidence*. The National Academies Press. Washington DC. (2004). Lead bullet examination, also known as Compositional Analysis of Bullet Lead (CABL), involves comparing the elemental composition of bullets found at a crime scene with unused cartridges in the possession of a suspect. This technique assumes that (1) the molten source used to produce a single “lot” of bullets has a uniform composition throughout, (2) no two molten sources have the same composition, and (3) bullets with different compositions are not mixed during the manufacturing or shipping processes. However, in practice, this is not the case. The 2004 NRC report found that compositionally indistinguishable volumes of lead could produce small lots of bullets—on the order of 12,000 bullets—or large lots—with more than 35 million bullets. The report also found no assurance that indistinguishable volumes of lead could not occur at different times and places. Neither scientists nor bullet manufacturers are able to definitively attest to the significance of an association made between bullets in the course of a bullet lead examination. The most that one can say is that bullets that are indistinguishable by CABL *could* have come from the same source.

²⁷ Faigman, D.L., Cheng, E.K., Mnookin, J.L., Murphy, E.E., Sander, J., and C. Slobogin (Eds.) *Modern Scientific Evidence: The Law and Science of Expert Testimony, 2015-2016 ed.* Thomson/West Publishing (2016).

²⁸ Federal Bureau of Investigation. *FBI Laboratory Announces Discontinuation of Bullet Lead Examinations*. (September 1, 2005, press release). www.fbi.gov/news/pressrel/press-releases/fbi-laboratory-announces-discontinuation-of-bullet-lead-examinations (accessed May 6, 2016).

Latent Fingerprints

In 2005, an international committee established by the FBI released a report concerning flaws in the FBI's practices for fingerprint identification that had led to a prominent misidentification. Based almost entirely on a latent fingerprint recovered from the 2004 bombing of the Madrid commuter train system, the FBI erroneously detained an American in Portland, Oregon and held him for two weeks as a material witness.²⁹ An FBI examiner concluded the fingerprints matched with "100 percent certainty," although Spanish authorities were unable to confirm the match.³⁰ The review committee concluded that the FBI's misidentification had occurred primarily as a result of "confirmation bias."³¹ Similarly, a report by the DOJ's Office of the Inspector General highlighted "reverse reasoning" from the known print to the latent image that led to an exaggerated focus on apparent similarities and inadequate attention to differences between the images.³²

Hair Analysis

In 2002, FBI scientists used mitochondrial DNA sequencing to re-examine 170 microscopic hair comparisons that the agency's scientists had performed in criminal cases. The DNA analysis showed that, in 11 percent of cases in which the FBI examiners had found the hair samples to match microscopically, DNA testing of the samples revealed they actually came from different individuals.³³ These false associations may not have been the result of a failure of the examiner to perform the analysis correctly; instead, the characteristics could have just happened to have been shared by chance. The study showed that the power of microscopic hair comparison to distinguish between samples from different sources was much lower than previously assumed. (For example, earlier studies suggested that the false positive rate for of hair analysis is in the range of 1 in 40,000.³⁴)

Bitemarks

A 2010 study of experimentally created bitemarks produced by known biters found that skin deformation distorts bitemarks so substantially and so variably that current procedures for comparing bitemarks are unable to reliably exclude or include a suspect as a potential biter. ("The data derived showed no correlation and was

²⁹ Stacey, R.B. "Report on the erroneous fingerprint individualization in the Madrid train bombing case." *Forensic Science Communications*, Vol. 7, No. 1 (2005).

³⁰ Application for Material Witness Order and Warrant Regarding Witness: Brandon Bieri Mayfield, *In re* Federal Grand Jury Proceedings 03-01, 337 F. Supp. 2d 1218 (D. Or. 2004) (No. 04-MC-9071).

³¹ Specifically, similarities between the two prints, combined with the inherent pressure of working on an extremely high-profile case, influenced the initial examiner's judgment: ambiguous characteristics were interpreted as points of similarity and differences between the two prints were explained away. A second examiner, not shielded from the first examiner's conclusions, simply confirmed the first examiner's results. See: Stacey, R.B. "Report on the erroneous fingerprint individualization in the Madrid train bombing case." *Forensic Science Communications*, Vol. 7, No. 1 (2005).

³² U.S. Department of Justice, Office of the Inspector General. "A review of the FBI's handling of the Brandon Mayfield case." (2006). oig.justice.special/s0601/final.pdf.

³³ Houck, M.M., and B. Budowle. "Correlation of microscopic and mitochondrial DNA hair comparisons." *Journal of Forensic Sciences*, Vol. 47, No. 5 (2002): 964-7.

³⁴ Gaudette, B. D., and E.S. Keeping. "An attempt at determining probabilities in human scalp hair comparisons." *Journal of Forensic Sciences*, Vol. 19 (1975): 599-606. This study was recently cited by DOJ to support the assertion that hair analysis is a valid and reliable scientific methodology. www.justice.gov/dag/file/877741/download. The topic of hair analysis is discussed in Chapter 5.

not reproducible, that is, the same dentition could not create a measurable impression that was consistent in all of the parameters in any of the test circumstances.³⁵) A recent study by the American Board of Forensic Odontology also showed a disturbing lack of consistency in the way that forensic odontologists go about analyzing bitemarks, including even on deciding whether there was sufficient evidence to determine whether a photographed bitemark was a human bitemark.³⁶ In February 2016, following a six-month investigation, the Texas Forensic Science Commission unanimously recommended a moratorium on the use of bitemark identifications in criminal trials, concluding that the validity of the technique has not been scientifically established.³⁷

These examples illustrate how several forensic feature-comparison methods that have been in wide use have nonetheless not been subjected to meaningful tests of scientific validity or measures of reliability.

2.3 Testimony Concerning Forensic Evidence

Reviews of trial transcripts have found that expert witnesses have often overstated the probative value of their evidence, going far beyond what the relevant science can justify. For example, some examiners have testified:

- that their conclusions are “100 percent certain;” have “zero,” “essentially zero,” “vanishingly small,” “negligible,” “minimal,” or “microscopic” error rate; or have a chance of error so remote as to be a “practical impossibility.”³⁸ As many reviews have noted, however, such statements are not scientifically defensible. All laboratory tests and feature-comparison analyses have non-zero error rates, even if an

³⁵ Bush, M.A., Cooper, H.I., and R.B. Dorion. “Inquiry into the scientific basis for bitemark profiling and arbitrary distortion compensation.” *Journal of Forensic Sciences*, Vol. 55, No. 4 (2010): 976-83. See also Bush, M.A., Miller, R.G., Bush, P.J., and R.B. Dorion. “Biomechanical factors in human dermal bitemarks in a cadaver model.” *Journal of Forensic Sciences*, Vol. 54, No. 1 (2009): 167-76.

³⁶ Balko, R. “A bite mark matching advocacy group just conducted a study that discredits bite mark evidence.” *Washington Post*, April 8, 2015. www.washingtonpost.com/news/the-watch/wp/2015/04/08/a-bite-mark-matching-advocacy-group-just-conducted-a-study-that-discredits-bite-mark-evidence/; Adam J. Freeman & Iain A. Pretty, Construct Validity of Bitemark Assessments Using the ABO Bitemark Decision Tree, American Academy of Forensic Sciences, Annual Meeting, Odontology Section, G14, February 2015 (data made available by the authors upon request).

³⁷ Texas Forensic Science Commission. “Forensic bitemark comparison complaint filed by National Innocence Project on behalf of Steven Mark Chaney – Final Report.” (2016). www.fsc.texas.gov/sites/default/files/FinalBiteMarkReport.pdf.

³⁸ Thompson, W.C., Taroni, F., and C.G.G. Aitken. “How the Probability of a False Positive Affects the Value of DNA Evidence.” *J Forensic Sci*, Vol. 48, No. 1 (2003): 1-8; Thompson, W.C. “The Myth of Infallibility,” In Sheldon Krimsky & Jeremy Gruber (Eds.) *Genetic Explanations: Sense and Nonsense*, Harvard University Press (2013); Cole, S.A. “More than zero: Accounting for error in latent fingerprint identification.” *Journal of Criminal Law and Criminology*, Vol. 95, No.3 (2005): 985-1078; and Koehler, J.J. “Forensics or fauxrensic? Ascertaining accuracy in the forensic sciences.” papers.ssrn.com/sol3/papers.cfm?abstract_id=2773255 (accessed June 28, 2016).

examiner received a perfect score on a particular performance test involving a limited number of samples.³⁹ Even highly automated tests do not have a zero error rate.^{40,41}

- that they can “individualize” evidence—for example, using markings on a bullet to attribute it to a specific weapon “to the exclusion of every other firearm in the world”—an assertion that is not supportable by the relevant science.⁴²
- that a result is true “to a reasonable degree of scientific certainty.” This phrase has no generally accepted meaning in science and is open to widely differing interpretations by different scientists.⁴³ Moreover, the statement may be taken as implying certainty.

DOJ Review of Testimony on Hair Analysis

In 2012, the DOJ and FBI announced that they would initiate a formal review of testimony in more than 3,000 criminal cases involving microscopic hair analysis. Initial results of this unprecedented review, conducted in consultation with the Innocence Project and the National Association of Criminal Defense Lawyers, found that FBI examiners had provided scientifically invalid testimony in more than 95 percent of cases where examiner-provided testimony was used to inculcate a defendant at trial. These problems were systemic: 26 of the 28 FBI hair examiners who testified in the 328 cases provided scientifically invalid testimony.^{44,45}

³⁹ Cole, S.A. “More than zero: Accounting for error in latent fingerprint identification.” *Journal of Criminal Law and Criminology*, Vol. 95, No.3 (2005): 985-1078 and Koehler, J.J. “Forensics or fauxrensic? Ascertaining accuracy in the forensic sciences.” papers.ssrn.com/sol3/papers.cfm?abstract_id=2773255 (accessed June 28, 2016).

⁴⁰ Thompson, W.C., Franco, T., and C.G.G. Aitken. “How the probability of a false positive affects the value of DNA evidence.” *Journal of Forensic Science*, Vol. 48, No. 1 (2003): 1-8.

⁴¹ False positive results can arise from two sources: (1) similarity between two features that occur by chance and (2) human/technical failures. See discussion in Chapter 4, p. 50-1.

⁴² See: National Research Council. *Ballistic Imaging*. The National Academies Press. Washington DC. 2008 and Saks, M. J., and J.J. Koehler. “The individualization fallacy in forensic science evidence.” *Forensic Science Evidence*. *Vanderbilt Law Review*, Vol. 61, No. 1 (2008): 199-218.

⁴³ National Commission on Forensic Science, “Recommendations to the Attorney General Regarding Use of the Term ‘Reasonable Scientific Certainty,’” Approved March 22, 2016, available at: www.justice.gov/ncfs/file/839726/download. The NCSF states that “forensic discipline conclusions are often testified to as being held ‘to a reasonable degree of scientific certainty’ or ‘to a reasonable degree of [discipline] certainty.’ These terms have no scientific meaning and may mislead factfinders about the level of objectivity involved in the analysis, its scientific reliability and limitations, and the ability of the analysis to reach a conclusion.”

⁴⁴ Federal Bureau of Investigation. *FBI Testimony on Microscopic Hair Analysis Contained Errors in at Least 90 Percent of Cases in Ongoing Review*, (April 20, 2015, press release). www.fbi.gov/news/pressrel/press-releases/fbi-testimony-on-microscopic-hair-analysis-contained-errors-in-at-least-90-percent-of-cases-in-ongoing-review.

⁴⁵ The erroneous statements fell into three categories, in which the examiner: (1) stated or implied that evidentiary hair could be associated with a specific individual to the exclusion of all others; (2) assigned to the positive association a statistical weight or a probability that the evidentiary hair originated from a particular source; or (3) cited the number of cases worked in the lab and the number of successful matches to support a conclusion that an evidentiary hair belonged to a specific individual. Reimer, N.L. “The hair microscopy review project: An historic breakthrough for law enforcement and a daunting challenge for the defense bar.” *The Champion*, (July 2013): 16. www.nacdl.org/champion.aspx?id=29488.

The importance of the FBI's hair analysis review was illustrated by the decision in January 2016 by Massachusetts Superior Court Judge Robert Kane to vacate the conviction of George Perrot, based in part on the FBI's acknowledgment of errors in hair analysis.⁴⁶

Expanded DOJ Review

In March 2016, DOJ announced its intention to expand its review of forensic testimony by the FBI Laboratory in closed criminal cases to additional forensic science methods. The review will provide the opportunity to assess the extent to which similar testimonial overstatement has occurred in other disciplines.⁴⁷ DOJ plans to lay out a framework for auditing samples of testimony that came from FBI units handling additional kinds of feature-based evidence, such as tracing the impressions that guns leave on bullets, shoe treads, fibers, soil and other crime-scene evidence.

2.4 Cognitive Bias

In addition to the issues previously described, scientists have studied a subtler but equally important problem that affects the reliability of conclusions in many fields, including forensic science: cognitive bias. Cognitive bias refers to ways in which human perceptions and judgments can be shaped by factors other than those relevant to the decision at hand. It includes "contextual bias," where individuals are influenced by irrelevant background information; "confirmation bias," where individuals interpret information, or look for new evidence, in a way that conforms to their pre-existing beliefs or assumptions; and "avoidance of cognitive dissonance," where individuals are reluctant to accept new information that is inconsistent with their tentative conclusion. The biomedical science community, for example, goes to great lengths to minimize cognitive bias by employing strict protocols, such as double-blinding in clinical trials.

Studies have demonstrated that cognitive bias may be a serious issue in forensic science. For example, a study by Itiel Dror and colleagues demonstrated that the judgment of latent fingerprint examiners can be influenced by knowledge about other forensic examiners' decisions (a form of confirmation bias).⁴⁸ These studies are discussed in more detail in Section 5.4. Similar studies have replicated these findings in other forensic domains, including DNA mixture interpretation, microscopic hair analysis, and fire investigation.^{49,50}

⁴⁶ *Commonwealth v. Perrot*, No. 85-5415, 2016 WL 380123 (Mass. Super. Man. 26, 2016).

⁴⁷ See: www.justice.gov/dag/file/870671/download.

⁴⁸ Dror, I.E., Charlton, D., and A.E. Peron. "Contextual information renders experts vulnerable to making erroneous identifications." *Forensic Science International*, Vol. 156 (2006): 74-8.

⁴⁹ See, for example: Dror, I.E., and G. Hampikian. "Subjectivity and bias in forensic DNA mixture interpretation." *Science & Justice*, Vol. 51, No. 4 (2011): 204-8; Miller, L.S. "Procedural bias in forensic examinations of human hair." *Law and Human Behavior*, Vol. 11 (1987): 157; and Bieber, P. "Fire investigation and cognitive bias." *Wiley Encyclopedia of Forensic Science*, 2014, available through onlinelibrary.wiley.com/doi/10.1002/9780470061589.fsa1119/abstract.

⁵⁰ See, generally, Dror, I.E. "A hierarchy of expert performance." *Journal of Applied Research in Memory and Cognition*, Vol. 5 (2016): 121-127.

Several strategies have been proposed for mitigating cognitive bias in forensic laboratories, including managing the flow of information in a crime laboratory to minimize exposure of the forensic analyst to irrelevant contextual information (such as confessions or eyewitness identification) and ensuring that examiners work in a linear fashion, documenting their finding about evidence from crime science *before* performing comparisons with samples from a suspect.⁵¹

2.5 State of Forensic Science

The 2009 NRC study concluded that many of these difficulties with forensic science may stem from the historical reality that many methods were devised as rough heuristics to aid criminal investigations and were not grounded in the validation practices of scientific research.⁵² Although many forensic laboratories do now require newly-hired forensic science practitioners to have an undergraduate science degree, many practitioners in forensic laboratories do not have advanced degrees in a scientific discipline.⁵³ In addition, until 2015, there were no Ph.D. programs specific to forensic science in the United States (although such programs exist in Europe).⁵⁴ There has been very limited funding for forensic science research, especially to study the validity or reliability of these disciplines. Serious peer-reviewed forensic science journals focused on feature-comparison fields remain quite limited.

As the 2009 NRC study and others have noted, fundamentally, the forensic sciences do not yet have a well-developed “research culture.”⁵⁵ Importantly, a research culture includes the principles that (1) methods must be presumed to be unreliable until their foundational validity has been established based on empirical evidence and (2) even then, scientific questioning and review of methods must continue on an ongoing basis. Notably, some forensic practitioners espouse the notion that extensive “experience” in casework can substitute for empirical studies of scientific validity.⁵⁶ Casework is not scientifically valid research, and experience alone

⁵¹ Kassin, S.M., Dror, I.E., and J. Kakucka. “The forensic confirmation bias: Problems, perspectives, and proposed solutions.” *Journal of Applied Research in Memory and Cognition*, Vol. 2, No. 1 (2013): 42-52. See also: Krane, D.E., Ford, S., Gilder, J., Iman, K., Jamieson, A., Taylor, M.S., and W.C. Thompson. “Sequential unmasking: A means of minimizing observer effects in forensic DNA interpretation.” *Journal of Forensic Sciences*, Vol. 53, No. 4 (July 2008): 1006-7.

⁵² National Research Council. *Strengthening Forensic Science in the United States: A Path Forward*. The National Academies Press. Washington DC. (2009): 128.

⁵³ National Research Council. *Strengthening Forensic Science in the United States: A Path Forward*. The National Academies Press. Washington DC. (2009): 223-230. See also: Cooney, L. “Latent Print Training to Competency: Is it Time for a Universal Training Program?” *Journal of Forensic Identification*, Vol. 60 (2010): 223–58. (“The areas where there was no consensus included degree requirements (almost a 50/50 split between agencies that required a four-year degree or higher versus those agencies that required less than a four-year degree or no degree at all.)”)

⁵⁴ National Research Council. *Strengthening Forensic Science in the United States: A Path Forward*. The National Academies Press. Washington DC. (2009): 223. While there are several Ph.D. programs in criminal justice, forensic psychology, forensic anthropology or programs in chemistry or related disciplines that offer a concentration in forensic science, only Sam Houston State University College of Criminal Justice offers a doctoral program in “forensic science.” See: www.shsu.edu/programs/doctorate-of-philosophy-in-forensic-science.

⁵⁵ Mnookin, J.L., Cole, S.A., Dror, I.E., Fisher, B.A.J., Houck, M.M., Inman, K., Kaye, D.H., Koehler, J.J., Langenburg, G., Risinger, D.M., Rudin, N., Siegel, J., and D.A. Stoney. “The need for a research culture in the forensic sciences.” *UCLA Law Review*, Vol. 725 (2011): 754-8.

⁵⁶ See Section 4.7.

cannot establish scientific validity. In particular, one cannot reliably estimate error rates from casework because one typically does not have independent knowledge of the “ground truth” or “right answer.”⁵⁷

Beyond the foundational issue of scientific validity, most feature-comparison fields historically gave insufficient attention to the importance of blinding practitioners to potentially biasing information; developing objective measures of assessment and interpretation; paying careful attention to error rates and their measurement; and developing objective assessments of the meaning of an association between a sample and its potential source.⁵⁸

The 2009 NRC report stimulated some in the forensic science community to recognize these flaws. Some forensic scientists have embraced the need to place forensics on a solid scientific foundation and have undertaken initial efforts to do so.⁵⁹

2.6 State of Forensic Practice

Investigations of forensic practice have likewise unearthed problems stemming from the lack of a strong “quality culture.” Specifically, dozens of investigations of crime laboratories—primarily at the state and local level—have revealed repeated failures concerning the handling and processing of evidence and incorrect interpretation of forensic analysis results.⁶⁰

Various commentators have pointed out a fundamental issue that may underlie these serious problems: the fact that nearly all crime laboratories are closely tied to the prosecution in criminal cases. This structure undermines

⁵⁷ See Section 4.7.

⁵⁸ National Research Council. *Strengthening Forensic Science in the United States: A Path Forward*. The National Academies Press. Washington DC. (2009): 8, 124, 184-5, 188-91. See also Koppl, R., and D. Krane. “Minimizing and leveraging bias in forensic science.” In Robertson C.T., and A.S. Kesselheim (Eds.) *Blinding as a solution to bias: Strengthening biomedical science, forensic science, and law*. Atlanta, GA: Elsevier (2016).

⁵⁹ See Section 4.8.

⁶⁰ A few examples of such investigations include: (1) a 2-year independent investigation of the Houston Police Department’s crime lab that resulted in the review of 3,500 cases (Final Report of the Independent Investigator for the Houston Police Department Crime Laboratory and Property Room, prepared by Michael R. Bromwich, June 13, 2007 (www.hpdlabinvestigation.org/reports/070613report.pdf)); (2) the investigation and closure of the Detroit Police Crime Lab’s firearms unit following the discovery of evidence contamination and failure to properly maintain testing equipment (see Bunkley, N. “Detroit police lab is closed after audit finds serious errors in many cases.” *New York Times*, September 25, 2008, www.nytimes.com/2008/09/26/us/26detroit.html?_r=0); (3) a 2010 investigation of North Carolina’s State Bureau of Investigation crime laboratory that found that agents consistently withheld exculpatory evidence or distorted evidence in more than 230 cases over a 16 year period (see Swecker, C., and M. Wolf, “An Independent Review of the SBI Forensic Laboratory” images.bimedia.net/documents/SBI+Report.pdf); and (4) a 2013 review of the New York City medical examiner’s office handling of DNA evidence in more than 800 rape cases (see State of New York, Office of the Inspector General. December 2013, www.ig.ny.gov/sites/default/files/pdfs/OCMEFinalReport.pdf). One analysis estimated that at least fifty major laboratories reported fraud by analysts, evidence destruction, failed proficiency tests, misrepresenting findings in testimony, or tampering with drugs between 2005 and 2011. Twenty-eight of these labs were nationally accredited. Memorandum from Marvin Schechter to New York State Commission on Forensic Science (March 25, 2011): 243-4 (see www.americanbar.org/content/dam/aba/administrative/legal_aid_indigent_defendants/ls_sclaid_def_train_memo_schechter_authcheckdam.pdf).

the greater objectivity typically found in testing laboratories in other fields and creates situations where personnel may make errors due to subtle cognitive bias or overt pressure.⁶¹

The 2009 NRC report recommended that all public forensic laboratories and facilities be removed from the administrative control of law enforcement agencies or prosecutors' offices.⁶² For example, Houston—after disbanding its crime laboratory twice in three years—followed this recommendation and, despite significant political pushback, succeeded in transitioning the laboratory into an independent forensic science center.⁶³

2.7 National Research Council Report

The 2009 NRC report, *Strengthening Forensic Science in the United States: A Path Forward*, was the most comprehensive review to date of the forensic sciences in the United States. The report made clear that the types of problems, irregularities, and miscarriages of justice outlined in this report cannot simply be attributed to a handful of rogue analysts or underperforming laboratories. Instead, the report found the problems plaguing the forensic science community are systemic and pervasive—the result of factors including a high degree of fragmentation (including disparate and often inadequate training and educational requirements, resources, and capacities of laboratories); a lack of standardization of the disciplines, insufficient high-quality research and education; and a dearth of peer-reviewed studies establishing the scientific basis and validity of many routinely used forensic methods.

Shortcomings in the forensic sciences were especially prevalent among the feature-comparison disciplines. The 2009 NRC report found that many of these disciplines lacked well-defined systems for determining error rates and had not done studies to establish the uniqueness or relative rarity or commonality of the particular marks or features examined. In addition, proficiency testing, where it had been conducted, showed instances of poor performance by specific examiners. In short, the report concluded that “much forensic evidence—including, for example, bitemarks and firearm and toolmark identifications—is introduced in criminal trials without any

⁶¹ The 2009 NRC Report (pp. 24-5) states, “The best science is conducted in a scientific setting as opposed to a law enforcement setting. Because forensic scientists often are driven in their work by a need to answer a particular question related to the issues of a particular case, they sometimes face pressure to sacrifice appropriate methodology for the sake of expediency.” See also: Giannelli, P.G. “Independent crime laboratories: The problem of motivational and cognitive bias.” *Utah Law Review*, (2010): 247-66 and Thompson, S.G. *Cops in Lab Coats: Curbing Wrongful Convictions through Independent Forensic Laboratories*. Carolina Academic Press (2015).

⁶² National Research Council. *Strengthening Forensic Science in the United States: A Path Forward*. The National Academies Press. Washington DC. (2009): Recommendation 4, p. 24.

⁶³ The Houston Forensic Science Center opened in April 2014, replacing the former Houston Police Department Crime Laboratory. The Center operates as a “local government corporation” with its own directors, officers, and employees. The structure was intentionally designed to insulate the Center from undue influence by police, prosecutors, elected officials, or special interest groups. See: Thompson, S.G. *Cops in Lab Coats: Curbing Wrongful Convictions through Independent Forensic Laboratories*. Carolina Academic Press (2015): 214.

meaningful scientific validation, determination of error rates, or reliability testing to explain the limits of the discipline.”⁶⁴

The 2009 NRC report found that the problems plaguing the forensic sciences were so severe that they could only be addressed by “a national commitment to overhaul the current structure that supports the forensic science community in this country.”⁶⁵ Underlying the report’s 13 core recommendations was a call for leadership at the highest levels of both Federal and State governments and the promotion and adoption of a long-term agenda to pull the forensic science enterprise up from its current weaknesses.

The 2009 NRC report called for studies to test whether various forensic methods are foundationally valid, including performing empirical tests of the accuracy of the results. It also called for the creation of a new, independent Federal agency to provide needed oversight of the forensic science system; standardization of terminology used in reporting and testifying about the results of forensic sciences; the removal of public forensic laboratories from the administrative control of law enforcement agencies; implementation of mandatory certification requirements for practitioners and mandatory accreditation programs for laboratories; research on human observer bias and sources of human error in forensic examinations; the development of tools for advancing measurement, validation, reliability, and proficiency testing in forensic science; and the strengthening and development of graduate and continuous education and training programs.

2.8 Recent Progress

In response to the 2009 NRC report, the Obama Administration initiated a series of reform efforts aimed at strengthening the forensic sciences, beginning with the creation in 2009 of a Subcommittee on Forensic Science of the National Science and Technology Council’s Committee on Science that was charged with considering how best to achieve the goals of the NRC report. The resulting activities are described in some detail below.

National Commission on Forensic Science

In 2013, the DOJ and NIST, with support from the White House, signed a Memorandum of Understanding that outlined a framework for cooperation and collaboration between the two agencies in support of efforts to strengthen forensic science.

In 2013, DOJ established a National Commission on Forensic Science (NCFS), a Federal advisory committee reporting to the Attorney General. Co-chaired by the Deputy Attorney General and the Director of NIST, the NCFS’s 32 members include seven academic scientists and five other science Ph.D.s; the other members include judges, attorneys and forensic practitioners. It is charged with providing policy recommendations to the Attorney General.⁶⁶ The NCFS issues formal recommendations to the Attorney General, as well as “views

⁶⁴ National Research Council. *Strengthening Forensic Science in the United States: A Path Forward*. The National Academies Press. Washington DC. (2009): 107-8.

⁶⁵ National Research Council. *Strengthening Forensic Science in the United States: A Path Forward*. The National Academies Press. Washington DC. (2009).

⁶⁶ See: www.justice.gov/ncfs.

documents” that reflect two-thirds majority view of NCFS but do not request specific action by the Attorney General. To date, the NCFS has issued ten recommendations concerning, among other things, accreditation of forensic laboratories and certification of forensic practitioners, advancing the interoperability of fingerprint information systems, development of root cause analysis protocols for forensic service providers, and enhancing communications among medical-examiner and coroner offices.⁶⁷ To date, the Attorney General has formally adopted the first set of recommendations on accreditation⁶⁸ and has directed the Department to begin to take steps toward addressing some of the other recommendations put forward to date.⁶⁹

In 2014, NIST established the Organization of Scientific Area Committees (OSAC), a collaborative body of more than 600 volunteer members largely drawn from the forensic science community.⁷⁰ OSAC was established to support the development of voluntary standards and guidelines for consideration by the forensic practitioner community.⁷¹ The structure consists of six Scientific Area Committees (SACs) and 25 subcommittees that work to develop standards, guidelines, and codes of practice for each of the forensic science disciplines and methodologies.⁷² Three overarching resource committees provide guidance on questions of law, human factors, and quality assurance. All documents developed by the SACs are approved by a Forensic Science Standards Board (FSSB), a component of the OSAC structure, for listing on the OSAC Registry of Approved Standards. OSAC is not a Federal advisory committee.

Federal Funding Of Research

The Federal government has also taken steps to address one factor contributing to the problems with forensic science—the lack of a robust and rigorous scientific research community in many disciplines in forensic science. While there are multiple reasons for the absence of such a research community, one reason is that, unlike most scientific disciplines, there has been too little funding to attract and sustain a substantial cadre of excellent scientists focused on *fundamental* research in forensic science.

The National Science Foundation (NSF) has recently begun efforts to help address this foundational shortcoming of forensic science. In 2013, NSF signaled its interest in this area and encouraged researchers to submit research proposals addressing fundamental questions that might advance knowledge and education in the forensic

⁶⁷ For a full list of documents approved by NCFS, see www.justice.gov/ncfs/work-products-adopted-commission.

⁶⁸ Department of Justice. “Justice Department announces new accreditation policies to advance forensic science.” (December 7, 2015, press release). www.justice.gov/opa/pr/justice-department-announces-new-accreditation-policies-advance-forensic-science.

⁶⁹ Memorandum from the Attorney General to Heads of Department Components Regarding Recommendations of the National Commission on Forensic Science, March 17, 2016. www.justice.gov/ncfs/file/841861/download.

⁷⁰ Members include forensic science practitioners and other experts who represent local, State, and Federal agencies; academia; and industry.

⁷¹ For more information see: www.nist.gov/forensics/osac.cfm.

⁷² The six Scientific Area Committees under OSAC are: Biology/DNA, Chemistry/Instrumental Analysis, Crime Scene/Death Investigation, Digital/Multimedia, and Physics/Pattern Interpretation (www.nist.gov/forensics/upload/OSAC-Block-Org-Chart-3-17-2015.pdf).

sciences.⁷³ As a result of an interagency process led by OSTP and NSF, in collaboration with the National Institute of Justice (NIJ), invited proposals for the creation of new, multi-disciplinary research centers for funding in 2014.⁷⁴ Based on our review of grant abstracts, PCAST estimates that NSF commits a total of approximately \$4.5 million per year in support for extramural research projects on foundational forensic science.

NIST has also taken steps to address this issue by creating a new Forensic Science Center of Excellence, called the Center for Statistics and Applications in Forensic Evidence (CSAFE), that will focus its research efforts on improving the statistical foundation for latent prints, ballistics, tire marks, handwriting, bloodstain patterns, toolmarks, pattern evidence analyses, and for computer and information systems, mobile devices, network traffic, social media, and GPS digital evidence analyses.⁷⁵ CSAFE is funded under a cooperative agreement with Iowa State University, to set up a center in partnership with investigators at Carnegie Mellon University, the University of Virginia, and the University of California, Irvine; the total support is \$20 million over five years. PCAST estimates that NIST commits a total of approximately \$5 million per year in support for extramural research projects on foundational forensic science, consisting of approximately \$4 million to CSAFE and approximately \$1 million to other projects.

NIJ has no budget allocated specifically for forensic science research. In order to support research activities, NIJ must draw from its base funding, funding from the Office of Justice Programs' assistance programs for research and statistics, or from the DNA backlog reduction programs.⁷⁶ Most of its research support is directed to applied research. Although it is difficult to classify NIJ's research projects, we estimate that NIJ commits a total of approximately \$4 million per year to support extramural research projects on fundamental forensic science.⁷⁷

Even with the recent increases, the total extramural funding for fundamental research in forensic science across NSF, NIST, and NIJ is thus likely to be in the range of only \$13.5 million per year.

⁷³ See: Dear Colleague Letter: Forensic Science – Opportunity for Breakthroughs in Fundamental and Basic Research and Education. www.nsf.gov/pubs/2013/nsf13120/nsf13120.jsp.

⁷⁴ The centers NSF is proposing to create are Industry/University Cooperative Research Centers (I/UCRCs). I/UCRCs are collaborative by design and could be effective in helping to bridge the scientific and cultural gap between academic researchers who work in forensics-relevant fields of science and forensic practitioners. www.nsf.gov/pubs/2014/nsf14066/nsf14066.pdf.

⁷⁵ National Institute of Standards and Technology. "New NIST Center of Excellence to Improve Statistical Analysis of Forensic Evidence." (2015). www.nist.gov/forensics/center-excellence-forensic052615.cfm.

⁷⁶ National Academies of Sciences, Engineering, and Medicine. *Support for Forensic Science Research: Improving the Scientific Role of the National Institute of Justice*. The National Academies Press. Washington DC. (2015). According to the report, "Congressional appropriations to support NIJ's research programs declined during the early to mid-2000s and remain insufficient, especially in light of the growing challenges facing the forensic science community...With limited base funding, NIJ funds research and development from the appropriations for DNA backlog reduction programs and other assistance programs. These carved-out funds are essentially supporting NIJ's current forensic science portfolio, but there are pressures to limit the amount used for research from these programs. In the past 3 years, funding for these assistance programs has declined; therefore, funds available for research have also been reduced."

⁷⁷ U.S. Department of Justice, National Institute of Justice. "Report Forensic Science: Fiscal Year 2015 Funding for DNA Analysis, Capacity Enhancement and Other Forensic Activities." 2016.

The 2009 NRC report found that

*Forensic science research is [overall] not well supported. . . . Relative to other areas of science, the forensic science disciplines have extremely limited opportunities for research funding. Although the FBI and NIJ have supported some research in the forensic science disciplines, the level of support has been well short of what is necessary for the forensic science community to establish strong links with a broad base of research universities and the national research community. Moreover, funding for academic research is limited . . . , which can inhibit the pursuit of more fundamental scientific questions essential to establishing the foundation of forensic science. Finally, the broader research community generally is not engaged in conducting research relevant to advancing the forensic science disciplines.*⁷⁸

A 2015 NRC report, *Support for Forensic Science Research: Improving the Scientific Role of the National Institute of Justice*, found that the status of forensic science research funding has not improved much since the 2009 NRC report.⁷⁹

In addition, the Defense Forensic Science Center has recently begun to support extramural research spanning the forensic science disciplines as part of its mission to provide specialized forensic and biometric research capabilities and support to the Department of Defense. Redesignated as DFSC in 2013, the Center was formerly the U.S. Army Criminal Investigation Laboratory, originally charged with supporting criminal investigations within the military but additionally tasked in 2007 with providing an “enduring expeditionary forensics capability,” in response in part to the need to investigate and prosecute explosives attacks in Iraq and Afghanistan. While the bulk of DFSC support has traditionally supported research in DNA analysis and biochemistry, the Center has recently directed resources toward projects to address critical foundational gaps in other disciplines, including firearms and latent print analysis.

Notably, DFSC has helped stimulate research in the forensic science community. Discussions between DFSC and the American Society of Crime Lab Directors (ASCLD) led ASCLD to host a meeting in 2011 to identify research priorities for the forensic science community. DFSC agreed to fund two foundational studies to address the highest priority research needs identified by the Forensic Research Committee of ASCLD: the first independent “black-box” study on firearms analysis and a DNA mixture interpretation study (see Chapter 5). In FY 2015, DFSC allocated approximately \$9.2 million to external forensic science research. Seventy-five percent of DFSC’s funding supported projects with regard to DNA/biochemistry; 9 percent digital evidence; 8 percent non-DNA pattern evidence; and 8 percent chemistry.⁸⁰ As is the case for NIJ, there is no line item in DFSC’s budget dedicated to forensic science research; DFSC instead must solicit funding from multiple sources within the Department of Defense to support this research.

⁷⁸ National Research Council. *Strengthening Forensic Science in the United States: A Path Forward*. The National Academies Press. Washington DC. (2009): 78.

⁷⁹ National Academies of Sciences, Engineering, and Medicine. *Support for Forensic Science Research: Improving the Scientific Role of the National Institute of Justice*. The National Academies Press. Washington DC. (2015): 15.

⁸⁰ Defense Forensic Science Center, Office of the Chief Scientist, Annual Research Portfolio Report, January 5, 2016.

A Critical Gap: Scientific Validity

The Administration has taken important and much needed initial steps by creating mechanisms to discuss policy, develop best practices for practitioners of specific methods, and support scientific research. At the same time, work to date has not addressed the 2009 NRC report's call to examine the fundamental scientific validity and reliability of many forensic methods used every day in courts. The remainder of our report focuses on that issue.



3. The Role of Scientific Validity in the Courts

The central focus of this report is the scientific validity of forensic-science evidence—more specifically, evidence from scientific methods for comparison of features (in, for example, DNA, latent fingerprints, bullet marks and other items). The reliability of methods for interpreting evidence is a fundamental consideration throughout science. Accordingly, every scientific field has a well-developed, domain-specific understanding of what scientific validity of methods entails.

The concept of scientific validity also plays an important role in the legal system. In particular, as noted in Chapter 1, the Federal Rules of Evidence require that expert testimony about forensic science must be the product of “reliable principles and methods” that have been “reliably applied . . . to the facts of the case.”

This report explicates the scientific criteria for scientific validity in the case of forensic feature-comparison methods, for use both within the legal system and by those working to strengthen the scientific underpinnings of those disciplines. Before delving into that scientific explication, we provide in this chapter a very brief summary, aimed principally at scientists and lay readers, of the relevant legal background and terms, as well as the nature of this intersection between law and science.

3.1 Evolution of Admissibility Standards

Over the course of the 20th century, the legal system’s approach for determining the admissibility of scientific evidence has evolved in response to advances in science. In 1923, in *Frye v. United States*,⁸¹ the Court of Appeals for the District of Columbia considered the admissibility of testimony concerning results of a purported “lie detector,” a systolic-blood- pressure deception test that was a precursor to the polygraph machine. After describing the device and its operation, the Court rejected the testimony, stating:

*[W]hile courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs.*⁸²

The court found that the systolic test had “not yet gained such standing and scientific recognition among physiological and psychological authorities,” and was therefore inadmissible.

More than a half-century later, the Federal Rules of Evidence were enacted into law in 1975 to guide criminal and civil litigation in Federal courts. Rule 702, in its original form, stated that:

⁸¹ *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923).

⁸² *Ibid.*, 1014.

*If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.*⁸³

There was considerable debate among litigants, judges, and legal scholars as to whether the rule embraced the *Frye* standard or established a new standard.⁸⁴ In 1993, the United States Supreme Court sought to resolve these questions in its landmark ruling in *Daubert v. Merrell Dow Pharmaceuticals*. In interpreting Rule 702, the *Daubert* Court held that the Federal Rules of Evidence superseded *Frye* as the standard for admissibility of expert evidence in Federal courts. The Court rejected “general acceptance” as the standard for admissibility and instead held that the admissibility of scientific expert testimony depended on its scientific reliability.

Where *Frye* told judges to defer to the judgment of the relevant expert community, *Daubert* assigned trial court judges the role of “gatekeepers” charged with ensuring that expert testimony “rests on reliable foundation.”⁸⁵

The Court stated that “the trial judge must determine . . . whether the reasoning or methodology underlying the testimony is scientifically valid.”⁸⁶ It identified five factors that a judge should, among others, ordinarily consider in evaluating the validity of an underlying methodology. These factors are: (1) whether the theory or technique can be (and has been) tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) the known or potential rate of error of a particular scientific technique; (4) the existence and maintenance of standards controlling the technique’s operation; and (5) a scientific technique’s degree of acceptance within a relevant scientific community.

The *Daubert* court also noted that judges evaluating proffers of expert scientific testimony should be mindful of other applicable rules, including:

- Rule 403, which permits the exclusion of relevant evidence “if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury...” (noting that expert evidence can be “both powerful and quite misleading because of the difficulty in evaluating it.”); and
- Rule 706, which allows the court at its discretion to procure the assistance of an expert of its own choosing.⁸⁷

⁸³ Act of January 2, 1975, Pub. Law No. 93-595, 88 Stat. 1926 (1975). See: [federalevidence.com/pdf/FRE_Amendments/1975_Orig_Enact/1975-Pub.L.93-595_FRE.pdf](https://www.federalevidence.com/pdf/FRE_Amendments/1975_Orig_Enact/1975-Pub.L.93-595_FRE.pdf).

⁸⁴ See: Giannelli, P.C. “The admissibility of novel scientific evidence: *Frye v. United States*, a half-century later.” *Columbus Law Review*, Vol. 80, No. 6 (1980); McCabe, J. “DNA fingerprinting: The failings of *Frye*,” *Norther Illinois University Law Review*, Vol. 16 (1996): 455-82; and Page, M., Taylor, J., and M. Blenkin. “Forensic identification science evidence since *Daubert*: Part II—judicial reasoning in decisions to exclude forensic identification evidence on grounds of reliability.” *Journal of Forensic Sciences*, Vol. 56, No. 4 (2011): 913-7.

⁸⁵ *Daubert*, at 597.

⁸⁶ *Daubert*, at 580. See also, FN9 (“In a case involving scientific evidence, *evidentiary reliability* will be based on *scientific validity*.” [emphasis in original]).

⁸⁷ *Daubert*, at 595, citing Weinstein, 138 F.R.D., at 632.

Congress amended Rule 702 in 2000 to make it more precise, and made further stylistic changes in 2011. In its current form, Rule 702 imposes four requirements:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

- (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;*
- (b) the testimony is based on sufficient facts or data;*
- (c) the testimony is the product of reliable principles and methods; and*
- (d) the expert has reliably applied the principles and methods to the facts of the case.*

An Advisory Committee's Note to Rule 702 also specified a number of reliability factors that supplement the five factors enumerated in *Daubert*. Among those factors is "whether the field of expertise claimed by the expert is known to reach reliable results."^{88,89}

Many states have adopted rules of evidence that track key aspects of these federal rules. Such rules are now the law in over half of the states, while other states continue to follow the *Frye* standard or variations of it.⁹⁰

3.2 Foundational Validity and Validity as Applied

As described in *Daubert*, the legal system envisions an important conversation between law and science:

"The [judge's] inquiry envisioned by Rule 702 is, we emphasize, a flexible one. Its overarching subject is the scientific validity—and thus the evidentiary relevance and reliability—of the principles that underlie a proposed submission."⁹¹

⁸⁸ See: Fed. R. Evid. 702 Advisory Committee note (2000). The following factors may be relevant under Rule 702: whether the underlying research was conducted independently of litigation; whether the expert unjustifiably extrapolated from an accepted premise to an unfounded conclusion; whether the expert has adequately accounted for obvious alternative explanations; whether the expert was as careful as she would be in her professional work outside of paid litigation; and *whether the field of expertise claimed by the expert is known to reach reliable results* [emphasis added].

⁸⁹ This note has been pointed to as support for efforts to challenge entire fields of forensic science, including fingerprints and hair comparisons. See: Giannelli, P.C. "The Supreme Court's 'Criminal' *Daubert* Cases." *Seton Hall Law Review*, Vol. 33 (2003): 1096.

⁹⁰ Even under the *Frye* formulation, the views of scientists about the meaning of reliability are relevant. *Frye* requires that a scientific technique or method must "have general acceptance" in the relevant scientific community to be admissible. As a scientific matter, the relevant scientific community for assessing the reliability of feature-comparison sciences includes metrologists (including statisticians) as well as other physical and life scientists from disciplines on which the specific methods are based. Importantly, the community is not limited to forensic scientists who practice the specific method. For example, the *Frye* court evaluated whether the proffered lie detector had gained "standing and scientific recognition among physiological and psychological authorities," rather than among lie detector experts. *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923).

⁹¹ *Daubert*, at 594

Legal and scientific considerations thus both play important roles.

- (1) The admissibility of expert testimony depends on a threshold test of, among other things, whether it meets certain *legal* standards embodied in Rule 702. These decisions about admissibility are exclusively the province of the courts.
- (2) Yet, as noted above, the overarching subject of the judge’s inquiry under Rule 702 is “scientific validity.” It is the proper province of the scientific community to provide guidance concerning *scientific* standards for scientific validity.

PCAST does not opine here on the legal standards, but seeks only to clarify the scientific standards that underlie them. For complete clarity about our intent, we have adopted specific terms to refer to the *scientific* standards for two key types of scientific validity, which we mean to correspond, as scientific standards, to the legal standards in Rule 702 (c,d):

- (1) by “foundational validity,” we mean the *scientific* standard corresponding to the legal standard of evidence being based on “reliable principles and methods,” and
- (2) by “validity as applied,” we mean the *scientific* standard corresponding to the legal standard of an expert having “reliably applied the principles and methods.”

In the next chapter, we turn to discussing the scientific standards for these concepts. We close this chapter by noting that answering the question of scientific validity in the forensic disciplines is important not just for the courts but also because it sets quality standards that ripple out throughout these disciplines—affecting practice and defining necessary research.



4. Scientific Criteria for Validity and Reliability of Forensic Feature-Comparison Methods

In this report, PCAST has chosen to focus on defining the validity and reliability of one specific area within forensic science: forensic feature-comparison methods. We have done so because it is both possible and important to do so for this particular class of methods.

- It is *possible* because feature comparison is a common scientific activity, and science has clear standards for determining whether such methods are reliable. In particular, feature-comparison methods belong squarely to the discipline of metrology—the science of measurement and its application.^{92,93}
- It is *important* because it has become apparent, over the past decade, that faulty forensic feature comparison has led to numerous miscarriages of justice.⁹⁴ It has also been revealed that the problems

⁹² International Vocabulary of Metrology – Basic and General Concepts and Associated Terms (VIM 3rd edition) JCGM 200 (2012).

⁹³ That forensic feature-comparison methods belong to the field of metrology is clear from the fact that NIST—whose mission is to assist the Nation by “advancing measurement science, standards and technology,” and which is the world’s leading metrological laboratory—is the home within the Federal government for research efforts on forensic science. NIST’s programs include internal research, extramural research funding, conferences, and preparation of reference materials and standards. See: www.nist.gov/public_affairs/mission.cfm and www.nist.gov/forensics/index.cfm. Forensic feature-comparison methods involve determining whether two sets of features agree within a given measurement tolerance.

⁹⁴ DNA-based re-examination of past cases has led so far to the exonerations of 342 defendants, including 20 who had been sentenced to death, and to the identification of 147 real perpetrators. See: Innocence Project, “DNA Exonerations in the United States.” www.innocenceproject.org/dna-exonerations-in-the-united-states. Reviews of these cases have revealed that roughly half relied in part on expert testimony that was based on methods that had not been subjected to meaningful scientific scrutiny or that included scientifically invalid claims of accuracy. See: Gross, S.R., and M. Shaffer. “Exonerations in the United States, 1989-2012.” National Registry of Exonerations, (2012) available at: www.law.umich.edu/special/exoneration/Documents/exonerations_us_1989_2012_full_report.pdf; Garrett, B.L., and P.J. Neufeld. “Invalid forensic science testimony and wrongful convictions.” *Virginia Law Review*, Vol. 91, No. 1 (2009): 1-97; National Research Council. *Strengthening Forensic Science in the United States: A Path Forward*. The National Academies Press. Washington DC. (2009): 42-3. The nature of the issues is illustrated by specific examples described in the materials cited: Levon Brooks and Kennedy Brewer, each convicted of separate child murders in the 1990s almost entirely on the basis of bitemark analysis testimony, spent more than 13 years in prison before DNA testing identified the actual perpetrator, who confessed to both crimes; Santae Tribble, convicted of murder after an FBI analyst testified that hair from a stocking mask linked Tribble to the crime and “matched in all microscopic characteristics,” spent more than 20 years in prison before DNA testing revealed that none of the 13 hairs belonged to Tribble and that one came from a dog; Jimmy Ray Bromgard of Montana served 15 years in prison for rape before DNA testing showed that hairs collected from the victim’s bed and reported as a match to Bromgard’s could not have come from him; Stephan Cowans, convicted of shooting a Boston police officer after two fingerprint experts testified that a thumbprint left by the perpetrator was “unique and

are not due simply to poor performance by a few practitioners, but rather to the fact that the reliability of many forensic feature-comparison methods has never been meaningfully evaluated.⁹⁵

Compared to many types of expert testimony, testimony based on forensic feature-comparison methods poses unique dangers of misleading jurors for two reasons:

- The vast majority of jurors have no independent ability to interpret the probative value of results based on the detection, comparison, and frequency of scientific evidence. If matching halves of a ransom note were found at a crime scene and at a defendant's home, jurors could rely on their own experiences to assess how unlikely it is that two torn scraps would match if they were not in fact from a single original note. If a witness were to describe a perpetrator as "tall and bushy haired," jurors could make a reasonable judgment of how many people might match the description. But, if an expert witness were to say that, in two DNA samples, the third exon of the *DYNC1H1* gene is precisely 174 nucleotides in length, most jurors would have no way to know if they should be impressed by the coincidence; they would be completely dependent on expert statements garbed in the mantle of science. (As it happens, they should not be impressed by the preceding statement: At the DNA locus cited, more than 99.9 percent of people have a fragment of the indicated size.⁹⁶)
- The potential prejudicial impact is unusually high, because jurors are likely to overestimate the probative value of a "match" between samples. Indeed, the DOJ itself historically overestimated the probative value of matches in its longstanding contention, now acknowledged to be inappropriate, that latent fingerprint analysis was "infallible."⁹⁷ Similarly, a former head of the FBI's fingerprint unit testified that the FBI had "an error rate of one per every 11 million cases."⁹⁸ In an online experiment, researchers asked mock jurors to estimate the frequency that a qualified, experienced forensic scientist would mistakenly conclude that two samples of specified types came from the same person when they actually came from two different people. The mock jurors believed such errors are likely to occur about 1 in 5.5 million for fingerprint analysis comparison; 1 in 1 million for bitemark comparison; 1 in 1 million for hair comparison; and 1 in 100 thousand for handwriting comparison.⁹⁹ While precise error rates are not known for most of these techniques, all indications point to the actual error rates being orders of magnitude higher. For example, the FBI's own studies of latent fingerprint analysis point to error rates in the range of one in several hundred.¹⁰⁰ (Because the term "match" is likely to imply an

identical," spent more than 5 years in prison before DNA testing on multiple items of evidence excluded him as the perpetrator; and Steven Barnes of upstate New York served 20 years in prison for a rape and murder he did not commit after a criminalist testified that a photographic overlay of fabric from the victim's jeans and an imprint on Barnes' truck showed patterns that were "similar" and hairs collected from the truck were similar to the victim's hairs.

⁹⁵ See: Chapter 5.

⁹⁶ See: ExAC database: exac.broadinstitute.org/gene/ENSG00000197102.

⁹⁷ See: www.justice.gov/olp/file/861906/download.

⁹⁸ *U.S. v. Baines* 573 F.3d 979 (2009) at 984.

⁹⁹ Koehler, J.J. "Intuitive error rate estimates for the forensic sciences." (August 2, 2016). Available at papers.ssrn.com/sol3/papers.cfm?abstract_id=2817443.

¹⁰⁰ See: Section 5.4.

inappropriately high probative value, a more neutral term should be used for an examiner's belief that two samples come from the same source. We suggest the term "*proposed* identification" to appropriately convey the examiner's conclusion, along with the possibility that it might be wrong. We will use this term throughout this report.)

This chapter lays out PCAST's conclusions concerning the scientific criteria for scientific validity. The conclusions are based on the fundamental principles of the "scientific method"—applicable throughout science—that valid scientific knowledge can *only* be gained through *empirical* testing of specific propositions.¹⁰¹ PCAST's conclusions in the chapter might be briefly summarized as follows:

Scientific validity and reliability require that a method has been subjected to empirical testing, under conditions appropriate to its intended use, that provides valid estimates of how often the method reaches an incorrect conclusion. For subjective feature-comparison methods, appropriately designed black-box studies are required, in which many examiners render decisions about many independent tests (typically, involving "questioned" samples and one or more "known" samples) and the error rates are determined. Without appropriate estimates of accuracy, an examiner's statement that two samples are similar—or even indistinguishable—is scientifically meaningless: it has no probative value, and considerable potential for prejudicial impact. Nothing—not training, personal experience nor professional practices—can substitute for adequate empirical demonstration of accuracy.

The chapter is organized as follows:

- The first section describes the distinction between two fundamentally different types of feature-comparison methods: objective methods and subjective methods.
- The next five sections discuss the scientific criteria for the two types of scientific validity: foundational validity and validity as applied.
- The final two sections discuss views held in the forensic community.

4.1 Feature-Comparison Methods: Objective and Subjective Methods

A forensic feature-comparison method is a procedure by which an examiner seeks to determine whether an evidentiary sample (e.g., from a crime scene) is or is not associated with a source sample (e.g., from a suspect)¹⁰² based on similar features. The evidentiary sample might be DNA, hair, fingerprints, bite marks, tool marks, bullets, tire tracks, voiceprints, visual images, and so on. The source sample would be biological material or an item (tool, gun, shoe, or tire) associated with the suspect.

¹⁰¹ For example, the Oxford Online Dictionary defines the scientific method as "a method or procedure that has characterized the natural sciences since the 17th century, consisting in systematic observation, measurement, and experimentation, and the formulation, testing, and modification of hypotheses." "Scientific method" *Oxford Dictionaries Online*. Oxford University Press (accessed on August 19, 2016).

¹⁰² A "source sample" refers to a specific individual or object (e.g., a tire or gun).

Feature-comparison methods may be classified as either objective or subjective. By objective feature-comparison methods, we mean methods consisting of procedures that are each defined with enough standardized and quantifiable detail that they can be performed by either an automated system or human examiners exercising little or no judgment. By subjective methods, we mean methods including key procedures that involve significant human judgment—for example, about which features to select or how to determine whether the features are sufficiently similar to be called a proposed identification.

Objective methods are, in general, preferable to subjective methods. Analyses that depend on human judgment (rather than a quantitative measure of similarity) are obviously more susceptible to human error, bias, and performance variability across examiners.¹⁰³ In contrast, objective, quantified methods tend to yield greater accuracy, repeatability and reliability, including reducing variation in results among examiners. Subjective methods can evolve into or be replaced by objective methods.¹⁰⁴

4.2 Foundational Validity: Requirement for Empirical Studies

For a metrological method to be scientifically valid and reliable, the procedures that comprise it must be shown, based on empirical studies, to be *repeatable*, *reproducible*, and *accurate*, at levels that have been measured and are appropriate to the intended application.^{105,106}

BOX 2. Definition of key terms

By “repeatable,” we mean that, with known probability, an examiner obtains the same result, when analyzing samples from the same sources.

By “reproducible,” we mean that, with known probability, different examiners obtain the same result, when analyzing the same samples.

By “accurate,” we mean that, with known probabilities, an examiner obtains correct results both (1) for samples from the same source (true positives) and (2) for samples from different sources (true negatives).

By “reliability,” we mean repeatability, reproducibility, and accuracy.¹⁰⁷

¹⁰³ Dror, I.E. “A hierarchy of expert performance.” *Journal of Applied Research in Memory and Cognition*, Vol. 5 (2016): 121-127.

¹⁰⁴ For example, before the development of objective tests for intoxication, courts had to rely exclusively on the testimony of police officers and others who in turn relied on behavioral indications of drunkenness and the presence of alcohol on the breath. The development of objective chemical tests drove a change from subjective to objective standards.

¹⁰⁵ National Physical Laboratory. “A Beginner’s Guide to Measurement.” (2010) available at:

www.npl.co.uk/upload/pdf/NPL-Beginners-Guide-to-Measurement.pdf; Pavese, F. “An Introduction to Data Modelling Principles in Metrology and Testing.” in *Data Modeling for Metrology and Testing in Measurement Science*, Pavese, F. and A.B. Forbes (Eds.) Birkhäuser (2009).

¹⁰⁶ Feature-comparison methods that get the wrong answer too often have, by definition, low probative value. As discussed above, the prejudicial impact will thus likely to outweigh the probative value.

¹⁰⁷ We note that “reliability” also has a narrow meaning within the field of statistics referring to “consistency”—that is, the extent to which a method produces the same result, regardless of whether the result is accurate. This is not the sense in which “reliability” is used in this report, or in the law.

By “scientific validity,” we mean that a method has shown, based on empirical studies, to be reliable with levels of repeatability, reproducibility, and accuracy that are appropriate to the intended application.

By an “empirical study,” we mean test in which a method has been used to analyze a large number of independent sets of samples, similar in relevant aspects to those encountered in casework, in order to estimate the method’s repeatability, reproducibility, and accuracy.

By a “black-box study,” we mean an empirical study that assesses a subjective method by having examiners analyze samples and render opinions about the origin or similarity of samples.

The method need not be perfect, but it is clearly *essential* that its accuracy has been measured based on appropriate empirical testing and is high enough to be appropriate to the application. Without an appropriate estimate of its accuracy, a metrological method is useless—because one has no idea how to interpret its results. The importance of knowing a method’s accuracy was emphasized by the 2009 NRC report on forensic science and by a 2010 NRC report on biometric technologies.¹⁰⁸

To meet the scientific criteria of foundational validity, two key elements are required:

- (1) a reproducible and consistent procedure for (a) identifying features within evidence samples; (b) comparing the features in two samples; and (c) determining, based on the similarity between the features in two samples, whether the samples should be declared to be a proposed identification (“matching rule”).
- (2) empirical measurements, from multiple independent studies, of (a) the method’s false positive rate—that is, the probability it declares a proposed identification between samples that actually come from *different* sources and (b) the method’s sensitivity—that is, probability that it declares a proposed identification between samples that actually come from the *same* source.

We discuss these elements in turn.

Reproducible and Consistent Procedures

For a method to be objective, *each* of the three steps (feature identification, feature comparison, and matching rule) should be precisely defined, reproducible and consistent. Forensic examiners should identify relevant features in the same way and obtain the same result. They should compare features in the same quantitative manner. To declare a proposed identification, they should calculate whether the features in an evidentiary sample and the features in a sample from a suspected source lie within a pre-specified measurement tolerance

¹⁰⁸ “Biometric recognition is an inherently probabilistic endeavor...Consequently, even when the technology and the system it is embedded in are behaving as designed, there is inevitable uncertainty and risk of error.” National Research Council, *“Biometric Recognition: Challenges and Opportunities.”* The National Academies Press. Washington DC. (2010): viii-ix.

(matching rule).¹⁰⁹ For an objective method, one can establish the foundational validity of each of the individual steps by measuring its accuracy, reproducibility, and consistency.

For subjective methods, procedures must still be carefully defined—but they involve substantial human judgment. For example, different examiners may recognize or focus on different features, may attach different importance to the same features, and may have different criteria for declaring proposed identifications. Because the procedures for feature identification, the matching rule, and frequency determinations about features are not objectively specified, the overall procedure must be treated as a kind of “black box” inside the examiner’s head.

Subjective methods require careful scrutiny, more generally, their heavy reliance on human judgment means that they are especially vulnerable to human error, inconsistency across examiners, and cognitive bias. In the forensic feature-comparison disciplines, cognitive bias includes the phenomena that, in certain settings, humans (1) may tend naturally to focus on similarities between samples and discount differences and (2) may also be influenced by extraneous information and external pressures about a case.¹¹⁰ (The latter issues are illustrated by the FBI’s misidentification of a latent fingerprint in the Madrid training bombing, discussed on p.9.)

Since the black box in the examiner’s head cannot be examined directly for its foundational basis in science, the foundational validity of subjective methods can be established *only* through empirical studies of examiner’s performance to determine whether they can provide accurate answers; such studies are referred to as “black-box” studies (Box 2). In black-box studies, many examiners are presented with many independent comparison problems—typically, involving “questioned” samples and one or more “known” samples—and asked to declare whether the questioned samples came from the same source as one of the known samples.¹¹¹ The researchers then determine how often examiners reach erroneous conclusions.

¹⁰⁹ If a source is declared *not* to share the same features, it is “excluded” by the test. The matching rule should be chosen carefully. If the “matching rule” is chosen to be too strict, samples that actually come from the same source will be declared a non-match (false negative). If it is too lax, then the method will not have much discriminatory power because the random match probability will be too high (false positive).

¹¹⁰ See, for example: Boroditsky, L. “Comparison and the development of knowledge.” *Cognition*, Vol. 102 (2007): 118-128; Hassin, R. “Making features similar: comparison processes affect perception.” *Psychonomic Bulletin & Review*, Vol. 8 (2001): 728–31; Medin, D.L., Goldstone, R.L., and D. Gentner. “Respects for similarity.” *Psychological Review*, Vol. 100 (1993): 254–78; Tversky, A. “Features of similarity.” *Psychological Review*, Vol. 84 (1977): 327–52; Kim, J., Novemsky, N., and R. Dhar. “Adding small differences can increase similarity and choice.” *Psychological Science*, Vol. 24 (2012): 225–9; Larkey, L.B., and A.B. Markman. “Processes of similarity judgment.” *Cognitive Science*, Vol. 29 (2005): 1061–76; Medin, D.L., Goldstone, R.L., and A.B. Markman. “Comparison and choice: Relations between similarity processes and decision processes.” *Psychonomic Bulletin and Review*, Vol. 2 (1995): 1–19; Goldstone, R. L. “The role of similarity in categorization: Providing a groundwork.” *Cognition*, Vol. 52 (1994): 125–57; Nosofsky, R. M. “Attention, similarity, and the identification-categorization relation.” *Journal of Experimental Psychology, General*, Vol. 115 (1986): 39–57.

¹¹¹ Answers may be expressed in such terms as “match/no match/inconclusive” or “identification/exclusion/inconclusive.”

As an excellent example, the FBI recently conducted a black-box study of latent fingerprint analysis, involving 169 examiners and 744 fingerprint pairs, and published the results of the study in a leading scientific journal.¹¹²

(Some forensic scientists have cautioned that too much attention to the subjective aspects of forensic methods—such as studies of cognitive bias and black-box studies—might distract from the goal of improving knowledge about the objective features of the forensic evidence and developing truly objective methods.¹¹³ Others have noted that this is not currently a problem, because current efforts and funding to address the challenges associated with subjective forensic methods are very limited.¹¹⁴)

Empirical Measurements of Accuracy

It is necessary to have appropriate empirical measurements of a method's false positive rate and the method's sensitivity. As explained in Appendix A, it is necessary to know these two measures to assess the probative value of a method.

The false positive rate is the probability that the method declares a proposed identification between samples that actually come from *different* sources. For example, a false positive rate of 5 percent means that two samples from *different* sources will (due to limitations of the method) be incorrectly declared to come from the same source 5 percent of the time. (The quantity equal to one minus the false positive rate—95 percent, in the example—is referred to as the specificity.)

The method's sensitivity is the probability that the method declares a proposed identification between samples that actually come from the *same* source. For example, a sensitivity of 90 percent means two samples from the same source will be declared to come from the same source 90 percent of the time, and declared to come from different sources 10 percent of the time. (The latter quantity is referred to as the false negative rate.)

The false positive rate is especially important because false positive results can lead directly to wrongful convictions.¹¹⁵ In some circumstances, it may be possible to estimate a false positive rate related to specific features of the evidence in the case. (For example, the random match probability calculated in DNA analysis depends in part on the specific genotype seen in an evidentiary sample. The false positive rate for latent fingerprint analysis may depend on the quality of the latent print.) For other feature-comparison methods, it may be only possible to make an overall estimate of the average false positive rate across samples.

For objective methods, the false positive rate is composed of two distinguishable sources—coincidental matches (where samples from different sources nonetheless have *features* that fall within the tolerance of the objective matching rule) and human/technical failures (where samples have features that fall outside the matching rule, but where a proposed identification was nonetheless declared due to a human or technical failure). For

¹¹² Ulery, B.T., Hicklin, R.A., Buscaglia, J., and M.A. Roberts. "Accuracy and reliability of forensic latent fingerprint decisions." *Proceedings of the National Academy of Sciences*, Vol. 108, No. 19 (2011): 7733-8.

¹¹³ Champod, C. "Research focused mainly on bias will paralyse forensic science." *Science & Justice*, Vol. 54 (2014): 107-9.

¹¹⁴ Risinger, D.M., Thompson, W.C., Jamieson, A., Koppl, R., Kornfield, I., Krane, D., Mnookin, J.L., Rosenthal, R., Saks, M.J., and S.L. Zabell. "Regarding Champod, editorial: "Research focused mainly on bias will paralyse forensic science." *Science and Justice*, Vol. 54 (2014):508-9.

¹¹⁵ See footnote 94, p. 44. Under some circumstances, false-negative results can contribute to wrongful convictions as well.

objective methods where the probability of coincidental match is very low (such as DNA analysis), the false positive rate in application in a given case will be dominated by the rate of human/technical failures—which may well be hundreds of times larger.

For subjective methods, both types of error—coincidental matches and human/technical failures—occur as well, but, without an objective “matching rule,” the two sources cannot be distinguished. In establishing foundational validity, it is thus essential to perform black-box studies that empirically measure the overall error rate across many examiners. (See Box 3 concerning the word “error.”)

BOX 3. The meanings of “error”

The term “error” has differing meanings in science and law, which can lead to confusion. In legal settings, the term “error” often implies fault—e.g., that a person has made a mistake that could have been avoided if he or she had properly followed correct procedures or a machine has given an erroneous result that could have been avoided if it had been properly calibrated. In science, the term “error” also includes the situation in which the procedure itself, when properly applied, does not yield the correct answer owing to chance occurrence.

When one applies a forensic feature-comparison method with the goal of assessing whether two samples did or did not come from the same source, coincidental matches and human/technical failures are both regarded, from a statistical point of view, as “errors” because both can lead to incorrect conclusions.

Studies designed to estimate a method’s false positive rate and sensitivity are necessarily conducted using only a finite number of samples. As a consequence, they cannot provide “exact” values for these quantities (and should not claim to do so), but only “confidence intervals,” whose bounds reflect, respectively, the range of values that are reasonably compatible with the results. When reporting a false positive rate to a jury, it is scientifically important to state the “upper 95 percent one-sided confidence bound” to reflect the fact that the actual false positive rate could reasonably be as high as this value.¹¹⁶ (For more information, see Appendix A.)

Studies often categorize their results as being conclusive (e.g., identification or exclusion) or inconclusive (no determination made).¹¹⁷ When reporting a false positive rate to a jury, it is scientifically important to calculate the rate based on the proportion of *conclusive* examinations, rather than just the proportion of all examinations. This is appropriate because evidence used against a defendant will typically be based on *conclusive*, rather than inconclusive, examinations. To illustrate the point, consider an extreme case in which a method had been

¹¹⁶ The upper confidence bound properly incorporates the precision of the estimate based on the sample size. For example, if a study found no errors in 100 tests, it would be misleading to tell a jury that the error rate was 0 percent. In fact, if the tests are independent, the upper 95 percent confidence bound for the true error rate is 3.0 percent. Accordingly a jury should be told that the error rate could be as high as 3.0 percent (that is, 1 in 33). The true error rate could be higher, but with rather small probability (less than 5 percent). If the study were much smaller, the upper 95 percent confidence limit would be higher. For a study that found no errors in 10 tests, the upper 95 percent confidence bound is 26 percent—that is, the actual false positive rate could be roughly 1 in 4 (see Appendix A).

¹¹⁷ See: Chapter 5.

tested 1000 times and found to yield 990 inconclusive results, 10 false positives, and no correct results. It would be misleading to report that the false positive rate was 1 percent (10/1000 examinations). Rather, one should report that 100 percent of the conclusive results were false positives (10/10 examinations).

Whereas exploratory scientific studies may take many forms, scientific *validation* studies—intended to assess the validity and reliability of a metrological method for a particular forensic feature-comparison application—must satisfy a number of criteria, which are described in Box 4.

BOX 4. Key criteria for validation studies to establish foundational validity

Scientific validation studies—intended to assess the validity and reliability of a metrological method for a particular forensic feature-comparison application—must satisfy a number of criteria.

(1) The studies must involve a sufficiently large number of examiners and must be based on sufficiently *large* collections of *known* and *representative* samples from *relevant* populations to reflect the range of features or combinations of features that will occur in the application. In particular, the sample collections should be:

(a) representative of the quality of evidentiary samples seen in real cases. (For example, if a method is to be used on distorted, partial, latent fingerprints, one must determine the *random match probability*—that is, the probability that the match occurred by chance—for distorted, partial, latent fingerprints; the random match probability for full scanned fingerprints, or even very high quality latent prints would not be relevant.)

(b) chosen from populations relevant to real cases. For example, for features in biological samples, the false positive rate should be determined for the overall US population and for major ethnic groups, as is done with DNA analysis.

(c) large enough to provide appropriate estimates of the error rates.

(2) The empirical studies should be conducted so that neither the examiner nor those with whom the examiner interacts have any information about the correct answer.

(3) The study design and analysis framework should be specified in advance. In validation studies, it is inappropriate to modify the protocol afterwards based on the results.¹¹⁸

¹¹⁸ The analogous situation in medicine is a clinical trial to test the safety and efficacy of a drug for a particular application. In the design of clinical trials, FDA requires that criteria for analysis must be pre-specified and notes that *post hoc* changes to the analysis compromise the validity of the study. See: FDA Guidance: “Adaptive Designs for Medical Device Clinical Studies” (2016) Available at:

www.fda.gov/downloads/medicaldevices/deviceregulationandguidance/guidancedocuments/ucm446729.pdf; Alish, M., Fritsch, K., Huque, M., Mahjoob, K., Pennello, G., Rothmann, M., Russek-Cohen, E., Smith, F., Wilson, S., and L. Yue. “Statistical considerations on subgroup analysis in clinical trials.” *Statistics in Biopharmaceutical Research*, Vol. 7 (2015): 286-303; FDA Guidance: “Design Considerations for Pivotal Clinical Investigations for Medical Devices” (2013) (available at:

- (4) The empirical studies should be conducted or overseen by individuals or organizations that have no stake in the outcome of the studies.¹¹⁹
- (5) Data, software and results from validation studies should be available to allow other scientists to review the conclusions.
- (6) To ensure that conclusions are reproducible and robust, there should be multiple studies by separate groups reaching similar conclusions.

An empirical measurement of error rates is not simply a desirable feature; it is *essential* for determining whether a method is foundationally valid. In science, a testing procedure—such as testing whether a person is pregnant or whether water is contaminated—is not considered valid until its reliability has been *empirically* measured. For example, we need to know how often the pregnancy test declares a pregnancy when there is none, and *vice versa*. The same scientific principles apply no less to forensic tests, which may contribute to a defendant losing his life or liberty.

Importantly, error rates cannot be inferred from casework, but rather must be determined based on samples where the correct answer is known. For example, the former head of the FBI’s fingerprint unit testified that the FBI had “an error rate of one per every 11 million cases” based on the fact that the agency was known to have made only one mistake over the past 11 years, during which time it had made 11 million identifications.¹²⁰ The fallacy is obvious: the expert simply *assumed without evidence* that every error in casework had come to light.

Why is it essential to know a method’s false positive rate and sensitivity? Because without appropriate empirical measurement of a method’s accuracy, the fact that two samples in a particular case show similar features has *no probative value*—and, as noted above, it may have considerable prejudicial impact because juries will likely incorrectly attach meaning to the observation.¹²¹

www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm373750.htm); FDA Guidance for Industry: E9 Statistical Principles for Clinical Trials (September 1998) (available at: www.fda.gov/downloads/drugs/guidancecomplianceregulatoryinformation/guidances/ucm073137.pdf); Pocock, S.J. Clinical trials: a practical approach. Wiley, Chichester (1983).

¹¹⁹ In the setting of clinical trials, the sponsor of the trial (a pharmaceutical, device or biotech company or, in some cases, an academic institutions) funds and initiates the study, but the trial is conducted by individuals who are independent of the sponsor (often, academic physicians), in order to ensure the reliability of the data generated by the study and minimize the potential for bias. See, for example, 21 C.F.R. § 312.3 and 21 C.F.R. § 54.4(a).

¹²⁰ *U.S. v. Baines* 573 F.3d 979 (2009) at 984.

¹²¹ Under Fed. R. Evid., Rule 403, evidence should be excluded “if its probative value is substantially outweighed by the danger of unfair prejudice.”

The absolute need, from a scientific perspective, for empirical data is elegantly expressed in an analogy by U.S. District Judge John Potter in his opinion in *U.S. v. Yee* (1991), an early case on the use of DNA analysis:

Without the probability assessment, the jury does not know what to make of the fact that the patterns match: the jury does not know whether the patterns are as common as pictures with two eyes, or as unique as the Mona Lisa.^{122,123}

4.3 Foundational Validity: Requirement for Scientifically Valid Testimony

It should be obvious—but it bears emphasizing—that once a method has been established as foundationally valid based on appropriate empirical studies, claims about the method’s accuracy and the probative value of proposed identifications, in order to be valid, must be based on such empirical studies. *Statements claiming or implying greater certainty than demonstrated by empirical evidence are scientifically invalid.* Forensic examiners should therefore report findings of a proposed identification with clarity and restraint, explaining in each case that the fact that two samples satisfy a method’s criteria for a proposed match does not necessarily imply that the samples come from a common source. If the false positive rate of a method has been found to be 1 in 50, experts should not imply that the method is able to produce results at a higher accuracy.

Troublingly, expert witnesses sometimes go beyond the empirical evidence about the frequency of features—even to the extent of claiming or implying that a sample came from a specific source with near-certainty or even absolute certainty, despite having no scientific basis for such opinions.¹²⁴ From the standpoint of scientific validity, experts should never be permitted to state or imply in court that they can draw conclusions with certainty or near-certainty (such as “zero,” “vanishingly small,” “essentially zero,” “negligible,” “minimal,” or “microscopic” error rates; “100 percent certainty” or “to a reasonable degree of scientific certainty;” or identification “to the exclusion of all other sources.”¹²⁵

The scientific inappropriateness of such testimony is aptly captured by an analogy by District of Columbia Court of Appeals Judge Catharine Easterly in her concurring opinion in *Williams v. United States*, a case in which an examiner testified that markings on certain bullets were unique to a gun recovered from a defendant’s apartment:

¹²² *U.S. v. Yee*, 134 F.R.D. 161 (N.D. Ohio 1991).

¹²³ Some courts have ruled that there is no harm in admitting feature-comparison evidence on the grounds that jurors can see the features with their own eyes and decide for themselves about whether features are shared. *U.S. v. Yee* shows why this reasoning is fallacious: jurors have no way to know how often two different samples would share features, and to what level of specificity.

¹²⁴ As noted above, the long history of exaggerated claims for the accuracy of forensic methods includes the DOJ’s own prior statement that latent fingerprint analysis was “infallible,” which the DOJ has judged to have been inappropriate. www.justice.gov/olp/file/861906/download.

¹²⁵ Cole, S.A. “Grandfathering evidence: Fingerprint admissibility rulings from Jennings to Llera Plaza and back again.” 41 *American Criminal Law Review*, 1189 (2004). See also: National Research Council. *Strengthening Forensic Science in the United States: A Path Forward*. The National Academies Press. Washington DC. (NRC Report, 2009): 87, 104, and 143.

*As matters currently stand, a certainty statement regarding toolmark pattern matching has the same probative value as the vision of a psychic: it reflects nothing more than the individual's foundationless faith in what he believes to be true. This is not evidence on which we can in good conscience rely, particularly in criminal cases, where we demand proof—real proof—beyond a reasonable doubt, precisely because the stakes are so high.*¹²⁶

In science, assertions that a metrological method is more accurate than has been empirically demonstrated are rightly regarded as mere speculation, not valid conclusions that merit credence.

4.4 Neither Experience nor Professional Practices Can Substitute for Foundational Validity

In some settings, an expert may be scientifically capable of rendering judgments based primarily on his or her “experience” and “judgment.” Based on experience, a surgeon might be scientifically qualified to offer a judgment about whether another doctor acted appropriately in the operating theater or a psychiatrist might be scientifically qualified to offer a judgment about whether a defendant is mentally competent to assist in his or her defense.

By contrast, “experience” or “judgment” cannot be used to establish the scientific validity and reliability of a metrological method, such as a forensic feature-comparison method. The frequency with which a particular pattern or set of features will be observed in different samples, which is an essential element in drawing conclusions, is not a matter of “judgment.” It is an empirical matter for which only empirical evidence is relevant. Moreover, a forensic examiner’s “experience” from extensive casework is not informative—because the “right answers” are not typically known in casework and thus examiners cannot accurately know how often they erroneously declare matches and cannot readily hone their accuracy by learning from their mistakes in the course of casework.

Importantly, good professional practices—such as the existence of professional societies, certification programs, accreditation programs, peer-reviewed articles, standardized protocols, proficiency testing, and codes of ethics—cannot substitute for actual evidence of scientific validity and reliability.¹²⁷

Similarly, an expert’s expression of *confidence* based on personal professional experience or expressions of *consensus* among practitioners about the accuracy of their field is no substitute for error rates estimated from relevant studies. For a method to be *reliable*, empirical evidence of validity, as described above, is required.

Finally, the points above underscore that scientific validity of a method must be assessed within the framework of the broader scientific field of which it is a part (e.g., measurement science in the case of feature-comparison methods). The fact that bitemark examiners defend the validity of bitemark examination means little.

¹²⁶ *Williams v. United States*, DC Court of Appeals, decided January 21, 2016, (Easterly, concurring).

¹²⁷ For example, both scientific and pseudoscientific disciplines employ such practices.

4.5 Validity as Applied: Key Elements

Foundational validity means that a method can, *in principle*, be reliable. Validity as applied means that the method has been reliably applied *in practice*. It is the *scientific* concept we mean to correspond to the legal requirement, in Rule 702(d), that an expert “has reliably applied the principles and methods to the facts of the case.”

From a scientific standpoint, certain criteria are essential to establish that a forensic practitioner has reliably applied a method to the facts of a case. These elements are described in Box 5.

BOX 5. Key criteria for validity as applied

(1) The forensic examiner must have been shown to be *capable* of reliably applying the method and must *actually* have done so. Demonstrating that an examiner is *capable* of reliably applying the method is crucial—especially for subjective methods, in which human judgment plays a central role. From a scientific standpoint, the ability to apply a method reliably can be demonstrated only through empirical testing that measures how often the expert reaches the correct answer. (Proficiency testing is discussed more extensively on p. 57-59.) Determining whether an examiner has *actually* reliably applied the method requires that the procedures actually used in the case, the results obtained, and the laboratory notes be made available for scientific review by others.

(2) Assertions about the probability of the observed features occurring by chance must be scientifically valid.

(a) The forensic examiner should report the overall false positive rate and sensitivity for the method established in the studies of foundational validity and should demonstrate that the samples used in the foundational studies are relevant to the facts of the case.¹²⁸

(b) Where applicable, the examiner should report the random match probability based on the specific features observed in the case.

(c) An expert should not make claims or implications that go beyond the empirical evidence and the applications of valid statistical principles to that evidence.

¹²⁸ For example, for DNA analysis, the frequency of genetic variants is known to vary among ethnic groups; it is thus important that the sample collection reflect relevant ethnic groups to the case at hand. For latent fingerprints, the risk of falsely declaring an identification may be higher when latent fingerprints are of lower quality; so, to be relevant, the sample collections used to estimate accuracy should be based on latent fingerprints comparable in quality and completeness to the case at hand.

4.6 Validity as Applied: Proficiency Testing

Even when a method is foundationally valid, there are many reasons why examiners may not always get the right result.¹²⁹ As discussed above, the *only* way to establish scientifically that an examiner is capable of applying a foundationally valid method is through appropriate empirical testing to measure how often the examiner gets the correct answer.

Such empirical testing is often referred to as “proficiency testing.” We note that term “proficiency testing” is sometimes used to refer to many different other types of testing—such as (1) tests to determine whether a practitioner reliably follows the steps laid out in a protocol, without assessing the *accuracy* of their conclusions, and (2) practice exercises that help practitioners improve their skills by highlighting their errors, without accurately reflect the circumstances of actual casework.

In this report, we use the term proficiency testing to mean ongoing empirical tests to “evaluate the capability and performance of analysts.”^{130, 131, 132}

Proficiency testing should be performed under conditions that are representative of casework and on samples, for which the true answer is known, that are representative of the full range of sample types and quality likely to be encountered in casework in the intended application. (For example, the fact that an examiner passes a proficiency test involving DNA analysis of simple, single-source samples does not demonstrate that they are capable of DNA analysis of complex mixtures of the sort encountered in casework; see p. 76-81.)

To ensure integrity, proficiency testing should be overseen by a disinterested third party that has no institutional or financial incentive to skew performance. We note that testing services have stated that forensic community prefers that tests not be too challenging.¹³³

¹²⁹ J.J. Koehler has enumerated a number of possible problems that could, in principle, occur: features may be mismeasured; samples may be interchanged, mislabeled, miscoded, altered, or contaminated; equipment may be miscalibrated; technical glitches and failures may occur without warning and without being noticed; and results may be misread, misinterpreted, misrecorded, mislabeled, mixed up, misplaced, or discarded. Koehler, J.J. “Forensics or fauxrensic? Ascertaining accuracy in the forensic sciences.” papers.ssrn.com/sol3/papers.cfm?abstract_id=2773255 (accessed June 28, 2016).

¹³⁰ ASCLD/LAB Supplemental Requirements for Accreditation of Forensic Testing Laboratories. des.wa.gov/SiteCollectionDocuments/About/1063/RFP/Add7_Item4ASCLD.pdf.

¹³¹ We note that proficiency testing is not intended to estimate the inherent error rates of a method; these rates should be assessed from foundational validity studies.

¹³² Proficiency testing should also be distinguished from “competency testing,” which is “the evaluation of a person’s knowledge and ability prior to performing independent work in forensic casework.” des.wa.gov/SiteCollectionDocuments/About/1063/RFP/Add7_Item4ASCLD.pdf.

¹³³ Christopher Czyryca, the president of Collaborative Testing Services, Inc., the leading proficiency testing firm in the U.S., has publicly stated that “Easy tests are favored by the community.” August 2015 meeting of the National Commission on Forensic Science, a presentation at the Accreditation and Proficiency Testing Subcommittee. www.justice.gov/ncfs/file/761061/download.

As noted previously, false positive rates consist of both coincidental match rates and technical/human failure rates. For some technologies (such as DNA analysis), the latter may be hundreds of times higher than the former.

Proficiency testing is especially critical for subjective methods: because the procedure is not based solely on objective criteria but relies on human judgment, it is inherently vulnerable to error and inter-examiner variability. Each examiner should be tested, because empirical studies have noted considerable differences in accuracy across examiners.^{134,135}

The test problems used in proficiency tests should be publicly released after the test is completed, to enable scientists to assess the appropriateness and adequacy of the test for their intended purpose.

Finally, proficiency testing should *ideally* be conducted in a ‘test-blind’ manner—that is, with samples inserted into the flow of casework such that examiners do not know that they are being tested. (For example, the Transportation Security Administration conducts blind tests by sending weapons and explosives inside luggage through screening checkpoints to see how often TSA screeners detect them.) It has been established in many fields (including latent fingerprint analysis) that, when individuals are aware that they are being tested, they perform differently than they do in the course of their daily work (referred to as the “Hawthorne Effect”).^{136,137}

While test-blind proficiency testing is ideal, there is disagreement in the forensic community about its feasibility in all settings. On the one hand, laboratories vary considerably as to the type of cases they receive, how evidence is managed and processed, and what information is provided to an analyst about the evidence or the case in question. Accordingly, blinded, inter-laboratory proficiency tests may be difficult to design and

¹³⁴ For example, a 2011 study on latent fingerprint decisions observed that examiners frequently differed on whether fingerprints were suitable for reaching a conclusion. Ulery, B.T., Hicklin, R.A., Buscaglia, J., and M.A. Roberts. “Accuracy and reliability of forensic latent fingerprint decisions.” *Proceedings of the National Academy of Sciences*, Vol. 108, No. 19 (2011): 7733-8.

¹³⁵ It is not sufficient to point to proficiency testing on volunteers in a laboratory, because better performing examiners are more likely to participate. Koehler, J.J. “Forensics or fauxrensic? Ascertaining accuracy in the forensic sciences.” papers.ssrn.com/sol3/papers.cfm?abstract_id=2773255 (accessed June 28, 2016).

¹³⁶ Concerning the Hawthorne effect, see, for example: Bracht, G.H., and G.V. Glass. “The external validity of experiments.” *American Educational Research Journal*, Vol. 5, No. 4 (1968): 437-74; Weech, T.L. and H. Goldhor. “Obtrusive versus unobtrusive evaluation of reference service in five Illinois public libraries: A pilot study.” *Library Quarterly: Information, Community, Policy*, Vol. 52, No. 4 (1982): 305-24; Bouchet, C., Guillemin, F., and S. Braincon. “Nonspecific effects in longitudinal studies: impact on quality of life measures.” *Journal of Clinical Epidemiology*, Vol. 49, No. 1 (1996): 15-20; Mangione-Smith, R., Elliott, M.N., McDonald, L., and E.A. McGlynn. “An observational study of antibiotic prescribing behavior and the Hawthorne Effect.” *Health Services Research*, Vol. 37, No. 6 (2002): 1603-23; Mujis, D. “Measuring teacher effectiveness: Some methodological reflections.” *Educational Research and Evaluation*, Vol. 12, No. 1 (2006): 53-74; and McCarney, R., Warner, J., Iliffe, S., van Haselen, R., Griffin, M., and P. Fisher. “The Hawthorne Effect: a randomized, controlled trial.” *BMC Medical Research Methodology*, Vol. 7, No. 30 (2007).

¹³⁷ For demonstrations that forensic examiners change their behavior when they know their performance is being monitored in particular ways, see Langenburg, G. “A performance study of the ACE-V process: A pilot study to measure the accuracy, precision, reproducibility, repeatability, and biasability of conclusions resulting from the ACE-V process.” *Journal of Forensic Identification*, Vol. 59, No. 2 (2009).

orchestrate on a large scale.¹³⁸ On the other hand, test-blind proficiency tests have been used for DNA analysis,¹³⁹ and select labs have begun to implement this type of testing, in-house, as part of their quality assurance programs.¹⁴⁰ We note that test-blind proficiency testing is much easier to adopt in laboratories that have adopted “context management procedures” to reduce contextual bias.¹⁴¹

PCAST believes that test-blind proficiency testing of forensic examiners should be vigorously pursued, with the expectation that it should be in wide use, at least in large laboratories, within the next five years. However, PCAST believes that it is not yet realistic to require test-blind proficiency testing because the procedures for test-blind proficiency tests have not yet been designed and evaluated.

While only non-test-blind proficiency tests are used to support validity as applied, it is scientifically important to report this limitation, including to juries—because, as noted above, non-blind proficiency tests are likely to overestimate the accuracy because the examiners knew they were being tested.

4.7 Non-Empirical Views in the Forensic Community

While the scientific validity of metrological methods requires empirical demonstration of accuracy, there have historically been efforts in the forensic community to justify non-empirical approaches. This is of particular concern because such views are sometimes mistakenly codified in policies or practices. These heterodox views typically involve four recurrent themes, which we review below.

“Theories” of Identification

A common argument is that forensic practices should be regarded as valid because they rest on scientific “theories” akin to the fundamental laws of physics, that should be accepted because they have been tested and not “falsified.”¹⁴²

An example is the “Theory of Identification as it Relates to Toolmarks,” issued in 2011 by the Association of Firearm and Tool Mark Examiners.^{143,144} It states in its entirety:

¹³⁸ Some of the challenges associated with designing blind inter-laboratory proficiency tests may be addressed if the forensic laboratories were to move toward a system where an examiner’s knowledge of a case were limited to domain-relevant information.

¹³⁹ See: Peterson, J.L., Lin, G., Ho, M., Chen, Y., and R.E. Gaensslen. “The feasibility of external blind DNA proficiency testing. II. Experience with actual blind tests.” *Journal of Forensic Science*, Vol. 48, No. 1 (2003): 32-40.

¹⁴⁰ For example, the Houston Forensic Science Center has implemented routine, blind proficiency testing for its firearms examiners and chemistry analysis unit, and is planning to carry out similar testing for its DNA and latent print examiners.

¹⁴¹ For background, see www.justice.gov/ncfs/file/888586/download.

¹⁴² See: www.swggun.org/index.php?option=com_content&view=article&id=66:the-foundations-of-firearm-and-toolmark-identification&catid=13:other&Itemid=43 and www.justice.gov/ncfs/file/888586/download.

¹⁴³ Association of Firearm and Tool Mark Examiners. “Theory of Identification as it Relates to Tool Marks: Revised.” *AFTE Journal*, Vol. 43, No. 4 (2011): 287.

¹⁴⁴ Firearms analysis is considered in detail in Chapter 5.

1. *The theory of identification as it pertains to the comparison of toolmarks enables opinions of common origin to be made when the unique surface of two toolmarks are in “sufficient agreement.”*

2. *This “sufficient agreement” is related to the significant duplication of random toolmarks as evidenced by the correspondence of a pattern or combination of patterns of surface contours. Significance is determined by the comparative examination of two or more sets of surface contour patterns comprised of individual peaks, ridges and furrows. Specifically, the relative height or depth, width, curvature and spatial relationship of the individual peaks, ridges and furrows within one set of surface contours are defined and compare to the corresponding features in the second set of surface contours. Agreement is significant when the agreement in individual characteristics exceeds the best agreement demonstrated between toolmarks known to have been produced by different tools and is consistent with agreement demonstrated by toolmarks known to have been produced by the same tool. The statement that “sufficient agreement” exists between two toolmarks means that the agreement of individual characteristics is of a quantity and quality that the likelihood another tool could have made the mark is so remote as to be considered a practical impossibility.*

3. *Currently the interpretation of individualization/identification is subjective in nature, founded on scientific principles and based on the examiner’s training and experience.*

The statement is clearly not a scientific theory, which the National Academy of Sciences has defined as “a comprehensive explanation of some aspect of nature that is supported by a vast body of evidence.”¹⁴⁵ Rather, it is a claim that examiners applying a subjective approach can accurately individualize the origin of a toolmark. Moreover, a “theory” is not what is needed. What is needed are empirical tests to see how well the method performs.

More importantly, the stated method is circular. It declares that an examiner may state that two toolmarks have a “common origin” when their features are in “sufficient agreement.” It then defines “sufficient agreement” as occurring when the examiner considers it a “practical impossibility” that the toolmarks have different origins. (In response to PCAST’s concern about this circularity, the FBI Laboratory replied that: “‘Practical impossibility’ is the certitude that exists when there is sufficient agreement in the quality and quantity of individual characteristics.”¹⁴⁶ This answer did not resolve the circularity.)

Focus on ‘Training and Experience’ Rather Than Empirical Demonstration of Accuracy

Many practitioners hold an honest belief that they are able to make accurate judgments about identification based on their training and experience. This notion is explicit in the AFTE’s *Theory of Identification*, which notes that interpretation is subjective in nature, “based on an examiner’s training and experience.” Similarly, the leading textbook on footwear analysis states,

Positive identifications may be made with as few as one random identifying characteristic, but only if that characteristic is confirmable; has sufficient definition, clarity, and features; is in the same location and

¹⁴⁵ See: www.nas.edu/evolution/TheoryOrFact.html.

¹⁴⁶ Communication from FBI Laboratory to PCAST (June 6, 2016).

*orientation on the shoe outsole; and in the opinion of an experienced examiner, would not occur again on another shoe.*¹⁴⁷ [emphasis added]

In effect, it says, positive identification depends on the examiner being *positive* about the identification.

“Experience” is an inadequate foundation for drawing judgments about whether two sets of features could have been produced by (or found on) different sources. Even if examiners could recall in sufficient detail all the patterns or sets of features that they have seen, they would have no way of knowing accurately in which cases two patterns actually came from different sources, because the correct answers are rarely known in casework.

The fallacy of relying on “experience” was evident in testimony by a former head of the FBI’s fingerprint unit (discussed above) that the FBI had “an error rate of one per every 11 million cases,” based on the fact that the agency was only aware of one mistake.¹⁴⁸ By contrast, recent empirical studies by the FBI Laboratory (discussed in Chapter 5) indicate error rates of roughly one in several hundred.

“Training” is an even weaker foundation. The mere fact that an individual has been trained in a method does not mean that the method itself is scientifically valid nor that the individual is capable of producing reliable answers when applying the method.

Focus on ‘Uniqueness’ Rather Than Accuracy

Many forensic feature-comparison disciplines are based on the premise that various sets of features (for example, fingerprints, toolmarks on bullets, human dentition, and so on) are “unique.”¹⁴⁹

¹⁴⁷ Bodziak, W. J. *Footwear Impression Evidence: Detection, Recovery, and Examination*. 2nd ed. CRC Press-Taylor & Francis, Boca Raton, Florida (2000).

¹⁴⁸ *U.S. v. Baines* 573 F.3d 979 (2009) at 984.

¹⁴⁹ For fingerprints, see, for example: Wertheim, Kasey. “Letter re: ACE-V: Is it scientifically reliable and accurate?” *Journal of Forensic Identification*, Vol. 52 (2002): 669 (“The law of biological uniqueness states that exact replication of any given organism cannot occur (nature never repeats itself), and, therefore, no biological entity will ever be exactly the same as another”) and Budowle, B., Buscaglia, J., and R.S. Perlman. “Review of the scientific basis for friction ridge comparisons as a means of identification: committee findings and recommendations.” *Forensic Science Communications*, Vol. 8 (2006) (“The use of friction ridge skin comparisons as a means of identification is based on the assumptions that the pattern of friction ridge skin is both unique and permanent”). For firearms, see, for example, Riva, F., and C. Christophe. “Automatic comparison and evaluation of impressions left by a firearm on fired cartridge cases.” *Journal of Forensic Sciences*, Vol. 59, (2014): 637 (“The ability to identify a firearm as the source of a questioned cartridge case or bullet is based on two tenets constituting the scientific foundation of the discipline. The first assumes the uniqueness of impressions left by the firearms”) and SWGGUN Admissibility Resource Kit (ARK): Foundational Overview of Firearm/Toolmark Identification. available at: afte.org/resources/swggun-ark (“The basis for identification in Toolmark Identification is founded on the principle of uniqueness . . . wherein, all objects are unique to themselves and thus can be differentiated from one another”). For bitemarks, see, for example, Kieser, J.A., Bernal, V., Neil Waddell, J., and S. Raju. “The uniqueness of the human anterior dentition: a geometric morphometric analysis.” *Journal of Forensic Sciences*, Vol. 52 (2007): 671-7 (“There are two postulates that underlie all bitemark analyses: first, that the characteristics of the anterior teeth involved in the bite are unique, and secondly, that this uniqueness is accurately recorded in the material bitten.”) and Pretty, I.A. “Resolving Issues in Bitemark Analysis” in *Bitemark Evidence: A Color Atlas* R.B.J Dorian, Ed. CRC Press. Chicago (2011) (“Bitemark

The forensics science literature contains many “uniqueness” studies that go to great lengths to try to establish the correctness of this premise.¹⁵⁰ For example, a 2012 paper studied 39 Adidas Supernova Classic running shoes (size 12) worn by a single runner over 8 years, during which time he kept a running journal and ran over the same types of surfaces.¹⁵¹ After applying black shoe polish to the soles of the shoes, the author asked the runner to carefully produce tread marks on sheets of legal paper on a hardwood floor. The author showed that it was possible to identify small identifying differences between the tread marks produced by different pairs of shoes.

Yet, uniqueness studies miss the fundamental point. The issue is not whether *objects* or *features* differ; they surely do if one looks at a fine enough level. The issue is how well and under what circumstances *examiners* applying a given metrological method can reliably *detect* relevant differences in features to reliably identify whether they share a common source. Uniqueness studies, which focus on the properties of features themselves, can therefore never establish whether a particular *method* for measuring and comparing features is foundationally valid. Only empirical studies can do so.

Moreover, it is not *necessary* for features to be unique in order for them to be useful in narrowing down the source of a feature. Rather, it is essential that there be empirical evidence about how often a method incorrectly attributes the source of a feature.

Decoupling Conclusions about Identification from Estimates of Accuracy

Finally, some hold the view that, when the application of a scientific method leads to a conclusion of an association or proposed identification, it is *unnecessary* to report in court the reliability of the method.¹⁵² As a rationale, it is sometimes argued that it is impossible to measure error rates perfectly or that it is impossible to know the error rate in the *specific* case at hand.

This notion is contrary to the fundamental principle of scientific validity in metrology—namely, that the claim that two objects have been compared and found to have the same property (length, weight, or fingerprint pattern) is meaningless without quantitative information about the reliability of the comparison process.

It is standard practice to study and report error rates in medicine—both to establish the reliability of a method in principle and to assess its implementation in practice. No one argues that measuring or reporting clinical error rates is inappropriate because they might not perfectly reflect the situation for a *specific* patient. If

analysis is based on two postulates: (a) the dental characteristics of anterior teeth involved in biting are unique among individuals, and (b) this asserted uniqueness is transferred and recorded in the injury.”).

¹⁵⁰ Some authors have criticized attempts to affirm the uniqueness proposition based on observations, noting that they rest on pure inductive reasoning, a method for scientific investigation that “fell out of favour during the epoch of Sir Francis Bacon in the 16th century.” Page, M., Taylor, J., and M. Blenkin. “Uniqueness in the forensic identification sciences—fact or fiction?” *Forensic Science International*, Vol. 206 (2011): 12-8.

¹⁵¹ Wilson, H.D. “Comparison of the individual characteristics in the outsoles of thirty-nine pairs of Adidas Supernova Classic shoes.” *Journal of Forensic Identification*, Vol. 62, No. 3 (2012): 194-204.

¹⁵² See: www.justice.gov/olp/file/861936/download.

transparency about error rates is appropriate for matching blood types before a transfusion, it is appropriate for matching forensic samples—where errors may have similar life-threatening consequences.

We return to this topic in Chapter 8, where we observe that the DOJ’s recent proposed guidelines on expert testimony are based, in part, on this scientifically inappropriate view.

4.8 Empirical Views in the Forensic Community

Although some in the forensic community continue to hold views such as those described in the previous section, a growing segment of the forensic science community has responded to the 2009 NRC report with an increased recognition of the need for empirical studies and with initial efforts to undertake them. Examples include published research studies by forensic scientists, assessments of research needs by Scientific Working Groups and OSAC committees, and statements from the NCFS.

Below we highlight several examples from recent papers by forensic scientists:

- *Researchers at the National Academy of Sciences and elsewhere (e.g., Saks & Koehler, 2005; Spinney, 2010) have argued that there is an urgent need to develop objective measures of accuracy in fingerprint identification. Here we present such data.*¹⁵³
- *Tool mark impression evidence, for example, has been successfully used in courts for decades, but its examination has lacked scientific, statistical proof that would independently corroborate conclusions based on morphology characteristics (2–7). In our study, we will apply methods of statistical pattern recognition (i.e., machine learning) to the analysis of toolmark impressions.*¹⁵⁴
- *The NAS report calls for further research in the area of bitemarks to demonstrate that there is a level of probative value and possibly restricting the use of analyses to the exclusion of individuals. This call to respond must be heard if bite-mark evidence is to be defensible as we move forward as a discipline.*¹⁵⁵
- *The National Research Council of the National Academies and the legal and forensic sciences communities have called for research to measure the accuracy and reliability of latent print examiners’ decisions, a challenging and complex problem in need of systematic analysis. Our research is focused on the development of empirical approaches to studying this problem.*¹⁵⁶

¹⁵³ Tangen, J.M., Thompson, M.B., and D.J. McCarthy. “Identifying fingerprint expertise.” *Psychological Science*, Vol. 22, No. 8 (2011): 995-7.

¹⁵⁴ Petraco, N.D., Shenkin, P., Speir, J., Diaczuk, P., Pizzola, P.A., Gambino, C., and N. Petraco. “Addressing the National Academy of Sciences’ Challenge: A Method for Statistical Pattern Comparison of Striated Tool Marks.” *Journal of Forensic Sciences*, Vol. 57 (2012): 900-11.

¹⁵⁵ Pretty, I.A., and D. Sweet. “A paradigm shift in the analysis of bitemarks.” *Forensic Science International*, Vol. 201 (2010): 38-44.

¹⁵⁶ Ulery, B.T., Hicklin, R.A., Buscaglia, J., and M.A., Roberts. “Accuracy and reliability of forensic latent fingerprint decisions.” *PNAS*, Vol. 108, No. 19 (2011): 7733-8.

- *We believe this report should encourage the legal community to require that the emerging field of forensic neuroimaging, including fMRI based lie detection, have a proper scientific foundation before being admitted in courts.*¹⁵⁷
- *An empirical solution which treats the system [referring to voiceprints] as a black box and its output as point values is therefore preferred.*¹⁵⁸

Similarly, the OSAC and other groups have acknowledged critical research gaps in the evidence supporting various forensic science disciplines and have begun to develop plans to close some of these gaps. We highlight several examples below:

- *While validation studies of firearms and toolmark analysis schemes have been conducted, most have been relatively small data sets. If a large study were well designed and has sufficient participation, it is our anticipation that similar lessons could be learned for the firearms and toolmark discipline.*¹⁵⁹
- *We are unaware of any study that assesses the overall firearm and toolmark discipline's ability to correctly/consistently categorize evidence by class characteristics, identify subclass marks, and eliminate items using individual characteristics.*¹⁶⁰
- *Currently there is not a reliable assessment of the discriminating strength of specific friction ridge feature types.*¹⁶¹
- *To date there is little scientific data that quantifies the overall risk of close non-matches in AFIS databases. It is difficult to create standards regarding sufficiency for examination or AFIS search searching without this type of research.*¹⁶²

¹⁵⁷ Langleben, D.D., and J.C. Moriarty. "Using brain imaging for lie detection: Where science, law, and policy collide." *Psychology, Public Policy, and Law*, Vol. 19, No. 2 (2013): 222–34.

¹⁵⁸ Morrison, G.S., Zhang, C., and P. Rose. "An empirical estimate of the precision of likelihood ratios from a forensic-voice-comparison system." *Forensic Science International*, Vol. 208, (2011): 59–65.

¹⁵⁹ OSAC Research Needs Assessment Form. "Study to Assess The Accuracy and Reliability of Firearm and Toolmark." Issued October 2015 (Approved January 2016). Available at: www.nist.gov/forensics/osac/upload/FATM-Research-Needs-Assessment-Blackbox.pdf.

¹⁶⁰ OSAC Research Needs Assessment Form. "Assessment of Examiners' Toolmark Categorization Accuracy." Issued October 2015 (Approved January 2016). Available at: www.nist.gov/forensics/osac/upload/FATM-Research-Needs-Assessment-Class-and-individual-marks.pdf.

¹⁶¹ OSAC Research Needs Assessment Form. "Assessing the Sufficiency and Strength of Friction Ridge Features." Issued October 2015. Available at: www.nist.gov/forensics/osac/upload/FRS-Research-Need-Assessment-of-Features.pdf.

¹⁶² OSAC Research Needs Assessment Form. "Close Non-Match Assessment." Issued October 2015. Available at: www.nist.gov/forensics/osac/upload/FRS-Research-Need-Close-Non-Match-Assessment.pdf.

- *Research is needed that studies whether sequential unmasking reduces the negative effects of bias during latent print examination.*¹⁶³
- *The IAI has, for many years, sought support for research that would scientifically validate many of the comparative analyses conducted by its member practitioners. While there is a great deal of empirical evidence to support these exams, independent validation has been lacking.*¹⁶⁴

The National Commission on Forensic Science has similarly recognized the need for rigorous empirical evaluation of forensic methods in a Views Document approved by the commission:

*All forensic science methodologies should be evaluated by an independent scientific body to characterize their capabilities and limitations in order to accurately and reliably answer a specific and clearly defined forensic question.*¹⁶⁵

PCAST applauds this growing focus on empirical evidence. We note that increased research funding will be needed to achieve these critical goals (see Chapter 6).

4.9 Summary of Scientific Findings

We summarize our scientific findings concerning the scientific criteria for foundational validity and validity as applied.

Finding 1: Scientific Criteria for Scientific Validity of a Forensic Feature-Comparison Method

(1) Foundational validity. To establish foundational validity for a forensic feature-comparison method, the following elements are required:

(a) a reproducible and consistent procedure for (i) identifying features in evidence samples; (ii) comparing the features in two samples; and (iii) determining, based on the similarity between the features in two sets of features, whether the samples should be declared to be likely to come from the same source (“matching rule”); and

(b) empirical estimates, from appropriately designed studies from multiple groups, that establish (i) the method’s false positive rate—that is, the probability it declares a proposed identification between samples that actually come from different sources and (ii) the method’s sensitivity—that is, the probability it declares a proposed identification between samples that actually come from the same source.

¹⁶³ OSAC Research Needs Assessment Form. “ACE-V Bias.” Issued October 2015. Available at: www.nist.gov/forensics/osac/upload/FRS-Research-Need-ACE-V-Bias.pdf.

¹⁶⁴ International Association for Identification. Letter to Patrick J. Leahy, Chairman, Senate Committee on the Judiciary, March 18, 2009. Available at: www.theiai.org/current_affairs/nas_response_leahy_20090318.pdf.

¹⁶⁵ National Commission on Forensic Science: “Views of the Commission Technical Merit Evaluation of Forensic Science Methods and Practices.” Available at: www.justice.gov/ncfs/file/881796/download.

As described in Box 4, scientific validation studies should satisfy a number of criteria: (a) they should be based on sufficiently large collections of known and representative samples from relevant populations; (b) they should be conducted so that the examinees have no information about the correct answer; (c) the study design and analysis plan should be specified in advance and not modified afterwards based on the results; (d) the study should be conducted or overseen by individuals or organizations with no stake in the outcome; (e) data, software and results should be available to allow other scientists to review the conclusions; and (f) to ensure that the results are robust and reproducible, there should be multiple independent studies by separate groups reaching similar conclusions.

Once a method has been established as foundationally valid based on adequate empirical studies, claims about the method's accuracy and the probative value of proposed identifications, in order to be valid, must be based on such empirical studies.

For objective methods, foundational validity can be established by demonstrating the reliability of each of the individual steps (feature identification, feature comparison, matching rule, false match probability, and sensitivity).

For subjective methods, foundational validity can be established *only* through black-box studies that measure how often many examiners reach accurate conclusions across many feature-comparison problems involving samples representative of the intended use. In the absence of such studies, a subjective feature-comparison method cannot be considered scientifically valid.

Foundational validity is a *sine qua non*, which can only be shown through empirical studies. Importantly, good professional practices—such as the existence of professional societies, certification programs, accreditation programs, peer-reviewed articles, standardized protocols, proficiency testing, and codes of ethics—cannot substitute for empirical evidence of scientific validity and reliability.

(2) Validity as applied. Once a forensic feature-comparison method has been established as foundationally valid, it is necessary to establish its validity as applied in a given case.

As described in Box 5, validity as applied requires that: (a) the forensic examiner must have been shown to be *capable* of reliably applying the method, as shown by appropriate proficiency testing (see Section 4.6), and must *actually* have done so, as demonstrated by the procedures actually used in the case, the results obtained, and the laboratory notes, which should be made available for scientific review by others; and (b) assertions about the probative value of proposed identifications must be scientifically valid—including that examiners should report the overall false positive rate and sensitivity for the method established in the studies of foundational validity; demonstrate that the samples used in the foundational studies are relevant to the facts of the case; where applicable, report probative value of the observed match based on the specific features observed in the case; and not make claims or implications that go beyond the empirical evidence.



5. Evaluation of Scientific Validity for Seven Feature-Comparison Methods

In the previous chapter, we described the scientific criteria that a forensic feature-comparison method must meet to be considered scientifically valid and reliable, and we underscored the need for empirical evidence of accuracy and reliability.

In this chapter, we illustrate the meaning of these criteria by applying them to six specific forensic feature-comparison methods: (1) DNA analysis of single-source and simple-mixture samples, (2) DNA analysis of complex-mixture samples, (3) bitemarks, (4) latent fingerprints, (5) firearms identification, and (6) footwear analysis.¹⁶⁶ For a seventh forensic feature-comparison method, hair analysis, we do not undertake a full evaluation, but review a recent evaluation by the DOJ.

We evaluate whether these methods have been established to be foundationally valid and reliable and, if so, what estimates of accuracy should accompany testimony concerning a proposed identification, based on current scientific studies. We also briefly discuss some issues related to validity as applied.

PCAST compiled a list of 2019 papers from various sources—including bibliographies prepared by the National Science and Technology Council's Subcommittee on Forensic Science, the relevant Scientific Working Groups (predecessors to the current OSAC),¹⁶⁷ and the relevant OSAC committees; submissions in response to PCAST's request for information from the forensic-science stakeholder community; and our own literature searches.¹⁶⁸ PCAST members and staff identified and reviewed those papers that were relevant to establishing scientific validity. After reaching a set of initial conclusions, input was obtained from the FBI Laboratory and individual scientists at NIST, as well as other experts—including asking them to identify additional papers supporting scientific validity that we might have missed.

For each of the methods, we provide a brief overview of the methodology, discuss background information and studies, and review evidence for scientific validity.

As discussed in Chapter 4, objective methods have well-defined procedures to (1) identify the features in samples, (2) measure the features, (3) determine whether the features in two samples match to within a stated measurement tolerance (matching rule), and (4) estimate the probability that samples from different sources would match (false match probability). It is possible to examine each of these separate steps for their validity

¹⁶⁶ The American Association for the Advancement of Science (AAAS) is conducting an analysis of the underlying scientific bases for the forensic tools and methods currently used in the criminal justice system. As of September 1, 2016 no reports have been issued. See: www.aaas.org/page/forensic-science-assessments-quality-and-gap-analysis.

¹⁶⁷ See: www.nist.gov/forensics/workgroups.cfm.

¹⁶⁸ See: www.whitehouse.gov/sites/default/files/microsites/ostp/PCAST/pcast_forensics_references.pdf.

and reliability. Of the six methods considered in this chapter, only the first two methods (involving DNA analysis) employ objective methods. The remaining four methods are subjective.

For subjective methods, the procedures are not precisely defined, but rather involve substantial expert human judgment. Examiners may focus on certain features while ignoring others, may compare them in different ways, and may have different standards for declaring proposed identification between samples. As described in Chapter 4, the sole way to establish foundational validity is through multiple independent “black-box” studies that measure how often examiners reach accurate conclusions across many feature-comparison problems involving samples representative of the intended use. In the absence of such studies, a feature-comparison method cannot be considered scientifically valid.

PCAST found few black-box studies appropriately designed to assess scientific validity of subjective methods. Two notable exceptions, discussed in this chapter, were a study on latent fingerprints conducted by the FBI Laboratory and a study on firearms identification sponsored by the Department of Defense and conducted by the Department of Energy’s Ames Laboratory.

We considered whether proficiency testing, which is conducted by commercial organizations for some disciplines, could be used to establish foundational validity. We concluded that it could not, at present, for several reasons. First, proficiency tests are not intended to establish foundational validity. Second, the test problems or test sets used in commercial proficiency tests are not at present routinely made public—making it impossible to ascertain whether the tests appropriately assess the method across the range of applications for which it is used. The publication and critical review of methods and data is an essential component in establishing scientific validity. Third, the dominant company in the market, Collaborative Testing Services, Inc. (CTS), explicitly states that its proficiency tests are not appropriate for estimating error rates of a discipline, because (a) the test results, which are open to anyone, may not reflect the skills of forensic practitioners and (b) “the reported results do not reflect ‘correct’ or ‘incorrect’ answers, but rather responses that agree or disagree with the consensus conclusions of the participant population.”¹⁶⁹ Fourth, the tests for forensic feature-comparison methods typically consist of only one or two problems each year. Fifth, “easy tests are favored by the community,” with the result that tests that are too challenging could jeopardize repeat business for a commercial vendor.¹⁷⁰

¹⁶⁹ See: www.ctsforensics.com/assets/news/CTSErrorRateStatement.pdf.

¹⁷⁰ PCAST thanks Collaborative Testing Services, Inc. (CTS) President Christopher Czyryca for helpful conversations concerning proficiency testing. Czyryca explained that that (1) CTS defines consensus as at least 80 percent agreement among respondents and (2) proficiency testing for latent fingerprints only occasionally involves a problem in which a questioned print matches *none* of the possible answers. Czyryca noted that the forensic community disfavors more challenging tests—and that testing companies are concerned that they could lose business if their tests are viewed as too challenging. An example of a “challenging” test is the very important scenario in which *none* of the questioned samples match any of the known samples: because examiners may expect they should find *some* matches, such scenarios provide an opportunity to assess how often examiners declare false-positive matches. (See also presentation to the National Commission on Forensic Science by CTS President Czyryca, noting that “Easy tests are favored by the community.” www.justice.gov/ncfs/file/761061/download.)

PCAST's observations and findings below are largely consistent with the conclusions of earlier NRC reports.¹⁷¹

5.1 DNA Analysis of Single-source and Simple-mixture samples

DNA analysis of single-source and simple mixture samples includes excellent examples of objective methods whose foundational validity has been properly established.¹⁷²

Methodology

DNA analysis involves comparing DNA profiles from different samples to see if a known sample may have been the source of an evidentiary sample.

To generate a DNA profile, DNA is first chemically *extracted* from a sample containing biological material, such as blood, semen, hair, or skin cells. Next, a predetermined set of DNA segments (“loci”) containing small repeated sequences¹⁷³ are *amplified* using the Polymerase Chain Reaction (PCR), an enzymatic process that replicates a targeted DNA segment over and over to yield millions of copies. After amplification, the lengths of the resulting DNA fragments are *measured* using a technique called capillary electrophoresis, which is based on the fact that longer fragments move more slowly than shorter fragments through a polymer solution. The raw data collected from this process are analyzed by a software program to produce a graphical image (an electropherogram) and a list of numbers (the DNA profile) corresponding to the sizes of the each of fragments (by comparing them to known “molecular size standards”).

As currently practiced, the method uses 13 specific loci and the amplification process is designed so that the DNA fragments corresponding to different loci occupy different size ranges—making it simple to recognize which fragments come from each locus.¹⁷⁴ At each locus, every human carries two variants (called “alleles”)—one inherited from his or her mother, one from his or her father—that may be of different lengths or the same length.¹⁷⁵

¹⁷¹ National Research Council. *Strengthening Forensic Science in the United States: A Path Forward*. The National Academies Press. Washington DC. (2009). National Research Council, *Ballistic Imaging*. The National Academies Press. Washington DC. (2008).

¹⁷² Forensic DNA analysis belongs to two parent disciplines—metrology and human molecular genetics—and has benefited from the extensive application of DNA technology in biomedical research and medical application.

¹⁷³ The repeats, called short tandem repeats (STRs), consist of consecutive repeated copies of a segments of 2-6 base pairs.

¹⁷⁴ The current kit used by the FBI (Identifiler Plus) has 16 total loci: 15 STR loci and the amelogenin locus. A kit that will be implemented later this year has 24 loci.

¹⁷⁵ The FBI announced in 2015 that it plans to expand the core loci by adding seven additional loci commonly used in databases in other countries. (Population data have been published for the expanded set, including frequencies in 11 ethnic populations www.fbi.gov/about-us/lab/biometric-analysis/codis/expanded-fbi-str-2015-final-6-16-15.pdf.) Starting in 2017, these loci will be required for uploading and searching DNA profiles in the national system. The expanded data in each profile are expected to provide greater discrimination potential for identification, especially in matching samples with only partial DNA profiles, missing person inquiries, and international law enforcement and counterterrorism cases.

Analysis of single-source samples

DNA analysis of a sample from a single individual is an objective method. In addition to the laboratory protocols being precisely defined, the interpretation also involves little or no human judgment.

An examiner can assess if a sample came from a single source based on whether the DNA profile typically contains, for each locus, exactly one fragment from each chromosome containing the locus—which yields one or two distinct fragment lengths from each locus.¹⁷⁶ The DNA profile can then be compared with the DNA profile of a known suspect. It can also be entered into the FBI’s National DNA Index System (NDIS) and searched against a database of DNA profiles from convicted offenders (and arrestees in more than half of the states) or unsolved crimes.

Two DNA profiles are declared to match if the lists of alleles are the same.¹⁷⁷ The probability that two DNA profiles from *different* sources would have the same DNA profile (the random match probability) is then calculated based on the empirically measured frequency of each allele and established principles of population genetics (see p. 53).¹⁷⁸

Analysis of simple mixtures

Many sexual assault cases involve DNA mixtures of two individuals, where one individual (i.e., the victim) is known. DNA analysis of these simple mixtures is also relatively straightforward. Methods have been used for 30 years to differentially extract DNA from sperm cells vs. vaginal epithelial cells, making it possible to generate DNA profiles from the two sources. Where the two cell types are the same but one contributor is known, the alleles of the known individual can be subtracted from the set of alleles identified in the mixture.¹⁷⁹

Once the known source is removed, the analysis of the unknown sample then proceeds as above for single-source samples. Like the analysis of single-source samples, the analysis of simple mixtures is a largely objective method.

¹⁷⁶ The examiner reviews the electropherogram to determine whether each of the peaks is a true allelic peak or an artifact (e.g., background noise in the form of stutter, spikes, and other phenomena) and to determine whether more than one individual could have contributed to the profile. In rare cases, an individual may have two fragments at a locus due to rare copy-number variation in the human genome.

¹⁷⁷ When only a partial profile could be generated from the evidence sample (for example, in cases with limited quantities of DNA, degradation of the sample, or the presence of PCR inhibitors), an examiner may also report an “inclusion” if the partial profile is *consistent* with the DNA profile obtained from a reference sample. An examiner may also report an inclusion when the DNA results from a reference sample are present in a mixture. These cases generally require significantly more human analysis and interpretation than single-source samples.

¹⁷⁸ Random match probabilities can also be expressed in terms of a likelihood ratio (LR), which is the ratio of (1) the probability of observing the DNA profile if the individual in question is the source of the DNA sample and (2) the probability of observing the DNA profile if the individual in question is *not* the source of the DNA sample. In the situation of a single-source sample, the LR should be simply the reciprocal of the random match probability (because the first probability in the LR is 1 and the second probability is the random match probability).

¹⁷⁹ In many cases, DNA will be present in the mixture in sufficiently different quantities so that the peak heights in the electropherogram from the two sources will be distinct, allowing the examiner to more readily separate out the sources.

Foundational Validity

To evaluate the foundational validity of an objective method (such as single-source and simple mixture analysis), one can examine the reliability of each of the individual steps rather than having to rely on black-box studies.

Single-source samples

Each step in the analysis is objective and involves little or no human judgment.

- (1) *Feature identification.* In contrast to the other methods discussed in this report, the features used in DNA analysis (the fragments lengths of the loci) are defined *in advance*.
- (2) *Feature measurement and comparison.* PCR amplification, invented in 1983, is widely used by tens of thousands of molecular biology laboratories, including for many medical applications in which it has been rigorously validated. Multiplex PCR kits designed by commercial vendors for use by forensic laboratories must be validated both externally (through developmental validation studies published in peer reviewed publication) and internally (by each lab that wishes to use the kit) before they may be used.¹⁸⁰ Fragment sizes are measured by an automated procedure whose variability is well characterized and small; the standard deviation is approximately 0.05 base pairs, which provides highly reliable measurements.^{181,182} Developmental validation studies were performed—including by the FBI—to verify the accuracy, precision, and reproducibility of the procedure.^{183,184}

¹⁸⁰ Laboratories that conduct forensic DNA analysis are required to follow FBI's Quality Assurance Standards for DNA Testing Laboratories as a condition of participating in the National DNA Index System (www.fbi.gov/about-us/lab/biometric-analysis/codis/qas-standards-for-forensic-dna-testing-laboratories-effective-9-1-2011). FBI's Scientific Working Group on DNA Analysis Methods (SWGDM) has published guidelines for laboratories in validating procedures consistent the FBI's Quality Assurance Standards (QAS). SWGDM Validation Guidelines for DNA Analysis Methods, December 2012. See: media.wix.com/ugd/4344b0_cbc27d16dcb64fd88cb36ab2a2a25e4c.pdf.

¹⁸¹ Forensic laboratories typically use genetic analyzer systems developed by the Applied Biosystems group of Thermo-Fisher Scientific (ABI 310, 3130, or 3500).

¹⁸² To incorrectly estimate a fragment length by 1 base pair (the minimum size difference) requires a measurement error of 0.5 base pair, which corresponds to 10 standard deviations. Moreover, alleles typically differ by at least 4 base pairs (although some STR loci have fairly common alleles that differ by 1 or 2 nucleotides).

¹⁸³ For examples of these studies see: Budowle, B., Moretti, T.R., Keys, K.M., Koons, B.W., and J.B. Smerick. "Validation studies of the CTT STR multiplex system." *Journal of Forensic Sciences*, Vol. 42, No. 4 (1997): 701-7; Kimpton, C.P., Oldroyd, N.J., Watson, S.K., Frazier, R.R., Johnson, P.E., Millican, E.S., Urguhart, A., Sparkes, B.L., and P. Gill. "Validation of highly discriminating multiplex short tandem repeat amplification systems for individual identification." *Electrophoresis*, Vol. 17, No. 8 (1996): 1283-93; Lygo, J.E., Johnson, P.E., Holdaway, D.J., Woodroffe, S., Whitaker, J.P., Clayton, T.M., Kimpton, C.P., and P. Gill. "The validation of short tandem repeat (STR) loci for use in forensic casework." *International Journal of Legal Medicine*, Vol. 107, No. 2 (1994): 77-89; and Fregeau, C.J., Bowen, K.L., and R.M. Fourney. "Validation of highly polymorphic fluorescent multiplex short tandem repeat systems using two generations of DNA sequencers." *Journal of Forensic Sciences*, Vol. 44, No. 1 (1999): 133-66.

¹⁸⁴ For example, a 2001 study that compared the performance characteristics of several commercially available STR testing kits tested the consistency and reproducibility of results using previously typed case samples, environmentally insulted samples, and body fluid samples deposited on various substrates. The study found that all of the kits could be used to amplify and type STR loci successfully and that the procedures used for each of the kits were robust and valid. No evidence

- (3) *Feature comparison.* For single-source samples, there are clear and well-specified “matching rules” for declaring whether the DNA profiles match. When complete DNA profiles are searched against the NDIS at “high stringency,” a “match” is returned only when each allele in the unknown profile is found to match an allele of the known profile, and *vice versa*. When partial DNA profiles obtained from a partially degraded or contaminated sample are searched at “moderate stringency,” candidate profiles are returned if each of the alleles in the unknown profile is found to match an allele of the known profile.^{185,186}
- (4) *Estimation of random match probability.* The process for calculating the random match probability (that is, the probability of a match occurring by chance) is based on well-established principles of population genetics and statistics. The frequencies of the individual alleles were obtained by the FBI based on DNA profiles from approximately 200 unrelated individuals from each of six population groups and were evaluated prior to use.¹⁸⁷ The frequency of an overall pattern of alleles—that is, the random match probability—is typically estimated by multiplying the frequencies of the individual loci, under the assumption that the alleles are independent of one another.¹⁸⁸ The resulting probability is typically less than 1 in 10 billion, excluding the possibility of close relatives.¹⁸⁹ (Note: Multiplying the frequency of alleles can overstates the rarity of a pattern because the alleles are not completely independent, owing

of false positive or false negative results and no substantial evidence of preferential amplification within a locus were found for any of the testing kits. Moretti, T.R., Baumstark, A.L., Defenbaugh, D.A., Keys, K.M., Smerick, J.B., and B. Budowle. “Validation of Short Tandem Repeats (STRs) for forensic usage: performance testing of fluorescent multiplex STR systems and analysis of authentic and simulated forensic samples.” *Journal of Forensic Sciences*, Vol. 46, No. 3 (2001): 647-60.

¹⁸⁵ See: FBI’s Frequently Asked Questions (FAQs) on the CODIS Program and the National DNA Index System.

www.fbi.gov/about-us/lab/biometric-analysis/codis/codis-and-ndis-fact-sheet.

¹⁸⁶ Contaminated samples are not retained in NDIS.

¹⁸⁷ The initial population data generated by FBI included data for 6 ethnic populations with database sizes of 200 individuals. See: Budowle, B., Moretti, T.R., Baumstark, A.L., Defenbaugh, D.A., and K.M. Keys. “Population data on the thirteen CODIS core short tandem repeat loci in African Americans, U.S. Caucasians, Hispanics, Bahamians, Jamaicans, and Trinidadians.” *Journal of Forensic Sciences*, Vol. 44, No. 6 (1999): 1277-86 and Budowle, B., Shea, B., Niezgodna, S., and R. Chakraborty. “CODIS STR loci data from 41 sample populations.” *Journal of Forensic Sciences*, Vol. 46, No. 3 (2001): 453-89. Errors in the original database were reported in July 2015 (Erratum, *Journal of Forensic Sciences*, Vol. 60, No. 4 (2015): 1114-6, the impact of these discrepancies on profile probability calculations were assessed (and found to be less than a factor of 2 in a full profile), and the allele frequency estimates were amended accordingly. At the same time as amending the original datasets, the FBI Laboratory also published expanded datasets in which the original samples were retyped for additional loci. In addition, the population samples that were originally studied at other laboratories were typed for additional loci, so the full dataset includes 9 populations. These “expanded” datasets are in use at the FBI Laboratory and can be found at www.fbi.gov/about-us/lab/biometric-analysis/codis/expanded-fbi-str-final-6-16-15.pdf.

¹⁸⁸ More precisely, the frequency at each locus is calculated first. If the locus has two copies of the same allele with frequency p , the frequency is calculated as p^2 . If the locus has two different alleles with respective frequencies p and q , the frequency is calculated as $2pq$. The frequency of the overall pattern is calculated by multiplying together the values for the individual loci.

¹⁸⁹ The random match probability will be higher for close relatives. For identical twins, the DNA profiles are expected to match perfectly. For first degree relatives, the random match probability may be on the order of 1 in 100,000 when examining the 13 CODIS core STR loci. See: Butler, J.M. “The future of forensic DNA analysis.” *Philosophical Transactions of the Royal Society B*, 370: 20140252 (2015).

to population substructure. A 1996 NRC report concluded that the effect of population substructure on the calculated value was likely to be within a factor of 10 (for example, for a random match probability estimate of 1 in 10 million, the true probability is highly likely to be between 1 in 1 million and 1 in 100 million).¹⁹⁰ However, a recent study by NIST scientists suggests that the variation may be substantially greater than 10-fold.¹⁹¹ The random match probability should be calculated using an appropriate statistical formula that takes account of population substructure.¹⁹²⁾

Simple mixtures

The steps for analyzing simple mixtures are the same as for analyzing single-source samples, up until the point of interpretation. DNA profiles that contain a mixture of two contributors, where one contributor is known, can be interpreted in much the same way as single-source samples. This occurs frequently in sexual assault cases, where a DNA profile contains a mixture of DNA from the victim and the perpetrator. Methods that are used to differentially extract DNA from sperm cells vs. vaginal epithelial cells in sexual assault cases are well-established.¹⁹³ Where the two cell types are the same, one DNA source may be dominant, resulting in a distinct contrast in peak heights between the two contributors; in these cases, the alleles from both the major contributor (corresponding to the larger allelic peaks) and the minor contributor can usually be reliably interpreted, provided the proportion of the minor contributor is not too low.¹⁹⁴

Validity as Applied

While DNA analysis of single-source samples and simple mixtures is a foundationally valid and reliable method, it is not infallible in practice. Errors can and do occur in DNA testing. Although the probability that two samples from different sources have the same DNA profile is tiny, the chance of human error is much higher. Such errors may stem from sample mix-ups, contamination, incorrect interpretation, and errors in reporting.¹⁹⁵

¹⁹⁰ National Research Council. *The Evaluation of Forensic DNA Evidence*. The National Academies Press. Washington DC. (1996). Goode, M. "Some observations on evidence of DNA frequency." *Adelaide Law Review*, Vol. 23 (2002): 45-77.

¹⁹¹ Gittelsohn, S. and J. Buckleton. "Is the factor of 10 still applicable today?" Presentation at the 68th Annual American Academy of Forensic Sciences Scientific Meeting, 2016. See: www.cstl.nist.gov/strbase/pub_pres/Gittelsohn-AAFS2016-Factor-of-10.pdf.

¹⁹² Balding, D.J., and R.A. Nichols. "DNA profile match probability calculation: how to allow for population stratification, relatedness, database selection and single bands." *Forensic Science International*, Vol. 64 (1994): 125-140.

¹⁹³ Gill, P., Jeffreys, A.J., and D.J. Werrett. "Forensic application of DNA 'fingerprints.'" *Nature*, Vol. 318, No. 6046 (1985): 577-9.

¹⁹⁴ Clayton, T.M., Whitaker, J.P., Sparkes, R., and P. Gill. "Analysis and interpretation of mixed forensic stains using DNA STR profiling." *Forensic Science International*, Vol. 91, No. 1 (1998): 55-70.

¹⁹⁵ Krimsky, S., and T. Simoncelli. *Genetic Justice: DNA Data Banks, Criminal Investigations, and Civil Liberties*. Columbia University Press, (2011). Perhaps the most spectacular human error to date involved the German government's investigation of the "Phantom of Heilbronn," a woman whose DNA appeared at the scenes of more than 40 crimes in three countries, including 6 murders, several muggings and dozens of break-ins over the course of more than a decade. After an effort that included analyzing DNA samples from more than 3,000 women from four countries and that cost \$18 million, authorities discovered that the woman of interest was a worker in the Austrian factory that fabricated the swabs used in DNA collection. The woman had inadvertently contaminated a large number of swabs with her own DNA, which was thus found in many DNA tests.

To minimize human error, the FBI requires, as a condition of participating in NDIS, that laboratories follow the FBI's Quality Assurance Standards (QAS).¹⁹⁶ Before the results of the DNA analysis can be compared, the examiner is required to run a series of controls to check for possible contamination and ensure that the PCR process ran properly. The QAS also requires semi-annual proficiency testing of all DNA analysts that perform DNA testing for criminal cases. The results of the tests do not have to be published, but the laboratory must retain the results of the tests, any discrepancies or errors made, and corrective actions taken.¹⁹⁷

Forensic practitioners in the U.S. do not typically report quality issues that arise in forensic DNA analysis. By contrast, error rates in medical DNA testing are commonly measured and reported.¹⁹⁸ Refreshingly, a 2014 paper from the Netherlands Forensic Institute (NFI), a government agency, reported a comprehensive analysis of all "quality issue notifications" encountered in casework, categorized by type, source and impact.^{199,200} The authors call for greater "transparency" and "culture change," writing that:

Forensic DNA casework is conducted worldwide in a large number of laboratories, both private companies and in institutes owned by the government. Quality procedures are in place in all laboratories, but the nature of the quality system varies a lot between the different labs. In particular, there are many forensic DNA laboratories that operate without a quality issue notification system like the one described in this paper. In our experience, such a system is extremely important for the detection and proper handling of errors. This is crucial in forensic casework that can have a major impact on people's lives. We therefore propose that the implementation of a quality issue notification system is necessary for any laboratory that is involved in forensic DNA casework.

Such system can only work in an optimal way, however, when there is a blame-free culture in the laboratory that extends to the police and the legal justice system. People have a natural tendency to hide their mistakes, and it is essential to create an atmosphere where there are no adverse personal consequences when mistakes are reported. The management should take the lead in this culture change...

As far as we know, the NFI is the first forensic DNA laboratory in the world to reveal such detailed data and reports. It shows that this is possible without any disasters or abuse happening, and there are no

¹⁹⁶ FBI. "Quality assurance standards for forensic DNA testing laboratories." (2011). See: www.fbi.gov/about-us/lab/biometric-analysis/codis/qas-standards-for-forensic-dna-testing-laboratories-effective-9-1-2011.

¹⁹⁷ Ibid., Sections 12, 13, and 14.

¹⁹⁸ See, for example: Plebani, M., and P. Carroro. "Mistakes in a stat laboratory: types and frequency." *Clinical Chemistry*, Vol. 43 (1997): 1348-51; Stahl, M., Lund, E.D., and I. Brandslund. "Reasons for a laboratory's inability to report results for requested analytical tests." *Clinical Chemistry*, Vol. 44 (1998): 2195-7; Hofgartner, W.T., and J.F. Tait. "Frequency of problems during clinical molecular-genetic testing." *American Journal of Clinical Pathology*, Vol. 112 (1999): 14-21; and Carroro, P., and M. Plebani. "Errors in a stat laboratory: types and frequencies 10 years later." *Clinical Chemistry*, Vol. 53 (2007): 1338-42.

¹⁹⁹ Kloosterman, A., Sjerps, M., and A. Quak. "Error rates in forensic DNA analysis: Definition, numbers, impact and communication." *Forensic Science International: Genetics*, Vol. 12 (2014): 77-85 and J.M. Butler "DNA Error Rates" presentation at the International Forensics Symposium, Washington, D.C. (2015). www.cstl.nist.gov/strbase/pub_pres/Butler-ErrorManagement-DNA-Error.pdf.

²⁰⁰ The Netherlands uses an "inquisitorial" approach to method of criminal justice rather than the adversarial system used in the U.S. Concerns about having to explain quality issues in court may explain in part why U.S. laboratories do not routinely report quality issues.

reasons for nondisclosure. As mentioned in the introduction, in laboratory medicine publication of data on error rates has become standard practice. Quality failure rates in this domain are comparable to ours.

Finally, we note that there is a need to improve proficiency testing. There are currently no requirements concerning how challenging the proficiency tests should be. The tests should be representative of the full range of situations likely to be encountered in casework.

Finding 2: DNA Analysis

Foundational validity. PCAST finds that DNA analysis of single-source samples or simple mixtures of two individuals, such as from many rape kits, is an objective method that has been established to be foundationally valid.

Validity as applied. Because errors due to human failures will dominate the chance of coincidental matches, the scientific criteria for validity as applied require that an expert (1) should have undergone rigorous and relevant proficiency testing to demonstrate their ability to reliably apply the method, (2) should routinely disclose in reports and testimony whether, when performing the examination, he or she was aware of any facts of the case that might influence the conclusion, and (3) should disclose, upon request, all information about quality testing and quality issues in his or her laboratory.

5.2 DNA Analysis of Complex-mixture Samples

Some investigations involve DNA analysis of complex mixtures of biological samples from multiple unknown individuals in unknown proportions. Such samples might arise, for example, from mixed blood stains. As DNA testing kits have become more sensitive, there has been growing interest in “touch DNA”—for example, tiny quantities of DNA left by multiple individuals on a steering wheel of a car.

Methodology

The fundamental difference between DNA analysis of complex-mixture samples and DNA analysis of single-source and simple mixtures lies not in the laboratory processing, but in the interpretation of the resulting DNA profile.

DNA analysis of complex mixtures—defined as mixtures with more than two contributors—is inherently difficult and even more for small amounts of DNA.²⁰¹ Such samples result in a DNA profile that superimposes multiple individual DNA profiles. Interpreting a mixed profile is different for multiple reasons: each individual may contribute two, one or zero alleles at each locus; the alleles may overlap with one another; the peak heights may differ considerably, owing to differences in the amount and state of preservation of the DNA from each source; and the “stutter peaks” that surround alleles (common artifacts of the DNA amplification process) can

²⁰¹ See, for example, SWGDAM document on interpretation of DNA mixtures. www.swgdam.org/#!/public-comments/c1t82.

obscure alleles that are present or suggest alleles that are not present.²⁰² It is often impossible to tell with certainty which alleles are present in the mixture or how many separate individuals contributed to the mixture, let alone accurately to infer the DNA profile of each individual.²⁰³

Instead, examiners must ask: “Could a suspect’s DNA profile be present *within* the mixture profile? And, what is the probability that such an observation might occur by chance?” The questions are challenging for the reasons given above. Because many different DNA profiles may fit within some mixture profiles, the probability that a suspect “cannot be excluded” as a possible contributor to complex mixture may be *much higher* (in some cases, millions of times higher) than the probabilities encountered for matches to single-source DNA profiles. As a result, proper calculation of the statistical weight is critical for presenting accurate information in court.

Subjective Interpretation of Complex Mixtures

Initial approaches to the interpretation of complex mixtures relied on subjective judgment by examiners, together with the use of simplified statistical methods such as the “Combined Probability of Inclusion” (CPI). These approaches are problematic because subjective choices made by examiners, such as about which alleles to include in the calculation, can dramatically alter the result and lead to inaccurate answers.

The problem with subjective analysis of complex-mixture samples is illustrated by a 2003 double-homicide case, *Winston v. Commonwealth*.²⁰⁴ A prosecution expert reported that the defendant could not be excluded as a possible contributor to DNA on a discarded glove that contained a mixed DNA profile of at least three contributors; the defendant was convicted and sentenced to death. The prosecutor told the jury that the chance the match occurred by chance was 1 in 1.1 billion. A 2009 paper, however, makes a reasonable scientific case that that the chance is closer to 1 in 2—that is, 50 percent of the relevant population could not be excluded.²⁰⁵ Such a large discrepancy is unacceptable, especially in cases where a defendant was sentenced to death.

Two papers clearly demonstrate that these commonly used approaches for DNA analysis of complex mixtures can be problematic. In a 2011 study, Dror and Hampikian tested whether irrelevant contextual information biased their conclusions of examiners, using DNA evidence from an actual adjudicated criminal case (a gang rape case in Georgia).²⁰⁶ In this case, one of the suspects implicated another in connection with a plea bargain. The two experts who examined evidence from the crime scene were aware of this testimony against the suspect and knew that the plea bargain testimony could be used in court only with corroborating DNA evidence. Due to the

²⁰² Challenges with “low-template” DNA are described in a recent paper, Butler, J.M. “The future of forensic DNA analysis.” *Philosophical Transactions of the Royal Society B*, 370: 20140252 (2015).

²⁰³ See: Buckleton, J.S., Curran, J.M., and P. Gill. “Towards understanding the effect of uncertainty in the number of contributors to DNA stains.” *Forensic Science International Genetics*, Vol. 1, No. 1 (2007): 20-8 and Coble, M.D., Bright, J.A., Buckleton, J.S., and J.M. Curran. “Uncertainty in the number of contributors in the proposed new CODIS set.” *Forensic Science International Genetics*, Vol. 19 (2015): 207-11.

²⁰⁴ *Winston v. Commonwealth*, 604 S.E.2d 21 (Va. 2004).

²⁰⁵ Thompson, W.C. “Painting the target around the matching profile: the Texas sharpshooter fallacy in forensic DNA interpretation.” *Law, Probability and Risk*, Vol. 8, No. 3 (2009): 257-76.

²⁰⁶ Dror, I.E., and G. Hampikian. “Subjectivity and bias in forensic DNA mixture interpretation.” *Science & Justice*, Vol. 51, No. 4 (2011): 204-8.

complex nature of the DNA mixture collected from the crime scene, the analysis of this evidence required judgment and interpretation on the part of the examiners. The two experts both concluded that the suspect could not be excluded as a contributor.

Dror and Hampikian presented the original DNA evidence from this crime to 17 expert DNA examiners, but without any of the irrelevant contextual information. They found that only 1 out of the 17 experts agreed with the original experts who were exposed to the biasing information (in fact, 12 of the examiners *excluded* the suspect as a possible contributor).

In another paper, de Keijser and colleagues presented 19 DNA experts with a mock case involving an alleged violent robbery outside a bar:

*There is a male suspect, who denies any wrongdoing. The items that were sampled for DNA analysis are the shirt of the (alleged) female victim (who claims to have been grabbed by her assailant), a cigarette butt that was picked up by the police and that was allegedly smoked by the victim and/or the suspect, and nail clippings from the victim, who claims to have scratched the perpetrator.*²⁰⁷

Although all the experts were provided the same DNA profiles (prepared from the three samples above and the two people), their conclusions varied wildly. One examiner excluded the suspect as a possible contributor, while another examiner declared a match between the suspect's profile and a few minor peaks in the mixed profile from the nails—reporting a random match probability of roughly 1 in 209 million. Still other examiners declared the evidence inconclusive.

In the summer of 2015, a remarkable chain of events in Texas revealed that the problems with subjective analysis of complex DNA mixtures were not limited to a few individual cases: they were systemic.²⁰⁸ The Texas Department of Public Safety (TX-DPS) issued a public letter on June 30, 2015 to the Texas criminal justice community noting that (1) the FBI had recently reported that it had identified and corrected minor errors in its population databases used to calculate statistics in DNA cases, (2) the errors were not expected to have any significant effect on results, and (2) the TX-DPS Crime Laboratory System would, upon request, recalculate statistics previously reported in individual cases.

When several prosecutors submitted requests for recalculation to TX-DPS and other laboratories, they were stunned to find that the statistics had changed dramatically—e.g., *from 1 in 1.4 billion to 1 in 36 in one case, from 1 in 4000 to inconclusive in another*. These prosecutors sought the assistance of the Texas Forensic Science Commission (TFSC) in understanding the reason for the change and the scope of potentially affected cases.

²⁰⁷ de Keijser, J.W., Malsch, M., Luining, E.T., Kranenbarg, M.W., and D.J.H.M. Lenssen. "Differential reporting of mixed DNA profiles and its impact on jurists' evaluation of evidence: An international analysis." *Forensic Science International: Genetics*, Vol. 23 (2016): 71-82.

²⁰⁸ Relevant documents and further details can be found at www.fsc.texas.gov/texas-dna-mixture-interpretation-case-review. Lynn Garcia, General Counsel for the Texas Forensic Science Commission, also provided a helpful summary to PCAST.

In consultation with forensic DNA experts, the TFSC determined that the large shifts observed in some cases were unrelated to the minor corrections in the FBI’s population database, but rather were due to the fact that forensic laboratories had changed the way in which they calculated the CPI statistic—especially how they dealt with phenomena such as “allelic dropout” at particular DNA loci.

The TFSC launched a statewide DNA Mixture Notification Subcommittee, which included representatives of conviction integrity units, district and county attorneys, defense attorneys, innocence projects, the state attorney general, and the Texas governor. By September 2015, the TX-DPS had generated a county-by-county list of more than 24,000 DNA mixture cases analyzed from 1999-2015. Because TX-DPS is responsible for roughly half of the casework in the state, the total number of Texas DNA cases requiring review may exceed 50,000. (Although comparable efforts have not been undertaken in other states, the problem is likely to be national in scope, rather than specific to forensic laboratories in Texas.)

The TFSC also convened an international panel of scientific experts—from the Harvard Medical School, the University of North Texas Health Science Center, New Zealand’s forensic research unit, and NIST—to clarify the proper use of CPI. These scientists presented observations at a public meeting, where many attorneys learned for the first time the extent to which DNA-mixture analysis involved subjective interpretation. Many of the problems with the CPI statistic arose because existing guidelines did not clearly, adequately, or correctly specify the proper use or limitations of the approach.

In summary, the interpretation of complex DNA mixtures with the CPI statistic has been an inadequately specified—and thus inappropriately subjective—method. As such, the method is clearly not foundationally valid.

In an attempt to fill this gap, the experts convened by TFSC wrote a joint scientific paper, which was published online on August 31, 2016.²⁰⁹ The paper underscores the “pressing need . . . for standardization of an approach, training and ongoing testing of DNA analysts.” The authors propose a set of specific rules for the use of the CPI statistic.

The proposed rules are clearly *necessary* for a scientifically valid method for the application of CPI. Because the paper appeared just as this report was being finalized, PCAST has not had adequate time to assess whether the rules are also *sufficient* to define an objective and scientifically valid method for the application of CPI.

Current Efforts to Develop Objective Methods

Given these problems, several groups have launched efforts to develop “probabilistic genotyping” computer programs that apply various algorithms to interpret complex mixtures. As of March 2014, at least 8 probabilistic genotyping software programs had been developed (called LRmix, Lab Retriever, likeLTD, FST, Armed Xpert, TrueAllele, STRmix, and DNA View Mixture Solution), with some being open source software and some being

²⁰⁹ Bieber, F.R., Buckleton, J.S., Budowle, B., Butler, J.M., and M.D. Coble. “Evaluation of forensic DNA mixture evidence: protocol for evaluation, interpretation, and statistical calculations using the combined probability of inclusion.” *BMC Genetics*. bmcbgenet.biomedcentral.com/articles/10.1186/s12863-016-0429-7.

commercial products.²¹⁰ The FBI Laboratory began using the STRmix program less than a year ago, in December 2015, and is still in the process of publishing its own internal developmental validation.

These probabilistic genotyping software programs clearly represent a major improvement over purely subjective interpretation. However, they still require careful scrutiny to determine (1) whether the methods are scientifically valid, including defining the limitations on their reliability (that is, the circumstances in which they may yield unreliable results) and (2) whether the software correctly implements the methods. This is particularly important because the programs employ different mathematical algorithms and can yield different results for the same mixture profile.²¹¹

Appropriate evaluation of the proposed methods should consist of studies by multiple groups, *not associated with the software developers*, that investigate the performance and define the limitations of programs by testing them on a wide range of mixtures with different properties. In particular, it is important to address the following issues:

- (1) How well does the method perform as a function of the number of contributors to the mixture? How well does it perform when the number of contributors to the mixture is *unknown*?
- (2) How does the method perform as a function of the number of alleles shared among individuals in the mixture? Relatedly, how does it perform when the mixtures include related individuals?
- (3) How well does the method perform—and how does accuracy degrade—as a function of the absolute and relative amounts of DNA from the various contributors? For example, it can be difficult to determine whether a small peak in the mixture profile represents a true allele from a minor contributor or a stutter peak from a nearby allele from a different contributor. (Notably, this issue underlies a current case that has received considerable attention.²¹²)

²¹⁰ The topic is reviewed in Butler, J.M. "Chapter 13: Coping with Potential Missing Alleles." *Advanced Topics in Forensic DNA Typing: Interpretation*. Waltham, MA: Elsevier/Academic, (2015): 333-48.

²¹¹ Some programs use discrete (semi-continuous) methods, which use only allele information in conjunction with probabilities of allelic dropout and dropin, while other programs use continuous methods, which also incorporate information about peak height and other information. Within these two classes, the programs differ with respect to how they use the information. Some of the methods involve making assumptions about the number of individuals contributing to the DNA profile, and use this information to clean up noise (such as "stutter" in DNA profiles).

²¹² In this case, examiners used two different DNA software programs (STRmix and TrueAllele) and obtained different conclusions concerning whether DNA from the defendant could be said to be included within the low-level DNA mixture profile obtained from a sample collected from one of the victim's fingernails. The judge ruled that the DNA evidence implicating the defendant was inadmissible. McKinley, J. "Potsdam Boy's Murder Case May Hinge on Minuscule DNA Sample From Fingernail." *New York Times*. See: www.nytimes.com/2016/07/25/nyregion/potsdam-boys-murder-case-may-hinge-on-statistical-analysis.html (accessed August 22, 2016). Sommerstein, D. "DNA results will not be allowed in Hillary murder trail." North Country Public Radio (accessed September 1, 2016). The decision can be found here: www.northcountrypublicradio.org/assets/files/08-26-16DecisionandOrder-DNAAnalysisAdmissibility.pdf.

(4) Under what circumstances—and why—does the method produce results (random inclusion probabilities) that differ substantially from those produced by other methods?

A number of papers have been published that analyze known mixtures in order to address some of these issues.²¹³ Two points should be noted about these studies. First, most of the studies evaluating software packages have been undertaken by the software developers themselves. While it is completely appropriate for method developers to evaluate their own methods, establishing scientific validity also requires scientific evaluation by other scientific groups that did not develop the method. Second, there have been few comparative studies across the methods to evaluate the differences among them—and, to our knowledge, no comparative studies conducted by independent groups.²¹⁴

Most importantly, current studies have adequately explored only a limited range of mixture types (with respect to number of contributors, ratio of minor contributors, and total amount of DNA). The two most widely used methods (STRMix and TrueAllele) appear to be reliable within a certain range, based on the available evidence and the inherent difficulty of the problem.²¹⁵ Specifically, these methods appear to be reliable for three-person mixtures in which the minor contributor constitutes at least 20 percent of the intact DNA in the mixture and in which the DNA amount exceeds the minimum level required for the method.²¹⁶

²¹³ For example: Perlin, M.W., Hornyak, J.M., Sugimoto, G., and K.W.P. Miller. “TrueAllele genotype identification on DNA mixtures containing up to five unknown contributors.” *Journal of Forensic Sciences*, Vol. 60, No. 4 (2015): 857-868; Greenspoon S.A., Schiermeier-Wood L., and B.C. Jenkins. “Establishing the limits of TrueAllele® Casework: A validation study.” *Journal of Forensic Sciences*. Vol. 60, No. 5 (2015):1263–76; Bright, J.A., Taylor, D., McGovern, C., Cooper, S., Russell, L., Abarno, D., and J.S. Buckleton. “Developmental validation of STRmix™, expert software for the interpretation of forensic DNA profiles.” *Forensic Science International: Genetics*. Vol. 23 (2016): 226-39; Bright, J-A., Taylor D., Curran, J.S., and J.S. Buckleton. “Searching mixed DNA profiles directly against profile databases.” *Forensic Science International: Genetics*. Vol. 9 (2014):102-10; Taylor D., Buckleton J, and I. Evett. “Testing likelihood ratios produced from complex DNA profiles.” *Forensic Science International: Genetics*. Vol. 16 (2015): 165-171; Taylor D. and J.S. Buckleton. “Do low template DNA profiles have useful quantitative data?” *Forensic Science International: Genetics*, Vol. 16 (2015): 13-16.

²¹⁴ Bille, T.W., Weitz, S.M., Coble, M.D., Buckleton, J., and J.A. Bright. “Comparison of the performance of different models for the interpretation of low level mixed DNA profiles.” *Electrophoresis*. Vol. 35 (2014): 3125–33.

²¹⁵ The interpretation of DNA mixtures becomes increasingly challenging as the number of contributors increases. See, for example: Taylor D., Buckleton J, and I. Evett. “Testing likelihood ratios produced from complex DNA profiles.” *Forensic Science International: Genetics*. Vol. 16 (2015): 165-171; Bright, J.A., Taylor, D., McGovern, C., Cooper, S., Russell, L., Abarno, D., and J.S. Buckleton. “Developmental validation of STRmix™, expert software for the interpretation of forensic DNA profiles.” *Forensic Science International: Genetics*. Vol. 23 (2016): 226-39; Bright, J-A., Taylor D., Curran, J.S., and J.S. Buckleton. “Searching mixed DNA profiles directly against profile databases.” *Forensic Science International: Genetics*. Vol. 9 (2014):102-10; Bieber, F.R., Buckleton, J.S., Budowle, B., Butler, J.M., and M.D. Coble. “Evaluation of forensic DNA mixture evidence: protocol for evaluation, interpretation, and statistical calculations using the combined probability of inclusion.” *BMC Genetics*. bmegenet.biomedcentral.com/articles/10.1186/s12863-016-0429-7.

²¹⁶ Such three-person samples involving similar proportions are more straightforward to interpret owing to the limited number of alleles and relatively similar peak height. The methods can also be reliably applied to single-source and simple-mixture samples, provided that, in cases where the two contributions cannot be separated by differential extraction, the proportion of the minor contributor is not too low (e.g., at least 10 percent).

For more complex mixtures (e.g. more contributors or lower proportions), there is relatively little published evidence.²¹⁷ In human molecular genetics, an experimental validation of an important diagnostic method would typically involve hundreds of distinct samples.²¹⁸ One forensic scientist told PCAST that many more distinct samples have, in fact, been analyzed, but that the data have not yet been collated and published.²¹⁹ Because empirical evidence is essential for establishing the foundational validity of a method, PCAST urges forensic scientists to submit and leading scientific journals to publish high-quality validation studies that properly establish the range of reliability of methods for the analysis of complex DNA mixtures.

When further studies are published, it will likely be possible to extend the range in which scientific validity has been established to include more challenging samples. As noted above, such studies should be performed by or should include independent research groups not connected with the developers of the methods and with no stake in the outcome.

Conclusion

Based on its evaluation of the published literature to date, PCAST reached several conclusions concerning the foundational validity of methods for the analysis of complex DNA mixtures. We note that foundational validity must be established with respect to a specified method applied to a specified range. In addition to forming its own judgment, PCAST also consulted with John Butler, Special Assistant to the Director for Forensic Science at NIST and Vice Chair of the NCFS.²²⁰ Butler concurred with PCAST's finding.

²¹⁷ For four-person mixtures, for example, papers describing experimental validations with known mixtures using TrueAllele involve 7 and 17 distinct mixtures, respectively, with relatively large amounts of DNA (at least 200 pg), while those using STRMix involve 2 and 3 distinct mixtures, respectively, but use much lower amounts of DNA (in the range of 10 pg). Greenspoon S.A., Schiermeier-Wood L., and B.C. Jenkins. "Establishing the limits of TrueAllele® Casework: A validation study." *Journal of Forensic Sciences*. Vol. 60, No. 5 (2015):1263–76; Perlin, M.W., Hornyak, J.M., Sugimoto, G., and K.W.P. Miller. "TrueAllele genotype identification on DNA mixtures containing up to five unknown contributors." *Journal of Forensic Sciences*, Vol. 60, No. 4 (2015): 857-868; Taylor, D. "Using continuous DNA interpretation methods to revisit likelihood ratio behavior." *Forensic Science International: Genetics*, Vol. 11 (2014): 144-153; Taylor D., Buckleton J, and I. Evett. "Testing likelihood ratios produced from complex DNA profiles." *Forensic Science International: Genetics*. Vol. 16 (2015): 165-171; Taylor D. and J.S. Buckleton. "Do low template DNA profiles have useful quantitative data?" *Forensic Science International: Genetics*, Vol. 16 (2015): 13-16; Bright, J.A., Taylor, D., McGovern, C., Cooper, S., Russell, L., Abarno, D., J.S. Buckleton. "Developmental validation of STRmix™, expert software for the interpretation of forensic DNA profiles." *Forensic Science International: Genetics*. Vol. 23 (2016): 226-39.

²¹⁸ Preparing and performing PCR amplification on hundreds of DNA mixtures is straightforward; it can be accomplished within a few weeks or less.

²¹⁹ PCAST interview with John Buckleton, Principal Scientist at New Zealand's Institute of Environmental Science and Research and a co-developer of STRMix.

²²⁰ Butler is a world authority on forensic DNA analysis, whose Ph.D. research, conducted at the FBI Laboratory, pioneered techniques of modern forensic DNA analysis and who has written five widely acclaimed textbooks on forensic DNA typing. See: Butler, J.M. *Forensic DNA Typing: Biology and Technology behind STR Markers*. Academic Press, London (2001); Butler, J.M. *Forensic DNA Typing: Biology, Technology, and Genetics of STR Markers (2nd Edition)*. Elsevier Academic Press, New York (2005); Butler, J.M. *Fundamentals of Forensic DNA Typing*. Elsevier Academic Press, San Diego (2010); Butler, J.M. *Advanced Topics in Forensic DNA Typing: Methodology*. Elsevier Academic Press, San Diego (2012); Butler, J.M. *Advanced Topics in Forensic DNA Typing: Interpretation*. Elsevier Academic Press, San Diego (2015).

Finding 3: DNA analysis of complex-mixture samples

Foundational validity. PCAST finds that:

(1) Combined-Probability-of-Inclusion (CPI)-based methods. DNA analysis of complex mixtures based on CPI-based approaches has been an inadequately specified, subjective method that has the potential to lead to erroneous results. As such, it is not foundationally valid.

A very recent paper has proposed specific rules that address a number of problems in the use of CPI. These rules are clearly *necessary*. However, PCAST has not adequate time to assess whether they are also *sufficient* to define an objective and scientifically valid method. If, for a limited time, courts choose to admit results based on the application of CPI, validity as applied would require that, at a minimum, they be consistent with the rules specified in the paper.

DNA analysis of complex mixtures should move rapidly to more appropriate methods based on probabilistic genotyping.

(2) Probabilistic genotyping. Objective analysis of complex DNA mixtures with probabilistic genotyping software is relatively new and promising approach. Empirical evidence is required to establish the foundational validity of each such method within specified ranges. At present, published evidence supports the foundational validity of analysis, with some programs, of DNA mixtures of 3 individuals in which the minor contributor constitutes at least 20 percent of the intact DNA in the mixture and in which the DNA amount exceeds the minimum required level for the method. The range in which foundational validity has been established is likely to grow as adequate evidence for more complex mixtures is obtained and published.

Validity as applied. For methods that are foundationally valid, validity as applied involves similar considerations as for DNA analysis of single-source and simple-mixtures samples, with a special emphasis on ensuring that the method was applied correctly and within its empirically established range.

The Path Forward

There is a clear path for extending the range over which objective methods have been established to be foundationally valid—specifically, through the publication of appropriate scientific studies.

Such efforts will be aided by the creation and dissemination (under appropriate data-use and data-privacy restrictions) of large collections of hundreds of DNA profiles created from known mixtures—representing widely varying complexity with respect to (1) the number of contributors, (2) the relationships among contributors, (3) the absolute and relative amounts of materials, and (4) the state of preservation of materials—that can be used by independent groups to evaluate and compare the methods. Notably, the PROVEDIt Initiative (Project Research Openness for Validation with Experimental Data) at Boston University has made available a resource of

25,000 profiles from DNA mixtures.^{221,222} In addition to scientific studies on common sets of samples for the purpose of evaluating foundational validity, individual forensic laboratories will want to conduct their own internal developmental validation studies to assess the validity of the method in their own hands.²²³

NIST should play a leadership role in this process, by ensuring the creation and dissemination of materials and stimulating studies by independent groups through grants, contracts, and prizes; and by evaluating the results of these studies.

5.3 Bitemark Analysis

Methodology

Bitemark analysis is a subjective method. It typically involves examining marks left on a victim or an object at the crime scene, and comparing those marks with dental impressions taken from a suspect.²²⁴ Bitemark comparison is based on the premises that (1) dental characteristics, particularly the arrangement of the front teeth, differ substantially among people and (2) skin (or some other marked surface at a crime scene) can reliably capture these distinctive features.

Bitemark analysis begins with an examiner deciding whether an injury is a mark caused by human teeth.²²⁵ If so, the examiner creates photographs or impressions of the questioned bitemark and of the suspect's dentition; compares the bitemark and the dentition; and determines if the dentition (1) cannot be excluded as having made the bitemark, (2) can be excluded as having made the bitemark, or (3) is inconclusive. The bitemark standards do not provide well-defined standards concerning the degree of similarity that must be identified to support a reliable conclusion that the mark could have or could not have been created by the dentition in question. Conclusions about all these matters are left to the examiner's judgment.

Background Studies

Before turning to the question of foundational validity, we discuss some background studies (concerning such topics as uniqueness and consistency) that shed some light on the field. These studies cast serious doubt on the fundamental premises of the field.

²²¹ See: www.bu.edu/dnamixtures.

²²² The collection contains DNA samples with 1- to 5-person DNA mixtures, amplified with targets ranging from 1 to 0.007 ng. In the multi-person mixtures, the ratio of contributors range from 1:1 to 1:19. Additionally, the profiles were generated using a variety of laboratory conditions from samples containing pristine DNA; UV damaged DNA; enzymatically or sonically degraded DNA; and inhibited DNA.

²²³ The FBI Laboratory has recently completed a developmental validation study and is preparing it for publication.

²²⁴ Less frequently, marks are found on a suspected perpetrator that may have come from a victim.

²²⁵ ABFO Bitemark Methodology Standards and Guidelines, abfo.org/wp-content/uploads/2016/03/ABFO-Bitemark-Standards-03162016.pdf (accessed July 2, 2016).

A widely cited 1984 paper claimed that “human dentition was unique beyond any reasonable doubt.”²²⁶ The study examined 397 bitemarks carefully made in a wax wafer, measured 12 parameters from each, and—assuming, without any evidence, that the parameters were uncorrelated with each other—suggested that the chance of two bitemarks having the same parameters is less than one in six trillion. The paper was theoretical rather than empirical: it did not attempt to actually compare the bitemarks to one another.

A 2010 paper debunked these claims.²²⁷ By empirically studying 344 human dental casts and measuring them by three-dimensional laser scanning, these authors showed that matches occurred vastly more often than expected under the theoretical model. For example, the theoretical model predicted that the probability of finding *even a single* five-tooth match among the collection of bitemarks is less than one in one million; yet, the empirical comparison revealed 32 such matches.

Notably, these studies examined human dentition patterns measured under idealized conditions. By contrast, skin has been shown to be an unreliable medium for recording the precise pattern of teeth. Studies that have involved inflicting bitemarks either on living pigs²²⁸ (used as a model of human skin) or human cadavers²²⁹ have demonstrated significant distortion in all directions. A 2010 study of experimentally created bitemarks produced by known biters concluded that skin deformation distorts bitemarks so substantially and so variably that current procedures for comparing bitemarks are unable to reliably exclude or include a suspect as a potential biter (“The data derived showed no correlation and was not reproducible, that is, the same dentition could not create a measurable impression that was consistent in all of the parameters in any of the test circumstances.”)²³⁰ Such distortion is further complicated in the context of criminal cases, where biting often occurs during struggles, in which skin may be stretched and contorted at the time a bitemark is created.

Empirical research suggests that forensic odontologists do not consistently agree even on whether an injury is a human bitemark at all. A study by the American Board of Forensic Odontology (ABFO)²³¹ involved showing photos of 100 patterned injuries to ABFO board-certified bitemark analysts, and asking them to answer three basic questions concerning (1) whether there was sufficient evidence to render an opinion as to whether the patterned injury is a human bitemark; (2) whether the mark is a human bitemark, suggestive of a human

²²⁶ Rawson, R.D., Ommen, R.K., Kinard, G., Johnson, J., and A. Yfantis. “Statistical evidence for the individuality of the human dentition.” *Journal of Forensic Sciences*, Vol. 29, No. 1 (1984): 245-53.

²²⁷ Bush, M.A., Bush, P.J., and H.D. Sheets. “Statistical evidence for the similarity of the human dentition.” *Journal of Forensic Sciences*, Vol. 56, No. 1 (2011): 118-23.

²²⁸ Dorion, R.B.J., ed. *Bitemark Evidence: A Color Atlas and Text*. 2nd ed. CRC Press-Taylor & Francis, Boca Raton, Florida (2011).

²²⁹ Sheets, H.D., Bush, P.J., and M.A. Bush. “Bitemarks: distortion and covariation of the maxillary and mandibular dentition as impressed in human skin.” *Forensic Science International*, Vol. 223, No. 1-3 (2012): 202-7. Bush, M.A., Miller, R.G., Bush, P.J., and R.B. Dorion. “Biomechanical factors in human dermal bitemarks in a cadaver model.” *Journal of Forensic Sciences*, Vol. 54, No. 1 (2009): 167-76.

²³⁰ Bush, M.A., Cooper, H.I., and R.B. Dorion. “Inquiry into the scientific basis for bitemark profiling and arbitrary distortion compensation.” *Journal of Forensic Sciences*, Vol. 55, No. 4 (2010): 976-83.

²³¹ Adam Freeman and Iain Pretty “Construct validity of bitemark assessments using the ABFO decision tree,” presentation at the 2016 Annual Meeting of the American Academy of Forensic Sciences. See:

online.wsj.com/public/resources/documents/ConstructValidBMdecisiontreePRETTYFREEMAN.pdf.

bitemark, or not a human bitemark; and (3) whether distinct features (arches and toothmarks) were identifiable.²³² Among the 38 examiners who completed the study, it was reported that there was unanimous agreement on the first question in only 4 of the 100 cases and agreement of at least 90 percent in only 20 of the 100 cases. Across all three questions, there was agreement of at least 90 percent in only 8 of the 100 cases.

In a similar study in Australia, 15 odontologists were shown a series of six bitemarks from contemporary cases, five of which were marks confirmed by living victims to have been caused by teeth, and were asked to explain, in narrative form, whether the injuries were, in fact, bitemarks.²³³ The study found wide variability among the practitioners in their conclusions about the origin, circumstance, and characteristics of the patterned injury for all six images. Surprisingly, those with the most experience (21 or more years) tended to have the widest range of opinions as to whether a mark was of human dental origin or not.²³⁴ Examiners' opinions varied considerably as to whether they thought a given mark was suitable for analysis, and individual practitioners demonstrated little consistency in their approach in analyzing one bitemark to the next. The study concluded that this "inconsistency indicates a fundamental flaw in the methodology of bitemark analysis and should lead to concerns regarding the reliability of any conclusions reached about matching such a bitemark to a dentition."²³⁵

Studies of Scientific Validity and Reliability

As discussed above, the foundational validity of a subjective method can only be established through multiple independent black-box studies.

The 2009 NRC report found that the scientific validity of bitemark analysis had not been established.²³⁶ In its own review of the literature PCAST found few empirical studies that attempted to study the validity and reliability of the methods to identify the source of a bitemark.

In a 1975 paper, two examiners were asked to match photographs of bitemarks made by 24 volunteers in skin from freshly slaughtered pigs with dental models from these same volunteers.²³⁷ The photographs were taken at 0, 1, and 24 hours after the bitemark was produced. Examiners' performance was poor and deteriorated with

²³² The raw data are made available by the authors upon request. They were reviewed by Professor Karen Kafadar, a member of the panel of Senior Advisors for this study.

²³³ Page, M., Taylor, J., and M. Blenkin. "Expert interpretation of bitemark injuries – a contemporary qualitative study." *Journal of Forensic Sciences*, Vol. 58, No. 3 (2013): 664-72.

²³⁴ For example, one examiner expressed certainty that one of the images was a bitemark, stating, "I know from experience that that's teeth because I did a case at the beginning of the year, that when I first looked at the images I didn't think they were teeth, because the injuries were so severe. But when I saw the models, and scratched them down my arm, they looked just like that." Another expressed doubt that the same image was a bitemark, also based on his or her experience: "Honestly I don't think it's a bite mark... there could be any number of things that could have caused that. Whether this is individual tooth marks here I doubt. I've never seen anything like that." *Ibid.*, 666.

²³⁵ *Ibid.*, 670.

²³⁶ "There is continuing dispute over the value and scientific validity of comparing and identifying bite marks." National Research Council. *Strengthening Forensic Science in the United States: A Path Forward*. The National Academies Press. Washington DC. (2009): 151.

²³⁷ Whittaker, D.K. "Some laboratory studies on the accuracy of bitemark comparison." *International Dental Journal*, Vol. 25, No. 3 (1975): 166-71.

time following the bite. The proportion of photographs incorrectly attributed was 28 percent, 65 percent, and 84 percent at the 0, 1, and 24 hour time points.

In a 1999 paper, 29 forensic dental experts—as well as 80 others, including general dentists, dental students, and lay participants—were shown color prints of human bitemarks from 50 court cases and asked to decide whether each bitemark was made by an adult or a child.²³⁸ The decisions were compared to the verdict from the cases. All groups performed poorly.²³⁹

In a 2001 paper, 32 AFBO-certified diplomates were asked to report their certainty that 4 specific bitemarks might have come from each of 7 dental models, consisting of the four correct sources and three unrelated samples.^{240,241} Such a “closed-set” design (where the correct source is present for each questioned samples) is inappropriate for assessing reliability, because it will tend to underestimate the false positive rate.²⁴² Even with this closed-set design, 11 percent of comparisons to the incorrect source were declared to be “probable,” “possible,” or “reasonable medical certainty” matches.

In another 2001 paper, 10 AFBO-certified diplomates were given 10 independent tests, each consisting of bitemark evidence and two possible sources. The evidence was produced by clamping a dental model onto freshly slaughtered pigs, subjectively confirming that “sufficient detail was recorded,” and photographing the bitemark. The correct source was present in all but two of the tests (mostly closed-set design). The mean false positive rate was 15.9 percent—that is, roughly 1 in 6.

In a 2010 paper, 29 examiners with various levels of training (including 9 AFBO-certified diplomates) were provided with photographs of 18 human bitemarks and dentition from three human individuals (A, B, C) and were asked to decide whether the bitemarks came from A, B, C, or none of the above. The bitemarks had been produced in live pigs, using a biting machine with dentition from individuals A, B, and D (for which the dentition was not provided to the examiners). For bitemarks produced by D, the diplomates erroneously declared a match to A, B, or C in 17 percent of cases—again, roughly 1 in 6.

²³⁸ Whittaker, D.K., Brickley, M.R., and L. Evans. “A comparison of the ability of experts and non-experts to differentiate between adult and child human bite marks using receiver operating characteristic (ROC) analysis.” *Forensic Science International*, Vol. 92, No. 1 (1998): 11-20.

²³⁹ The authors asked observers to indicate how certain they were a bitemark was made by an adult, using a 6 point scale. Receiver-Operator Characteristic (ROC) curves were derived from the data. The Area under the Curve (AUC) was calculated for each group (where AUC = 1 represents perfect classification and AUC = 0.5 is equivalent to random decision-making). The Area under the Curve (AUC) was between 0.62-0.69, which is poor.

²⁴⁰ Arheart, K.L., and I.A. Pretty. “Results of the 4th AFBO Bitemark Workshop-1999.” *Forensic Science International*, Vol. 124, No. 2-3 (2001): 104-11.

²⁴¹ The four bitemarks consisted of three from criminal cases and one produced by an individual deliberately biting into a block of cheese. The seven dental models corresponded to the three defendants convicted in the criminal cases (presumed to be the biters), the individual who bit the cheese, and three unrelated individuals.

²⁴² In closed-set tests, examiners will perform well as long as they choose the closest matching dental model. In an open-set design in which none of models may be correct, the opportunity for false positives is higher. The open-set design resembles the application in casework. See the extensive discussion of closed-set designs in firearms analysis (Section 5.5).

Conclusion

Few empirical studies have been undertaken to study the ability of examiners to accurately identify the source of a bitemark. Among those studies that have been undertaken, the observed false positive rates were so high that the method is clearly scientifically unreliable at present. (Moreover, several of these studies employ inappropriate closed-set designs that are likely to *underestimate* the false-positive rate.)

Finding 4: Bitemark analysis

Foundational validity. PCAST finds that bitemark analysis does not meet the scientific standards for foundational validity, and is far from meeting such standards. To the contrary, available scientific evidence strongly suggests that examiners cannot consistently agree on whether an injury is a human bitemark and cannot identify the source of bitemark with reasonable accuracy.

The Path Forward

Some practitioners have expressed concern that the exclusion of bitemarks in court could hamper efforts to convict defendants in some cases.²⁴³ If so, the correct solution, from a scientific perspective, would not be to admit expert testimony based on invalid and unreliable methods, but rather to attempt to develop scientifically valid methods.

However, PCAST considers the prospects of developing bitemark analysis into a scientifically valid method to be low. We advise against devoting significant resources to such efforts.

5.4 Latent Fingerprint Analysis

Latent fingerprint analysis was first proposed for use in criminal identification in the 1800s and has been used for more than a century. The method was long hailed as infallible, despite the lack of appropriate studies to assess its error rate. As discussed above, this dearth of empirical testing indicated a serious weakness in the scientific culture of forensic science—where validity was assumed rather than proven. Citing earlier guidelines now acknowledged to have been inappropriate,²⁴⁴ the DOJ recently noted,

*Historically, it was common practice for an examiner to testify that when the ... methodology was correctly applied, it would always produce the correct conclusion. Thus any error that occurred would be human error and the resulting error rate of the methodology would be zero. This view was described by the Department of Justice in 1984 in the publication *The Science of Fingerprints*, where it states, "Of all the methods of identification, fingerprinting alone has proved to be both infallible and feasible."²⁴⁵*

In response to the 2009 NRC report, the latent print analysis field has made progress in recognizing the need to perform empirical studies to assess foundational validity and measure reliability. Much credit goes to the FBI

²⁴³ The precise proportion of cases in which bitemarks play a key role is unclear, but is clearly small.

²⁴⁴ Federal Bureau of Investigation. *The Science of Fingerprints*. U.S. Government Printing Office. (1984): iv.

²⁴⁵ See: www.justice.gov/olp/file/861906/download.

Laboratory, which has led the way in performing both black-box studies, designed to measure reliability, and “white-box studies,” designed to understand the factors that affect examiners’ decisions.²⁴⁶ PCAST applauds the FBI’s efforts. There are also nascent efforts to begin to move the field from a purely subjective method toward an objective method—although there is still a considerable way to go to achieve this important goal.

Methodology

Latent fingerprint analysis typically involves comparing (1) a “latent print” (a complete or partial friction-ridge impression from an unknown subject) that has been developed or observed on an item) with (2) one or more “known prints” (fingerprints deliberately collected under a controlled setting from known subjects; also referred to as “ten prints”), to assess whether the two may have originated from the same source. (It may also involve comparing latent prints with one another.)

It is important to distinguish latent prints from known prints. A known print contains fingerprint images of up to ten fingers captured in a controlled setting, such as an arrest or a background check.²⁴⁷ Because known prints tend to be of high quality, they can be searched automatically and reliably against large databases. By contrast, latent prints in criminal cases are often incomplete and of variable quality (smudged or otherwise distorted), with quality and clarity depending on such factors as the surface touched and the mechanics of touch.

An examiner might be called upon to (1) compare a latent print to the fingerprints of a known suspect that has been identified by other means (“identified suspect”) or (2) search a large database of fingerprints to identify a suspect (“database search”).

²⁴⁶ See: Hicklin, R.A., Buscaglia, J., Roberts, M.A., Meagher, S.B., Fellner, W., Burge, M.J., Monaco, M., Vera, D., Pantzer, L.R., Yeung, C.C., and N. Unnikumaran. “Latent fingerprint quality: a survey of examiners.” *Journal of Forensic Identification*. Vol. 61, No. 4 (2011): 385-419; Hicklin, R.A., Buscaglia, J., and M.A. Roberts. “Assessing the clarity of friction ridge impressions.” *Forensic Science International*, Vol. 226, No. 1 (2013): 106-117; Ulery, B.T., Hicklin, R.A., Kiebusinski, G.I., Roberts, M.A., and J. Buscaglia. “Understanding the sufficiency of information for latent fingerprint value determinations.” *Forensic Science International*, Vol. 230, No. 1-3 (2013): 99-106; Ulery, B.T., Hicklin, R.A., and J. Buscaglia. “Repeatability and reproducibility of decisions by latent fingerprint examiners.” *PLoS ONE*, (2012); and Ulery, B.T., Hicklin, R.A., Roberts, M.A., and J. Buscaglia. “Changes in latent fingerprint examiners’ markup between analysis and comparison.” *Forensic Science International*, Vol. 247 (2015): 54-61.

²⁴⁷ See: Committee on Science, Subcommittee on Forensic Science of the National Science and Technology Council. “Achieving Interoperability for Latent Fingerprint Identification in the United States.” (2014).

www.whitehouse.gov/sites/default/files/microsites/ostp/NSTC/afis_10-20-2014_draftforcomment.pdf.

Examiners typically follow an approach called “ACE” or “ACE-V,” for Analysis, Comparison, Evaluation, and Verification.^{248,249} The approach calls on examiners to make a series of subjective assessments. An examiner uses subjective judgment to select particular regions of a latent print for analysis. If there are no identified persons of interest, the examiner will run the latent print against an Automated Fingerprint Identification System (AFIS),²⁵⁰ containing large numbers of known prints, which uses non-public, proprietary image-recognition algorithms²⁵¹ to generate a list of potential candidates that share similar fingerprint features.²⁵² The examiner then manually compares the latent print to the fingerprints from the specific person of interest or from the closest candidate matches generated by the computer by studying selected features²⁵³ and then comes to a subjective decision as to whether they are similar enough to declare a proposed identification.

ACE-V adds a verification step. For the verification step, implementation varies widely.²⁵⁴ In many laboratories, only identifications are verified, because it is considered too burdensome, in terms of time and cost, to conduct

²⁴⁸ “A latent print examination using the ACE-V process proceeds as follows: *Analysis* refers to an initial information-gathering phase in which the examiner studies the unknown print to assess the quality and quantity of discriminating detail present. The examiner considers information such as substrate, development method, various levels of ridge detail, and pressure distortions. A separate analysis then occurs with the exemplar print. *Comparison* is the side-by-side observation of the friction ridge detail in the two prints to determine the agreement or disagreement in the details. In the *Evaluation* phase, the examiner assesses the agreement or disagreement of the information observed during Analysis and Comparison and forms a conclusion. *Verification* in some agencies is a review of an examiner’s conclusions with knowledge of those conclusions; in other agencies, it is an independent re-examination by a second examiner who does not know the outcome of the first examination.” National Institute of Standards and Technology. “*Latent Print Examination and Human Factors: Improving the Practice through a Systems Approach*.” (2012), available at: www.nist.gov/oles/upload/latent.pdf.

²⁴⁹ Reznicek, M., Ruth, R.M., and D.M. Schilens. “ACE-V and the scientific method.” *Journal of Forensic Identification*, Vol. 60, No. 1 (2010): 87-103.

²⁵⁰ State and local jurisdictions began purchasing AFIS systems in the 1970s and 1980s from private vendors, each with their own proprietary software and searching algorithms. In 1999, the FBI launched the Integrated Automated Fingerprint Identification System (IAFIS), a national fingerprint database that houses fingerprints and criminal histories on more than 70 million subjects submitted by state, local and federal law enforcement agencies (recently replaced by the Next Generation Identification (NGI) System). Some criminal justice agencies have the ability to search latent prints not only against their own fingerprint database but also against a hierarchy of local, state, and federal databases. System-wide interoperability, however, has yet to be achieved. See: Committee on Science, Subcommittee on Forensic Science of the National Science and Technology Council. “Achieving Interoperability for Latent Fingerprint Identification in the United States.” (2014). www.whitehouse.gov/sites/default/files/microsites/ostp/NSTC/afis_10-20-2014_draftforcomment.pdf.

²⁵¹ The algorithms used in generating candidate matches are proprietary and have not been made publicly available.

²⁵² The FBI Laboratory requires examiners to complete and document their analysis of the latent fingerprint before reviewing any known fingerprints or moving to the comparison and evaluation phase, this this requirement is not shared by all labs.

²⁵³ Fingerprint features are compared at three levels of detail—level 1 (“ridge flow”), level 2 (“ridge path”), and level 3 (“ridge features” or “shapes”). “Ridge flow” refers to classes of pattern types shared by many individuals, such as loop or whorl formations; this level is only sufficient for exclusions, not for declaring identifications. “Ridge path” refers to minutiae that can be used for declaring identifications, such as bifurcations or dots. “Ridge shapes” include the edges of ridges and location of pores. See: National Institute of Standards and Technology. “*Latent Print Examination and Human Factors: Improving the Practice through a Systems Approach*.” (2012), available at: www.nist.gov/oles/upload/latent.pdf.

²⁵⁴ Black, J.P. “Is there a need for 100% verification (review) of latent print examination conclusions?” *Journal of Forensic Identification*, Vol. 62, No.1 (2012): 80-100.

independent examinations in all cases (for example, exclusions). This procedure is problematic because it is not blind: the second examiner knows the first examiner reached a conclusion of proposed identification, which creates the potential for confirmation bias. In the aftermath of the Madrid train bombing case misidentification (see below), the FBI Laboratory adopted requirements to conduct, in certain cases, “independent application of ACE to a friction ridge print by another qualified examiner, who does not know the conclusion of the primary examiner.”²⁵⁵ In particular, the FBI Laboratory uses blind verification in cases considered to present the greatest risk of error, such as where a single fingerprint is identified, excluded, or deemed inconclusive.²⁵⁶

As noted in Chapter 2, earlier concerns²⁵⁷ about the reliability of latent fingerprint analysis increased substantially following a prominent misidentification of a latent fingerprint recovered from the 2004 bombing of the Madrid commuter train system. An FBI examiner concluded with “100 percent certainty” that the fingerprint matched Brandon Mayfield, an American in Portland, Oregon, even though Spanish authorities were unable to confirm the identification. Reviewers believe the misidentification resulted in part from “confirmation bias” and “reverse reasoning”—that is, going from the known print to the latent image in a way that led to overreliance on apparent similarities and inadequate attention to differences.²⁵⁸ As described in a recent paper by scientists at the FBI Laboratory,

A notable example of the problem of bias from the exemplar resulting in circular reasoning occurred in the Madrid misidentification, in which the initial examiner reinterpreted five of the original seven analysis points to be more consistent with the (incorrect) exemplar: “Having found as many as 10 points of unusual similarity, the FBI examiners began to ‘find’ additional features in LFP 17 [the latent print] that were not really there, but rather suggested to the examiners by features in the Mayfield prints.”²⁵⁹

In contrast to DNA analysis, the rules for declaring an identification that were historically used in fingerprint analysis were not set in advance nor uniform among examiners. As described by a February 2012 report from an Expert Working Group commissioned by NIST and NIJ:

²⁵⁵ U.S. Department of Justice, Office of the Inspector General. “A Review of the FBI’s Progress in Responding to the Recommendations in the Office of the Inspector General Report on the Fingerprint Misidentification in the Brandon Mayfield Case.” (2011). www.oig.justice.gov/special/s1105.pdf. See also: Federal Bureau of Investigation. Laboratory Division. *Latent Print Operations Manual: Standard Operating Procedures for Examining Friction Ridge Prints*. FBI Laboratory, Quantico, Virginia, 2007 (updated May 24, 2011).

²⁵⁶ Federal Bureau of Investigation. Laboratory Division. *Latent Print Operations Manual: Standard Operating Procedures for Examining Friction Ridge Prints*. FBI Laboratory, Quantico, Virginia, 2007 (updated May 24, 2011).

²⁵⁷ Faigman, D.L., Kaye, D.H., Saks, M.J., and J. Sanders (Eds). *Modern Scientific Evidence: The Law and Science of Expert Testimony, 2015-2016 ed.* Thomson/West Publishing (2016). Saks, M.J. “Implications of *Daubert* for forensic identification science.” *Shepard’s Expert and Science Evidence Quarterly* 427, (1994).

²⁵⁸ A Review of the FBI’s handling of the Brandon Mayfield Case. U.S. Department of Justice, Office of the Inspector General (2006). oig.justice.gov/special/s0601/final.pdf.

²⁵⁹ Ulery, B.T., Hicklin, R.A., Roberts, M.A., and J. Buscaglia. “Changes in latent fingerprint examiners’ markup between analysis and comparison.” *Forensic Science International*, Vol. 247 (2015): 54-61. The internal quotation is from U.S. Department of Justice Office of the Inspector General: A review of the FBI’s handling of the Brandon Mayfield case (March 2006), www.justice.gov/oig/special/s0601/PDF_list.htm. US Department of Justice Office of the Inspector General: A review of the FBI’s handling of the Brandon Mayfield case (March 2006), www.justice.gov/oig/special/s0601/PDF_list.htm.

*The thresholds for these decisions can vary among examiners and among forensic service providers. Some examiners state that they report identification if they find a particular number of relatively rare concurring features, for instance, eight or twelve. Others do not use any fixed numerical standard. Some examiners discount seemingly different details as long as there are enough similarities between the two prints. Other examiners practice the one-dissimilarity rule, excluding a print if a single dissimilarity not attributable to perceptible distortion exists. If the examiner decides that the degree of similarity falls short of satisfying the standard, the examiner can report an inconclusive outcome. If the conclusion is that the degree of similarity satisfies the standard, the examiner reports an identification.*²⁶⁰

In September 2011, the Scientific Working Group on Friction Ridge Analysis, Study and Technology (SWGFAST) issued “Standards for Examining Friction Ridge Impressions and Resulting Conclusions (Latent/Tenprint)” that begins to move latent print analysis in the direction of an objective framework. In particular, it suggests criteria concerning what combination of image quality and feature quantity (for example, the number of “minutiae” shared between two fingerprints) would be sufficient to declare an identification. The criteria are not yet fully objective, but they are a step in the right direction. The Friction Ridge Subcommittee of the OSAC has recognized the need for objective criteria in its identification of “Research Needs.”²⁶¹ We note that the black-box studies described below did not set out to test these specific criteria, and so they have not yet been scientifically validated.

Studies of Scientific Validity and Reliability

As discussed above, the foundational validity of a subjective method can *only* be established through multiple independent black-box studies appropriately designed to assess validity and reliability.

Below, we discuss various studies of latent fingerprint analysis. The first five studies were not intended as validation studies, although they provide some incidental information about performance. Remarkably, there have been only two black-box studies that were intentionally and appropriately designed to assess validity and reliability—the first published by the FBI Laboratory in 2011; the second completed in 2014 but not yet published. Conclusions about foundational validity thus must rest on these two recent studies.

In summarizing these studies, we apply the guidelines described earlier in this report (see Chapter 4 and Appendix A). First, while we note (1) both the estimated false positive rates and (2) the upper 95 percent confidence bound on the false positive rate, we focus on the latter as, from a scientific perspective, the appropriate rate to report to a jury—because the primary concern should be about underestimating the false positive rate and the true rate could reasonably be as high as this value.²⁶² Second, while we note both the false positive rate among *conclusive* examinations (identifications or exclusions) or among *all* examinations (including inconclusives) are relevant, we focus primarily on the former as being, from a scientific perspective, the

²⁶⁰ See: NIST. “Latent Print Examination and Human Factors: Improving the Practice through a Systems Approach.” (2012), available at: www.nist.gov/oles/upload/latent.pdf.

²⁶¹ See: workspace.forensicosac.org/kws/groups/fric_ridge/documents.

²⁶² By convention, the 95 percent confidence bound is most widely used in statistics as reflecting the range of plausible values (see Appendix A).

appropriate rate to report to a jury—because fingerprint evidence used against a defendant in court will typically be the result of a conclusive examination.

Evetts and Williams (1996)

This paper is a discursive historical review essay that contains a brief description of a small “collaborative study” relevant to the accuracy of fingerprint analysis.²⁶³ In this study, 130 highly experienced examiners in England and Wales, each with at least ten years of experience in forensic fingerprint analysis, were presented with ten latent print-known pairs. Nine of the pairs came from past casework at New Scotland Yard and were presumed to be ‘mated pairs’ (that is, from the same source). The tenth pair was a ‘non-mated pair’ (from different sources), involving a latent print deliberately produced on a “dimpled beer mug.” For the single non-mated pair, the 130 experts made no false identifications. Because the paper does not distinguish between exclusions and inconclusive examinations (and the authors no longer have the data),²⁶⁴ it is impossible to infer the upper 95 percent confidence bound.²⁶⁵

Langenburg (2009a)

In a small pilot study, the author examined the performance of six examiners on 60 tests each.²⁶⁶ There were only 15 conclusive examinations involving non-mated pairs (see Table 1 of the paper). There was one false positive, which the author excluded because it appeared to be a clerical error and was not repeated on subsequent retest. Even if this error is excluded, the tiny sample size results in a huge confidence interval (upper 95 percent confidence bound of 19 percent), with this upper bound corresponding to 1 error in 5 cases.

Langenburg (2009b)

In this small pilot study for the following paper, the author tested examiners in a conference room at a convention of forensic identification specialists.²⁶⁷ The examiners were divided into three groups: high-bias (n=16), low-bias (n=12), and control (n=15). Each group was presented with 6 latent-known pairs, consisting of 3 mated and 3 non-mated pairs. The first two groups received information designed to bias their judgment by heightening their attention, while the control group received a generic description. For the non-mated pairs, the control group had 1 false positive among 43 conclusive examinations. The false positive rate was 2.3

²⁶³ Evett, I.W., and R.L. Williams. “Review of the 16 point fingerprint standard in England and Wales.” *Forensic Science International*, Vol. 46, No. 1 (1996): 49-73.

²⁶⁴ I.W. Evett, personal communication.

²⁶⁵ For example, the upper 95 percent confidence bound would be 1 in 44 if all 130 examinations were conclusive and 1 in 22 if half of the examinations were conclusive.

²⁶⁶ Langenburg, G. “A performance study of the ACE-V Process: A pilot study to measure the accuracy, precision, reproducibility, repeatability, and biasability of conclusions resulting from the ACE-V process.” *Journal of Forensic Identification*, Vol. 59, No. 2 (2009): 219–57.

²⁶⁷ Langenburg, G., Champod, C., and P. Wertheim. “Testing for potential contextual bias effects during the verification stage of the ACE-V methodology when conducting fingerprint comparisons.” *Journal of Forensic Sciences*, Vol. 54, No. 3 (2009): 571-82.

percent (upper 95 percent confidence bound of 11 percent), with the upper bound corresponding to 1 error in 9 cases.^{268,269}

Langenburg, Champod, and Genessay (2012)

This study was not designed to assess the accuracy of latent fingerprint analysis, but rather to explore how fingerprint analysts would incorporate information from newly developed tools (such as a quality tool to aid in the assessment of the clarity of the friction ridge details; a statistical tool to provide likelihood ratios representing the strength of the corresponding features between compared fingerprints; and consensus information from a group of trained fingerprint experts) into their decision making processes.²⁷⁰ Nonetheless, the study provided some information on the accuracy of latent print analysis. Briefly, 158 experts (as well as some trainees) were asked to analyze 12 latent print-exemplar pairs, consisting of 7 mated and 5 non-mated pairs. For the non-mated pairs, there were 17 false positive matches among 711 conclusive examinations by the experts.²⁷¹ The false positive rate was 2.4 percent (upper 95 percent confidence bound of 3.5 percent). The estimated error rate corresponds to 1 error in 42 cases, with an upper bound corresponding to 1 error in 28 cases.²⁷²

Tangen et al. (2011)

This Australian study was designed to study the reliability of latent fingerprint analysis by fingerprint experts.²⁷³ The authors asked 37 fingerprint experts, as well as 37 novices, to examine 36 latent print-known pairs—consisting of 12 mated pairs, 12 non-mated pairs chosen to be “similar” (the most highly ranked exemplar from a different source in the Australian National Automated Fingerprint Identification System), and 12 “non-similar” non-mated pairs (chosen at random from the other prints). Examiners were asked to rate the likelihood they came from the same source on a scale from 1 to 12. The authors chose to define scores of 1-6 as identifications and scores of 7-12 as exclusions.²⁷⁴ This approach does not correspond to the procedures used in conventional fingerprint examination.

For the “similar” non-mated pairs, the experts made 3 errors among 444 comparisons; the false positive rate was 0.68 percent (upper 95 percent confidence bound of 1.7 percent), with the upper bound corresponding to 1 error in 58 cases. For the “non-similar” non-mated pairs, the examiners made no errors in 444 comparisons; the

²⁶⁸ If the two inconclusive examinations are included, the values are only slightly different: 2.2 percent (upper 95 percent confidence bound of 10.1 percent), with the odds being 1 in 10.

²⁶⁹ The biased groups made no errors among 69 conclusive examinations.

²⁷⁰ Langenburg, G., Champod, C., and T. Genessay. “Informing the judgments of fingerprint analysts using quality metric and statistical assessment tools.” *Forensic Science International*, Vol. 219, No. 1-3 (2012): 183-98.

²⁷¹ We thank G. Langenburg for providing the data for the experts alone.

²⁷² If the 79 inconclusive examinations are included, the false positive rate was 2.15 percent (upper 95 percent confidence bound of 3.2 percent). The estimated false positive rate corresponds to 1 error in 47 cases, with the upper bound corresponding to 1 in 31.

²⁷³ Tangen, J.M., Thompson, M.B., and D.J. McCarthy. “Identifying fingerprint expertise.” *Psychological Science*, Vol. 22, No. 8 (2011): 995-7.

²⁷⁴ There were thus no inconclusive results in this study.

false positive rate was thus 0 percent (upper 95 percent confidence bound of 0.62 percent), with the upper bound corresponding to 1 error in 148 cases. The experts substantially outperformed the novices.

Although interesting, the study does not constitute a black-box validation study of latent fingerprint analysis because its design did not resemble the procedures used in forensic practice (in particular, the process of assigning rating on a 12-point scale that the authors subsequently converted into identifications and exclusions).

FBI studies

The first study designed to test foundational validity and measure reliability of latent fingerprint analysis was a major black-box study conducted by FBI scientists and collaborators. Undertaken in response to the 2009 NRC report, the study was published in 2011 in a leading international science journal, *Proceedings of the National Academy of Sciences*.²⁷⁵ The authors assembled a collection of 744 latent-known pairs, consisting of 520 mated pairs and 224 non-mated pairs. To attempt to ensure that the non-mated pairs were representative of the type of matches that might arise when police identify a suspect by searching fingerprint databases, the known prints were selected by searching the latent prints against the 58 million fingerprints in the AFIS database and selecting one of the closest matching hits. Each of 169 fingerprint examiners was shown 100 pairs and asked to classify them as an identification, an exclusion, or inconclusive. The study reported 6 false positive identifications among 3628 nonmated pairs that examiners judged to have “value for identification.” The false positive rate was thus 0.17 percent (upper 95 percent confidence bound of 0.33 percent). The estimated rate corresponds to 1 error in 604 cases, with the upper bound indicating that the rate could be as high as 1 error in 306 cases.^{276,277}

In 2012, the same authors reported a follow-up study testing repeatability and reproducibility. After a period of about seven months, 75 of the examiners from the previous study re-examined a subset of the latent-known comparisons from the previous study. Among 476 nonmated pairs leading to conclusive examinations (including 4 of the pairs that led to false positives in the initial study and were reassigned to the examiner who had made the erroneous decision), there were no false positives. These results (upper 95 percent confidence bound of 0.63 percent, corresponding to 1 error in 160) are broadly consistent with the false positive rate measured in the previous study.²⁷⁸

Miami-Dade study (Pacheco et al. (2014))

The Miami-Dade Police Department Forensic Services Bureau, with funding from the NIJ, conducted a black-box study designed to assess foundational validity and measure reliability; the results were reported to the sponsor

²⁷⁵ Ulery, B.T., Hicklin, R.A., Buscaglia, J., and M.A. Roberts. “Accuracy and reliability of forensic latent fingerprint decisions.” *Proceedings of the National Academy of Sciences*, Vol. 108, No. 19 (2011): 7733-8.

²⁷⁶ If one includes the 455 inconclusive results for latent prints judged to have “value for identification,” the false positive rate is 0.15 percent (upper 95 percent confidence bound of 0 of 0.29 percent). The estimated false positive rate corresponds to 1 error in 681 cases, with the upper bound corresponding to 1 in 344.

²⁷⁷ The sensitivity (proportion of mated samples that were correctly declared to match) was 92.5 percent.

²⁷⁸ Overall, 85-90 percent of the conclusive results were unchanged, with roughly 30 percent of false exclusions being repeated.

and posted on the internet, but they have not yet published in a peer-reviewed scientific journal.²⁷⁹ The study differed significantly from the 2011 FBI black-box study in important respects, including that the known prints were not selected by means of a large database search to be similar to the latent prints (which should, in principle, have made it easier to declare exclusions for the non-mated pairs). The study found 42 false positives among 995 conclusive examinations. The false positive rate was 4.2 percent (upper 95 percent confidence bound of 5.4 percent). The estimated rate corresponds to 1 error in 24 cases, with the upper bound indicating that the rate could be as high as 1 error in 18 cases.²⁸⁰ (Note: The paper observes that “in 35 of the erroneous identifications the participants appeared to have made a clerical error, but the authors could not determine this with certainty.” In validation studies, it is inappropriate to exclude errors in a *post hoc* manner (see Box 4). However, if these 35 errors were to be excluded, the false positive rate would be 0.7 percent (confidence interval 1.4 percent), with the upper bound corresponding to 1 error in 73 cases.)

Conclusions from the studies

While it is distressing that meaningful studies to assess foundational validity and reliability did not begin until recently, we are encouraged that serious efforts are now being made to try to put the field on a solid scientific foundation—including by measuring accuracy, defining quality of latent prints, studying the reason for errors, and so on. Much credit belongs to the FBI Laboratory, as well as to academic researchers who had been pressing the need for research. Importantly, the FBI Laboratory is responsible for the only black-box study to date that has been *published* in a peer-reviewed journal.

The studies above cannot be directly compared for many reasons—including differences in experimental design, selection and difficulty level of latent-known pairs, and degree to which they represent the circumstances, procedures and pressures found in casework. Nonetheless, certain conclusions can be drawn from the results of the studies (summarized in Table 1 below):

- (1) The studies collectively demonstrate that many examiners can, under *some* circumstances, produce correct answers at *some* level of accuracy.
- (2) The empirically estimated false positive rates are *much higher* than the general public (and, by extension, most jurors) would likely believe based on longstanding claims about the accuracy of fingerprint analysis.^{281,282}

²⁷⁹ Pacheco, I., Cerchiai, B., and S. Stoiloff. “Miami-Dade research study for the reliability of the ACE-V process: Accuracy & precision in latent fingerprint examinations.” (2014). www.ncjrs.gov/pdffiles1/nij/grants/248534.pdf.

²⁸⁰ If the 403 inconclusive examinations are included, the false positive rate was 3.0 percent (upper 95 percent confidence bound of 3.9 percent). The estimated false positive rate corresponds to 1 error in 33 cases, with the upper bound corresponding to 1 in 26.

²⁸¹ The conclusion holds regardless of whether the rates are based on the point estimates or the 95 percent confidence bound, and on conclusive examinations or all examinations.

²⁸² These claims include the DOJ’s own longstanding previous assertion that fingerprint analysis is “infallible” (www.justice.gov/olp/file/861906/download); testimony by a former head of the FBI’s fingerprint unit testified that the FBI had “an error rate of one per every 11 million cases” (see p. 53); and a study finding that mock jurors estimated that the false positive rate for latent fingerprint analysis is 1 in 5.5 million (see p. 45). Koehler, J.J. “Intuitive error rate estimates for the forensic sciences.” (August 2, 2016). Available at: papers.ssrn.com/sol3/papers.cfm?abstract_id=2817443.

- (3) Of the two appropriately designed black-box studies, the larger study (FBI 2011 study) yielded a false positive rate that is unlikely to exceed 1 in 306 conclusive examinations while the other (Miami-Dade 2014 study) yielded a considerably higher false positive rate of 1 in 18.²⁸³ (The earlier studies, which were not designed as validation studies, also yielded high false positive rates.)

Overall, it would be appropriate to inform jurors that (1) only two properly designed studies of the accuracy of latent fingerprint analysis have been conducted and (2) these studies found false positive rates that could be as high as 1 in 306 in one study and 1 in 18 in the other study. This would appropriately inform jurors that errors occur at detectable frequencies, allowing them to weigh the probative value of the evidence.

It is likely that a properly designed program of systematic, blind verification would decrease the false-positive rate, because examiners in the studies tend to make *different* mistakes.²⁸⁴ However, there has not been empirical testing to obtain a quantitative estimate of the false positive rate that might be achieved through such a program.²⁸⁵ And, it would not be appropriate simply to *infer* the impact of independent verification based on the theoretical assumption that examiners' errors are uncorrelated.²⁸⁶

It is important to note that, for a verification program to be truly blind and thereby avoid cognitive bias, examiners cannot only verify individualizations. As the authors of the FBI black-box study propose, "this can be ensured by performing verifications on a mix of conclusion types, not merely individualizations"—that is, a mix that ensures that verifiers cannot make inferences about the conclusions being verified.²⁸⁷ We are not aware of any blind verification programs that currently follow this practice.

At present, testimony asserting any specific level of increased accuracy (beyond that measured in the studies) due to blind independent verification would be scientifically inappropriate, as speculation unsupported by empirical evidence.

²⁸³ As noted above, the rate is 1 in 73 if one ignores the presumed clerical errors—although such *post hoc* adjustment is not appropriate in validation studies.

²⁸⁴ The authors of the FBI black-box study note that five of the false positive occurred on test problem where a large majority of examiners correctly declared an exclusion, while one occurred on a test problem where the majority of examiners made inconclusive decisions. They state that "this suggests that these erroneous individualizations would have been detected if blind verification were routinely performed." Ulery, B.T., Hicklin, R.A., Buscaglia, J., and M.A. Roberts. "Accuracy and reliability of forensic latent fingerprint decisions." *Proceedings of the National Academy of Sciences*, Vol. 108, No. 19 (2011): 7733-8.

²⁸⁵ The Miami-Dade study involved a small test of verification step, involving verification of 15 of the 42 false positives. In these 15 cases, the second examiner declared 13 cases to be exclusions and 2 to be inconclusive. The sample size is too small to draw a meaningful conclusion. And, the paper does not report verification results for the other 27 false positives.

²⁸⁶ The DOJ has proposed to PCAST that "basic probability states that given an error rate for one examiner, the likelihood of a second examiner making the exact same error (verification/blind verification), would dictate that the rates should be multiplied." However, such a theoretical model would assume that errors by different examiners will be uncorrelated; yet they may depend on the difficulty of the problem and thus be correlated. Empirical studies are necessary to estimate error rates under blind verification.

²⁸⁷ Ulery, B.T., Hicklin, R.A., Buscaglia, J., and M.A. Roberts. "Accuracy and reliability of forensic latent fingerprint decisions." *Proceedings of the National Academy of Sciences*, Vol. 108, No. 19 (2011): 7733-8.

We note that the DOJ believes that the high false positive rate observed in the Miami-Dade study (1 in 24, with upper confidence limit of 1 in 18) is unlikely to apply to casework at the FBI Laboratory, because it believes such a high rate would have been detected by the Laboratory's verification procedures. An independent evaluation of the verification protocols could shed light on the extent to which such inferences could be drawn based on the current Laboratory's verification procedures.

We also note it is conceivable that the false-positive rate in real casework could be higher than that observed in the experimental studies, due to exposure to potentially biasing information in the course of casework. Introducing test samples blindly into the flow of casework could provide valuable insight about the actual error rates in casework.

In conclusion, the FBI Laboratory black-box study has significantly advanced the field. There is a need for ongoing studies of the reliability of latent print analysis, building on its study design. Studies should ideally estimate error rates for latent prints of varying "quality" levels, using well defined measures (ideally, objective measures implemented by automated software²⁸⁸). As noted above, studies should be designed and conducted in conjunction with third parties with no stake in the outcome. This important feature was not present in the FBI study.

²⁸⁸ An example is the Latent Quality Assessment (LQAS), which is designed as a proof-of-concept tool to evaluate the clarity of prints. Studies have found that error rates are correlated to the quality of the print. The software provides a manual and automated definitions of clarity maps, functions to process clarity maps, and annotation of corresponding points providing a method for overlapping of impression areas. Hicklin, R.A., Buscaglia, J., and M.A. Roberts. "Assessing the clarity of friction ridge impressions." *Forensic Science International*, Vol. 226, No. 1 (2013): 106-17. Another example is the Picture Annotation System (PiAnoS), developed by the University of Lausanne, which is being tested as a quality metric and statistical assessment tool for analysts. This platform uses tools that (1) assess the clarity of the friction ridge details, (2) provide likelihood ratios representing the strength of corresponding features between fingerprints, and (3) gives consensus information from a group of trained fingerprint experts. PiAnoS is an open-source software package available at: ips-labs.unil.ch/pianos.

Table 1: Error Rates in Studies of Latent Print Analysis*

Study	False Positives			
	Raw Data	Freq. (Confidence bound)	Estimated Rate	Bound on Rate
Early studies				
Langenburg (2009a)	0/14	0% (19%)	1 in ∞	1 in 5
Langenburg (2009b)	1/43	2.3% (11%)	1 in 43	1 in 9
Langenburg et al. (2012)	17/711	2.4% (3.5%)	1 in 42	1 in 28
Tangen et al. (2011) (“similar pairs”)	3/444	0.68% (1.7%)	1 in 148	1 in 58
Tangen et al. (2011) (“dissimilar pairs”)	0/444	0% (0.67%)	1 in ∞	1 in 148
Black-box studies				
Ulery et al. 2011 (FBI)**	6/3628	0.17% (0.33%)	1 in 604	1 in 306
Pacheco et al. 2014 (Miami-Dade)	42/995	4.2% (5.4%)	1 in 24	1 in 18
Pacheco et al. 2014 (Miami-Dade) (excluding clerical errors)	7/960	0.7% (1.4%)	1 in 137	1 in 73

* “Raw Data”: Number of false positives divided by number of conclusive examinations involving non-mated pairs. “Freq. (Confidence Bound)”: Point estimate of false positive frequency, and upper 95 percent confidence bound. “Estimated Rate”: The odds of a false positive occurring, based on the observed proportion of false positives. “Bound on Rate”: The odds of a false positive occurring, based on the upper 95 percent confidence bound—that is, the rate could reasonably be as high as this value.

** If inconclusive examinations are included for the FBI study, the rates are 1 in 681 and 1 in 344, respectively.

Scientific Studies of How Latent-print Examiners Reach Conclusions

Complementing the black-box studies, various studies have shed important light on how latent fingerprint examiners reach conclusions and how these conclusions may be influenced by extraneous factors. These studies underscore the serious risks that may arise in subjective methods.

Cognitive-bias studies

Itiel Dror and colleagues have done pioneering work on the potential role of cognitive bias in latent fingerprint analysis.²⁸⁹ In an exploratory study in 2006, they demonstrated that examiners’ judgments can be influenced by knowledge about other forensic examiners’ decisions (a form of “confirmation bias”).²⁹⁰ Five fingerprint examiners were given fingerprint pairs that they had studied five years earlier in real cases and had judged to “match.” They were asked to re-examine the prints, but were led to believe that they were the pair of prints that had been erroneously matched by the FBI in a high-profile case. Although they were instructed to ignore this information, four out of five examiners no longer judged the prints to “match.” Although these studies are

²⁸⁹ Dror, I.E., Charlton, D., and A.E. Peron. “Contextual information renders experts vulnerable to making erroneous identifications.” *Forensic Science International*, Vol. 156 (2006): 74-878. Dror, I.E., and D. Charlton. “Why experts make errors.” *Journal of Forensic identification*, Vol. 56, No.4 (2006): 600-16.

²⁹⁰ Dror, I.E., Charlton, D., and A.E. Peron. “Contextual information renders experts vulnerable to making erroneous identifications.” *Forensic Science International*, Vol. 156 (2006): 74-878.

too small to provide precise estimates of the impact of cognitive bias, they have been instrumental in calling attention to the issue.

Several strategies have been proposed for mitigating cognitive bias in forensic laboratories, including managing the flow of information in a crime laboratory to minimize exposure of the forensic analyst to irrelevant contextual information (such as confessions or eyewitness identification) and ensuring that examiners work in a linear fashion, documenting their finding about evidence from crime science *before* performing comparisons with samples from a suspect.^{291,292}

FBI white-box studies

In the past few years, FBI scientists and their collaborators have also undertaken a series of “white-box” studies to understand the factors underlying the process of latent fingerprint analysis. These studies include analyses of fingerprint quality,^{293,294} examiners’ processes to determine the value of a latent print for identification or exclusion,²⁹⁵ the sufficiency of information for identifications,²⁹⁶ and how examiners’ assessments of a latent print change when they compare it with a possible match.²⁹⁷

Among work on subjective feature-comparison methods, this series of papers is unique in its breadth, rigor and willingness to explore challenging issues. We could find no similarly self-reflective analyses for other subjective disciplines.

The two most recent papers are particularly notable because they involve the serious issue of confirmation bias. In a 2014 paper, the FBI scientists wrote

ACE distinguishes between the Comparison phase (assessment of features) and Evaluation phase (determination), implying that determinations are based on the assessment of features. However, our results suggest that this is not a simple causal relation: examiners’ markups are also influenced by their determinations. How this reverse influence occurs is not obvious. Examiners may subconsciously reach a

²⁹¹ Kassin, S.M., Dror, I.E., and J. Kakucka. “The forensic confirmation bias: Problems, perspectives, and proposed solutions.” *Journal of Applied Research in Memory and Cognition*, Vol. 2, No. 1 (2013): 42-52. See also: Krane, D.E., Ford, S., Gilder, J., Iman, K., Jamieson, A., Taylor, M.S., and W.C. Thompson. “Sequential unmasking: A means of minimizing observer effects in forensic DNA interpretation.” *Journal of Forensic Sciences*, Vol. 53, No. 4 (July 2008): 1006-7.

²⁹² Irrelevant contextual information could, depending on its nature, bias an examiner toward an incorrect identification or an incorrect exclusion. Either outcome is undesirable.

²⁹³ Hicklin, R.A., Buscaglia, J., Roberts, M.A., Meagher, S.B., Fellner, W., Burge, M.J., Monaco, M., Vera, D., Pantzer, L.R., Yeung, C.C., and N. Unnikumaran. “Latent fingerprint quality: a survey of examiners.” *Journal of Forensic Identification*. Vol. 61, No. 4 (2011): 385-419.

²⁹⁴ Hicklin, R.A., Buscaglia, J., and M.A. Roberts. “Assessing the clarity of friction ridge impressions.” *Forensic Science International*, Vol. 226, No. 1 (2013): 106-17.

²⁹⁵ Ulery, B.T., Hicklin, R.A., Kiebusinski, G.I., Roberts, M.A., and J. Buscaglia. “Understanding the sufficiency of information for latent fingerprint value determinations.” *Forensic Science International*, Vol. 230, No. 1-3 (2013): 99-106.

²⁹⁶ Ulery, B.T., Hicklin, R.A., and J. Buscaglia. “Repeatability and reproducibility of decisions by latent fingerprint examiners.” *PLoS ONE*, (2012).

²⁹⁷ Ulery, B.T., Hicklin, R.A., Roberts, M.A., and J. Buscaglia. “Changes in latent fingerprint examiners’ markup between analysis and comparison.” *Forensic Science International*, Vol. 247 (2015): 54-61.

preliminary determination quickly and this influences their behavior during Comparison (e.g., level of effort expended, how to treat ambiguous features). After making a decision, examiners may then revise their annotations to help document that decision, and examiners may be more motivated to provide thorough and careful markup in support of individualizations than other determinations. As evidence in support of our conjecture, we note in particular the distributions of minutia counts, which show a step increase associated with decision thresholds: this step occurred at about seven minutiae for most examiners, but at 12 for those examiners following a 12-point standard.²⁹⁸

Similar observations had been made by Dror et al., who noted that the number of minutiae marked in a latent print was greater when a matching exemplar was present.²⁹⁹ In addition, Evett and Williams described how British examiners, who used a 16-point standard for declaring identifications, used an exemplar to “tease the points out” of the latent print after they had reached an “inner conviction” that the prints matched.³⁰⁰

In a follow-up paper in 2015, the FBI scientists carefully studied how examiners analyzed prints and confirmed that, in the vast majority (>90 percent) of identification decisions, examiners modified the features marked in the latent fingerprint in response to an apparently matching known fingerprint (more often adding than subtracting features).³⁰¹ (The sole false positive in their study was an extreme case in which the conclusion was based almost entirely on subsequent marking of minutiae that had not been initially found and deletion of features that had been initially marked.)

The authors concluded that “there is a need for examiners to have some means of unambiguously documenting what they see during analysis and comparison (in the ACE-V process)” and that “rigorously defined and consistently applied methods of performing and documenting ACE-V would improve the transparency of the latent print examination process.”

PCAST compliments the FBI scientists for calling attention to the risk of confirmation bias arising from circular reasoning. As a matter of scientific validity, examiners must be required to “complete and document their analysis of a latent fingerprint before looking at any known fingerprint” and “must separately document any data relied upon during comparison or evaluation that differs from the information relied upon during analysis.”³⁰² The FBI adopted these rules following the Madrid train bombing case misidentification; they need to be universally adopted by all laboratories.

²⁹⁸ Ulery, B.T., Hicklin, R.A., Roberts, M.A., and J. Buscaglia. “Measuring what latent fingerprint examiners consider sufficient information for individualization determinations.” *PLoS ONE*, (2014).

²⁹⁹ Dror, I.E., Champod, C., Langenburg, G., Charlton, D., Hunt, H., and R. Rosenthal. “Cognitive issues in fingerprint analysis: Inter- and intra-expert consistency and the effect of a ‘target’ comparison.” *Forensic Science International*, Vol. 208, No. 1-3 (2011): 10-7.

³⁰⁰ Evett, I.W., and R.L. Williams. “Review of the 16 point fingerprint standard in England and Wales.” *Forensic Science International*, Vol. 46, No. 1 (1996): 49–73.

³⁰¹ Ulery, B.T., Hicklin, R.A., Roberts, M.A., and J. Buscaglia. “Changes in latent fingerprint examiners’ markup between analysis and comparison.” *Forensic Science International*, Vol. 247 (2015): 54-61.

³⁰² U.S. Department of Justice, Office of the Inspector General. “A Review of the FBI’s Progress in Responding to the Recommendations in the Office of the Inspector General Report on the Fingerprint Misidentification in the Brandon Mayfield Case.” (2011): 5, 27. www.oig.justice.gov/special/s1105.pdf.

Validity as Applied

Foundational validity means that a large group of examiners analyzing a specific type of sample can, under test conditions, produce correct answers at a known and useful frequency. It does not mean that a particular examiner has the ability to reliably apply the method; that the samples in the foundational studies are representative of the actual evidence of the case; or that the circumstances of the foundational study represent a reasonable approximation of the circumstances of casework.

To address these matters, courts should take into account several key considerations.

- (1) Because latent print analysis, as currently practiced, depends on subjective judgment, it is scientifically unjustified to conclude that a particular examiner is capable of reliably applying the method unless the examiner has undergone regular and rigorous proficiency testing. Unfortunately, it is not possible to assess the appropriateness of current proficiency testing because the test problems are not publically released. (As emphasized previously, training and experience are no substitute, because neither provides any assurance that the examiner can apply the method reliably.)
- (2) In any given case, it must be established that the latent print(s) are of the quality and completeness represented in the foundational validity studies.
- (3) Because contextual bias may have an impact on experts' decisions, courts should assess the measures taken to mitigate bias during casework—for example, ensuring that examiners are not exposed to potentially biasing information and ensuring that analysts document ridge features of an unknown print before referring to the known print (a procedure known as “linear ACE-V”³⁰³).

Finding 5: Latent fingerprint analysis

Foundational validity. Based largely on two recent appropriately designed black-box studies, PCAST finds that latent fingerprint analysis is a foundationally valid subjective methodology—albeit with a false positive rate that is substantial and is likely to be higher than expected by many jurors based on longstanding claims about the infallibility of fingerprint analysis.

Conclusions of a proposed identification may be scientifically valid, provided that they are accompanied by accurate information about limitations on the reliability of the conclusion—specifically, that (1) only two properly designed studies of the foundational validity and accuracy of latent fingerprint analysis have been conducted, (2) these studies found false positive rates that could be as high as 1 error in 306 cases in one study and 1 error in 18 cases in the other, and (3) because the examiners were aware they were being tested, the actual false positive rate in casework may be higher. At present, claims of higher accuracy are

³⁰³ U.S. Department of Justice, Office of the Inspector General. “A Review of the FBI’s Progress in Responding to the Recommendations in the Office of the Inspector General Report on the Fingerprint Misidentification in the Brandon Mayfield Case.” (2011): 27. www.oig.justice.gov/special/s1105.pdf.

not warranted or scientifically justified. Additional black-box studies are needed to clarify the reliability of the method.

Validity as applied. Although we conclude that the method is foundationally valid, there are a number of important issues related to its validity as applied.

(1) Confirmation bias. Work by FBI scientists has shown that examiners typically alter the features that they initially mark in a latent print based on comparison with an apparently matching exemplar. Such circular reasoning introduces a serious risk of confirmation bias. Examiners should be required to complete and document their analysis of a latent fingerprint *before* looking at any known fingerprint and should separately document any additional data used during their comparison and evaluation.

(2) Contextual bias. Work by academic scholars has shown that examiners' judgments can be influenced by irrelevant information about the facts of a case. Efforts should be made to ensure that examiners are not exposed to potentially biasing information.

(3) Proficiency testing. Proficiency testing is essential for assessing an examiner's capability and performance in making accurate judgments. As discussed elsewhere in this report, proficiency testing needs to be improved by making it more rigorous, by incorporating it within the flow of casework, and by disclosing tests for evaluation by the scientific community.

From a scientific standpoint, validity as applied requires that an expert: (1) has undergone appropriate proficiency testing to ensure that he or she is capable of analyzing the full range of latent fingerprints encountered in casework and reports the results of the proficiency testing; (2) discloses whether he or she documented the features in the latent print in writing before comparing it to the known print; (3) provides a written analysis explaining the selection and comparison of the features; (4) discloses whether, when performing the examination, he or she was aware of any other facts of the case that might influence the conclusion; and (5) verifies that the latent print in the case at hand is similar in quality to the range of latent prints considered in the foundational studies.

The Path Forward

Continuing efforts are needed to improve the state of latent print analysis—and these efforts will pay clear dividends for the criminal justice system.

One direction is to continue to improve latent print analysis as a subjective method. With only two black-box studies so far (with very different error rates), there is a need for additional black-box studies building on the study design of the FBI black-box study. Studies should estimate error rates for latent prints of varying quality and completeness, using well-defined measures. As noted above, the studies should be designed and conducted in conjunction with third parties with no stake in the outcome.

A second—and more important—direction is to convert latent print analysis from a subjective method to an objective method. The past decade has seen extraordinary advances in automated image analysis based on machine learning and other approaches—leading to dramatic improvements in such tasks as face recognition.^{304,305} In medicine, for example, it is expected that automated image analysis will become the gold standard for many applications involving interpretation of X-rays, MRIs, funduscopy, and dermatological images.³⁰⁶

Objective methods based on automated image analysis could yield major benefits—including greater efficiency and lower error rates; it could also enable estimation of error rates from millions of pairwise comparisons. Initial efforts to develop automated systems could not outperform humans.³⁰⁷ However, given the pace of progress in image analysis and machine learning, we believe that fully automated latent print analysis is likely to be possible in the near future. There have already been initial steps in this direction, both in academia and industry.³⁰⁸

The most important resource to propel the development of objective methods would be the creation of huge databases containing known prints, each with many corresponding “simulated” latent prints of varying qualities and completeness, which would be made available to scientifically-trained researchers in academia and industry. The simulated latent prints could be created by “morphing” the known prints, based on transformations derived from collections of actual latent print-record print pairs.³⁰⁹

³⁰⁴ See: cs.stanford.edu/people/karpathy/cvpr2015.pdf.

³⁰⁵ Lu, C., and X. Tang. “Surpassing human-level face verification performance on LFW with GaussianFace.” arxiv.org/abs/1404.3840 (accessed July 2, 2016). Taigman, Y., Yang, M., Ranzato, M., and L. Wolf. “Deepface: Closing the gap to human-level performance in face verification.” www.cs.toronto.edu/~ranzato/publications/taigman_cvpr14.pdf (accessed July 2, 2016) and Schroff, F., Kalenichenko, D., and J. Philbin. “FaceNet: A unified embedding for face recognition and clustering.” arxiv.org/abs/1503.03832 (accessed July 2, 2016).

³⁰⁶ Doi, K. “Computer-aided diagnosis in medical imaging: historical review, current status and future potential.” *Computerized Medical Imaging and Graphics*, Vol. 31, No. 4-5 (2007): 198-211 and Shiraishi, J., Li, Q., Appelbaum, D., and K. Doi. “Computer-aided diagnosis and artificial intelligence in clinical imaging.” *Seminars in Nuclear Medicine*, Vol. 41, No. 6 (2011): 449-62.

³⁰⁷ For example, a study in 2010 reported that that humans outperformed an automated program for toolmark comparisons. See: Chumbley, L.S., Morris, M.D., Kreiser, M.J., Fisher, C., Craft J., Genalo, L.J., Davis, S., Faden, D., and J. Kidd. “Validation of Tool Mark Comparisons Obtained Using a Quantitative, Comparative, Statistical Algorithm.” *Journal of Forensic Sciences*, Vol. 55, No. 4 (2010): 953-961.

³⁰⁸ Arunalatha, J.A., Tejaswi, V., Shaila, K., Anvekar, D., Venugopal, K.R., Iyengar, S.S., and L.M. Patnaik. “FIVDL: Fingerprint Image Verification using Dictionary Learning.” *Procedia Computer Science*, Vol. 54 (2015): 482-490 and Srihari, S.N. “Quantitative Measures in Support of Latent Print Comparison: Final Technical Report.” NIJ Award Number: 2009-DN-BX-K208, University at Buffalo, SUNY, 2013. www.crime-scene-investigator.net/QuantitativeMeasuresinSupportofLatentPrint.pdf. In addition, Christophe Champod’s group at Université de Lausanne has an active program in this area.

³⁰⁹ For privacy, fingerprints from deceased individuals could be used.

5.5 Firearms Analysis

Methodology

In firearms analysis, examiners attempt to determine whether ammunition is or is not associated with a *specific* firearm based on toolmarks produced by guns on the ammunition.^{310,311} (Briefly, gun barrels are typically rifled to improve accuracy, meaning that spiral grooves are cut into the barrel’s interior to impart spin on the bullet. Random individual imperfections produced during the tool-cutting process and through “wear and tear” of the firearm leave toolmarks on bullets or casings as they exit the firearm. Parts of the firearm that come into contact with the cartridge case are machined by other methods.)

The discipline is based on the idea that the toolmarks produced by different firearms vary substantially enough (owing to variations in manufacture and use) to allow components of fired cartridges to be identified with particular firearms. For example, examiners may compare “questioned” cartridge cases from a gun recovered from a crime scene to test fires from a suspect gun.

Briefly, examination begins with an evaluation of class characteristics of the bullets and casings, which are features that are permanent and predetermined before manufacture. If these class characteristics are different, an elimination conclusion is rendered. If the class characteristics are similar, the examination proceeds to identify and compare individual characteristics, such as the striae that arise during firing from a particular gun. According to the Association of Firearm and Tool Mark Examiners (AFTE) the “most widely accepted method used in conducting a toolmark examination is a side-by-side, microscopic comparison of the markings on a questioned material item to known source marks imparted by a tool.”³¹²

Background

In the previous section, PCAST expressed concerns about certain foundational documents underlying the scientific discipline of firearm and tool mark examination. In particular, we observed that AFTE’s “Theory of Identification as it Relates to Toolmarks”—which defines the criteria for making an identification—is circular.³¹³ The “theory” states that an examiner may conclude that two items have a common origin if their marks are in “sufficient agreement,” where “sufficient agreement” is defined as the examiner being convinced that the items are extremely unlikely to have a different origin. In addition, the “theory” explicitly states that conclusions are subjective.

³¹⁰ Examiners can also undertake other kinds of analysis, such as for distance determinations, operability of firearms, and serial number restorations as well as the analyze primer residue to determine whether someone recently handled a weapon.

³¹¹ For more complete descriptions, see, for example, National Research Council. *Strengthening Forensic Science in the United States: A Path Forward*. The National Academies Press. Washington DC. (2009), and archives.fbi.gov/archives/about-us/lab/forensic-science-communications/fsc/july2009/review/2009_07_review01.htm.

³¹² See: Foundational Overview of Firearm/Toolmark Identification tab on afte.org/resources/swggun-ark (accessed May 12, 2016).

³¹³ Association of Firearm and Tool Mark Examiners. “Theory of Identification as it Relates to Tool Marks: Revised,” *AFTE Journal*, Vol. 43, No. 4 (2011): 287.

Much attention in this scientific discipline has focused on trying to prove the notion that every gun produces “unique” toolmarks. In 2004, the NIJ asked the NRC to study the feasibility, accuracy, reliability, and advisability of developing a comprehensive national ballistics database of images from bullets fired from all, or nearly all, newly manufactured or imported guns for the purpose of matching ballistics from a crime scene to a gun and information on its initial owner.

In its 2008 report, an NRC committee, responding to NIJ’s request, found that “the validity of the fundamental assumptions of uniqueness and reproducibility of firearms-related toolmarks” had not yet been demonstrated and that, given current comparison methods, a database search would likely “return too large a subset of candidate matches to be practically useful for investigative purposes.”³¹⁴

Of course, it is not necessary that toolmarks be unique for them to provide useful information whether a bullet may have been fired from a particular gun. However, it is *essential* that the accuracy of the method for comparing them be known based on empirical studies.

Firearms analysts have long stated that their discipline has near-perfect accuracy. In a 2009 article, the chief of the Firearms-Toolmarks Unit of the FBI Laboratory stated that “a qualified examiner will rarely if ever commit a false-positive error (misidentification),” citing his review, in an affidavit, of empirical studies that showed virtually no errors.³¹⁵

With respect to firearms analysis, the 2009 NRC report concluded that “sufficient studies have not been done to understand the reliability and reproducibility of the methods”—that is, that the foundational validity of the field had not been established.³¹⁶

The Scientific Working Group on Firearms Analysis (SWGUN) responded to the criticisms in the 2009 NRC report by stating that:

*The SWGGUN has been aware of the scientific and systemic issues identified in this report for some time and has been working diligently to address them. . . . [the NRC report] identifies the areas where we must fundamentally improve our procedures to enhance the quality and reliability of our scientific results, as well as better articulate the basis of our science.*³¹⁷

³¹⁴ National Research Council. *Ballistic Imaging*. The National Academies Press. Washington DC. (2008): 3-4.

³¹⁵ See: www.fbi.gov/about-us/lab/forensic-science-communications/fsc/july2009/review/2009_07_review01.htm.

³¹⁶ The report states that “Toolmark and firearms analysis suffers from the same limitations discussed above for impression evidence. Because not enough is known about the variabilities among individual tools and guns, we are not able to specify how many points of similarity are necessary for a given level of confidence in the result. Sufficient studies have not been done to understand the reliability and repeatability of the methods. The committee agrees that class characteristics are helpful in narrowing the pool of tools that may have left a distinctive mark.” National Research Council. *Strengthening Forensic Science in the United States: A Path Forward*. The National Academies Press. Washington DC. (2009): 154.

³¹⁷ See: www.swggun.org/index.php?option=com_content&view=article&id=37&Itemid=22.

Non-black-box studies of firearms analysis: Set-based analyses

Because firearms analysis is at present a subjective feature-comparison method, its foundational validity can *only* be established through multiple independent black box studies, as discussed above.

Although firearms analysis has been used for many decades, only relatively recently has its validity been subjected to meaningful empirical testing. Over the past 15 years, the field has undertaken a number of studies that have sought to estimate the accuracy of examiners' conclusions. While the results demonstrate that examiners can under some circumstances identify the source of fired ammunition, many of the studies were not appropriate for assessing scientific validity and estimating the reliability because they employed artificial designs that differ in important ways from the problems faced in casework.

Specifically, many of the studies employ “set-based” analyses, in which examiners are asked to perform all pairwise comparisons within or between small samples sets. For example, a “within-set” analysis involving n objects asks examiners to fill out an $n \times n$ matrix indicating which of the $n(n-1)/2$ possible pairs match. Some forensic scientists have favored set-based designs because a small number of objects gives rise to a large number of comparisons. The study design has a serious flaw, however: the comparisons are not *independent* of one another. Rather, they entail internal dependencies that (1) constrain and thereby inform examiners' answers and (2) in some cases, allow examiners to make inferences about the study design. (The first point is illustrated by the observation that if A and B are judged to match, then every additional item C must match either *both* or *neither* of them—cutting the space of possible answers in half. If A and B match one another but do not match C, this creates additional dependencies. And so on. The second point is illustrated by “closed-set” designs, described below.)

Because of the complex dependencies among the answers, set-based studies are not appropriately-designed black-box studies from which one can obtain proper estimates of accuracy. Moreover, analysis of the empirical results from at least some set-based studies (“closed-set” designs) suggest that they may substantially underestimate the false positive rate.

The Director of the Defense Forensic Science Center analogized set-based studies to solving a “Sudoku” puzzle, where initial answers can be used to help fill in subsequent answers.³¹⁸ As discussed below, DFSC's discomfort with set-based studies led it to fund the first (and, to date, only) appropriately designed black-box study for firearms analysis.

We discuss the most widely cited of the set-based studies below. We adopt the same framework as for latent prints, focusing primarily on (1) the 95 percent upper confidence limit of the false positive rate and (2) false positive rates based on the proportion of conclusive examinations, as the appropriate measures to report (see p. 91).

³¹⁸ PCAST interview with Jeff Salyards, Director, DFSC.

Within-set comparison

Some studies have involved within-set comparisons, in which examiners are presented, for example, with a collection of samples and asked them to determine which samples were fired from the same firearm. We reviewed two often-cited studies with this design.^{319,320} In these studies, most of the samples were from distinct sources, with only 2 or 3 samples being from the same source. Across the two studies, examiners identified 55 of 61 matches and made no false positives. In the first study, the vast majority of different-source samples (97 percent) were declared inconclusive; there were only 18 conclusive examinations for different-source cartridge cases and no conclusive examinations for different-source bullets.³²¹ In the second study, the results are only described in brief paragraph and the number of conclusive examinations for different-source pairs was not reported. It is thus impossible to estimate the false positive rate among conclusive examinations, which is the key measure for consideration (as discussed above).

Set-to-set comparison/closed set

Another common design has been *between*-set comparisons involving a “closed set.” In this case, examiners are given a set of questioned samples and asked to compare them to a set of known standards, representing the possible guns from which the questioned ammunition had been fired. In a “closed-set” design, the source gun is

³¹⁹ Smith, E. “Cartridge case and bullet comparison validation study with firearms submitted in casework.” *AFTE Journal*, Vol. 37, No. 2 (2005): 130-5. In this study from the FBI, cartridges and bullets were fired from nine Ruger P89 pistols from casework. Examiners were given packets (of cartridge cases or bullets) containing samples fired from each of the 9 guns and one additional sample fired from one of the guns; they were asked to determine which samples were fired from the same gun. Among the 16 same-source comparisons, there were 13 identifications and 3 inconclusives. Among the 704 different-source comparisons, 97 percent were declared inconclusives, 2.5 percent were declared exclusions and 0 percent false positives.

³²⁰ DeFrance, C.S., and M.D. Van Arsdale. “Validation study of electrochemical rifling.” *AFTE Journal*, Vol. 35, No. 1 (2003): 35-7. In this study from the FBI, bullets were fired from 5 consecutively manufactured Smith & Wesson .357 Magnum caliber rifle barrels. Each of 9 examiners received two test packets, each containing a bullet from each of the 5 guns and two additional bullets (from the different guns in one packet, from the same gun in the other); they were asked to perform all 42 possible pairwise comparisons, which included 37 different-source comparisons. Of the 45 total same-source comparisons, there were 42 identifications and 3 inconclusives. For the 333 total different-source comparisons, the paper states that there were no false positives, but does not report the number of inconclusive examinations.

³²¹ Some laboratory policies mandate a very high bar for declaring exclusions.

always present. We analyzed four such studies in detail.^{322,323,324,325} In these studies, examiners were given a collection of questioned bullets and/or cartridge cases fired from a small number of consecutively manufactured firearms of the same make (3, 10, 10, and 10 guns, respectively) and a collection of bullets (or casings) known to have been fired from these same guns. They were then asked to perform a matching exercise—assigning the bullets (or casings) in one set to the bullets (or casings) in the other set.

This “closed-set” design is simpler than the problem encountered in casework, because the correct answer is always present in the collection. In such studies, examiners can perform perfectly if they simply match each bullet to the standard that is *closest*. By contrast, in an open-set study (as in casework), there is no guarantee that the correct source is present—and thus no guarantee that the closest match is correct. Closed-set comparisons would thus be expected to underestimate the false positive rate.

Importantly, it is not necessary that examiners be told explicitly that the study design involves a closed set. As one of the studies noted:

*The participants were not told whether the questioned casings constituted an open or closed set. However, from the questionnaire/answer sheet, participants could have assumed it was a closed set and that every questioned casing should be associated with one of the ten slides.*³²⁶

³²² Stroman, A. “Empirically determined frequency of error in cartridge case examinations using a declared double-blind format.” *AFTE Journal*, Vol. 46, No. 2 (2014):157-175. In this study, bullets were fired from three Smith & Wesson guns. Each of 25 examiners received a test set containing three questioned cartridge cases and three known cartridge cases from each gun. Of the 75 answers returned, there were 74 correct assignments and one inconclusive examination.

³²³ Brundage, D.J. “The identification of consecutively rifled gun barrels.” *AFTE Journal*, Vol. 30, No. 3 (1998): 438-44. In this study, bullets were fired from 10 consecutively manufactured 9 millimeter Ruger P-85 semi-automatic pistol barrels. Each of 30 examiners received a test set containing 20 questioned bullets to compare to a set of 15 standards, containing at least one bullet fired from each of the 10 guns. Of the 300 answers returned, there were no incorrect assignments and one inconclusive examination.

³²⁴ Fadul, T.G., Hernandez, G.A., Stoiloff, S., and S. Gulati. “An empirical study to improve the scientific foundation of forensic firearm and tool mark identification utilizing 10 consecutively manufactured slides.” *AFTE Journal*. Vol. 45, No. 4 (2013): 376-93. An empirical study to improve the scientific foundation of forensic firearm and tool mark identification utilizing 10 consecutively manufactured slides. In this study, bullets were fired from 10 consecutively manufactured semi-automatic 9mm Ruger pistol slides. Each of 217 examiners received a test set consisting of 15 questioned casings and two known cartridge cases from each of the 10 guns. Of the 3255 answers returned, there were 3239 correct assignments, 14 inconclusive examinations and two false positives.

³²⁵ Hamby, J.E., Brundage, D.J., and J.W. Thorpe. “The identification of bullets fired from 10 consecutively rifled 9mm Ruger pistol barrels: a research project involving 507 participants from 20 countries.” *AFTE Journal*, Vol. 41, No. 2 (2009): 99-110. In this study, bullets were fired from 10 consecutively rifled Ruger P-85 barrels. Each of 440 examiners received a test set consisting of 15 questioned bullets and two known standards from each of the 10 guns. Of the 6600 answers returned, there were 6593 correct assignments, seven inconclusive examinations and no false positives.

³²⁶ Fadul, T.G., Hernandez, G.A., Stoiloff, S., and S. Gulati. “An empirical study to improve the scientific foundation of forensic firearm and tool mark identification utilizing 10 consecutively manufactured slides.” *AFTE Journal*, Vol. 45, No. 4 (2013): 376-93.

Moreover, as participants find that many of the questioned casings have strong similarities to the known casings, their surmise that matching knowns are always present will tend to be confirmed.

The issue with this study design is not just a theoretical possibility: it is evident in the results themselves. Specifically, the closed-set studies have inconclusive and false-positives rate that are dramatically lower (by more than 100-fold) than those for the partly open design (Miami-Dade study) or fully open, black-box designs (Ames Laboratory) studies described below (Table 2).³²⁷

In short, the closed-set design is problematic in principle and appears to underestimate the false positive rate in practice.³²⁸ The design is not appropriate for assessing scientific validity and measuring reliability.

Set-to-set comparison/partly open set ('Miami Dade study')

One study involved a set-to-set comparison in which a few of the questioned samples lacked a matching known standard.³²⁹ The 165 examiners in the study were asked to assign a collection of 15 questioned samples, fired from 10 pistols, to a collection of known standards; two of the 15 questioned samples came from a gun for which known standards were not provided. For these two samples, there were 188 eliminations, 138 inconclusives and 4 false positives. The inconclusive rate was 41.8 percent and the false positive rate among conclusive examinations was 2.1 percent (confidence interval 0.6-5.25 percent). The false positive rate corresponds to an estimated rate of 1 error in 48 cases, with upper bound being 1 in 19.

As noted above, the results from the Miami-Dade study are sharply different than those from the closed-set studies: (1) the proportion of inconclusive results was 200-fold higher and (2) the false positive rate was roughly 100-fold higher.

Recent black-box study of firearms analysis

In 2011, the Forensic Research Committee of the American Society of Crime Lab Directors identified, among the highest ranked needs in forensic science, the importance of undertaking a black-box study in firearms analysis analogous to the FBI's black-box study of latent fingerprints. DFSC, dissatisfied with the design of previous studies of firearms analysis, concluded that a black-box study was needed and should be conducted by an independent testing laboratory unaffiliated with law enforcement that would engage forensic examiners as

³²⁷ Of the 10,230 answers returned across the three studies, there were there were 10,205 correct assignments, 23 inconclusive examinations and 2 false positives.

³²⁸ Stroman (2014) acknowledges that, although the test instructions did not explicitly indicate whether the study was closed, their study could be improved if "additional firearms were used and knowns from only a portion of those firearms were used in the test kits, thus presenting an open set of unknowns to the participants. While this could increase the chances of inconclusive results, it would be a more accurate reflection of the types of evidence received in real casework."

³²⁹ Fadul, T.G., Hernandez, G.A., Stoiloff, S., and S. Gulati. "An empirical study to improve the scientific foundation of forensic firearm and tool mark identification utilizing consecutively manufactured Glock EBIS barrels with the same EBIS pattern." National Institute of Justice Grant #2010-DN-BX-K269, December 2013.

www.ncjrs.gov/pdffiles1/nij/grants/244232.pdf.

participants in the study. DFSC and Defense Forensics and Biometrics Agency jointly funded a study by the Ames Laboratory, a Department of Energy national laboratory affiliated with Iowa State University.³³⁰

Independent tests/open ('Ames Laboratory study')

The study employed a similar design to the FBI's black-box study of latent fingerprints, with many examiners making a series of *independent* comparison decisions between a questioned sample and one or more known samples that may or may not contain the source. The samples all came from 25 newly purchased 9mm Ruger pistols.³³¹ Each of 218 examiners³³² was presented with 15 *separate* comparison problems—each consisting of one questioned sample and three known test fires from the same known gun, which might or might not have been the source.³³³ Unbeknownst to the examiners, there were five same-source and ten different-source comparisons. (In an ideal design, the proportion of same- and different-source comparisons would differ among examiners.)

Among the 2178 different-source comparisons, there were 1421 eliminations, 735 inconclusives and 22 false positives. The inconclusive rate was 33.7 percent and the false positive rate among conclusive examinations was 1.5 percent (upper 95 percent confidence interval 2.2 percent). The false positive rate corresponds to an estimated rate of 1 error in 66 cases, with upper bound being 1 in 46. (It should be noted that 20 of the 22 false positives were made by just 5 of the 218 examiners—strongly suggesting that the false positive rate is highly heterogeneous across the examiners.)

The results for the various studies are shown in Table 2. The tables show a striking difference between the closed-set studies (where a matching standard is always present by design) and the non-closed studies (where there is no guarantee that any of the known standards match). Specifically, the closed-set studies show a dramatically lower rate of inconclusive examinations and of false positives. With this unusual design, examiners succeed in answering all questions and achieve essentially perfect scores. In the more realistic open designs, these rates are much higher.

³³⁰ Baldwin, D.P., Bajic, S.J., Morris, M., and D. Zamzow. "A study of false-positive and false-negative error rates in cartridge case comparisons." Ames Laboratory, USDOE, Technical Report #IS-5207 (2014) afte.org/uploads/documents/swggun-false-positive-false-negative-usdoe.pdf.

³³¹ One criticism, raised by a forensic scientist, is that the study did not involve *consecutively manufactured* guns.

³³² Participants were members of AFTE who were practicing examiners employed by or retired from a national or international law enforcement agency, with suitable training.

³³³ Actual casework may involve more complex situations (for example, many different bullets from a crime scene). But, a proper assessment of foundational validity must *start* with the question of how often an examiner can determine whether a questioned bullet comes from a specific known source.

Table 2: Results From Firearms Studies*

Study Type	Results for different-source comparisons				
	Raw Data	Inconclusives	False positives among conclusive exams ³³⁴		
	Exclusions/ Inconclusives/ False positives		Freq. (Confidence Bound)	Estimated Rate	Bound on Rate
Set-to-set/closed (four studies)	10,205/23/2	0.2%	0.02% (0.06%)	1 in 5103	1 in 1612
Set-to-set/partly open (Miami-Dade study)	188/138/4	41.8%	2.0% (4.7%)	1 in 49	1 in 21
Black-box study (Ames Laboratory study)	1421/735/22	33.7%	1.5% (2.2%)	1 in 66	1 in 46

* “Inconclusives”: Proportion of total examinations that were called inconclusive. “Raw Data”: Number of false positives divided by number of conclusive examinations involving questioned items without a corresponding known (for set-to-set/slightly open) or non-mated pairs (for independent/open). “Freq. (Confidence Bond)”: Point estimate of false positive frequency, with the upper 95 percent confidence bounds. “Estimated”: The odds of a false positive occurring, based on the observed proportion of false positives. “Bound”: The odds of a false positive occurring, based on the upper bound of the confidence interval—that is, the rate could reasonably be as high as this value.

Conclusions

The early studies indicate that examiners can, under some circumstances, associate ammunition with the gun from which it was fired. However, as described above, most of these studies involved designs that are not appropriate for assessing the scientific validity or estimating the reliability of the method as practiced. Indeed, comparison of the studies suggests that, because of their design, many frequently cited studies seriously underestimate the false positive rate.

At present, there is only a single study that was appropriately designed to test foundational validity and estimate reliability (Ames Laboratory study). Importantly, the study was conducted by an independent group, unaffiliated with a crime laboratory. Although the report is available on the web, it has not yet been subjected to peer review and publication.

The scientific criteria for foundational validity require appropriately designed studies by *more than one group* to ensure reproducibility. Because there has been only a single appropriately designed study, the current evidence falls short of the scientific criteria for foundational validity.³³⁵ There is thus a need for additional, appropriately designed black-box studies to provide estimates of reliability.

³³⁴ The rates for *all* examinations are, reading across rows: 1 in 5115; 1 in 1416; 1 in 83; 1 in 33; 1 in 99; and 1 in 66.

³³⁵ The DOJ asked PCAST to review a recent paper, published in July 2016, and judge whether it constitutes an additional appropriately designed black-box study of firearms analysis (that is, the ability to associate ammunition with a *particular* gun). PCAST carefully reviewed the paper, including interviewing the three authors about the study design. Smith, T.P.,

Finding 6: Firearms analysis

Foundational validity. PCAST finds that firearms analysis currently falls short of the criteria for foundational validity, because there is only a single appropriately designed study to measure validity and estimate reliability. The scientific criteria for foundational validity require more than one such study, to demonstrate reproducibility.

Whether firearms analysis should be deemed admissible based on current evidence is a decision that belongs to the courts.

If firearms analysis is allowed in court, the scientific criteria for validity as applied should be understood to require clearly reporting the error rates seen in appropriately designed black-box studies (estimated at 1 in 66, with a 95 percent confidence limit of 1 in 46, in the one such study to date).

Smith, G.A., and J.B. Snipes. "A validation study of bullet and cartridge case comparisons using samples representative of actual casework." *Journal of forensic sciences* Vol. 61, No. 4 (2016): 939-946.

The paper involves a novel and complex design that is unlike any previous study. Briefly, the study design was as follows: (1) six different types of ammunition were fired from eight 40 caliber pistols from four manufacturers (two Taurus, two Sig Sauer, two Smith and Wesson, and two Glock) that had been in use in the general population and obtained by the San Francisco Police Department; (2) tests kits were created by randomly selecting 12 samples (bullets or cartridge cases); (3) 31 examiners were told that the ammunition was all recovered from a single crime scene and were asked to prepare notes describing their conclusions about which sets of samples had been fired from the same gun; and (4) based on each examiner's notes, the authors sought to re-create the logical path of comparisons followed by each examiner and calculate statistics based on this inferred numbers of comparisons performed by each examiner.

While interesting, the paper clearly is not a black-box study to assess the reliability of firearms analysis to associate ammunition with a particular gun, and its results cannot be compared to previous studies. Specifically: (1) The study employs a *within-set comparison* design (interdependent comparisons within a set) rather than a *black-box* design (many independent comparisons); (2) The study involves only a small number of examiners; (3) The central question with respect to firearms analysis is whether examiners can associate spent ammunition with a *particular* gun, not simply with a particular *make* of gun. To answer this question, studies must assess examiners' performance on ammunition fired from different guns of the *same make* ("within-class" comparisons) rather than from guns of *different makes* ("between-class" comparison); the latter comparison is much simpler because guns of different makes produce marks with distinctive "class" characteristics (due to the design of the gun), whereas guns of the same make must be distinguished based on "randomly acquired" features of each gun (acquired during rifling or in use). Accordingly, previous studies have employed only within-class comparisons. In contrast, the recent study consists of a mixture of within- vs. between-class comparisons, with the substantial majority being the simpler between-class comparisons. To estimate the false-positive rate for *within-class* comparisons (the relevant quantity), one would need to know the number of independent tests involving different-source within-class comparisons resulting in conclusive examinations (identification or elimination). The paper does not distinguish between within- and between-class comparisons, and the authors noted that they did not perform such analysis.

PCAST's comments are not intended as a criticism of the recent paper, which is a novel and valuable research project. They simply respond to DOJ's specific question: the recent paper does not represent a black-box study suitable for assessing scientific validity or estimating the accuracy of examiners to associate ammunition with a *particular* gun.

Validity as applied. If firearms analysis is allowed in court, validity as applied would, from a scientific standpoint, require that the expert:

- (1) has undergone rigorous proficiency testing on a large number of test problems to evaluate his or her capability and performance, and discloses the results of the proficiency testing; and
- (2) discloses whether, when performing the examination, he or she was aware of any other facts of the case that might influence the conclusion.

The Path Forward

Continuing efforts are needed to improve the state of firearms analysis—and these efforts will pay clear dividends for the criminal justice system.

One direction is to continue to improve firearms analysis as a subjective method. With only one black-box study so far, there is a need for additional black-box studies based on the study design of the Ames Laboratory black-box study. As noted above, the studies should be designed and conducted in conjunction with third parties with no stake in the outcome (such as the Ames Laboratory or research centers such as the Center for Statistics and Applications in Forensic Evidence (CSAFE)). There is also a need for more rigorous proficiency testing of examiners, using problems that are appropriately challenging and publically disclosed after the test.

A second—and more important—direction is (as with latent print analysis) to convert firearms analysis from a subjective method to an objective method.

This would involve developing and testing image-analysis algorithms for comparing the similarity of tool marks on bullets. There have already been encouraging steps toward this goal.³³⁶ Recent efforts to characterize 3D images of bullets have used statistical and machine learning methods to construct a quantitative “signature” for each bullet that can be used for comparisons across samples. A recent review discusses the potential for surface topographic methods in ballistics and suggests approaches to use these methods in firearms examination.³³⁷ The authors note that the development of optical methods have improved the speed and accuracy of capturing surface topography, leading to improved quantification of the degree of similarity.

³³⁶ For example, a recent study used data from three-dimensional confocal microscopy of ammunition to develop a similarity metric to compare images. By performing all pairwise comparisons among a total of 90 cartridge cases fired from 10 pistol slides, the authors found that the distribution of the metric for same-gun pairs did not overlap the distribution of the metric for different-gun pairs. Although a small study, it is encouraging. Weller, T.J., Zheng, X.A., Thompson, R.M., and F. Tulleners. “Confocal microscopy analysis of breech face marks on fired cartridge cases from 10 consecutively manufactured pistol slides.” *Journal of Forensic Sciences*, Vol. 57, No. 4 (2012): 912-17.

³³⁷ Vorburger, T.V., Song, J., and N. Petraco. “Topography measurements and applications in ballistics and tool mark identification.” *Surface topography: Metrology and Properties*, Vol. 4 (2016) 013002.

In a recent study, researchers used images from an earlier study to develop a computer-assisted approach to match bullets that minimizes human input.³³⁸ The group’s algorithm extracts a quantitative signature from a bullet 3D image, compares the signature across two or more samples, and produces a “matching score,” reflecting the strength of the match. On the small test data set, the algorithm had a very low error rate.

There are additional efforts in the private sector focused on development of accurate high-resolution cartridge casing representations to improve accuracy and allow for higher quality scoring functions to improve and assign match confidence during database searches. The current NIBIN database uses older (non-3D) technology and does not provide a scoring function or confidence assignment to each candidate match. It has been suggested that a scoring function could be used for blind verification for human examiners.

Given the tremendous progress over the past decade in other fields of image analysis, we believe that fully automated firearms analysis is likely to be possible in the near future. However, efforts are currently hampered by lack of access to realistically large and complex databases that can be used to continue development of these methods and validate initial proposals.

NIST, in coordination with the FBI Laboratory, should play a leadership role in propelling this transformation by creating and disseminating appropriate large datasets. These agencies should also provide grants and contracts to support work—and systematic processes to evaluate methods. In particular, we believe that “prize” competitions—based on large, publicly available collections of images³³⁹—could attract significant interest from academic and industry.

5.6 Footwear Analysis: Identifying Characteristics

Methodology

Footwear analysis is a process that typically involves comparing a known object, such as a shoe, to a complete or partial impression found at a crime scene, to assess whether the object is likely to be the source of the impression. The process proceeds in a stepwise manner, beginning with a comparison of “class characteristics” (such as design, physical size, and general wear) and then moving to “identifying characteristics” or “randomly acquired characteristics (RACs)” (such as marks on a shoe caused by cuts, nicks, and gouges in the course of use).³⁴⁰

In this report, we do not address the question of whether examiners can reliably determine class characteristics—for example, whether a particular shoeprint was made by a size 12 shoe of a particular make. While it is important that that studies be undertaken to estimate the reliability of footwear analysis aimed at

³³⁸ Hare, E., Hofmann, H., and A. Carriquiry. “Automatic matching of bullet lands.” Unpublished paper, available at: arxiv.org/pdf/1601.05788v2.pdf.

³³⁹ On July 7, 2016 NIST released the NIST Ballistics Toolmark Research Database (NBTRD) as an open-access research database of bullet and cartridge case toolmark data (tsapps.nist.gov/NBTRD). The database contains reflectance microscopy images and three-dimensional surface topography data acquired by NIST or submitted by users.

³⁴⁰ See: SWGTREAD Range of Conclusions Standards for Footwear and Tire Impression Examinations (2013). SWGTREAD Guide for the Examination of Footwear and Tire Impression Evidence (2006) and Bodziak W. J. *Footwear Impression Evidence: Detection, Recovery, and Examination*. 2nd ed. CRC Press-Taylor & Francis, Boca Raton, Florida (2000): p 347.

determining class characteristics, PCAST chose not to focus on this aspect of footwear examination because it is not *inherently* a challenging measurement problem to determine class characteristics, to estimate the frequency of shoes having a particular class characteristic, or (for jurors) to understand the nature of the features in question.

Instead, PCAST focused on the reliability of conclusions, based on RACs, that an impression was likely to have come from a specific piece of footwear. This is a much harder problem, because it requires knowing how accurately examiners identify specific features shared between a shoe and an impression, how often they fail to identify features that would distinguish them, and what probative value should be ascribed to a particular RAC.

Despite the absence of empirical studies that measure examiners' accuracy, authorities in the footwear field express confidence that they can identify the source of an impression based on a single RAC.

As described in a 2009 article by an FBI forensic examiner published in the FBI's Forensic Science Communications:

*An examiner first determines whether a correspondence of class characteristics exists between the questioned footwear impression and the known shoe. If the examiner deems that there are no inconsistencies in class characteristics, then the examination progresses to any identifying characteristics in the questioned impression. The examiner compares these characteristics with any identifying characteristics observed on the known shoe. Although unpredictable in their occurrence, the size, shape, and position of these characteristics have a low probability of recurrence in the same manner on a different shoe. Thus, combined with class characteristics, even one identifying characteristic is extremely powerful evidence to support a conclusion of identification.*³⁴¹

In support, the article cites a leading textbook on footwear identification:

*According to William J. Bodziak (2000), "Positive identifications may be made with as few as one random identifying characteristic, but only if that characteristic is confirmable; has sufficient definition, clarity, and features; is in the same location and orientation on the shoe outsole; and in the opinion of an experienced examiner, would not occur again on another shoe."*³⁴²

The article points to a mathematical model by Stone that claims that the chance is 1 in 16,000 that two shoes would share one identifying characteristics and 1 in 683 billion that they would share three characteristics.³⁴³

Such claims for "identification" based on footwear analysis are breathtaking—but lack scientific foundation.

The statement by Bodziak has two components: (1) that the examiner consistently observes a demonstrable RAC in a set of impressions and (2) that the examiner is positive that the RAC would not occur on another shoe. The

³⁴¹ Smith, M.B. *The Forensic Analysis of Footwear Impression Evidence*. www.fbi.gov/about-us/lab/forensic-science-communications/fsc/july2009/review/2009_07_review02.htm

³⁴² Bodziak W.J. *Footwear Impression Evidence: Detection, Recovery, and Examination*. 2nd ed. CRC Press-Taylor & Francis, Boca Raton, Florida (2000).

³⁴³ Stone, R.S. "Footwear examinations: Mathematical probabilities of theoretical individual characteristics." *Journal of Forensic Identification*, Vol. 56, No. 4 (2006): 577-99.

first part is not unreasonable, but the second part is deeply problematic: It requires the examiner to rely on recollections and guesses about the frequency of features.

The model by Stone is entirely theoretical: it makes many unsupported assumptions (about the frequency and statistical independence of marks) that it does not test in any way.

The entire process—from choice of features to include (and ignore) and the determination of rarity—relies entirely on an examiner’s subjective judgment. Under such circumstances, it is essential that the scientific validity of the method and estimates of its reliability be established by multiple, appropriate black-box studies.³⁴⁴

Background

The 2009 NRC report cited some papers that cast doubt on whether footwear examiners reach consistent conclusions when presented with the same evidence. For example, the report contained a detailed discussion of a 1996 European paper that presented examiners with six mock cases—two involving worn shoes from crime scenes, four with new shoes in which specific identifying characteristics had been deliberately added; the paper reported considerable variation in their answers.³⁴⁵ PCAST also notes a 1999 Israeli study involving two cases from crime scenes that reached similar conclusions.³⁴⁶

In response to the 2009 NRC report, a 2013 paper claimed to demonstrate that American and Canadian footwear analysts exhibit greater consistency than seen in the 1996 European study.³⁴⁷ However, this study differed substantially because the examiners in this study did not conduct their own examinations. For example, the photographs were pre-annotated to call out all relevant features for comparison—that is, the examiners were not asked to identify the features.³⁴⁸ Thus, the study, by virtue of its design, cannot address the consistency of the examination process.

Moreover, the fundamental issue is not one of *consistency* (whether examiners give the *same* answer) but rather of *accuracy* (whether they give the *right* answer). Accuracy can be evaluated only from large, appropriately designed black-box studies.

³⁴⁴ In addition to black-box studies, white-box studies are also valuable to identify the sources of errors.

³⁴⁵ Majamma, H., and A. Ytti. “Survey of the conclusions drawn of similar footwear cases in various crime laboratories.” *Forensic Science International*. Vol. 82, No. 1 (1996): 109-20.

³⁴⁶ Shor, Y., and S. Weisner. “Survey on the conclusions drawn on the same footwear marks obtained in actual cases by several experts throughout the world.” *Journal of Forensic Science*, Vol. 44, No. 2 (1999): 380-4384.

³⁴⁷ Hammer, L., Duffy, K., Fraser, J., and N.N. Daeid. “A study of the variability in footwear impression comparison conclusions.” *Journal of Forensic Identification*, Vol. 63, No. 2 (2013): 205-18.

³⁴⁸ The paper states that “All characteristics and observations that were to be considered by the examiners during the comparisons were clearly identified and labeled for each impression.”

Studies of Scientific Validity and Reliability

PCAST could find no black-box studies appropriately designed to establish the foundational validity of identifications based on footwear analysis.

Consistent with our conclusion, the OSAC Footwear and Tire subcommittee recently identified the need for both black-box and white-box examiner reliability studies—citing it as a “major gap in current knowledge” in which there is “no or limited current research being conducted.”³⁴⁹

Finding 7: Footwear analysis

Foundational validity. PCAST finds there are no appropriate empirical studies to support the foundational validity of footwear analysis to associate shoeprints with particular shoes based on specific identifying marks (sometimes called “randomly acquired characteristics”). Such conclusions are unsupported by any meaningful evidence or estimates of their accuracy and thus are not scientifically valid.

PCAST has not evaluated the foundational validity of footwear analysis to identify class characteristics (for example, shoe size or make).

The Path Forward

In contrast to latent fingerprint analysis and firearms analysis, there is little research on which to build with respect to conclusions that seek to associate a shoeprint with a particular shoe (identification conclusions).

New approaches will be needed to develop paradigms. As an initial step, the FBI Laboratory is engaging in a study examining a set of 700 similar boots that were worn by FBI Special Agent cadets during their 16-week training program. The study aims to assess whether RACs are observed on footwear from different individuals. While such “uniqueness” studies (i.e., demonstrations that many objects have distinct features) cannot establish foundational validity (see p. 42), the impressions generated from the footwear could provide an initial dataset for (1) a pilot black-box study and (2) a pilot database of feature frequencies. Importantly, NIST is beginning a study to see if it is possible to quantify the footwear examination process, or at minimum aspects of the process, in an effort to increase the objectivity of footwear analysis.

Separately, evaluations should be undertaken concerning the accuracy and reliability of determinations about class characteristics, a topic that is not addressed in this report.

³⁴⁹ See: www.nist.gov/forensics/osac/upload/SAC-Phy-Footwear-Tire-Sub-R-D-001-Examiner-Reliability-Study_Revision_Feb_2016.pdf (accessed on May, 12, 2016).

5.7 Hair Analysis

Forensic hair examination is a process by which examiners compare microscopic features of hair to determine whether a particular person may be the source of a questioned hair. As PCAST was completing this report, the DOJ released for comment guidelines concerning testimony on hair examination that included supporting documents addressing the validity and reliability of the discipline.³⁵⁰ While PCAST has not undertaken a comprehensive review of the discipline, we undertook a review of the supporting document in order to shed further light on the standards for conducting a scientific evaluation of a forensic feature-comparison discipline.

The supporting document states that “microscopic hair comparison has been demonstrated to be a valid and reliable scientific methodology,” while noting that “microscopic hair comparisons alone cannot lead to personal identification and it is crucial that this limitation be conveyed both in the written report and in testimony.”

Foundational Studies of Microscopic Hair Examination

In support of its conclusion that hair examination is valid and reliable, the DOJ supporting document discusses five studies of human hair comparison. The primary support is a series of three studies by Gaudette in 1974, 1976 and 1978.³⁵¹ The 1974 and 1976 studies focus, respectively, on head hair and pubic hair. Because the designs and results are similar, we focus on the head hair study.

The DOJ supporting document states that “In the head hair studies, a total of 370,230 intercomparisons were conducted, with only nine pairs of hairs that could not be distinguished”—corresponding to a false positive rate of less than 1 in 40,000. More specifically, the design of this 1974 study was as follows: a single examiner (1) scored between 6 and 11 head hairs from each of 100 individuals (a total of 861 hairs) with respect to 23 distinct categories (with a total of 96 possible values); (2) compared the hairs from *different* individuals, to identify those pairs of hairs with fewer than four differences; and (3) compared these pairs of hairs microscopically to see if they could be distinguished.

The DOJ supporting document fails to note that these studies were strongly criticized by other scientists for flawed methodology.³⁵² The most serious criticism was that Gaudette compared only hairs from *different* individuals, but did not look at hairs from the *same* individual. As pointed out by a 1990 paper by two authors at the Hair and Fibre Unit of the Royal Canadian Mounted Police Forensic Laboratory (as well as in other papers),

³⁵⁰ See: Department of Justice Proposed Uniform Language for Testimony and Reports for the Forensic Hair Examination Discipline, available at: www.justice.gov/dag/file/877736/download and Supporting Documentation for Department of Justice Proposed Uniform Language for Testimony and Reports for the Forensic Hair Examination Discipline, available at: www.justice.gov/dag/file/877741/download.

³⁵¹ Gaudette, B.D., and E.S. Keeping. “An attempt at determining probabilities in human scalp hair comparisons.” *Journal of Forensic Sciences*, Vol. 19 (1974): 599-606; Gaudette, B.D. “Probabilities and Human Pubic Hair Comparisons.” *Journal of Forensic Science*, Vol. 21 (1976): 514-517; Gaudette, B.D. “Some further thoughts on probabilities and human hair comparisons.” *Journal of Forensic Sciences*, Vol. 23 (1978): 758–763.

³⁵² Wickenheiser, R. A. and D.G. Hepworth, D.G. “Further evaluation of probabilities in human scalp hair comparisons.” *Journal of Forensic Sciences*, Vol. 35 (1990): 1323-29. See also Barnett, P.D. and R.R. Ogle. “Probabilities and human hair comparison.” *Journal of Forensic Sciences*, Vol. 27 (1982): 272–278 and Gaudette, B.D. “A Supplementary Discussion of Probabilities and Human Hair Comparisons.” *Journal of Forensic Sciences*, Vol. 27, No. 2, (1982): 279-89.

the apparently low false positive rate could have resulted from examiner bias—that is, that the examiner explicitly knew that all hairs being examined came from *different* individuals and thus could be inclined, consciously or unconsciously, to search for differences.³⁵³ In short, one cannot appropriately assess a method’s false-positive rate without simultaneously assessing its *true*-positive rate (sensitivity). In the 1990 paper, the authors used a similar study design, but employed *two* examiners who examined *all* pairs of hairs. They found non-repeatability for the individual examiners (“each examiner had considerable day-to-day variation in hair feature classification”) and non-reproducibility between the examiners (“in many cases, the examiners classified the same hairs differently”). Most notably, they found that, while the examiners found no matches between hairs from *different* individuals, they also found almost no consistent matches among hairs from the *same* person. Of 15 pairs of same-source hairs that the authors determined *should* have been declared to match, *only two* were correctly called by both examiners.

In Gaudette’s 1978 study, the author gave a different hair to each of three examiner trainees, who had completed one year of training, and asked them to identify any matching samples among a reference set of 100 hairs (which, unbeknownst to the examiners, came from 100 different people, including the sources of the hairs). The three examiners reported 1, 1 and 4 matches, consisting of 3 correct and 3 incorrect answers. Of the declared matches, 50 percent were thus false positive associations. Among the 300 total comparisons, the overall false positive rate was 1 percent, which notably is 400-fold higher than the rate estimated in the 1974 study.

Interestingly, we noted that the DOJ supporting document wrongly reports the results of the study—*claiming that the third examiner trainee made only 1 error, rather than 3 errors*. The explanation for this discrepancy is found in a remarkably frank passage of the text, which illustrates the need for employing rigorous protocols in evaluating the results of experiments:

“Two trainees correctly identified one hair and only one hair as being similar to the standard. The third trainee first concluded that there were four hairs similar to the standard. Upon closer examination and consultation with the other examiners, he was easily able to identify one of his choices as being incorrect. However, he was still convinced that there were three hairs similar to the standard, the correct one and two others. Examination by the author brought the opinion that one of these two others could be eliminated but that the remaining one was indistinguishable from hairs in the standard. Another experienced examiner then studied the hairs and also concluded that one of the two others could be eliminated. This time, however, it was the opposite to the one picked by the author!”³⁵⁴

Ex post facto reclassification of errors is generally not advisable in studies pertaining to validity and reliability.

³⁵³ In addition, inconsistency in scoring features would add random noise to any structure in the data (e.g., feature correlations) and thereby decrease the frequency of matches occurring by chance.

³⁵⁴ Gaudette, B.D. “Some further thoughts on probabilities and human hair comparisons.” *Journal of Forensic Sciences* Vol. 23, (1978): 758–763.

The two other human-hair studies discussed in the DOJ supporting document are also problematic. A 1983 paper involved hair samples from 100 individuals, classified into three racial groups.³⁵⁵ After the author had extensively studied the hairs, she asked a neutral party to set up seven “blind” challenge problems for her—by selecting 10 questioned hairs and 10 known hairs (across groups in three cases, within a group in four cases).³⁵⁶ The results consist of a single sentence in which the author simply states that she performed with “100 percent accuracy.” Self-reported performance on a test is not generally regarded as appropriate scientific methodology.

A 1984 paper studied hairs from 17 pairs of twins (9 fraternal, 6 identical and 2 unknown zygosity) and one set of identical triplets.³⁵⁷ Interestingly, the hairs from identical twins showed no greater similarity than the hairs from fraternal twins. In the sole test designed to simulate forensic casework, two examiners were given seven challenge problems, each consisting of comparing a questioned hair to between 5 and 10 known hairs. The false positive rate was 1 in 12, which is roughly 3300-fold higher than in Gaudette’s 1974 study of hair from unrelated individuals.³⁵⁸

PCAST finds that, based on their methodology and results, the papers described in the DOJ supporting document do not provide a scientific basis for concluding that microscopic hair examination is a valid and reliable process.

After describing the scientific papers, the DOJ document goes on to discuss the conclusions that can be drawn from hair comparison:

These studies have also shown that microscopic hair comparison alone cannot lead to personal identification and it is crucial that this limitation be conveyed both in the written report and in testimony.

The science of microscopic hair comparison acknowledges that the microscopic characteristics exhibited by a questioned hair may be encompassed by the range of characteristics exhibited by known hair samples of more than one person. If a questioned hair is associated with a known hair sample that is truly not the source, it does not mean that the microscopic hair association is in error. Rather, it highlights the limitation of the science in that there is an unknown pool of people who could have contributed the questioned hair. However, studies have not determined the number of individuals who share hairs with the same or similar characteristics.

The passage violates fundamental scientific principles in two important ways. The first problem is that it uses the fact that the method’s accuracy is not *perfect* to dismiss the need to know the method’s accuracy *at all*. According to the supporting document, it is not an “error” but simply a “limitation of the science” when an examiner associates a hair with an individual who was not actually the source of the hair. This is disingenuous. When an expert witness tells a jury that a hair found at the scene of a crime is microscopically indistinguishable

³⁵⁵ Strauss, M.T. “Forensic characterization of human hair.” *The Microscope*, Vol. 31, (1983): 15-29.

³⁵⁶ The DOJ supporting document mistakenly reports that the comparison-microscopy test involved comparing 100 questioned hairs with 100 known hairs.

³⁵⁷ Bisbing, R.E. and M.F. Wolner. “Microscopical Discrimination of Twins’ Head Hair.” *Journal of Forensic Sciences*, Vol. 29, (1984): 780-786.

³⁵⁸ The DOJ supporting document describes the results in positive terms: “In the seven tests, one examiners correctly excluded 47 of 52 samples, and a second examiner correctly excluded 49 of 52 samples.” It does not specify whether the remaining results are inconclusive results or false positives.

from a defendant's hair, the expert and the prosecution intend the statement to carry weight. Yet, the document goes on to say that no information is available about the proportion of individuals with similar characteristics. As Chapter 4 makes clear, this is scientifically unacceptable. Without appropriate estimates of accuracy, an examiner's statement that two samples are similar—or even indistinguishable—is scientifically meaningless: it has no probative value, and considerable potential for prejudicial impact. In short, if scientific hair analysis is to *mean* something, there must be actual *empirical evidence* about its meaning.

The second problem with the passage is its implication that there is no relevant empirical evidence about the accuracy of hair analysis. In fact, such evidence was generated by the FBI Laboratory. We turn to this point next.

FBI Study Comparing Microscopic Hair Examination and DNA Analysis

A particularly concerning aspect of the DOJ supporting document is its treatment of the FBI study on hair examination discussed in Chapter 2. In that 2002 study, FBI personnel used mitochondrial DNA analysis to re-examine 170 samples from previous cases in which the FBI Laboratory had performed microscopic hair examination. The authors found that, in 9 of 80 cases (11 percent) in which the FBI Laboratory had found the hairs to be microscopically indistinguishable, the DNA analysis showed that the hairs actually came from *different* individuals.

The 2002 FBI study is a landmark in forensic science because it was the first study to systematically and comprehensively analyze a large collection of previous casework to measure the frequency of false-positive associations. Its conclusion is of enormous importance to forensic science, to police, to courts and to juries: *When hair examiners conclude in casework that two hair samples are microscopically indistinguishable, the hairs often (1 in 9 times) come from different sources.*

Surprisingly, the DOJ document completely ignores this key finding. Instead, it references the FBI study only to support the proposition that DNA analysis “can be used in conjunction with microscopic hair comparison,” citing “a 2002 study, which indicated that out of 80 microscopic associations, approximately 88 percent were also included by additional mtDNA testing.” The document fails to acknowledge that the remaining cases were found to be false associations—that is, results that, if presented as evidence against a defendant, would mislead a jury about the origins of the hairs.³⁵⁹

Conclusion

Our brief review is intended simply to illustrate potential pitfalls in evaluations of the foundational validity and reliability of a method. PCAST is mindful of the constraints that DOJ faces in undertaking scientific evaluations of

³⁵⁹ In a footnote, the document also takes pains to note that paper cannot be taken to provide an estimate of the *false-positive rate* for microscopic hair comparison, because it contains no data about the number of different-sources comparison that examiners correctly excluded. While this statement is correct, it is misleading—because the paper provides an estimate of a far more important quantity—namely, the frequency of false associations that occurred in actual casework.

the validity and reliability of forensic methods, because critical evaluations by DOJ might be taken as admissions that could be used to challenge past convictions or current prosecutions.

These issues highlight why it is important for evaluations of scientific validity and reliability to be carried out by a science-based agency that is not itself involved in the application of forensic science within the legal system (see Section 6.1).

They also underscore why it is important that *quantitative* information about the reliability of methods (e.g., the frequency of false associations in hair analysis) be stated clearly in expert testimony. We return to this point in Chapter 8, where we consider the DOJ's proposed guidelines, which would bar examiners from providing information about the statistical weight or probability of a conclusion that a questioned hair comes from a particular source.

5.8 Application to Additional Methods

Although we have undertaken detailed evaluations of only six specific methods and included a discussion of a seventh method, the basic analysis can be applied to assess the foundational validity of any forensic feature-comparison method—including traditional forensic disciplines (such as document examination) as well as methods yet to be developed (such as microbiome analysis or internet-browsing patterns).

We note that the evaluation of scientific validity is based on the available scientific evidence at a point in time. Some methods that have not been shown to be foundationally valid may ultimately be found to be reliable—although significant modifications to the methods may be required to achieve this goal. Other methods may not be salvageable—as was the case with compositional bullet lead analysis and is likely the case with bitemarks. Still others may be subsumed by different but more reliable methods, much as DNA analysis has replaced other methods in many instances.

5.9 Conclusion

As the chapter above makes clear, many forensic feature-comparison methods have historically been *assumed* rather than *established* to be foundationally valid based on appropriate empirical evidence. Only within the past decade has the forensic science community begun to recognize the need to empirically *test* whether specific methods meet the scientific criteria for scientific validity. Only in the past five years, for example, have there been appropriate studies that establish the foundational validity and measure the reliability of latent fingerprint analysis. For most subjective methods, there are no appropriate black-box studies with the result that there is no appropriate evidence of foundational validity or estimates of reliability.

The scientific analysis and findings in Chapters 4 and 5 are intended to help focus the relevant actors on *how* to ensure scientific validity, both for existing technologies and for technologies still to be developed.

PCAST expects that some forensic feature-comparison methods may be rejected by courts as inadmissible because they lack adequate evidence of scientific validity. We note that decisions to exclude unreliable methods have historically helped propel major improvements in forensic science—as happened in the early days

of DNA evidence—with the result that some methods become established (possibly in revised form) as scientifically valid, while others are discarded.

In the remaining chapters, we offer recommendations on specific actions that could be taken by the Federal Government—including science-based agencies (NIST and OSTP), the FBI Laboratory, the Attorney General, and the Federal judiciary—to ensure the scientific validity and reliability of forensic feature-comparison methods and promote their more rigorous use in the courtroom.



6. Actions to Ensure Scientific Validity in Forensic Science: Recommendations to NIST and OSTP

Based on the scientific findings in Chapters 4 and 5, PCAST has identified actions that we believe should be taken by science-based Federal agencies—specifically, NIST and OSTP—to ensure the scientific validity of forensic feature-comparison methods.

6.1 Role for NIST in Ongoing Evaluation of Foundational Validity

There is an urgent need for ongoing evaluation of the foundational validity of important methods, to provide guidance to the courts, the DOJ, and the forensic science community. Evaluations should be undertaken of both existing methodologies that have not yet met the scientific standards for foundational validity and new methodologies that are being and will be developed in the years ahead. To ensure that the scientific judgments are unbiased and independent, such evaluations must clearly be conducted by a science agency with no stake in the outcome.³⁶⁰

This responsibility should be lodged with NIST. NIST is the world’s leading metrological laboratory, with a long and distinguished history in the science and technology of measurement. It has tremendous experience in designing and carrying out validation studies, as well as assessing the foundational validity and reliability of laboratory techniques and practices. NIST’s mission of advancing measurement science, technology, and standards has expanded from traditional physical measurement standards to respond to many other important societal needs, including those of forensic science, in which NIST has vigorous programs.³⁶¹ As described above, NIST has begun to lead a number of important efforts to strengthen the forensic sciences, including its roles with respect to NCFS and OSAC.

PCAST recommends that NIST be tasked with responsibility for preparing an annual report evaluating the foundational validity of key forensic feature-comparison methods, based on available, published empirical studies. These evaluations should be conducted under the auspices of NIST, with input from additional expertise as deemed necessary from experts outside forensic science, and overseen by an appropriate review panel. The reports should, as a minimum, produce assessments along the lines of those in this report, updated as appropriate. Our intention is not that NIST have a formal regulatory role with respect to forensic science, but rather that NIST’s evaluations help inform courts, the DOJ, and the forensic science community.

³⁶⁰ For example, agencies that apply forensic feature-comparison methods within the legal system have a clear stake in the outcome of such evaluations.

³⁶¹ See: www.nist.gov/forensics.

We do not expect NIST to take responsibility for *conducting* the necessary validation studies. However, NIST should advise on the design and execution of such studies. NIST could carry out some studies through its own intramural research program and through CSAFE. However, the majority of studies will likely be conducted by other groups—such as NSF’s planned Industry/University Cooperative Research Centers; the FBI Laboratory; the U.S. national laboratories; other Federal agencies; state laboratories; and academic researchers.

We note that the NCFS has recently endorsed the need for independent scientific review of forensic science methods. A Views Document overwhelmingly approved by the commission in June 2016 stated that, “All forensic science methodologies should be evaluated by an independent scientific body to characterize their capabilities and limitations in order to accurately and reliably answer a specific and clearly defined forensic question” and that “The National Institute of Standards and Technology (NIST) should assume the role of independent scientific evaluator within the justice system for this purpose.”³⁶²

Finally, we believe that the state of forensic science would be improved if papers on the foundational validity of forensic feature-comparison methods were published in leading scientific journals rather than in forensic-science journals, where, owing to weaknesses in the research culture of the forensic science community discussed in this report, the standards for peer review are less rigorous. Commendably, FBI scientists published its black-box study of latent fingerprints in the *Proceedings of the National Academy of Sciences*. We suggest that NIST explore with one or more leading scientific journals the possibility of creating a process for rigorous review and online publication of important studies of foundational validity in forensic science. Appropriate journals could include *Metrologia*, a leading international journal in pure and applied metrology, and the *Proceedings of the National Academy of Sciences*.

6.2 Accelerating the Development of Objective Methods

As described throughout the report, objective methods are generally preferable to subjective methods. The reasons include greater accuracy, greater efficiency, lower risk of human error, lower risk of cognitive bias, and greater ease of establishing foundational validity and estimating reliability. Where possible, vigorous efforts should be undertaken to transform subjective methods into objective methods.

Two forensic feature-comparison methods—latent fingerprint analysis and firearms analysis—are ripe for such transformation. As discussed in the previous chapter, there are strong reasons to believe that both methods can be made objective through automated image analysis. In addition, DNA analysis of complex mixtures has recently been converted into a foundationally valid objective method for a limited range of mixtures, but additional work will be needed to expand the limits of the range.

NIST, in conjunction with the FBI Laboratory, should play a leadership role in propelling this transformation by (1) the creation and dissemination of large datasets to support the development and testing of methods by both

³⁶² Views of the Commission: Technical Merit Evaluation of Forensic Science Methods and Practices. www.justice.gov/ncfs/file/881796/download.

companies and academic researchers, (2) grant and contract support, and (3) sponsoring processes, such as prize competitions, to evaluate methods.

6.3 Improving the Organization for Scientific Area Committees

The creation by NIST of OSAC was an important step in strengthening forensic science practice. The organizational design—which houses all of the subject area communities under one structure and encourages cross-disciplinary communication and coordination—is a significant improvement over the previous Scientific Working Groups (SWGs), which functioned less formally as stand-alone committees.

However, initial lessons from its first years of operation have revealed some important shortcomings. OSAC’s membership includes relatively few independent scientists: it is dominated by forensic professionals, who make up more than two-thirds of its members. Similarly, it has few independent statisticians: while virtually all of the standards and guidelines evaluated by this body need consideration of statistical principles, OSAC’s 600 members include only 14 statisticians spread across all four Science Area Committees and 23 subcommittees.

Restructuring

PCAST concludes that OSAC lacks sufficient independent scientific expertise and oversight to overcome the serious flaws in forensic science. Some restructuring is necessary to ensure that independent scientists and statisticians have a greater voice in the standards development process, a requirement for meaningful scientific validity. Most importantly, OSAC should have a formal committee—a Metrology Resource Committee—at the level of the other three Resource Committees (the Legal Resource Committee, the Human Factors Committee, and the Quality Infrastructure Committee). This Committee should be composed of laboratory scientists and statisticians from outside the forensic science community and charged with reviewing each standard and guideline that is recommended for registry approval by the Science Area Committees before it is sent for final review the Forensic Science Standards Board (FSSB).

Availability of OSAC Standards

OSAC is not a formal standard-setting body. It reviews and evaluates standards relevant to forensic science developed by standards developing organizations such as ASTM International, the National Fire Protection Association (NFPA) and the International Organization for Standardization (ISO) for inclusion on the OSAC Registries of Standards and Guidelines. The OSAC evaluation process includes a public comment period. OSAC, working with the standards developers, has arranged for the content of standards under consideration to be accessible to the public during the public comment period. Once approved by OSAC, a standard is listed, by title, on a public registry maintained by NIST. It is customary for some standards developing organization, including ASTM International, to charge a fee for a licensed copy of each copyrighted standard and to restrict users from distributing these standards.^{363,364}

³⁶³ For a list of ASTM’s forensic science standards, see: www.astm.org/DIGITAL_LIBRARY/COMMIT/PAGES/E30.htm.

³⁶⁴ The American Academy of Forensic Sciences (AAFS) will also become an accredited Standards Developing Organization (SDO) and could, in the future, develop standards for review and listing by OSAC.

NIST recently negotiated a licensing agreement with ASTM International that, for a fee, allows federal, state and local government employees online access to ASTM Committee E30 standards.³⁶⁵ However, this list does not include indigent defendants, private defense attorneys, or large swaths of the academic research community. At present, contracts have been negotiated with the other SDOs that have standards currently under review by the OSAC. PCAST believes it is important that standards intended for use in the criminal justice system are widely available to all who may need access. It is important that the standards be readily available to defendants and to external observers, who have an important role to play in ensuring quality in criminal justice.³⁶⁶

NIST should ensure that the content of OSAC-registered standards and guidelines are freely available to any party that may desire them in connection with a legal case or for evaluation and research, including by aligning with the policies related to reasonable availability of standards in the Office of Management and Budget Circular A-119, Federal Participation in the Development and Use of Voluntary Consensus Standards and Conformity Assessment Activities and the Office of the Federal Register, IBR (incorporation by reference) Handbook.

6.4 Need for an R&D Strategy for Forensic Science

The 2009 NRC report found that there is an urgent need to strengthen forensic science, noting that, “Forensic science research is not well supported, and there is no unified strategy for developing a forensic science research plan across federal agencies.”³⁶⁷

It is especially important to create and support a vibrant academic research community rooted in the scientific culture of universities. This will require significant funding to support academic research groups, but will pay big dividends in driving quality and innovation in both existing and entirely new methods.

Both NIST and NSF have recently taken initial steps to help bridge the significant gaps between the forensic practitioner and academic research communities through multi-disciplinary research centers. These centers promise to engage the broader research community in advancing forensic science and create needed links between the forensic science community and a broad base of research universities and could help drive forward critical foundational research.

Nonetheless, as noted in Chapter 2, the total level of Federal funding by NIH, NIST, and NSF to the academic community for fundamental research in forensic science is extremely small. Substantially larger funding will be needed to develop a robust research community and to support the development and evaluation of promising new technologies.

³⁶⁵ According to the revised contract, ASTM will provide unlimited web-based access for all ASTM committee E30 Forensic Science Standards to: OSAC members and affiliates; NIST and Federal/State/Local Crime Laboratories; Public Defenders Offices; Law Enforcement Agencies; Prosecutor Offices; and Medical Examiner/and Coroners Offices.

³⁶⁶ PCAST expresses no opinion about the appropriateness of paywalls for standards in areas other than criminal justice.

³⁶⁷ National Research Council. *Strengthening Forensic Science in the United States: A Path Forward*. The National Academies Press. Washington DC. (2009): 78.

Federal R&D efforts in forensic science, both intramural and extramural, need to be better coordinated. No one agency has lead responsibility for ensuring that the forensic sciences are adequately supported. Greater coordination is needed across the relevant Federal agencies and laboratories to ensure that funding is directed to the highest priorities and that work is of high quality.

OSTP should convene relevant Federal agencies, laboratories, and stakeholders to develop a national research strategy and 5-year plan to ensure that foundational research in support of the forensic sciences is well-coordinated, solidify Federal agency commitments made to date, and galvanize further action and funding that could be taken to encourage additional foundational research, improve current forensic methods, support the creation of new research databases, and oversee the regular review and prioritization of research.

6.5 Recommendations

Based on its scientific findings, PCAST makes the following recommendations.

Recommendation 1. Assessment of foundational validity

It is important that scientific evaluations of the foundational validity be conducted, on an ongoing basis, to assess the foundational validity of current and newly developed forensic feature-comparison technologies. To ensure the scientific judgments are unbiased and independent, such evaluations must be conducted by a science agency which has no stake in the outcome.

(A) The National Institute of Standards and Technology (NIST) should perform such evaluations and should issue an annual public report evaluating the foundational validity of key forensic feature-comparison methods.

(i) The evaluations should (a) assess whether each method reviewed has been adequately defined and whether its foundational validity has been adequately established and its level of accuracy estimated based on empirical evidence; (b) be based on studies published in the scientific literature by the laboratories and agencies in the U.S. and in other countries, as well as any work conducted by NIST's own staff and grantees; (c) as a minimum, produce assessments along the lines of those in this report, updated as appropriate; and (d) be conducted under the auspices of NIST, with additional expertise as deemed necessary from experts outside forensic science.

(ii) NIST should establish an advisory committee of experimental and statistical scientists from outside the forensic science community to provide advice concerning the evaluations and to ensure that they are rigorous and independent. The members of the advisory committee should be selected jointly by NIST and the Office of Science and Technology Policy.

(iii) NIST should prioritize forensic feature-comparison methods that are most in need of evaluation, including those currently in use and in late-stage development, based on input from the Department of Justice and the scientific community.

(iv) Where NIST assesses that a method has been established as foundationally valid, it should (a) indicate appropriate estimates of error rates based on foundational studies and (b) identify any issues relevant to validity as applied.

(v) Where NIST assesses that a method has not been established as foundationally valid, it should suggest what steps, if any, could be taken to establish the method's validity.

(vi) NIST should not have regulatory responsibilities with respect to forensic science.

(vii) NIST should encourage one or more leading scientific journals outside the forensic community to develop mechanisms to promote the rigorous peer review and publication of papers addressing the foundational validity of forensic feature-comparison methods.

(B) The President should request and Congress should provide increased appropriations to NIST of (a) \$4 million to support the evaluation activities described above and (b) \$10 million to support increased research activities in forensic science, including on complex DNA mixtures, latent fingerprints, voice/speaker recognition, and face/iris biometrics.

Recommendation 2. Development of objective methods for DNA analysis of complex mixture samples, latent fingerprint analysis, and firearms analysis

The National Institute of Standards and Technology (NIST) should take a leadership role in transforming three important feature-comparison methods that are currently subjective—latent fingerprint analysis, firearms analysis, and, under some circumstances, DNA analysis of complex mixtures—into objective methods.

(A) NIST should coordinate these efforts with the Federal Bureau of Investigation Laboratory, the Defense Forensic Science Center, the National Institute of Justice, and other relevant agencies.

(B) These efforts should include (i) the creation and dissemination of large datasets and test materials (such as complex DNA mixtures) to support the development and testing of methods by both companies and academic researchers, (ii) grant and contract support, and (iii) sponsoring processes, such as prize competitions, to evaluate methods.

Recommendation 3. Improving the Organization for Scientific Area Committees process

(A) The National Institute of Standards and Technology (NIST) should improve the Organization for Scientific Area Committees (OSAC), which was established to develop and promulgate standards and guidelines to improve best practices in the forensic science community.

(i) NIST should establish a Metrology Resource Committee, composed of metrologists, statisticians, and other scientists from outside the forensic science community. A representative of the Metrology Resource Committee should serve on each of the Scientific Area Committees (SACs) to provide direct guidance on the application of measurement and statistical principles to the developing documentary standards.

(ii) The Metrology Resource Committee, as a whole, should review and publically approve or disapprove all standards proposed by the Scientific Area Committees before they are transmitted to the Forensic Science Standards Board.

(B) NIST should ensure that the content of OSAC-registered standards and guidelines are freely available to any party that may desire them in connection with a legal case or for evaluation and research, including by aligning with the policies related to reasonable availability of standards in the Office of Management and Budget Circular A-119, Federal Participation in the Development and Use of Voluntary Consensus Standards and Conformity Assessment Activities and the Office of the Federal Register, IBR (incorporation by reference) Handbook.

Recommendation 4. R&D strategy for forensic science

(A) The Office of Science and Technology Policy (OSTP) should coordinate the creation of a national forensic science research and development strategy. The strategy should address plans and funding needs for:

(i) major expansion and strengthening of the academic research community working on forensic sciences, including substantially increased funding for both research and training;

(ii) studies of foundational validity of forensic feature-comparison methods;

(iii) improvement of current forensic methods, including converting subjective methods into objective methods, and development of new forensic methods;

(iv) development of forensic feature databases, with adequate privacy protections, that can be used in research;

(v) bridging the gap between research scientists and forensic practitioners; and

(vi) oversight and regular review of forensic science research.

(B) In preparing the strategy, OSTP should seek input from appropriate Federal agencies, including especially the Department of Justice, Department of Defense, National Science Foundation, and National Institute of Standards and Technology; Federal and State forensic science practitioners; forensic science and non-forensic science researchers; and other stakeholders.



7. Actions to Ensure Scientific Validity in Forensic Science: Recommendation to the FBI Laboratory

Based on the scientific findings in Chapters 4 and 5, PCAST has identified actions that we believe should be taken by the FBI Laboratory to ensure the scientific validity of forensic feature-comparison methods.

We note that the FBI Laboratory has played an important role in recent years in undertaking high-quality scientific studies of latent fingerprint analysis. PCAST applauds these efforts and urges the FBI Laboratory to expand them.

7.1 Role for FBI Laboratory

The FBI Laboratory is a full-service, state-of-the-art facility that works to apply cutting-edge science to solve cases and prevent crime. Its mission is to apply scientific capabilities and technical services to the collection, processing, and exploitation of evidence for the Laboratory and other duly constituted law enforcement and intelligence agencies in support of investigative and intelligence priorities. Currently, the Laboratory employs approximately 750 employees and over 300 contractors to meet the broad scope of this mission.

Laboratory Capabilities and Services

The FBI has specialized capabilities and personnel to respond to incidents, collect evidence in their field, carry out forensic analyses, and provide expert witness testimony. The FBI Laboratory supports Evidence Response Teams in all 56 FBI field offices and has personnel who specialize in hazardous evidence and crime scene documentation and data collection. The Laboratory is responsible for training and supplying these response activities for FBI personnel across the U.S.³⁶⁸ The Laboratory also manages the Terrorist Explosive Device Analytical Center (TEDAC), which received nearly 1,000 evidence submissions in FY 2015 and disseminated over 2,000 intelligence products.

The FBI Laboratory employs forensic examiners to carry out analyses in a range of disciplines, including chemistry, cryptanalysis, DNA, firearms and toolmarks, latent prints, questioned documents, and trace evidence. The FBI Laboratory received over 3875 evidence submissions and authored over 4850 laboratory reports in FY 2015. In addition to carrying out casework for federal cases, the Laboratory provides support to state and local laboratories and carries out testing in state and local cases for some disciplines.

³⁶⁸ The FBI Laboratory supported 162 deployments and 168 response exercises, as well as delivering 239 training courses in FY 2015.

Research and Development Activities

In addition to its services, the FBI Laboratory carries out important research and development activities. The activities are critical for providing the Laboratory with the most advanced tools for advancing its mission. A strong research program and culture is also important to the Laboratory's ability to maintain excellence and to attract and retain highly qualified personnel.

Due to the expansive scope and many requirements on its operations, only about five percent of the FBI Laboratory's annual \$100 million budget is available for research and development activities.³⁶⁹ The R&D budget is stretched across a number of applied research activities, including validation studies (for new methods or commercial products, such as new DNA analyzers). For its internal research activities, the Laboratory relies heavily on its Visiting Scientist Program, which brings approximately 25 post docs, master's students, and bachelor's degree students into the laboratory each year. The Laboratory has worked to partner with other government agencies to provide more resources to its research priorities as a composite initiative, and has also been able to stretch available budgets by performing critical research studies incrementally over several years.

The FBI Laboratory's series of studies in latent print examination is an example of important foundational research that it was able to carry out incrementally over a five-year period. The work includes "black box" studies that evaluate the accuracy and reliability of latent print examiners' conclusions, as well as "white box" studies to evaluate how the quality and quantity of features relate to latent print examiners' decisions. These studies have resulted in a series of important publications that have helped to quantify error rates for the community of practice and assess the repeatability and reproducibility of latent fingerprint examiners' decisions. Indeed, PCAST's judgment that latent fingerprint analysis is foundationally valid rests heavily on the FBI black-box study. Similar lines of research are being pursued in some other disciplines, including firearms examination and questioned documents.

Unfortunately, the limited funding available for these studies—and for the intramural research program more generally—has hampered progress in testing the foundational validity of forensic science methods and in strengthening the forensic sciences. PCAST believes that the budget for the FBI Laboratory should be significantly increased, and targeted so as allow the R&D budget to be increased to a total of \$20 million.

Access to databases

The FBI also has an important role to play in encouraging research by external scientists, by facilitating access, under appropriate conditions, to large forensic databases. Most of the databases routinely used in forensic analysis are not accessible for use by researchers, and the lack of access hampers progress in improving forensic science. For example, ballistic database systems such as the Bureau of Alcohol, Tobacco, Firearms and Explosives' National Integrated Ballistic Information System (NIBIN), which is searched by firearms examiners seeking to identify a firearm or cartridge case, cannot be assessed to study its completeness, relevance or

³⁶⁹ In 2014, the FBI Laboratory spent \$10.9 million on forensic science research and development, with roughly half from its own budget and half from grants from NIST and the Department of Homeland Security. See: National Academies of Sciences, Engineering, and Medicine. *Support for Forensic Science Research: Improving the Scientific Role of the National Institute of Justice*. The National Academies Press. Washington DC. (2015): p. 31.

quality, and the search algorithm that is used to identify potential matches cannot be evaluated. The NGI (formerly IAFIS)³⁷⁰ system that currently houses more than 70 million fingerprint entries would dramatically expand the data available for study; currently, there exists only one publicly available fingerprint database, consisting of 258 latent print-10 print pairs.³⁷¹ And, the FBI's NDIS system, which currently houses more than 14 million offender and arrestee DNA profiles. NIST has developed an inventory of all of the forensic databases that are heavily used by law enforcement and forensic scientists, with information as to their accessibility.

Substantial efforts are needed to make existing forensic databases more accessible to the research community, subject to appropriate protection of privacy, such as removal of personally identifiable information and data-use restrictions.

For some disciplines, such as firearms analysis and treadmarks, there are no significant privacy concerns.

For latent prints, privacy concerns might be ameliorated in variety of ways. For example, one might avoid the issue by (1) generating large collections of known-latent print pairs with varying quality and quantity of information through the touching and handling of natural items in a wide variety of circumstances (surfaces, pressure, distortion, etc.), (2) using software to automatically generate the "morphing transformations" from the known prints and the latent prints, and (3) applying these transformations to prints from deceased individuals to create millions of latent-known print pairs.³⁷²

For DNA, protocols have been developed in human genomic research, which poses similar or greater privacy concerns, to allow access to bona fide researchers.³⁷³ Such policies should be feasible for forensic DNA databases as well. We note that the law that authorizes the FBI to maintain a national forensic DNA database explicitly contemplates allowing access to DNA samples and DNA analyses "if personally identifiable information is removed . . . for identification research and protocol development purposes."³⁷⁴ Although the law does not contain an explicit statement on this point, DOJ interprets the law as allowing use for this purpose only by criminal justice agencies. It is reluctant, in the absence of statutory clarification, to provide even controlled access to other researchers. This topic deserves attention.

PCAST believes that the availability of data will speed the development of methods, tools, and software that will improve forensic science. For databases under its control, the FBI Laboratory should develop programs to make forensic databases (or subsets of those databases) accessible to researchers under conditions that protect

³⁷⁰ NGI standards for "Next Generation Identification" and combines multiple biometric information systems, including IAFIS, iris and face recognition systems, and others.

³⁷¹ NIST Special Database 27A, available at: www.nist.gov/itl/iad/image-group/nist-special-database-27a-sd-27a.

³⁷² Medical examiners offices routinely collect fingerprints from deceased individuals as part of the autopsy process; these fingerprints could be collected and used to create a large database for research purposes.

³⁷³ A number of models that have been developed in the biomedical research context that allow for tiered access to sensitive data while providing adequate privacy protection could be employed here. Researchers could be required to sign Non-Disclosure Agreements (NDAs) or enter into limited use agreements. Researchers could be required to access the data on site, so that data cannot be downloaded or shared, or could be permitted to download only aggregated or summary data.

³⁷⁴ Federal DNA Identification Act, 42 U.S.C. §14132(b)(3)(D)).

privacy. For databases owned by others, the FBI Laboratory and NIST should each work with other agencies and companies that control the databases to develop programs providing appropriate access.

7.2 Recommendation

Based on its scientific findings, PCAST makes the following recommendation.

Recommendation 5. Expanded forensic-science agenda at the Federal Bureau of Investigation Laboratory

(A) *Research programs.* The Federal Bureau of Investigation (FBI) Laboratory should undertake a vigorous research program to improve forensic science, building on its recent important work on latent fingerprint analysis. The program should include:

- (i) conducting studies on the reliability of feature-comparison methods, in conjunction with independent third parties without a stake in the outcome;
- (ii) developing new approaches to improve reliability of feature-comparison methods;
- (iii) expanding collaborative programs with external scientists; and
- (iv) ensuring that external scientists have appropriate access to datasets and sample collections, so that they can carry out independent studies.

(B) *Black-box studies.* Drawing on its expertise in forensic science research, the FBI Laboratory should assist in the design and execution of additional black-box studies for subjective methods, including for latent fingerprint analysis and firearms analysis. These studies should be conducted by or in conjunction with independent third parties with no stake in the outcome.

(C) *Development of objective methods.* The FBI Laboratory should work with the National Institute of Standards and Technology to transform three important feature-comparison methods that are currently subjective—latent fingerprint analysis, firearm analysis, and, under some circumstances, DNA analysis of complex mixtures—into objective methods. These efforts should include (i) the creation and dissemination of large datasets to support the development and testing of methods by both companies and academic researchers, (ii) grant and contract support, and (iii) sponsoring prize competitions to evaluate methods.

(D) *Proficiency testing.* The FBI Laboratory, should promote increased rigor in proficiency testing by (i) within the next four years, instituting routine blind proficiency testing within the flow of casework in its own laboratory, (ii) assisting other Federal, State, and local laboratories in doing so as well, and (iii) encouraging routine access to and evaluation of the tests used in commercial proficiency testing.

(E) *Latent fingerprint analysis.* The FBI Laboratory should vigorously promote the adoption, by all laboratories that perform latent fingerprint analysis, of rules requiring a “linear Analysis, Comparison, Evaluation” process—whereby examiners must complete and document their analysis of a latent fingerprint *before* looking at any known fingerprint and should separately document any additional data used during comparison and evaluation.

(F) *Transparency concerning quality issues in casework.* The FBI Laboratory, as well as other Federal forensic laboratories, should regularly and publicly report quality issues in casework (in a manner similar to the practices employed by the Netherlands Forensic Institute, described in Chapter 5), as a means to improve quality and promote transparency.

(G) *Budget.* The President should request and Congress should provide increased appropriations to the FBI to restore the FBI Laboratory’s budget for forensic science research activities from its current level to \$30 million and should evaluate the need for increased funding for other forensic-science research activities in the Department of Justice.



8. Actions to Ensure Scientific Validity in Forensic Science: Recommendations to the Attorney General

Based on the scientific findings in Chapters 4 and 5, PCAST has identified actions that we believe should be taken by the Attorney General to ensure the scientific validity of forensic feature-comparison methods and promote their more rigorous use in the courtroom.

8.1 Ensuring the Use of Scientifically Valid Methods in Prosecutions

The Federal Government has a deep commitment to ensuring that criminal prosecutions are not only fair in their process, but correct in their outcome—that is, that guilty individuals are convicted, while innocent individuals are not.

Toward this end, the DOJ should ensure that testimony about forensic evidence presented in court is scientifically valid. This report provides guidance to DOJ concerning the scientific criteria for both foundational validity and validity as applied, as well as evaluations of six specific forensic methods and a discussion of a seventh. Over the long term, DOJ should look to ongoing evaluations of forensic methods that should be performed by NIST (as described in Chapter 6).

In the interim, DOJ should undertake a review of forensic feature-comparison methods (beyond those reviewed in this report) to identify which methods used by DOJ lack appropriate black-box studies necessary to assess foundational validity. Because such subjective methods are presumptively not established to be foundationally valid, DOJ should evaluate (1) whether DOJ should present in court conclusions based on such methods and (2) whether black-box studies should be launched to evaluate those methods.

8.2 Revision of DOJ Recently Proposed Guidelines on Expert Testimony

On June 3, 2016, the DOJ released for comment a first set of proposed guidelines, together with supporting documents, on “Proposed Uniform Language for Testimony and Reports” on several forensic sciences, including latent fingerprint analysis and forensic footwear and tire impression analysis.³⁷⁵ On July 21, 2016, the DOJ released for comment a second set of proposed guidelines and supporting documents for several additional forensic sciences, including microscopic hair analysis, certain types of DNA analysis, and other fields.

³⁷⁵ See: www.justice.gov/dag/proposed-language-regarding-expert-testimony-and-lab-reports-forensic-science. A second set of proposed guidelines was released on July 21, 2016 including hair analysis and mitochondrial DNA and Y chromosome typing (www.justice.gov/dag/proposed-uniform-language-documents-anthropology-explosive-chemistry-explosive-devices-geology).

The guidelines represent an important step forward, because they instruct DOJ examiners not to make sweeping claims that they can identify the source of a fingerprint or footprint to the exclusion of all other possible sources. PCAST applauds DOJ's intention and efforts to bring uniformity and to prevent inaccurate testimony concerning feature comparisons.

Some aspects of the guidelines, however, are not scientifically appropriate and embody heterodox views of the kind discussed in Section 4.7. As an illustration, we focus on the guidelines for footwear and tire impression analysis and the guidelines for hair analysis.

Footwear and Tire Impression Analysis

Relevant portions of the guidelines for testimony and reports about forensic footwear and tire impression are shown in Box 6.

BOX 6. Excerpt from DOJ Proposed uniform language for testimony and reports for the forensic footwear and tire impression discipline³⁷⁶

Statements Approved for Use in Laboratory Reports and Expert Witness Testimony Regarding Forensic Examination of Footwear and Tire Impression Evidence

Identification

1. The examiner may state that it is his/her opinion that the shoe/tire is the source of the impression because there is sufficient quality and quantity of corresponding features such that the examiner would not expect to find that same combination of features repeated in another source. This is the highest degree of association between a questioned impression and a known source. This opinion requires that the questioned impression and the known source correspond in class characteristics and also share one or more randomly acquired characteristics. This opinion acknowledges that an identification to the exclusion of all others can never be empirically proven.

Statements Not Approved for Use in Laboratory Reports and Expert Witness Testimony Regarding Forensic Examination of Footwear and Tire Impression Evidence

Exclusion of All of Others

1. The examiner may not state that a shoe/tire is the source of a questioned impression to the exclusion of all other shoes/tires because all other shoes/tires have not been examined. Examining all of the shoes/tires in the world is a practical impossibility.

³⁷⁶ See: www.justice.gov/olp/file/861936/download.

Error Rate

2. The examiner may not state a numerical value or percentage regarding the error rate associated with either the methodology used to conduct the examinations or the examiner who conducted the analyses.

Statistical Weight

3. The examiner may not state a numerical value or probability associated with his/her opinion. Accurate and reliable data and/or statistical models do not currently exist for making quantitative determinations regarding the forensic examination of footwear/tire impression evidence.

These proposed guidelines have serious problems.

An examiner may opine that a shoe is the source of an impression, but not that the shoe is the source of impression *to the exclusion of all other possible shoes*. But, as a matter of logic, there is no difference between these two statements. If an examiner believes that X is the source of Y, then he or she necessarily believes that *nothing else* is the source of Y. Any sensible juror should understand this equivalence.

What then is the goal of the guidelines? It appears to be to acknowledge the possibility of error. In effect, examiners should say, "I believe X is the source of Y, although I could be wrong about that."

This is appropriate. But, the critical question is then: How likely is it that the examiner is wrong?

There's the rub: the guidelines bar the examiner from discussing the likelihood of error, because there is no accurate or reliable information about accuracy. In effect, examiners are instructed to say, "I believe X is the source of Y, although I could be wrong about that. But, I have no idea how often I'm wrong because we have no reliable information about that."

Such a statement does not meet any plausible test of scientific validity. As Judge Easterly wrote in *Williams v. United States*, a claim of identification under such circumstances:

*has the same probative value as the vision of a psychic: it reflects nothing more than the individual's foundationless faith in what he believes to be true. This is not evidence on which we can in good conscience rely, particularly in criminal cases, where we demand proof—real proof—beyond a reasonable doubt, precisely because the stakes are so high.*³⁷⁷

³⁷⁷ *Williams v. United States*, DC Court of Appeals, Decided January 21, 2016, (Easterly, concurring). We cite the analogy for its expositional value concerning the scientific point; we express no position on the role of the case as legal authority.

Hair Analysis

Relevant portions of the guidelines for testimony and reports on forensic hair examination are shown in Box 7.

BOX 7. Excerpt from DOJ Proposed uniform language for testimony and reports for the forensic hair examination discipline³⁷⁸

Statements Not Approved for Use in Forensic Hair Examination Testimony and/or Laboratory Reports

Human Hair Comparisons

1. The examiner may state or imply that the questioned human hair is microscopically consistent with the known hair sample and accordingly, the source of the known hair sample can be included as a possible source of the questioned hair.

Statements Not Approved for Use in Forensic Hair Examination Testimony and/or Laboratory Reports

Individualization

1. The examiner may not state or imply that a hair came from a particular source to the exclusion of all others.

Statistical Weight

2. The examiner may not state or imply a statistical weight or probability to a conclusion or provide a likelihood that the questioned hair originated from a particular source.

Zero Error Rate

3. The examiner may not state or imply that the method used in performing microscopic hair examinations has a zero error rate or is infallible.

The guidelines appropriately state that examiners may not claim that they can individualize the source of a hair nor that they have a zero error rate. However, while examiners may “state or imply that the questioned human hair is microscopically consistent with the known hair sample and accordingly, the source of the known hair sample can be included as a possible source of the questioned hair,” they are barred from providing accurate information about the reliability of such conclusions. This is contrary to the scientific requirement that forensic feature-comparison methods must be supported by and accompanied by appropriate empirical estimates of reliability.

In particular, as discussed in Section 5.7, a landmark study in 2002 by scientists at the FBI Laboratory showed that, among 80 instances in actual casework where examiners concluded that a questioned hair was microscopically consistent with the known hair sample, the hair were found by DNA analysis to have come from

³⁷⁸ Department of Justice Proposed Uniform Language for Testimony and Reports for the Forensic Hair Examination Discipline, available at: www.justice.gov/dag/file/877736/download.

a different source in 11 percent of cases. The fact that such a significant proportion of conclusions were false associations is of tremendous importance in interpreting conclusions of hair examiners.

In cases of hair examination unaccompanied by DNA analysis, examiners should be required to disclose the high frequency of false associations seen in the FBI study so that juries can appropriately weigh conclusions.

Conclusion

The DOJ should revise the proposed guidelines, to bring them into alignment with scientific standards for scientific validity. The supporting documentation should also be revised, as discussed in Section 5.7.

8.3 Recommendations

Based on its scientific findings, PCAST makes the following recommendations.

Recommendation 6. Use of feature-comparison methods in Federal prosecutions

(A) The Attorney General should direct attorneys appearing on behalf of the Department of Justice (DOJ) to ensure expert testimony in court about forensic feature-comparison methods meets the scientific standards for scientific validity.

While pretrial investigations may draw on a wider range of methods, expert testimony in court about forensic feature-comparison methods in criminal cases—which can be highly influential and has led to many wrongful convictions—must meet a higher standard. In particular, attorneys appearing on behalf of the DOJ should ensure that:

- (i) the forensic feature-comparison methods upon which testimony is based have been established to be foundationally valid, as shown by appropriate empirical studies and consistency with evaluations by the National Institute of Standards and Technology (NIST), where available; and
- (ii) the testimony is scientifically valid, with the expert's statements concerning the accuracy of methods and the probative value of proposed identifications being constrained by the empirically supported evidence and not implying a higher degree of certainty.

(B) DOJ should undertake an initial review, with assistance from NIST, of subjective feature-comparison methods used by DOJ to identify which methods (beyond those reviewed in this report) lack appropriate black-box studies necessary to assess foundational validity. Because such subjective methods are presumptively not established to be foundationally valid, DOJ should evaluate whether it is appropriate to present in court conclusions based on such methods.

(C) Where relevant methods have not yet been established to be foundationally valid, DOJ should encourage and provide support for appropriate black-box studies to assess foundational validity and measure reliability. The design and execution of these studies should be conducted by or in conjunction with independent third parties with no stake in the outcome.

Recommendation 7. Department of Justice guidelines on expert testimony

(A) The Attorney General should revise and reissue for public comment the Department of Justice’s (DOJ) proposed “Uniform Language for Testimony and Reports” and supporting documents to bring them into alignment with scientific standards for scientific validity.

(B) The Attorney General should issue instructions directing that:

(i) Where empirical studies and/or statistical models exist to shed light on the accuracy of a forensic feature-comparison method, an examiner should provide quantitative information about error rates, in accordance with guidelines to be established by DOJ and the National Institute of Standards and Technology, based on advice from the scientific community.

(ii) Where there are not adequate empirical studies and/or statistical models to provide meaningful information about the accuracy of a forensic feature-comparison method, DOJ attorneys and examiners should not offer testimony based on the method. If it is necessary to provide testimony concerning the method, they should clearly acknowledge to courts the lack of such evidence.

(iii) In testimony, examiners should always state clearly that errors can and do occur, due both to similarities between features and to human mistakes in the laboratory.



9. Actions to Ensure Scientific Validity in Forensic Science: Recommendations to the Judiciary

Based on the scientific findings in Chapters 4 and 5, PCAST has identified actions that we believe should be taken by the judiciary to ensure the scientific validity of evidence based on forensic feature-comparison methods and promote their more rigorous use in the courtroom.

9.1 Scientific Validity as a Foundation for Expert Testimony

In Federal courts, judges are assigned the critical role of “gatekeepers” charged with ensuring that expert testimony “rests on a reliable foundation.”³⁷⁹ Specifically, Rule 702 (c,d) of the Federal Rules of Evidence requires that (1) expert testimony must be the product of “reliable principles and methods” and (2) experts must have “reliably applied” the methods to the facts of the case.³⁸⁰ The Supreme Court has stated that judges must determine “whether the reasoning or methodology underlying the testimony is scientifically valid.”³⁸¹

As discussed in Chapter 3, this framework establishes an important conversation between the judiciary and the scientific community. The admissibility of expert testimony depends on a threshold test of whether it meets certain *legal* standards for evidentiary reliability, which are exclusively the province of the judiciary. Yet, in cases involving scientific evidence, these legal standards are to be “based upon scientific validity.”³⁸²

PCAST does not opine on the legal standards, but aims in this report to clarify the *scientific* standards that underlie them. To ensure that the distinction between scientific and legal concepts is clear, we have adopted specific terms to refer to *scientific* concepts (*foundational validity* and *validity as applied*) intended to parallel *legal* concepts expressed in Rule 702 (c,d).

As the Supreme Court has noted, the judge’s inquiry under Rule 702 is a flexible one: there is no simple one-size-fits-all test that can be applied uniformly to all scientific disciplines.³⁸³ Rather, the evaluation of scientific validity should be based on the appropriate scientific criteria for the scientific field. Moreover, the appropriate scientific field should be the larger scientific discipline to which it belongs.³⁸⁴

³⁷⁹ *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579 (1993) at 597.

³⁸⁰ See: www.uscourts.gov/file/rules-evidence.

³⁸¹ *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579 (1993) at 592.

³⁸² *Daubert*, at FN9 (“in a case involving scientific evidence, *evidentiary reliability* will be based on *scientific validity*.” [emphasis in original]).

³⁸³ *Daubert*, at 594.

³⁸⁴ For example, in *Frye*, the court evaluated whether a proffered lie detector had gained “standing and scientific recognition among physiological and psychological authorities,” rather than among lie detector experts. *Frye v. United*

In this report, PCAST has focused on forensic feature-comparison methods—which belong to the field of metrology, the science of measurement and its application.³⁸⁵ We have sought—in a form usable by courts, as well as by scientists and others who seek to improve forensic science—to lay out the scientific criteria for foundational validity and validity as applied (Chapter 4) and to illustrate their application to specific forensic feature-comparison methods (Chapter 5).

The scientific criteria are described in Finding 1. PCAST’s conclusions can be summarized as follows:

Scientific validity and reliability require that a method has been subjected to empirical testing, under conditions appropriate to its intended use, that provides valid estimates of how often the method reaches an incorrect conclusion. For subjective feature-comparison methods, appropriately designed black-box studies are required, in which many examiners render decisions about many independent tests (typically, involving “questioned” samples and one or more “known” samples) and the error rates are determined. Without appropriate estimates of accuracy, an examiner’s statement that two samples are similar—or even indistinguishable—is scientifically meaningless: it has no probative value, and considerable potential for prejudicial impact. Nothing—not personal experience nor professional practices—can substitute for adequate empirical demonstration of accuracy.

The applications to specific feature-comparison methods are described in Findings 2-7. The full set of scientific findings is collected in Chapter 10.

Finally, we note that the Supreme Court in *Daubert* suggested that judges should be mindful of Rule 706, which allows a court at its discretion to procure the assistance of an expert of its own choosing.³⁸⁶ Such experts can provide independent assessments concerning, among other things, the validity of scientific methods and their applications.

9.2 Role of Past Precedent

One important issue that arose throughout our deliberations was the role of past precedents.

As discussed in Chapter 5, our scientific review found that most forensic feature-comparison methods (with the notable exception of DNA analysis of single-source and simple-mixture samples) have historically been *assumed* rather than *established* to be foundationally valid. Only after it became clear in recent years (based on DNA and other analysis) that there are fundamental problems with the reliability of some of these methods has the forensic science community begun to recognize the need to *empirically test* whether specific methods meet the scientific criteria for scientific validity.

This creates an obvious tension, because many courts admit forensic feature-comparison methods based on longstanding precedents that were set before these fundamental problems were discovered.

States, 293 F. 1013 (D.C. Cir. 1923). Similarly, the fact that bitemark examiners believe that bitemark examination is valid carries little weight.

³⁸⁵ See footnote 93 on p.44.

³⁸⁶ *Daubert*, at 595.

From a purely *scientific* standpoint, the resolution is clear. When new facts falsify old assumptions, courts should not be obliged to defer to past precedents: they should look afresh at the scientific issues. How are such tensions resolved from a legal standpoint? The Supreme Court has made clear that a court may overrule precedent if it finds that an earlier case was “erroneously decided and that subsequent events have undermined its continuing validity.”³⁸⁷

PCAST expresses no view on the legal question of whether any past cases were “erroneously decided.” However, PCAST notes that, from a *scientific* standpoint, subsequent events have indeed undermined the continuing validity of conclusions that were not based on appropriate empirical evidence. These events include (1) the recognition of systemic problems with some forensic feature-comparison methods, including through study of the causes of hundreds of wrongful convictions revealed through DNA and other analysis; (2) the 2009 NRC report from the National Academy of Sciences, the leading scientific advisory body established by the Legislative Branch,³⁸⁸ that found that some forensic feature-comparison methods lack a scientific foundation; and (3) the scientific review in this report by PCAST, the leading scientific advisory body established by the Executive Branch,³⁸⁹ finding that some forensic feature-comparison methods lack foundational validity.

9.3 Resources for Judges

Another important issue that arose frequently in our conversations with experts was the need for better resources for judges related to evaluation of forensic feature-comparison methods for use in the courts.

The most appropriate bodies to provide such resources are the Judicial Conference of the United States and the Federal Judicial Center.

The Judicial Conference of the United States is the national policy-making body for the federal courts.³⁹⁰ Its statutory responsibility includes studying the operation and effect of the general rules of practice and procedure in the federal courts. The Judicial Conference develops best practices manuals and issues Advisory Committee notes to assist judges with respect to specific topics, including through its Standing Advisory Committee on the Federal Rules of Evidence.

The Federal Judicial Center is the research and education agency of the federal judicial system.³⁹¹ Its statutory duties include (1) conducting and promoting research on federal judicial procedures and court operations and

³⁸⁷ *Boys Markets, Inc. v. Retails Clerks Union*, 398 U.S. 235, 238 (1970). See also: *Patterson v. McLean Credit Union*, 485 U.S. 617, 618 (1988) (noting that the Court has “overruled statutory precedents in a host of cases”). PCAST sought advice on this matter from its panel of Senior Advisors.

³⁸⁸ The National Academy of Sciences was chartered by Congress in 1863 to advise the Federal government on matters of science (U.S. Code, Section 36, Title 1503).

³⁸⁹ The President formally established a standing scientific advisory council soon after the launch of Sputnik in 1957. It is currently titled the President’s Council of Advisors of Science and Technology (operating under Executive Order 13539, as amended by Executive Order 13596).

³⁹⁰ Created in 1922 under the name the Conference of Senior Circuit Judges, the Judicial Conference of the United States is currently established under 28 U.S.C. § 331.

³⁹¹ The Federal Judicial Center was established by Congress in 1967 (28 U.S.C. §§ 620-629), on the recommendation of the Judicial Conference of the United States.

(2) conducting and promoting orientation and continuing education and training for federal judges, court employees, and others.

PCAST recommends that the Judicial Conference of the United States, through its Subcommittee on the Federal Rules of Evidence, develop best practices manuals and an Advisory Committee note and the Federal Judicial Center develop educational programs related to procedures for evaluating the scientific validity of forensic feature-comparison methods.

9.4 Recommendation

Based on its scientific findings, PCAST makes the following recommendation.

Recommendation 8. Scientific validity as a foundation for expert testimony

(A) When deciding the admissibility of expert testimony, Federal judges should take into account the appropriate scientific criteria for assessing scientific validity including:

(i) foundational validity, with respect to the requirement under Rule 702(c) that testimony is the product of reliable principles and methods; and

(ii) validity as applied, with respect to requirement under Rule 702(d) that an expert has reliably applied the principles and methods to the facts of the case.

These scientific criteria are described in Finding 1.

(B) Federal judges, when permitting an expert to testify about a foundationally valid feature-comparison method, should ensure that testimony about the accuracy of the method and the probative value of proposed identifications is scientifically valid in that it is limited to what the empirical evidence supports. Statements suggesting or implying greater certainty are not scientifically valid and should not be permitted. In particular, courts should never permit scientifically indefensible claims such as: “zero,” “vanishingly small,” “essentially zero,” “negligible,” “minimal,” or “microscopic” error rates; “100 percent certainty” or proof “to a reasonable degree of scientific certainty;” identification “to the exclusion of all other sources;” or a chance of error so remote as to be a “practical impossibility.”

(C) To assist judges, the Judicial Conference of the United States, through its Standing Advisory Committee on the Federal Rules of Evidence, should prepare, with advice from the scientific community, a best practices manual and an Advisory Committee note, providing guidance to Federal judges concerning the admissibility under Rule 702 of expert testimony based on forensic feature-comparison methods.

(D) To assist judges, the Federal Judicial Center should develop programs concerning the scientific criteria for scientific validity of forensic feature-comparison methods.



10. Scientific Findings

PCAST's scientific findings in this report are collected below. Finding 1, concerning the scientific criteria for scientific validity, is based on the discussion in Chapter 4. Findings 2–6, concerning foundational validity of six forensic feature-comparison methods, is based on the evaluations in Chapter 5.

Finding 1: Scientific Criteria for Scientific Validity of a Forensic Feature-Comparison Method

(1) Foundational validity. To establish foundational validity for a forensic feature-comparison method, the following elements are required:

(a) a reproducible and consistent procedure for (i) identifying features within evidence samples, (ii) comparing the features in two samples, and (iii) determining, based on the similarity between the features in two samples, whether the samples should be declared to be likely to come from the same source (“matching rule”); and

(b) empirical estimates, from appropriately designed studies from multiple groups, that establish (i) the method's false positive rate—that is, the probability it declares a proposed identification between samples that actually come from different sources, and (ii) the method's sensitivity—that is, the probability it declares a proposed identification between samples that actually come from the same source.

As described in Box 4, scientific validation studies should satisfy a number of criteria: (a) they should be based on sufficiently large collections of known and representative samples from relevant populations; (b) they should be conducted so that have no information about the correct answer; (c) the study design and analysis plan are specified in advance and not modified afterwards based on the results; (d) the study is conducted or overseen by individuals or organizations with no stake in the outcome; (e) data, software and results should be available to allow other scientists to review the conclusions; and (f) to ensure that the results are robust and reproducible, there should be multiple independent studies by separate groups reaching similar conclusions.

Once a method has been established as foundationally valid based on adequate empirical studies, claims about the method's accuracy and the probative value of proposed identifications, in order to be valid, must be based on such empirical studies.

For objective methods, foundational validity can be established by demonstrating the reliability of each of the individual steps (feature identification, feature comparison, matching rule, false match probability, and sensitivity).

For subjective methods, foundational validity can be established *only* through black-box studies that measure how often many examiners reach accurate conclusions across many feature-comparison problems involving samples representative of the intended use. In the absence of such studies, a subjective feature-comparison method cannot be considered scientifically valid.

Foundational validity is a *sine qua non*, which can only be shown through empirical studies. Importantly, good professional practices—such as the existence of professional societies, certification programs, accreditation programs, peer-reviewed articles, standardized protocols, proficiency testing, and codes of ethics—cannot substitute for empirical evidence of scientific validity and reliability.

(2) Validity as applied. Once a forensic feature-comparison method has been established as foundationally valid, it is necessary to establish its validity as applied in a given case.

As described in Box 5, validity as applied requires that: (a) the forensic examiner must have been shown to be *capable* of reliably applying the method, as shown by appropriate proficiency testing (see Section 4.6), and must *actually* have done so, as demonstrated by the procedures actually used in the case, the results obtained, and the laboratory notes, which should be made available for scientific review by others; and (b) the forensic examiner’s assertions about the probative value of proposed identifications must be scientifically valid—including that the expert should report the overall false positive rate and sensitivity for the method established in the studies of foundational validity; demonstrate that the samples used in the foundational studies are relevant to the facts of the case; where applicable, report probative value of the observed match based on the specific features observed in the case; and not make claims or implications that go beyond the empirical evidence.

Finding 2: DNA Analysis

Foundational validity. PCAST finds that DNA analysis of single-source samples or simple mixtures of two individuals, such as from many rape kits, is an objective method that has been established to be foundationally valid.

Validity as applied. Because errors due to human failures will dominate the chance of coincidental matches, the scientific criteria for validity as applied require that an expert (1) should have undergone rigorous and relevant proficiency testing to demonstrate their ability to reliably apply the method, (2) should routinely disclose in reports and testimony whether, when performing the examination, he or she was aware of any facts of the case that might influence the conclusion, and (3) should disclose, upon request, all information about quality testing and quality issues in his or her laboratory.

Finding 3: DNA analysis of complex-mixture samples

Foundational validity. PCAST finds that:

(1) Combined Probability of Inclusion-based methods. DNA analysis of complex mixtures based on CPI-based approaches has been an inadequately specified, subjective method that has the potential to lead to erroneous results. As such, it is not foundationally valid.

A very recent paper has proposed specific rules that address a number of problems in the use of CPI. These rules are clearly *necessary*. However, PCAST has not adequate time to assess whether they are also *sufficient* to define an objective and scientifically valid method. If, for a limited time, courts choose to admit results based on the application of CPI, validity as applied would require that, at a minimum, they be consistent with the rules specified in the paper.

DNA analysis of complex mixtures should move rapidly to more appropriate methods based on probabilistic genotyping.

(2) Probabilistic genotyping. Objective analysis of complex DNA mixtures with probabilistic genotyping software is relatively new and promising approach. Empirical evidence is required to establish the foundational validity of each such method within specified ranges. At present, published evidence supports the foundational validity of analysis, with some programs, of DNA mixtures of 3 individuals in which the minor contributor constitutes at least 20 percent of the intact DNA in the mixture and in which the DNA amount exceeds the minimum required level for the method. The range in which foundational validity has been established is likely to grow as adequate evidence for more complex mixtures is obtained and published.

Validity as applied. For methods that are foundationally valid, validity as applied involves similar considerations as for DNA analysis of single-source and simple-mixtures samples, with a special emphasis on ensuring that the method was applied correctly and within its empirically established range.

Finding 4: Bitemark analysis

Foundational validity. PCAST finds that bitemark analysis does not meet the scientific standards for foundational validity, and is far from meeting such standards. To the contrary, available scientific evidence strongly suggests that examiners cannot consistently agree on whether an injury is a human bitemark and cannot identify the source of bitemark with reasonable accuracy.

Finding 5: Latent fingerprint analysis

Foundational validity. Based largely on two recent appropriately designed black-box studies, PCAST finds that latent fingerprint analysis is a foundationally valid subjective methodology—albeit with a false positive rate that is substantial and is likely to be higher than expected by many jurors based on longstanding claims about the infallibility of fingerprint analysis.

Conclusions of a proposed identification may be scientifically valid, provided that they are accompanied by accurate information about limitations on the reliability of the conclusion—specifically, that (1) only two properly designed studies of the foundational validity and accuracy of latent fingerprint analysis have been conducted, (2) these studies found false positive rates that could be as high as 1 error in 306 cases in one study and 1 error in 18 cases in the other, and (3) because the examiners were aware they were being tested, the actual false positive rate in casework may be higher. At present, claims of higher accuracy are not warranted or scientifically justified. Additional black-box studies are needed to clarify the reliability of the method.

Validity as applied. Although we conclude that the method is foundationally valid, there are a number of important issues related to its validity as applied.

(1) Confirmation bias. Work by FBI scientists has shown that examiners typically alter the features that they initially mark in a latent print based on comparison with an apparently matching exemplar. Such circular reasoning introduces a serious risk of confirmation bias. Examiners should be required to complete and document their analysis of a latent fingerprint *before* looking at any known fingerprint and should separately document any additional data used during their comparison and evaluation.

(2) Contextual bias. Work by academic scholars has shown that examiners' judgments can be influenced by irrelevant information about the facts of a case. Efforts should be made to ensure that examiners are not exposed to potentially biasing information.

(3) Proficiency testing. Proficiency testing is essential for assessing an examiner's capability and performance in making accurate judgments. As discussed elsewhere in this report, there is a need to improve proficiency testing, including making it more rigorous, incorporating it within the flow of casework, and disclosing test problems following a test so that they can be evaluated for appropriateness by the scientific community.

From a scientific standpoint, validity as applied requires that an expert: (1) has undergone appropriate proficiency testing to ensure that he or she is capable of analyzing the full range of latent fingerprints encountered in casework and reports the results of the proficiency testing; (2) discloses whether he or she documented the features in the latent print in writing before comparing it to the known print; (3) provides a written analysis explaining the selection and comparison of the features; (4) discloses whether, when performing the examination, he or she was aware of any other facts of the case that might influence the conclusion; and (5) verifies that the latent print in the case at hand is similar in quality to the range of latent prints considered in the foundational studies.

Finding 6: Firearms analysis

Foundational validity. PCAST finds that firearms analysis currently falls short of the criteria for foundational validity, because there is only a single appropriately designed study to measure validity and estimate reliability. The scientific criteria for foundational validity require more than one such study, to demonstrate reproducibility.

Whether firearms analysis should be deemed admissible based on current evidence is a decision that belongs to the courts.

If firearms analysis is allowed in court, the scientific criteria for validity as applied should be understood to require clearly reporting the error rates seen in appropriately designed black-box studies (estimated at 1 in 66, with a 95 percent confidence limit of 1 in 46, in the one such study to date).

Validity as applied. If firearms analysis is allowed in court, validity as applied would, from a scientific standpoint, require that the expert:

- (1) has undergone rigorous proficiency testing on a large number of test problems to measure his or her accuracy and discloses the results of the proficiency testing; and
- (2) discloses whether, when performing the examination, he or she was aware of any other facts of the case that might influence the conclusion.

Finding 7: Footwear analysis

Foundational validity. PCAST finds there are no appropriate empirical studies to support the foundational validity of footwear analysis to associate shoeprints with particular shoes based on specific identifying marks (sometimes called “randomly acquired characteristics”). Such conclusions are unsupported by any meaningful evidence or estimates of their accuracy and thus are not scientifically valid.

PCAST has not evaluated the foundational validity of footwear analysis to identify class characteristics (for example, shoe size or make).



Appendix A: Statistical Issues

To enhance its accessibility to a broad audience, the main text of this report avoids, where possible, the use of mathematical and statistical terminology. However, for the actual implementation of some of the principles stated in the report, somewhat more precise descriptions are necessary. This Appendix summarizes the relevant concepts from elementary statistics.³⁹²

Sensitivity and False Positive Rate

Forensic feature-comparison methods typically aim to determine how likely it is that two samples came from the same source, given the result of a forensic test on the samples. Two possibilities are considered: the null hypothesis (H_0) that they are from different sources (H_0) and the alternative hypothesis (H_1) that two samples are from the same source. The forensic test result may be summarized as match declared (M) or no match declared (O).

There are two necessary characterizations of a method's accuracy: Sensitivity (abbreviated SEN) and False Positive Rate (FPR).

Sensitivity is defined as the probability that the method declares a match between two samples when they are known to be from the same source (drawn from an appropriate population), that is, $SEN = P(M|H_1)$. For example, a value $SEN = 0.95$ would indicate that two samples from the same source will be declared as a match 95 percent of the time. In the statistics literature, SEN is sometimes also called the "true positive rate," "TPR," or "recall rate."³⁹³

False positive rate (abbreviated FPR) is defined as the probability that the method declares a match between two samples that are from different sources (again in an appropriate population), that is, $FPR = P(M|H_0)$. For example, a value $FPR = 0.01$ would indicate that two samples from different sources will be (mistakenly) called as a match 1 percent of the time.³⁹⁴ Methods with a high FPR are scientifically unreliable for making important

³⁹² See, e.g.: Peter Amitage, G. Berry, JNS Matthews: *Statistical Methods in Medical Research*, 4th ed., Blackwell Science, 2002; George Snedecor, William G Cochran: *Statistical Methods*, 8th ed., Iowa State University Press, 1989; Gerald van Belle, Lloyd D Fisher, Patrick Heagerty, Thomas Lumley, *Biostatistics: A Methodology for the Health Sciences*, Wiley, 2004; Alan Agresti; Brent A. Coull: Approximate Is Better than "Exact" for Interval Estimation of Binomial Proportions. *The American Statistician* 52(2), 119-126, 1998; Robert V Hogg, Elliot Tanis, Dale Zimmerman: *Probability and Statistical Inference*, 9th ed., Pearson, 2015; David Freedman, Roger Pisani, Roger Purves: *Statistics*. Norton, 2007; Lincoln E Moses: *Think and Explain with Statistics*, Addison-Wesley, 1986; David S Moore, George P McCabe, Bruce A Craig: *Introduction to the Practice of Statistics*. W.H. Freeman, 2009.

³⁹³ The term false negative rate is sometimes used for the complement of SEN, that is, $FNR = 1 - SEN$.

³⁹⁴ Statisticians may refer to a method's specificity (SPC) instead of its false positive rate (FPR). The two are related by the formula $FPR = 1 - SPC$. In the example given, $FPR = 0.01$ (1 percent) and $SPC = 0.99$ (99 percent).

judgments in court about the source of a sample. To be considered reliable, the FPR should certainly be less than 5 percent and it may be appropriate that it be considerably lower, depending on the intended application.

The results of a given empirical study can be summarized by four values: the number of occurrences in the study of true positives (TP), false positives (FP), false negatives (FN), and true negatives (TN). (The matrix of these values is, perhaps oddly, referred to as the “confusion matrix.”)

		Test Result	
		Match	No Match
H1: Truly from same source	TP	FN	
H0: Truly from different sources	FP	TN	

In this standard-but-confusing terminology, “true” and “false” refer to agreement or disagreement with the ground truth (either H0 or H1), while “positive” and “negative” refer to the test results (that is, results M and O, respectively).

A widely-used estimate, called the *maximum likelihood* estimate, of SEN is given by $TP/(TP+FN)$, the fraction of events with ground truth H1 (same source) that are correctly declared as M (match). The maximum likelihood estimate of FPR is correspondingly $FP/(FP+TN)$, the fraction events with ground truth H0 (different source) that are mistakenly declared as M (match).

Since the false positive rate will often be the mathematically determining factor in the method’s probative value in a particular case (discussion below), it is particularly important that FPR be well measured empirically.

In addition, tests with very low sensitivity should be viewed with suspicion because rare positive test results may be matched or outweighed by the occurrence of false positive results.³⁹⁵

Confidence Intervals

As discussed in the main text, to be valid, empirical measurements of SEN and FPR must be based on large collections of known and representative samples from each relevant population, so as to reflect how often a given feature or combination of features occurs. (Other requirements for validity are also discussed in the main text.)

Since empirical measurements are based on a limited number of samples, SEN and FPR cannot be measured exactly, but only estimated. Because of the finite sample sizes, the maximum likelihood estimates thus do not tell the whole story. Rather, it is necessary and appropriate to quote confidence bounds within which SEN, and FPR, are highly likely to lie.

³⁹⁵ The argument in favor of a test that “this test succeeds only occasionally, but in this case it did succeed” is thus a fallacious one

Because one should be primarily concerned about overestimating SEN or underestimating FPR, it is appropriate to use a *one-sided* confidence bound. By convention, a confidence level of 95 percent is most widely used—meaning that there is a 5 percent chance the true value exceeds the bound. Upper 95 percent one-sided confidence bounds should thus be used for assessing the error rates and the associated quantities that characterize forensic feature matching methods. (The use of lower values may rightly be viewed with suspicion as an attempt at obfuscation.)

The confidence bound for proportions depends on the sample size in the empirical study. When the sample size is small, the estimates may be far from the true value. For example, if an empirical study found no false positives in 25 individual tests, there is still a reasonable chance (at least 5 percent) that the true error rate might be as high as roughly 1 in 9.

For technical reasons, there is no single, universally agreed method for calculating these confidence intervals (a problem known as the “binomial proportion confidence interval”). However, the several widely used methods give very similar results, and should all be considered acceptable: the Clopper-Pearson/Exact Binomial method, the Wilson Score interval, the Agresti-Coull (adjusted Wald) interval, and the Jeffreys interval.³⁹⁶ Web-based calculators are available for all of these methods.³⁹⁷ For example, if a study finds zero false positives in 100 tries, the four methods mentioned give, respectively, the values 0.030, 0.026, 0.032, and 0.019 for the upper 95 percent confidence bound. From a scientific standpoint, any of these might appropriately be reported to a jury in the context “the false positive rate might be as high as.” (In this report, we used the Clopper-Pearson/Exact Binomial method.)

Calculating Results for Conclusive Tests

For many forensic tests, examiners may reach a conclusion (e.g., match or no match) or declare that the test is inconclusive. SEN and FPR can thus be calculated based on the *conclusive* examinations or on *all* examinations. While both rates are of interest, from a scientific standpoint, the former rate should be used for reporting FPR to a jury. This is appropriate because evidence used against a defendant will typically be based on *conclusive*, rather than inconclusive, examinations. To illustrate the point, consider an extreme case in which a method had been tested 1000 times and found to yield 990 inconclusive results, 10 false positives, and no correct results. It would be misleading to report that the false positive rate was 1 percent (10/1000 examinations). Rather, one should report that 100 percent of the conclusive results were false positives (10/10 examinations).

Bayesian Analysis

In this appendix, we have focused on the Sensitivity and False Positives rates ($SEN = P(M|H1)$ and $FPR = P(M|H0)$). The quantity of most interest in a criminal trial is $P(H1|M)$, that is, “the probability that the samples are from the same source *given* that a match has been declared.” This quantity is often termed the *positive predictive value* (PPV) of the test.

³⁹⁶ Brown, L.D., Cai, T.T., and A. DasGupta. “Interval estimation for a binomial proportion.” *Statistical Science*, Vol. 16, No. 2 (2001): 101-33.

³⁹⁷ For example, see: epitools.ausvet.com.au/content.php?page=CIProportion.

The calculation of PPV depends on two quantities: the “Bayes factor” $BF = SEN/FPR$ and a second quantity called the “prior odds ratio” (POR). This latter quantity is defined mathematically as $POR = P(H0)/P(H1)$, where $P(H0)$ and $P(H1)$ are the prior (i.e., before doing the test) probabilities of the hypotheses $H0$ and $H1$.³⁹⁸ The formula for PPV in terms of BF and POR is: $PPV = BF / (BF + POR)$, a formula that follows from the statistical principle known as Bayes Theorem.³⁹⁹

Bayes Theorem offers a mathematical way to combine the test result with independent information—such as (1) one’s prior probability that two samples came from the same source and (2) the number of samples searched. Some Bayesian statisticians would choose $POR = 1$ in the case of a match to single sample (implying that it is equally likely *a priori* that the samples came from the same source as from different sources) and $POR = 100,000$ for a match identified by comparing a sample to a database containing 100,000 samples. Others would set $POR = (1-p)/p$, where p is the *a priori* probability of same-source identity in the relevant population, given the other facts of the case.

The Bayesian approach is mathematically elegant. However, it poses challenges for use in courts: (1) different people may hold very different beliefs about POR and (2) many jurors may not understand how beliefs about POR affect the mathematical calculation of PPV. (Moreover, as noted previously, the empirical estimates of SEN and FPR have uncertainty, so the estimated $BF = SEN/FPR$ also has uncertainty.)

Some commentators therefore favor simply reporting the empirically measured quantities (the sensitivity, the false positive rate of the test, and the probability of a false positive match given the number of samples searched against) and allowing a jury to incorporate them into their own intuitive Bayesian judgments. (For example, “Yes, the test has a false positive rate of only 1 in 100, but two witnesses place the defendant 1000 miles from the crime scene, so the test result was probably one of those 1 in 100 false positives.”)

³⁹⁸ That is, if p is the *a priori* probability of same-source identity in the population under examination then $POR = (1-p)/p$.

³⁹⁹ In the main text, the phrase “appropriately correct for the size of the pool that was searched in identifying a suspect” refers to the use of this formula with an appropriate value for POR.



Appendix B. Additional Experts Providing Input

PCAST sought input from a diverse group of additional experts and stakeholders. PCAST expresses its gratitude to those listed here who shared their expertise. They did not have the opportunity to review drafts of the report, and their willingness to engage with PCAST on specific points does not imply endorsement of the views expressed therein. Responsibility for the opinions, findings, and recommendations in this report and for any errors of fact or interpretation rests solely with PCAST.

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TAB 10

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Memorandum To: Advisory Committee on Evidence Rules
From: Daniel Capra, Reporter
Re: Federal Case Law Development After *Crawford v. Washington*
Date: October 1, 2017

The Committee has directed the Reporter to keep it apprised of case law developments after *Crawford v. Washington*. This memo is intended to fulfill that function. The memo describes the Supreme Court and federal circuit case law that discusses the impact of *Crawford* on the Federal Rules of Evidence. The outline begins with a short discussion of the Court's two latest cases on confrontation, *Ohio v. Clark* and *Williams v. Illinois*, and then summarizes all the post-*Crawford* cases by subject matter heading.

I. Recent Supreme Court Confrontation Cases

A. *Ohio v. Clark*

The Court's most recent opinion on the Confrontation Clause and hearsay, *Ohio v. Clark*, 135 S.Ct. 2173 (2015), sheds some more light on how to determine whether hearsay is or is not "testimonial." As shown in the outline below, the Court has found a statement to be testimonial when the "primary motivation" behind the statement is that it be used in a criminal prosecution. *Clark* raised three questions about the application of the primary motivation test:

1. Can a statement be primarily motivated for use in a prosecution when it is not made with the involvement of law enforcement? (Or put the other way, is law enforcement involvement a prerequisite for a finding of testimoniality?).
2. If a person is required to report information to law enforcement, does that requirement render them law enforcement personnel for the purpose of the primary motivation test?

3. How does the primary motivation test apply to statements made by children, who are too young to know about use of statements for law enforcement purposes?

In *Clark*, teachers at a preschool saw indications that a 3 year-old boy had been abused, and asked the boy about it. The boy implicated the defendant. The boy's statement was admitted at trial under the Ohio version of the residual exception. The boy was not called to testify --- nor could he have been, because under Ohio law, a child of his age is incompetent to testify at trial. The defendant argued that the boy's statement was testimonial, relying in part on the fact that under Ohio law, teachers are required to report evidence of child abuse to law enforcement. The defendant argued that the reporting requirement rendered the teachers agents of law enforcement.

The Supreme Court in *Clark*, in an opinion by Justice Alito for six members of the Court, found that the boy's hearsay statement was not testimonial.¹ It made no categorical rulings as to the issues presented, but did make the following points about the primary motive test of testimoniality:

1. Statements of young children are *extremely unlikely* to be testimonial because a young child is not cognizant of the criminal justice system, and so will not be making a statement with the primary motive that it be used in a criminal prosecution.

2. A statement made without law enforcement involvement is *extremely unlikely* to be found testimonial because if law enforcement is not involved, there is probably some other motive for making the statement other than use in a criminal prosecution. Moreover, the formality of a statement is a critical component in determining primary motive, and if the statement is not made with law enforcement involved, it is much less likely to be formal in nature.

3. The fact that the teachers were subject to a reporting requirement was essentially irrelevant, because the teachers would have sought information from the child whether or not there was a reporting requirement --- their primary motivation was to protect the child, and the reporting requirement did nothing to change that motivation. (So there may be room left for a finding of testimoniality if the government sets up mandatory reporting in a situation in which the individual would not otherwise think of, or be interested in, obtaining information).

¹All nine Justices found that the boy's statement was not testimonial. Justices Scalia and Ginsburg concurred in the judgment, but challenged some of the language in the majority opinion on the ground that it appeared to be backsliding from the *Crawford* decision. Justice Thomas concurred in the judgment, finding that the statement was not testimonial because it lacked the solemnity required to meet his definition of testimoniality.

B. Williams v. Illinois

In *Williams v. Illinois*, 567 U.S. 50 (2012), the Court brought substantial uncertainty to how courts are supposed to regulate hearsay offered against an accused under the Confrontation Clause. The case involved an expert who used testimonial hearsay as part of the basis for her opinion. The expert relied in part on a Cellmark DNA report to conclude that the DNA found at the crime scene belonged to Williams. The splintered opinions in *Williams* create confusion not only for how and whether experts may use testimonial hearsay, but more broadly about how some of the hearsay exceptions square with the Confrontation Clause bar on testimonial hearsay.

The question in *Williams* was whether an expert's testimony violates the Confrontation Clause when the expert relies on hearsay. A plurality of four Justices, in an opinion written by Justice Alito, found no confrontation violation for two independent reasons:

1) First, the hearsay (the report of a DNA analyst) was never admitted for its truth, but was only used as a basis of the expert's own conclusion that Williams's DNA was found at the crime scene. Justice Alito emphasized that the expert witness conducted her own analysis of the data and did not simply parrot the conclusions of the out-of-court analyst.

2) Second, the DNA test results were not testimonial in any event, because at the time the test was conducted the suspect was at large, and so the DNA was not prepared with the intent that it be used against a *targeted individual*.

Justice Kagan, in a dissenting opinion for four Justices, rejected both of the grounds on which Justice Alito relied to affirm Williams's conviction. She stated that it was a "subterfuge" to say that it was only the expert's opinion (and not the underlying report) that was admitted against Williams. She reasoned that where the expert relies on a report, the expert's opinion is useful only if the report itself is true. Therefore, according to Justice Kagan, the argument that the Cellmark report was not admitted for its truth rests on an artificial distinction that cannot satisfy the right to confrontation. As to Justice Alito's "targeting the individual" test of testimoniality, Justice Kagan declared that it was not supported by the Court's prior cases defining testimoniality in terms of primary motive. Her test of "primary motive" is whether the statement was prepared primarily for the purpose of *any* criminal prosecution, which the Cellmark report clearly was.²

² Justice Breyer wrote a concurring opinion. He argued that rejecting the premise that an expert can rely on testimonial hearsay --- as permitted by Fed.R.Evid. 703 --- would end up requiring the government to call every person who had anything to do with a forensic test. That was a result he found untenable. He also set forth several possible approaches to permitting/limiting experts' reliance on lab reports, some of which he found "more compatible with *Crawford* than others" and some of which "seem more easily considered by a rules committee" than the Court.

Justice Thomas was the tiebreaker. He essentially agreed completely with Justice Kagan’s critique of Justice Alito’s two grounds for affirming the conviction. But Justice Thomas concurred in the judgment nonetheless, because he had his own reason for affirming the conviction. In his view, the use of the Cellmark report for its truth did not offend the Confrontation Clause because that report was not sufficiently “formalized.” He declared that the Cellmark report

lacks the solemnity of an affidavit of deposition, for it is neither a sworn nor a certified declaration of fact. Nowhere does the report attest that its statements accurately reflect the DNA testing processes used or the results obtained. . . . And, although the report was introduced at the request of law enforcement, it was not the product of any sort of formalized dialogue resembling custodial interrogation.

Fallout from Williams:

The irony of *Williams* is that *eight* members of the Court rejected Justice Thomas’s view that testimoniality is defined by whether a statement is sufficiently formal as to constitute an affidavit or certification. Yet if a court is counting Justices, it appears that it might be necessary for the government to comply with the rather amorphous standards for “informality” established by Justice Thomas. Thus, if the government offers hearsay that would be testimonial under the Kagan view of “primary motive” but not under the Alito view, then the government may have to satisfy the Thomas requirement that the hearsay is not tantamount to a formal affidavit. Similarly, if the government proffers an expert who relies on testimonial hearsay, but the declarant does not testify, then it can be argued that the government must establish that the hearsay is not tantamount to a formal affidavit --- because five members of the Court rejected the argument that the Confrontation Clause is satisfied so long as the testimonial hearsay is used only as the basis of the expert’s opinion.

There is a strong argument, though, that counting Justices after *Williams* is a fool’s errand for now --- because of the death of Justice Scalia and the uncertainty over Justice Gorsuch’s view of the Confrontation Clause.

It should be noted that much of the post-*Crawford* landscape is unaltered by *Williams*. For example, take a case in which a victim has just been shot. He makes a statement to a neighbor “I’ve just been shot by Bill. Call an ambulance.” Surely that statement --- admissible against the accused as an excited utterance --- satisfies the Confrontation Clause on the same grounds after *Williams* as it did before. Such a statement is not testimonial because even under the Kagan view, it was not

The problem of course with consideration of these alternatives by a rules committee is that if the Confrontation Clause bars these approaches, the rules committee is just wasting its time. And given the uncertainty of *Williams*, it is fair to state that none of the approaches listed by Justice Breyer are clearly constitutional.

made with the primary motive that it would be used in a criminal prosecution. And *a fortiori* it satisfies the less restrictive Alito view. Thus Justice Thomas’s “formality” test is not controlling, but even if it were, such a statement is not tantamount to an affidavit and so Justice Thomas would find no constitutional problem with its admission. See *Michigan v. Bryant*, 562 U.S. 344 (2011) (Thomas, J., concurring) (excited utterance of shooting victim “bears little if any resemblance to the historical practices that the Confrontation Clause aimed to eliminate.”).

Similarly, there is extensive case law both before and after *Williams* allowing admission of testimonial statements on the ground that they are not offered for their truth. For example, if a statement is legitimately offered to show the background of a police investigation, or offered to show that the statement is in fact false, then it is not hearsay and it also does not violate the right to confrontation. This is because if the statement is not offered for its truth, there is no reason to cross-examine the declarant, and cross-examination is the procedure right that the Confrontation Clause guarantees. As will be discussed further below, while both Justice Thomas and Justice Kagan in *Williams* reject the not-for-truth analysis in the context of expert reliance on hearsay, they both distinguish that use from admitting a statement for a *legitimate* not-for-truth purpose. Moreover, both approve of the language in *Crawford* that the Confrontation Clause “does not bar the use of testimonial statements offered for purposes other than establishing the truth of the matter asserted.” And they both approve of the result in *Tennessee v. Street*, 471 U.S. 409 (1985), in which the Court held that the Confrontation Clause was not violated when an accomplice confession was admitted only to show that it was different from the defendant’s own confession. For the Kagan-Thomas camp, the question will be whether the testimonial statement is offered for a purpose as to which its probative value is not dependent on the statement being true --- and that is the test that is essentially applied by the lower courts in determining whether statements ostensibly offered for a not-for-truth purpose are consistent with the Confrontation Clause.

II. Post-*Crawford* Cases Discussing the Relationship Between the Confrontation Clause and the Hearsay Rule and its Exceptions, Arranged By Subject Matter

“Admissions” --- Hearsay Statements by the Defendant

Defendant’s own hearsay statement was not testimonial: *United States v. Lopez*, 380 F.3d 538 (1st Cir. 2004): The defendant blurted out an incriminating statement to police officers after they found drugs in his residence. The court held that this statement was not testimonial under *Crawford*. The court declared that “for reasons similar to our conclusion that appellant’s statements were not the product of custodial interrogation, the statements were also not testimonial.” That is, the statement was spontaneous and not in response to police interrogation.

Note: The *Lopez* court had an easier way to dispose of the case. Both before and after *Crawford*, an accused has no right to confront *himself*. If the solution to confrontation is cross-examination, as the Court in *Crawford* states, then it is silly to argue that a defendant has the right to have his own statements excluded because he had no opportunity to cross-examine himself. See *United States v. Hansen*, 434 F.3d 92 (1st Cir. 2006) (admission of defendant’s own statements does not violate *Crawford*); *United States v. Orm Hieng*, 679 F.3d 1131 (9th Cir. 2012): “The Sixth Amendment simply has no application [to the defendant’s own hearsay statements] because a defendant cannot complain that he was denied the opportunity to confront himself.”

Defendant’s own statements, reporting statements of another defendant, are not testimonial under the circumstances: *United States v. Gibson*, 409 F.3d 325 (6th Cir. 2005): In a case involving fraud and false statements arising from a mining operation, the trial court admitted testimony from a witness that Gibson told him that another defendant was planning on doing something that would violate regulations applicable to mining. The court recognized that the testimony encompassed double hearsay, but held that each level of hearsay was admissible as a statement by a party-opponent. Gibson also argued that the testimony violated *Crawford*. But the court held that Gibson’s statement and the underlying statement of the other defendant were both casual remarks made to an acquaintance, and therefore were not testimonial.

Text messages were properly admitted as coming from the defendant: *United States v. Brinson*, 772 F.3d 1314 (10th Cir. 2014). In a prosecution for sex trafficking, text messages sent to a prostitute were admitted against the defendant. The defendant argued that admitting the texts violated his right to confrontation, but the court disagreed. The court stated that the texts were properly admitted as statements of a party-opponent, because the government had established by a preponderance of the evidence that the texts were sent by the defendant. They were therefore “not hearsay” under Rule 801(d)(2)(A), and “[b]ecause the messages did not constitute hearsay their introduction did not violate the Confrontation Clause.”

Note: The court in *Brinson* was right but for the wrong reasons. It is true that if a statement is “not hearsay” its admission does not violate the Confrontation Clause. (See the many cases collected under the “not hearsay” headnote, *infra*). But party-opponent statements are only technically “not hearsay.” They are in fact

hearsay because they are offered for their truth --- they are hearsay subject to an exemption. The Evidence Rules' technical categorization in Rule 801(d)(2) cannot determine the scope of the Confrontation Clause. If that were so, then coconspirator statements would automatically satisfy the Confrontation Clause because they, too, are classified as "not hearsay" under the Federal Rules. That would have made the Supreme Court's decision in *Bourjaily v. United States* unnecessary; and the Court in *Crawford* would not have had to discuss the fact that coconspirator statements are ordinarily not testimonial. The real reason that party-opponent statements are not hearsay is that when the defendant makes a hearsay statement, he has no right to confront himself.

***Bruton* --- Testimonial Statements of Co-Defendants**

***Bruton* line of cases not applicable unless accomplice's hearsay statement is testimonial:** *United States v. Figueroa-Cartagena*, 612 F.3d 69 (1st Cir. 2010): The defendant's codefendant had made hearsay statements in a private conversation that was taped by the government. The statements directly implicated both the codefendant and the defendant. At trial the codefendant's statements were admitted against him, and the defendant argued that the *Bruton* line of cases required severance. But the court found no *Bruton* error, because the hearsay statements were not testimonial in the first place. The statements were from a private conversation so the speaker was not primarily motivated to have the statements used in a criminal prosecution. The court stated that the "*Bruton/Richardson* framework presupposes that the aggrieved co-defendant has a Sixth Amendment right to confront the declarant in the first place."

***Bruton* does not apply unless the testimonial hearsay directly implicates the nonconfessing codefendant:** *United States v. Lung Fong Chen*, 393 F.3d 139, 150 (2d Cir. 2004): The court held that a confession of a co-defendant, when offered only against the co-defendant, is regulated by *Bruton*, not *Crawford*: so that the question of a Confrontation violation is dependent on whether the confession is powerfully incriminating against the non-confessing defendant. If the confession does not directly implicate the defendant, then there will be no violation if the judge gives an effective limiting instruction to the jury. *Crawford* does not apply because if the instruction is effective, the co-defendant is not a witness "against" the defendant within the meaning of the Confrontation Clause. *See also Chrysler v. Guiney*, 806 F.3d 104 (2nd Cir. 2015) (noting that if an accomplice confession is properly redacted to satisfy *Bruton*, then *Crawford* is not violated because the accomplice is not a witness "against" the defendant within the meaning of the Confrontation Clause).

***Bruton* protection limited to testimonial statements:** *United States v. Berrios*, 676 F.3d 118 (3rd Cir. 2012): "[B]ecause *Bruton* is no more than a byproduct of the Confrontation Clause, the Court's holdings in *Davis* and *Crawford* likewise limit *Bruton* to testimonial statements. Any protection provided by *Bruton* is therefore only afforded to the same extent as the Confrontation Clause, which requires that the challenged statement qualify as testimonial. To the extent we have held otherwise, we no longer follow those holdings." *See also United States v. Shavers*, 693 F.3d 363 (3rd Cir. 2012) (admission of non-testifying co-defendant's inculpatory statement did not violate *Bruton* because it was made casually to an acquaintance and so was non-testimonial; the statement bore "no resemblance to the abusive governmental investigation tactics that the Sixth Amendment seeks to prevent").

***Bruton* protection does not apply unless the codefendant's statements are testimonial:** *United States v. Dargan*, 738 F.3d 643 (4th Cir. 2013): The court held that a

statement made to a cellmate in an informal setting was not testimonial --- therefore admitting the statement against the nonconfessing codefendant did not violate *Bruton*, because the premise of *Bruton* is that the nonconfessing defendant's confrontation rights are violated when the confessing defendant's statement is admitted at trial. But after *Crawford* there can be no confrontation violation unless the hearsay statement is testimonial.

***Bruton* remains in place to protect against admission of testimonial hearsay against a non-confessing co-defendant: *United States v. Ramos-Cardenas*, 524 F.3d 600 (5th Cir. 2008):** In a multiple-defendant case, the trial court admitted a post-arrest statement by one of the defendants, which indirectly implicated the others. The court found that the confession could not be admitted against the other defendants, because the confession was testimonial under *Crawford*. But the court found that *Crawford* did not change the analysis with respect to the admissibility of a confession against the confessing defendant (because he has no right to confront himself); nor did it displace the case law under *Bruton* allowing limiting instructions to protect the non-confessing defendants under certain circumstances. The court found that the reference to the other defendants in the confession was vague, and therefore a limiting instruction was sufficient to assure that the confession would not be used against them. Thus, the *Bruton* problem was resolved by a limiting instruction.

Codefendant's testimonial statements were not admitted "against" the defendant in light of limiting instruction: *United States v. Harper*, 527 F.3d 396 (5th Cir. 2008): Harper's co-defendant made a confession, but it did not directly implicate Harper. At trial the confession was admitted against the co-defendant and the jury was instructed not to use it against Harper. The court recognized that the confession was testimonial, but held that it did not violate Harper's right to confrontation because the co-defendant was not a witness "against" him. The court relied on the post-*Bruton* case of *Richardson v. Marsh*, and held that the limiting instruction was sufficient to protect Harper's right to confrontation because the co-defendant's confession did not directly implicate Harper and so was not as "powerfully incriminating" as the confession in *Bruton*. The court concluded that because "the Supreme Court has so far taken a pragmatic approach to resolving whether jury instructions preclude a Sixth Amendment violation in various categories of cases, and because *Richardson* has not been expressly overruled, we will apply *Richardson* and its pragmatic approach, as well as the teachings in *Bruton*."

***Bruton* inapplicable to statement made by co-defendant to another prisoner, because that statement was not testimonial: *United States v. Vasquez*, 766 F.3d 373 (5th Cir. 2014):** The defendant's co-defendant made a statement to a jailhouse snitch that implicated the defendant in the crime. The defendant argued that admitting the codefendant's statement at his trial violated *Bruton*, but the court disagreed. It stated that *Bruton* "is no longer applicable to a non-testimonial prison yard conversation because *Bruton* is no more than a by-product of the Confrontation Clause." The court further stated that "statements from one prisoner to another are clearly non-testimonial."

Bruton protection does not apply unless codefendant's statements are testimonial: *United States v. Johnson*, 581 F.3d 320 (6th Cir. 2009): The court held that after *Crawford*, *Bruton* is applicable only when the codefendant's statement is testimonial.

Bruton protection does not apply unless codefendant's statements are testimonial: *United States v. Dale*, 614 F.3d 942 (8th Cir. 2010): The court held that after *Crawford*, *Bruton* is applicable only when the codefendant's statement is testimonial.

Statement admitted against co-defendant only does not implicate *Crawford*: *Mason v. Yarborough*, 447 F.3d 693 (9th Cir. 2006): A non-testifying codefendant confessed during police interrogation. At the trial of both defendants, the government introduced only the fact that the codefendant confessed, not the content of the statement. The court first found that there was no *Bruton* violation, because the defendant's name was never mentioned --- *Bruton* does not prohibit the admission of hearsay statements of a non-testifying codefendant if the statements implicate the defendant only by inference and the jury is instructed that the evidence is not admissible against the defendant. For similar reasons, the court found no *Crawford* violation, because the codefendant was not a "witness against" the defendant. "Because Fenton's words were never admitted into evidence, he could not 'bear testimony' against Mason."

Statement that is non-testimonial cannot raise a *Bruton* problem: *United States v. Patterson*, 713 F.3d 1237 (10th Cir. 2013): The defendant challenged a statement by a non-testifying codefendant on *Bruton* grounds. The court found no error, because the statement was made in furtherance of the conspiracy. Accordingly, it was non-testimonial. That meant there was no *Bruton* problem because *Bruton* does not apply to non-testimonial hearsay. *Bruton* is a confrontation case and the Supreme Court has held that the Confrontation Clause extends only to testimonial hearsay. *See also United States v. Clark*, 717 F.3d 790 (10th Cir. 2013) (No *Bruton* violation because the codefendant hearsay was a coconspirator statement made in furtherance of the conspiracy and so was not testimonial); *United States v. Morgan*, 748 F.3d 1024 (10th Cir. 2014) (statement admissible as a coconspirator statement cannot violate *Bruton* because "*Bruton* applies only to testimonial statements" and the statements were made between coconspirators dividing up the proceeds of the crime and so "were not made to be used for investigation or prosecution of crime.").

Child-Declarants

Statements of young children are extremely unlikely to be testimonial: *Ohio v. Clark*, 135 S.Ct. 2173 (2015): This case is fully discussed in Part I. The case involved a statement from a three-year-old boy to his teachers. It accused the defendant of injuring him. The Court held that a statement from a young child is extremely unlikely to be testimonial because the child is not aware of the possibility of use of statements in criminal prosecutions, and so cannot be speaking with the primary motive that the statement will be so used. The Court refused to adopt a bright-line rule, but it is hard to think of a case in which the statement of a young child will be found testimonial under the primary motivation test.

Following *Clark*, the court finds that a report of sex abuse to a nurse by a 4½ year old child is not testimonial: *United States v. Barker*, 820 F.3d 167 (5th Cir. 2016): The court held that a statement by a 4½ year-old girl, accusing the defendant of sexual abuse, was not testimonial in light of *Ohio v. Clark*. The girl made the statement to a nurse who was registered by the state to take such statements. The court held that like in *Clark* the statement was not testimonial because: 1) it was made by a child too young to understand the criminal justice system; 2) it was not made to law enforcement; 3) the nurse's primary motive was to treat the child; and 4) the fact that the nurse was required to report the abuse to law enforcement did not change her motivation to treat the child.

Co-Conspirator Statements

Co-conspirator statement not testimonial: *United States v. Felton*, 417 F.3d 97 (1st Cir. 2005): The court held that a statement by the defendant's coconspirator, made during the course and in furtherance of the conspiracy, was not testimonial under *Crawford*. **Accord** *United States v. Sanchez-Berrios*, 424 F.3d 65 (1st Cir. 2005) (noting that *Crawford* "explicitly recognized that statements made in furtherance of a conspiracy by their nature are not testimonial."). **See also** *United States v. Turner*, 501 F.3d 59 (1st Cir. 2007) (conspirator's statement made during a private conversation were not testimonial); *United States v. Ciresi*, 697 F.3d 19 (1st Cir. 2012) (statements admissible as coconspirator hearsay under Rule 801(d)(2)(E) are "by their nature" not testimonial because they are "made for a purpose other than use in a prosecution.").

Statements made pursuant to a conspiracy to commit kidnapping are not testimonial: *United States v. Stimler*, 864 F.3d 253 (3rd Cir. 2017): The defendants were prosecuted for conspiracy to kidnap and related crimes arising out of Orthodox Jewish divorce proceedings. Statements were made at a *beth din* which was convened when the alleged victim of one of the kidnappings had challenged the validity of the *get* he signed. The court found that those statements were made pursuant to the kidnapping conspiracy, and reasoned that "none of the individuals at the *beth din* --- all of whom were charged in the conspiracy --- would have reasonably believed that they were making statements for the purpose of assisting a criminal prosecution."

Surreptitiously recorded statements of coconspirators are not testimonial: *United States v. Hendricks*, 395 F.3d 173 (3rd Cir. 2005): The court found that surreptitiously recorded statements of an ongoing criminal conspiracy were not testimonial within the meaning of *Crawford* because they were informal statements among coconspirators. **Accord** *United States v. Bobb*, 471 F.3d 491 (3rd Cir. 2006) (noting that the holding in *Hendricks* was not limited to cases in which the declarant was a confidential informant).

Statement admissible as coconspirator hearsay is not testimonial: *United States v. Robinson*, 367 F.3d 278 (5th Cir. 2004): The court affirmed a drug trafficker's murder convictions and death sentence. It held that coconspirator statements are not testimonial under *Crawford* as they are made under informal circumstances and not for the purpose of creating evidence. **Accord** *United States v. Delgado*, 401 F.3d 290 (5th Cir. 2005); *United States v. Olguin*, 643 F.3d 384 (5th Cir. 2011); *United States v. Alaniz*, 726 F.3d 586 (5th Cir. 2013). **See also** *United States v. King*, 541 F.3d 1143 (5th Cir. 2008) ("Because the statements at issue here were made by co-conspirators in the furtherance of a conspiracy, they do not fall within the ambit of *Crawford's* protection"). Note that the court in *King* rejected the defendant's argument that the co-conspirator statements were testimonial because they were "presented by the government for their testimonial value." Accepting that definition would mean that all hearsay is testimonial simply by being offered at

trial. The court observed that “*Crawford’s* emphasis clearly is on whether the statement was testimonial at the time it was made.”

Statement by an anonymous coconspirator is not testimonial: *United States v. Martinez*, 430 F.3d 317 (6th Cir. 2005). The court held that a letter written by an anonymous coconspirator during the course and in furtherance of a conspiracy was not testimonial under *Crawford* because it was not written with the intent that it would be used in a criminal investigation or prosecution. *See also United States v. Mooneyham*, 473 F.3d 280 (6th Cir. 2007) (statements made by coconspirator in furtherance of the conspiracy are not testimonial because the one making them “has no awareness or expectation that his or her statements may later be used at a trial”; the fact that the statements were made to a law enforcement officer was irrelevant because the officer was undercover and the declarant did not know he was speaking to a police officer); *United States v. Stover*, 474 F.3d 904 (6th Cir. 2007) (holding that under *Crawford* and *Davis*, “co-conspirators’ statements made in pendency and furtherance of a conspiracy are not testimonial” and therefore that the defendant’s right to confrontation was not violated when a statement was properly admitted under Rule 801(d)(2)(E)); *United States v. Damra*, 621 F.3d 474 (6th Cir. 2010) (statements made by a coconspirator “by their nature are not testimonial”) *United States v. Tragas*, 727 F.3d 610 (6th Cir. 2013) (“As coconspirator statements were made in furtherance of the conspiracy, they were categorically non-testimonial.”).

Coconspirator statements made to an undercover informant are not testimonial: *United States v. Hargrove*, 508 F.3d 445 (7th Cir. 2007): The defendant, a police officer, was charged with taking part in a conspiracy to rob drug dealers. One of his coconspirators had a discussion with a potential member of the conspiracy (in fact an undercover informant) about future robberies. The defendant argued that the coconspirator’s statements were testimonial, but the court disagreed. It held that “*Crawford* did not affect the admissibility of coconspirator statements.” The court specifically rejected the defendant’s argument that *Crawford* somehow undermined *Bourjaily*, noting that in both *Crawford* and *Davis*, “the Supreme Court specifically cited *Bourjaily* --- which as here involved a coconspirator’s statement made to a government informant --- to illustrate a category of nontestimonial statements that falls outside the requirements of the Confrontation Clause.”

Statements by a coconspirator during the course and in furtherance of the conspiracy are not testimonial: *United States v. Lee*, 374 F.3d 637 (8th Cir. 2004): The court held that statements admissible under the coconspirator exemption from the hearsay rule are by definition not testimonial. As those statements to be admissible must be made during the course and in furtherance of the conspiracy, they cannot be the kind of formalized, litigation-oriented statements that the Court found testimonial in *Crawford*. The court reached the same result on co-conspirator hearsay in *United States v. Reyes*, 362 F.3d 536 (8th Cir. 2004); *United States v. Singh*, 494 F.3d 653 (8th Cir. 2007); and *United States v. Hyles*, 521 F.3d 946 (8th Cir. 2008) (noting that the statements were not elicited in response to a government investigation and were casual remarks to co-conspirators).

Statements in furtherance of a conspiracy are not testimonial: *United States v. Allen*, 425 F.3d 1231 (9th Cir. 2005): The court held that “co-conspirator statements are not testimonial and therefore beyond the compass of *Crawford’s* holding.” See also *United States v. Larson*, 460 F.3d 1200 (9th Cir. 2006) (statement from one conspirator to another identifying the defendants as the source of some drugs was made in furtherance of the conspiracy; conspiratorial statements were not testimonial as there was no expectation that the statements would later be used at trial); *United States v. Grasso*, 724 F.3d 1077 (9th Cir. 2013) (“co-conspirator statements in furtherance of a conspiracy are not testimonial”); *United States v. Cazares*, 788 F.3d 956 (9th Cir. 2015) (“a conversation between two gang members about the journey of their burned gun is not testimonial”).

Statements admissible under the co-conspirator exemption are not testimonial: *United States v. Townley*, 472 F.3d 1267 (10th Cir. 2007): The court rejected the defendant’s argument that hearsay is testimonial under *Crawford* whenever “confrontation would have been required at common law as it existed in 1791.” It specifically noted that *Crawford* did not alter the rule from *Bourjaily* that a hearsay statement admitted under Federal Rule 801(d)(2)(E) does not violate the Confrontation Clause. Accord *United States v. Ramirez*, 479 F.3d 1229 (10th Cir. 2007) (statements admissible under Rule 801(d)(2)(E) are not testimonial under *Crawford*); *United States v. Patterson*, 713 F.3d 1237 (10th Cir. 2013) (same); *United States v. Morgan*, 748 F.3d 1024 (10th Cir. 2014) (statements made between coconspirators dividing up the proceeds of the crime were not testimonial because they “were not made to be used for investigation or prosecution of crime.”).

Statements made during the course and in furtherance of the conspiracy are not testimonial: *United States v. Underwood*, 446 F.3d 1340 (11th Cir. 2006): In a narcotics prosecution, the defendant argued that the admission of an intercepted conversation between his brother Darryl and an undercover informant violated *Crawford*. But the court found no error and affirmed. The court noted that the statements “clearly were not made under circumstances which would have led [Darryl] reasonably to believe that his statement would be available for use at a later trial. Had Darryl known that Hopps was a confidential informant, it is clear that he never would have spoken to her in the first place.” The court concluded as follows:

Although the foregoing discussion would probably support a holding that the evidence challenged here is not “testimonial,” two additional aspects of the *Crawford* opinion seal our conclusion that Darryl’s statements to the government informant were not “testimonial” evidence. First, the Court stated: “most of the hearsay exceptions covered statements that by their nature were not testimonial -- for example, business records or statements in furtherance of a conspiracy.” Also, the Court cited *Bourjaily v. United States*, 483 U.S. 171 (1987) approvingly, indicating that it “hew[ed] closely to the traditional line” of cases that *Crawford* deemed to reflect the correct view of the Confrontation Clause. In approving *Bourjaily*, the *Crawford* opinion expressly noted that it involved statements

unwittingly made to an FBI informant. * * * The co-conspirator statement in *Bourjaily* is indistinguishable from the challenged evidence in the instant case.

See also United States v. Lopez, 649 F.3d 1222 (11th Cir. 2011): co-conspirator's statement, bragging that he and the defendant had drugs to sell after a robbery, was admissible under Rule 801(d)(2)(E) and was not testimonial, because it was merely "bragging to a friend" and not a formal statement intended for trial.

Cross-Examination

Cross-examination of a witness during prior testimony was adequate even though defense counsel was found ineffective on other grounds: *Rolan v. Coleman*, 680 F.3d 311 (3rd Cir. 2012): The habeas petitioner argued that his right to confrontation was violated when he was retried and testimony from the original trial was admitted against him. The prior testimony was obviously testimonial under *Crawford*. The question was whether the witness --- who was unavailable for the second trial --- was adequately cross-examined at the first trial. The defendant argued that cross-examination could not have been adequate because the court had already found defense counsel to be constitutionally ineffective at that trial (by failing to investigate a self-defense theory and failing to call two witnesses). The court, however, found the cross-examination to be adequate. The court noted that the state court had found the cross-examination to be adequate --- that court found “baseless” the defendant’s argument that counsel had failed to explore the witness’s immunity agreement. Because the witness had made statements before that agreement was entered into that were consistent with his in-court testimony, counsel could reasonably conclude that exploring the immunity agreement would do more harm than good. The court of appeals concluded that “[t]here is no Supreme Court precedent to suggest that Goldstein’s cross-examination was inadequate, and the record does not support such a conclusion. Consequently, the Superior Court’s finding was not contrary to, or an unreasonable application of, *Crawford*.”

Attorney’s cross-examination at a prior trial was adequate and therefore admitting the testimony at a later trial did not violate the right to confrontation: *United States v. Richardson*, 781 F. 3d 287 (5th Cir. 2015): The defendant was convicted on drug and gun charges, but the conviction was reversed on appeal. By the time of retrial on mostly the same charges, a prosecution witness had become unavailable, and the trial court admitted the transcript of the witness’s testimony from the prior trial. The court found no violation of the right to confrontation. The court found that *Crawford* did not change the long-standing rule as to the opportunity that must be afforded for cross-examination to satisfy the Confrontation Clause. What is required is an “adequate opportunity to cross-examine” the witness: enough to provide the jury with “sufficient information to appraise the bias and the motives of the witness.” The court noted that while the lawyer’s cross-examination of the witness at the first trial could have been better, it was adequate, as the lawyer explored the witness’s motive to cooperate, his arrests and convictions, his relationship with the defendant, and “the contours of his trial testimony.”

State court was not unreasonable in finding that cross-examination by defense counsel at the preliminary hearing was sufficient to satisfy the defendant’s right to confrontation: *Williams v. Bauman*, 759 F.3d 630 (9th Cir. 2014): The defendant argued that his right to confrontation was violated when the transcript of the preliminary hearing testimony of an eyewitness was admitted against him at his state trial. The witness was unavailable for trial and the

defense counsel cross-examined him at the preliminary hearing. The court found that the state court was not unreasonable in concluding that the cross-examination was adequate, thus satisfying the right to confrontation. The court noted that “there is some question whether a preliminary hearing necessarily offers an adequate opportunity to cross-examine for Confrontation Clause purposes” but concluded that there was “reasonable room for debate” on the question, and therefore the state court’s decision to align itself on one side of the argument was beyond the federal court’s power to remedy on habeas review.

Declarations Against Penal Interest (Including Accomplice Statements to Law Enforcement)

Accomplice's jailhouse statement was admissible as a declaration against interest and accordingly was not testimonial: *United States v. Pelletier*, 666 F.3d 1 (1st Cir. 2011): The defendant's accomplice made hearsay statements to a jailhouse buddy, indicating among other things that he had smuggled marijuana for the defendant. The court found that the statements were properly admitted as declarations against interest. The court noted specifically that the fact that the accomplice made the statements "to fellow inmate Hafford, rather than in an attempt to curry favor with police, cuts in favor of admissibility." For similar reasons, the hearsay was not testimonial under *Crawford*. The court stated that the statements were made "not under formal circumstances, but rather to a fellow inmate with a shared history, under circumstances that did not portend their use at trial against Pelletier."

Statement admissible as a declaration against penal interest, after *Williamson*, is not testimonial: *United States v. Saget*, 377 F.3d 223 (2nd Cir. 2004) (Sotomayor, J.): The defendant's accomplice spoke to an undercover officer, trying to enlist him in the defendant's criminal scheme. The accomplice's statements were admitted at trial as declarations against penal interest under Rule 804(b)(3), as they tended to implicate the accomplice in a conspiracy. After *Williamson v. United States*, hearsay statements made by an accomplice to a law enforcement officer while in custody are not admissible under Rule 804(b)(3) when they implicate the defendant, because the accomplice may be currying favor with law enforcement. But in the instant case, the accomplice's statement was not barred by *Williamson*, because it was made to an undercover officer---the accomplice didn't know he was talking to a law enforcement officer and therefore had no reason to curry favor by implicating the defendant. For similar reasons, the statement was not testimonial under *Crawford* --- it was not the kind of formalized statement to law enforcement, prepared for trial, such as a "witness" would provide. *See also United States v. Williams*, 506 F.3d 151 (2d Cir. 2007): Statement of accomplice implicating himself and defendant in a murder was admissible under Rule 804(b)(3) where it was made to a friend in informal circumstances; for the same reason the statement was not testimonial. The defendant's argument about insufficient indicia of reliability was misplaced because the Confrontation Clause no longer imposes a reliability requirement. *Accord United States v. Wexler*, 522 F.3d 194 (2nd Cir. 2008) (inculpatory statement made to friends found admissible under Rule 804(b)(3) and not testimonial).

Intercepted conversations were admissible as declarations against penal interest and were not testimonial: *United States v. Berrios*, 676 F.3d 118 (3rd Cir. 2012): Authorities intercepted a conversation between two criminal associates in a prison yard. The court held that the statements were non-testimonial, because neither of the declarants "held the objective of incriminating any of the defendants at trial when their prison yard conversation was recorded; there is no indication that they were aware of being overheard; and there is no indication that their

conversation consisted of anything but casual remarks to an acquaintance.” A defendant also lodged a hearsay objection, but the court found that the statements were admissible as declarations against interest. The declarants unequivocally incriminated themselves in acts of carjacking and murder, as well as shooting a security guard, and they mentioned the defendant “only to complain that he crashed the getaway car.”

Accomplice statement made to a friend, admitting complicity in a crime, was admissible as a declaration against interest and was not testimonial: *United States v. Jordan*, 509 F.3d 191 (4th Cir. 2007): The defendant was convicted of murder while engaged in a drug-trafficking offense. He contended that the admission of a statement of an accomplice was error under the Confrontation Clause and the hearsay rule. The accomplice confessed her part in the crime in a statement to her roommate. The court found no error in the admission of the accomplice’s statement. It was not testimonial because it was made to a friend, not to law enforcement. The court stated: “To our knowledge, no court has extended *Crawford* to statements made by a declarant to friends or associates.” The court also found the accomplice’s statement properly admitted as a declaration against interest. The court elaborated as follows:

Here, although Brown’s statements to Adams inculpated Jordan, they also subject *her* to criminal liability for a drug conspiracy and, by extension, for Tabon’s murder. Brown made the statements to a friend in an effort to relieve herself of guilt, not to law enforcement in an effort to minimize culpability or criminal exposure.

Accomplice’s statements to the victim, in conversations taped by the victim, were not testimonial: *United States v. Udeozor*, 515 F.3d 260 (4th Cir.2008): The defendant was convicted for conspiracy to hold another in involuntary servitude. The evidence showed that the defendant and her husband brought a teenager from Nigeria into the United States and forced her to work without compensation. The victim also testified at trial that the defendant’s husband raped her on a number of occasions. On appeal the defendant argued that the trial court erroneously admitted two taped conversations between the victim and the defendant. The victim taped the conversations surreptitiously in order to refer them to law enforcement. The court found no error in admitting the tapes. The conversations were hearsay, but the husband’s statements were admissible as declarations against penal interest, as they admitted wrongdoing and showed an attempt to evade prosecution. The defendant argued that even if admissible under Rule 804(b)(3), the conversations were testimonial under *Crawford*. He argued that a statement is testimonial if the *government’s* primary motivation is to prepare the statement for use in a criminal prosecution --- and that in this case, the victim was essentially acting as a government agent in obtaining statements to be used for trial. But the court found that the conversation was not testimonial because the husband did not know he was talking to anyone affiliated with law enforcement, and the *husband’s* primary motivation was not to prepare a statement for any criminal trial. The court observed that the “intent of the police officers or investigators is relevant to the determination of whether a statement is testimonial only if it is first the case that a person in the position of the declarant reasonably would have expected that his statements would be used prosecutorially.”

Note: This case was decided before *Michigan v. Bryant, infra*, but it consistent with the holding in *Bryant* that the primary motive test considers the motivation of all the parties to a communication --- and that all of them must be primarily motivated to have the statement used in a criminal prosecution for the statement to be testimonial.

Accomplice's confessions to law enforcement agents were testimonial: *United States v. Harper*, 514 F.3d 456 (5th Cir. 2008): The court held that confessions made by the codefendant to law enforcement were testimonial, even though the codefendant did not mention the defendant as being involved in the crime. The statements were introduced to show that the codefendant owned some of the firearms and narcotics at issue in the case, and these facts implicated the defendant as well. The court did not consider whether the confessions were admissible under a hearsay exception --- but they would not have been admissible as a declaration against interest, because *Williamson* bars confessions of cohorts made to law enforcement.

Accomplice's statements to a friend, implicating both the accomplice and the defendant in the crime, were not testimonial: *Ramirez v. Dretke*, 398 F.3d 691 (5th Cir. 2005): The defendant was convicted of murder. Hearsay statements of his accomplice were admitted against him. The accomplice made statements both before and after the murder that directly implicated both himself and the defendant. These statements were made to the accomplice's roommate. The court found that these statements were not testimonial under *Crawford*: "There is nothing in *Crawford* to suggest that testimonial evidence includes spontaneous out-of-court statements made outside any arguably judicial or investigatorial context."

Declaration against penal interest, made to a friend, is not testimonial: *United States v. Franklin*, 415 F.3d 537 (6th Cir. 2005): The defendant was charged with bank robbery. One of the defendant's accomplices (Clarke), was speaking to a friend (Wright) sometime after the robbery. Wright told Clarke that he looked "stressed out." Clarke responded that he was indeed stressed out, because he and the defendant had robbed a bank and he thought the authorities were on their trail. The court found no error in admitting Clarke's hearsay statement against the defendant as a declaration against penal interest, as it disserved Clark's interest and was not made to law enforcement officers in any attempt to curry favor with the authorities. On the constitutional question, the court found that Clarke's statement was not testimonial under *Crawford*:

Clarke made the statements to his friend by happenstance; Wright was not a police officer or a government informant seeking to elicit statements to further a prosecution against Clarke or Franklin. To the contrary, Wright was privy to Clarke's statements only as his friend and confidant.

The court distinguished other cases in which an informant's statement to police officers was found testimonial, on the ground that those other cases involved accomplice statements knowingly made to police officers, so that "the informant's statements were akin to statements elicited during police

interrogation, i.e., the informant could reasonably anticipate that the statements would be used to prosecute the defendant.”

See also United States v. Gibson, 409 F.3d 325 (6th Cir. 2005) (describing statements as nontestimonial where “the statements were not made to the police or in the course of an official investigation, nor in an attempt to curry favor or shift the blame”); *United States v. Johnson*, 440 F.3d 832 (6th Cir. 2006) (statements by accomplice to an undercover informant he thought to be a cohort were properly admitted against the defendant; the statements were not testimonial because the declarant didn’t know he was speaking to law enforcement, and so a person in his position “would not have anticipated that his statements would be used in a criminal investigation or prosecution of Johnson.”).

Statement admissible as a declaration against penal interest is not testimonial: *United States v. Johnson*, 581 F.3d 320 (6th Cir. 2009): The court held that the tape-recorded confession of a coconspirator describing the details of an armed robbery, including his and the defendant’s roles, was properly admitted as a declaration against penal interest. The court found that the statements tended to disserve the declarant’s interest because “they admitted his participation in an unsolved murder and bank robbery.” And the statements were trustworthy because they were made to a person the declarant thought to be his friend, at a time when the declarant did not know he was being recorded “and therefore could not have made his statement in order to obtain a benefit from law enforcement.” Moreover, the hearsay was not testimonial, because the declarant did not know he was being recorded or that the statement would be used in a criminal proceeding against the defendant.

Accomplice confession to law enforcement is testimonial, even if redacted: *United States v. Jones*, 371 F.3d 363 (7th Cir. 2004): An accomplice’s statement to law enforcement was offered against the defendant, though it was redacted to take out any direct reference to the defendant. The court found that even if the confession, as redacted, could be admissible as a declaration against interest (a question it did not decide), its admission would violate the Confrontation Clause after *Crawford*. The court noted that even though redacted, the confession was testimonial, as it was made during interrogation by law enforcement. And because the defendant never had a chance to cross-examine the accomplice, “under *Crawford*, no part of Rock’s confession should have been allowed into evidence.”

Declaration against interest made to an accomplice who was secretly recording the conversation for law enforcement was not testimonial: *United States v. Watson*, 525 F.3d 583 (7th Cir. 2008): After a bank robbery, one of the perpetrators was arrested and agreed to cooperate with the FBI. She surreptitiously recorded a conversation with Anthony, in which Anthony implicated himself and Watson in the robbery. The court found that Anthony’s statement was against his own interest, and rejected Watson’s contention that it was testimonial. The court noted that Anthony could not have anticipated that the statement would be used at a trial, because he did not know that the FBI was secretly recording the conversation. It concluded: “A statement unwittingly made to a confidential informant and recorded by the government is not testimonial for Confrontation Clause purposes.” **Accord** *United States v. Volpendesto*, 746 F.3d 273 (7th Cir. 2014): Statements of an accomplice made to a confidential informant were properly admitted as declarations against interest and for the same reasons were not testimonial. The defendant argued that the court should reconsider its ruling in *Watson* because the Supreme Court, in *Michigan v. Bryant*, had in the interim stated that in determining primary motive, the court must look at the motivation of both the declarant and the other party to the conversation, and in this case as in *Watson* the other party was a confidential informant trying to obtain statements to use in a criminal prosecution. But the court noted that in *Bryant* the Court stated that the relevant inquiry “is not the subjective or actual purpose of the individuals involved in a particular encounter, but rather the purpose that reasonable participants would have had.” Applying this objective approach, the court concluded that the conversation “looks like a casual, confidential discussion between co-conspirators.”

Statement admissible as a declaration against penal interest, after *Williamson*, is not testimonial: *United States v. Manfre*, 368 F.3d 832 (8th Cir. 2004): An accomplice made a statement to his fiancée that he was going to burn down a nightclub for the defendant. The court held that this statement was properly admitted as a declaration against penal interest, as it was not a statement made to law enforcement to curry favor. Rather, it was a statement made informally to a trusted person. For the same reason, the statement was not testimonial under *Crawford*; it was a statement made to a loved one and was “not the kind of memorialized, judicial-process-created evidence of which *Crawford* speaks.”

Accomplice statements to cellmate were not testimonial: *United States v. Johnson*, 495 F.3d 951 (8th Cir. 2007): The defendant’s accomplice made statements to a cellmate, implicating himself and the defendant in a number of murders. The court found that these hearsay statements were not testimonial, as they were made under informal circumstances and there was no involvement with law enforcement.

Accomplice’s confession to law enforcement was testimonial, even if redacted: *United States v. Shaw*, 758 F.3d 1187 (10th Cir. 2014): At the defendant’s trial, the court permitted a police officer to testify about a confession made by the defendant’s alleged accomplice. The accomplice was not a co-defendant, but the court, relying on the *Bruton* line of cases, ruled that the confession could be admitted so long as all references to the defendant were replaced with a

neutral pronoun. The court of appeals found that this was error, because the confession to law enforcement was, under *Crawford*, clearly testimonial. It stated that “[r]edaction does not override the Confrontation Clause. It is just a tool to remove, in appropriate cases, the prejudice to the defendant from allowing the jury to hear evidence admissible against the codefendant but not admissible against the defendant.” The trial court’s reliance on the *Bruton* cases was flawed because in those cases the accomplice is joined as a codefendant and the confession is admissible against the accomplice. In this case, where the defendant was tried alone and the confession was offered against him only, it was inadmissible for any purpose, whether or not redacted.

Jailhouse confession implicating defendant was admissible as a declaration against penal interest and was not testimonial: *United States v. Smalls*, 605 F.3d 765 (10th Cir. 2010): The court found no error in admitting a jailhouse confession that implicated a defendant in the murder of a government informant. The fact that the statements were made in a conversation with a government informant did not make them testimonial because the declarant did not know he was being interrogated, and the statement was not made under the formalities required for a statement to be testimonial. And the statements were properly admitted under Rule 804(b)(3), because they implicated the declarant in a serious crime committed with another person, there was no attempt to shift blame to the defendant, and the declarant did not know he was talking to a government informant and therefore was not currying favor with law enforcement.

Declaration against interest is not testimonial: *United States v. U.S. Infrastructure, Inc.*, 576 F.3d 1195 (11th Cir. 2009): The declarant, McNair, made a hearsay statement that he was accepting bribes from one of the defendants. The statement was made in private to a friend. The court found that the statement was properly admitted as a declaration against McNair’s penal interest, as it showed that he accepted bribes from an identified person. The court also held that the hearsay was not testimonial, because it was “part of a private conversation” and no law enforcement personnel were involved.

Excited Utterances, 911 Calls, Etc.

911 calls and statements to responding officers may be testimonial, but only if the primary purpose is to establish or prove past events in a criminal prosecution: *Davis v. Washington and Hammon v. Indiana*, 547 U.S. 813 (2006): In companion cases, the Court decided whether reports of crime by victims of domestic abuse were testimonial under *Crawford*. In *Davis*, the victim's statements were made to a 911 operator while and shortly after the victim was being assaulted by the defendant. In *Hammon*, the statements were made to police, who were conducting an interview of the victim after being called to the scene. The Court held that the statements in *Davis* were not testimonial, but came to the opposite result with respect to one of the statements in *Hammon*. The Court set the dividing line for such statements as follows:

Statements are nontestimonial when made in the course of police interrogation under circumstances objectively indicating that the primary purpose of the interrogation is to enable police assistance to meet an ongoing emergency. They are testimonial when the circumstances objectively indicate that there is no such ongoing emergency, and that the primary purpose of the interrogation is to establish or prove past events potentially relevant to later criminal prosecution.

The Court defined testimoniality by whether the *primary motivation* in making the statements was for use in a criminal prosecution.

Pragmatic application of the emergency and primary purpose standards: *Michigan v. Bryant*, 562 U.S. 344 (2011): The Court held that the statement of a shooting victim to police, identifying the defendant as the shooter --- and admitted as an excited utterance under a state rule of evidence --- was not testimonial under *Davis* and *Crawford*. The Court applied the test for testimoniality established by *Davis* --- whether the primary motive for making the statement was to have it used in a criminal prosecution --- and found that in this case such primary motive did not exist. The Court noted that *Davis* focused on whether statements were made to respond to an emergency, as distinct from an investigation into past events. But it stated that the lower court had construed that distinction too narrowly to bar, as testimonial, essentially all statements of past events. The Court made the following observations about how to determine testimoniality when statements are made to responding police officers:

1. The primary purpose inquiry is objective. The relevant inquiry into the parties' statements and actions is not the subjective or actual purpose of the particular parties, but the purpose that reasonable participants would have had, as ascertained from the parties' statements and actions and the circumstances in which the encounter occurred.

2. As *Davis* notes, the existence of an "ongoing emergency" at the time of the encounter is among the most important circumstances informing the interrogation's primary purpose. An emergency focuses the participants not on proving past events

potentially relevant to later criminal prosecution, but on ending a threatening situation. But there is no categorical distinction between present and past fact. Rather, the question of whether an emergency exists and is ongoing is a highly context-dependent inquiry. An assessment of whether an emergency threatening the police and public is ongoing cannot narrowly focus on whether the threat to the first victim has been neutralized, because the threat to the first responders and public may continue.

3. An emergency's duration and scope may depend in part on the type of weapon involved; in *Davis* and *Hammon* the assailants used their fists, which limited the scope of the emergency --- unlike in this case where the perpetrator used a gun, and so questioning could permissibly be broader.

4. A victim's medical condition is important to the primary purpose inquiry to the extent that it sheds light on the victim's ability to have any purpose at all in responding to police questions and on the likelihood that any such purpose would be a testimonial one. It also provides important context for first responders to judge the existence and magnitude of a continuing threat to the victim, themselves, and the public.

5. Whether an ongoing emergency exists is simply one factor informing the ultimate inquiry regarding an interrogation's "primary purpose." Another is the encounter's informality. Formality suggests the absence of an emergency, but informality does not necessarily indicate the presence of an emergency or the lack of testimonial intent.

6. The statements and actions of *both* the declarant and interrogators provide objective evidence of the interrogation's primary purpose. Looking to the contents of both the questions and the answers ameliorates problems that could arise from looking solely to one participant, because both interrogators and declarants may have mixed motives.

Applying all these considerations to the facts, the Court found that the circumstances of the encounter as well as the statements and actions of the shooting victim and the police objectively indicated that the interrogation's "primary purpose" was "to enable police assistance to meet an ongoing emergency." The circumstances of the interrogation involved an armed shooter, whose motive for and location after the shooting were unknown and who had mortally wounded the victim within a few blocks and a few minutes of the location where the police found him. Unlike the emergencies in *Davis* and *Hammon*, the circumstances presented in *Bryant* indicated a potential threat to the police and the *public*, even if not the victim. And because this case involved a gun, the physical separation that was sufficient to end the emergency in *Hammon* was not necessarily sufficient to end the threat.

The Court concluded that the statements and actions of the police and victim objectively indicated that the primary purpose of their discussion was not to generate statements for trial. When the victim responded to police questions about the crime, he was lying in a gas station parking lot bleeding from a mortal gunshot wound, and his answers were punctuated with questions about when emergency medical services would arrive. Thus, the Court could not say that a person in his situation would have had a primary purpose "to establish or prove past events

potentially relevant to later criminal prosecution.” For their part, the police responded to a call that a man had been shot. They did not know why, where, or when the shooting had occurred; the shooter's location; or anything else about the crime. They asked exactly the type of questions necessary to enable them “to meet an ongoing emergency” --- essentially, who shot the victim and where did the act occur. Nothing in the victim’s responses indicated to the police that there was no emergency or that the emergency had ended. The informality suggested that their primary purpose was to address what they considered to be an ongoing emergency --- apprehending a suspect with a gun --- and the circumstances lacked the formality that would have alerted the victim to or focused him on the possible future prosecutorial use of his statements.

Justice Sotomayor wrote the majority opinion for five Justices. Justice Thomas concurred in the judgment, adhering to his longstanding view that testimoniality is determined by whether the statement is the kind of formalized accusation that was objectionable under common law --- he found no such formalization in this case. Justices Scalia and Ginsburg wrote dissenting opinions. Justice Kagan did not participate.

911 call reporting drunk person with an unloaded gun was not testimonial: *United States v. Cadieux*, 500 F.3d 37 (1st Cir. 2007): In a felon-firearm prosecution, the trial court admitted a tape of a 911 call, made by the daughter of the defendant’s girlfriend, reporting that the defendant was drunk and walking around with an unloaded shotgun. The court held that the 911 call was not testimonial. It relied on the following factors: 1) the daughter spoke about events “in real time, as she witnessed them transpire”; 2) she specifically requested police assistance; 3) the dispatcher’s questions were tailored to identify “the location of the emergency, its nature, and the perpetrator”; and 4) the daughter was “hysterical as she speaks to the dispatcher, in an environment that is neither tranquil nor, as far as the dispatcher could reasonably tell, safe.” The defendant argued that the call was testimonial because the daughter was aware that her statements to the police could be used in a prosecution. But the court found that after *Davis*, awareness of possible use in a prosecution is not enough for a statement to be testimonial. A statement is testimonial only if the “primary motivation” for making it is for use in a criminal prosecution.

911 call was not testimonial under the circumstances: *United States v. Brito*, 427 F.3d 53 (1st Cir. 2005): The court affirmed a conviction of firearm possession by an illegal alien. It held that statements made in a 911 call, indicating that the defendant was carrying and had fired a gun, were properly admitted as excited utterances, and that the admission of the 911 statements did not violate the defendant’s right to confrontation. The court declared that the relevant question is whether the statement was made with an eye toward “legal ramifications.” The court noted that under this test, statements to police made while the declarant or others are still in personal danger are ordinarily not testimonial, because the declarant in these circumstances “usually speaks out of urgency and a desire to obtain a prompt response.” In this case the 911 call was properly admitted because the caller stated that she had “just” heard gunshots and seen a man with a gun, that the man had pointed the gun at her, and that the man was still in her line of sight. Thus the declarant was in

“imminent personal peril” when the call was made and therefore her report was not testimonial. The court also found that the 911 operator’s questioning of the caller did not make the answers testimonial, because “it would blink reality to place under the rubric of interrogation the single off-handed question asked by the dispatcher --- a question that only momentarily interrupted an otherwise continuous stream of consciousness.”

911 call --- including statements about the defendant’s felony status --- was not testimonial: *United States v. Proctor*, 505 F.3d 366 (5th Cir. 2007): In a firearms prosecution, the court admitted a 911 call from the defendant’s brother (Yogi), in which the brother stated that the defendant had stolen a gun and shot it into the ground twice. Included in the call were statements about the defendant’s felony status and that he was probably on cocaine. The court held that the entire call was nontestimonial. It applied the “primary purpose” test and evaluated the call in the following passage:

Yogi's call to 911 was made immediately after Proctor grabbed the gun and fired it twice. During the course of the call, he recounts what just happened, gives a description of his brother, indicates his brother's previous criminal history, and the fact that his brother may be under the influence of drugs. All of these statements enabled the police to deal appropriately with the situation that was unfolding. The statements about Proctor's possession of a gun indicated Yogi's understanding that Proctor was armed and possibly dangerous. The information about Proctor's criminal history and possible drug use necessary for the police to respond appropriately to the emergency, as it allowed the police to determine whether they would be encountering a violent felon. Proctor argues that the emergency had already passed, because he had run away with the weapon at the time of the 911 call and, therefore, the 911 conversation was testimonial. It is hard to reconcile this argument with the facts. During the 911 call, Yogi reported that he witnessed his brother, a felon possibly high on cocaine, run off with a loaded weapon into a nightclub. This was an ongoing emergency --- not one that had passed. Proctor's retreat into the nightclub provided no assurances that he would not momentarily return to confront Yogi * * *. Further, Yogi could have reasonably feared that the people inside the nightclub were in danger. Overall, a reasonable viewing of the 911 call is that Yogi and the 911 operator were dealing with an ongoing emergency involving a dangerous felon, and that the 911 operator's questions were related to the resolution of that emergency.

***See also United States v. Mouzone*, 687 F.3d 207 (5th Cir. 2012)** (911 calls found non-testimonial as “each caller simply reported his observation of events as they unfolded”; the 911 operators were not attempting to “establish or prove past events”; and “the transcripts simply reflect an effort to meet the needs of the ongoing emergency”).

911 call, and statements made by the victim after police arrived, are excited utterances and not testimonial: *United States v. Arnold*, 486 F.3d 177 (6th Cir. 2007) (en banc): In a felon-firearm prosecution, the court admitted three sets of hearsay statements made by the

daughter of the defendant's girlfriend, after an argument between the daughter (Tamica) and the defendant. The first set were statements made in a 911 call, in which Tamica stated that Arnold pulled a pistol on her and is "fixing to shoot me." The call was made after Tamica got in her car and went around the corner from her house. The second set of statements occurred when the police arrived within minutes; Tamica was hysterical, and without prompting said that Arnold had pulled a gun and was trying to kill her. The police asked what the gun looked like and she said "a black handgun." At the time of this second set of statements, Arnold had left the scene. The third set of statements was made when Arnold returned to the scene in a car a few minutes later. Tamica identified Arnold by name and stated "that's the guy that pulled the gun on me." A search of the vehicle turned up a black handgun underneath Arnold's seat.

The court first found that all three sets of statements were properly admitted as excited utterances. For each set of statements, Tamica was clearly upset, she was concerned about her safety, and the statements were made shortly after or right at the time of the two startling events (the gun threat for the first two sets of statements and Arnold's return for the third set of statements).

The court then concluded that none of Tamica's statements fell within the definition of "testimonial" as developed by the Court in *Davis*. Essentially the court found that the statements were not testimonial for the very reason that they were excited utterances --- Tamica was upset, she was responding to an emergency and concerned about her safety, and her statements were largely spontaneous and not the product of an extensive interrogation.

911 call is not testimonial: *United States v. Thomas*, 453 F.3d 838 (7th Cir. 2006): The court held that statements made in a 911 call were non-testimonial under the analysis provided by the Supreme Court in *Davis/Hammon*. The anonymous caller reported a shooting, and the perpetrator was still at large. The court analyzed the statements as follows:

[T]he caller here described an emergency as it happened. First, she directed the operator's attention to Brown's condition, stating "[t]here's a dude that just got shot . . .", and ". . . the guy who shot him is still out there." Later in the call, she reiterated her concern that ". . . [t]here is somebody shot outside, somebody needs to be sent over here, and there's somebody runnin' around with a gun, somewhere." Any reasonable listener would know from this exchange that the operator and caller were dealing with an ongoing emergency, the resolution of which was paramount in the operator's interrogation. This fact is evidenced by the operator's repeatedly questioning the caller to determine who had the gun and where Brown lay injured. Further, the caller ended the conversation immediately upon the arrival of the police, indicating a level of interrogation that was significantly less formal than the testimonial statement in *Crawford*. Because the tape-recording of the call is nontestimonial, it does not implicate Thomas's right to confrontation.

See also *United States v. Dodds*, 569 F.3d 336 (7th Cir. 2009) (unidentified person's identification of a person with a gun was not testimonial: "In this case, the police were responding to a 911 call reporting shots fired and had an urgent need to identify the person with the gun and to stop the

shooting. The witness's description of the man with a gun was given in that context, and we believe it falls within the scope of *Davis*.”).

Statement made by a child immediately after an assault on his mother was admissible as excited utterance and was not testimonial: *United States v. Clifford*, 791 F.3d 884 (8th Cir. 2015): In an assault trial, the court admitted a hearsay statement from the victim’s three-year-old son, made to a trusted adult, that the defendant “hurt mama.” The statement was made immediately after the event and the child was shaking and crying; the statement was in response to the adult asking “what happened?” The court of appeals held that the statement was admissible as an excited utterance and was not testimonial. There was no law enforcement involvement and the court noted that the defendant “identifies no case in which questions from a private individual acting without any direction from state officials were determined to be equivalent to police interrogation.” The court also noted that the interchange between the child and the adult was informal, and was in response to an emergency. Finally, the court relied on the Supreme Court’s most recent decision in *Ohio v. Clark*:

As in *Clark*, the record here shows an informal, spontaneous conversation between a very young child and a private individual to determine how the victim had just been injured. [The child’s] age is significant since “statements by very young children will rarely, if ever, implicate the Confrontation Clause.”

911 calls and statements made to officers responding to the calls were not testimonial: *United States v. Brun*, 416 F.3d 703 (8th Cir. 2005): The defendant was charged with assault with a deadly weapon. The police received two 911 calls from the defendant’s home. One was from the defendant’s 12-year-old nephew, indicating that the defendant and his girlfriend were arguing, and requesting assistance. The other call came 20 minutes later, from the defendant’s girlfriend, indicating that the defendant was drunk and had a rifle, which he had fired in the house and then left. When officers responded to the calls, they found the girlfriend in the kitchen crying; she told the responding officers that the defendant had been drunk, and shot his rifle in the bathroom while she was in it. The court had little problem in finding that all three statements were properly admitted as excited utterances, and addressed whether the admission of the statements violated the defendant’s right to confrontation after *Crawford*. The court first found that the nephew’s 911 call was not testimonial because it was not the kind of statement that was equivalent to courtroom testimony. The court had “no doubt that the statements of an adolescent boy who has called 911 while witnessing an argument between his aunt and her partner escalate to an assault would be emotional and spontaneous rather than deliberate and calculated.” The court used similar reasoning to find that the girlfriend’s 911 call was not testimonial. The court also found that the girlfriend’s statement to the police was not testimonial. It reasoned that the girlfriend’s conversation with the officers “was unstructured, and not the product of police interrogation.”

Note: The court’s decision in *Brun* preceded the Supreme Court’s treatment of 911 calls and statements to responding officers in *Davis/Hammon* and then *Bryant*, but

the analysis appears consistent with that of the Supreme Court. It is true that in *Hammon* the Court found statements by the victim to responding police officers to be testimonial, but that was largely because the police officers engaged in a structured interview about past criminal activity; in *Brun* the victim spoke spontaneously in response to an emergency. And the Court in *Davis/Hammon* acknowledged that statements to responding officers are non-testimonial if they were directed more toward dealing with an emergency than toward investigating or prosecuting a crime. The *Brun* decision is especially consistent with the pragmatic approach to finding an emergency (and to the observation that emergency is only one factor in the primary motive test) that the Court found in *Michigan v. Bryant*.

Statements made by mother to police, after her son was taken hostage, were not testimonial: *United States v. Lira-Morales*, 759 F.3d 1105 (9th Cir. 2014): The defendant was charged with hostage-taking and related crimes. At trial, the court admitted statements from the hostage's mother, describing a telephone call with her son's captors. The call was arranged as part of a sting operation to rescue the son. The court found that the mother's statements to the officers about what the captors had said were not testimonial, because the primary motive for making the call --- and thus the report about it to the police officers --- was to rescue the son. The court noted that throughout the event the mother was "very nervous, shaking, and crying in response to continuous ransom demands and threats to her son's life." Thus the agents faced an "emergency situation" and "the primary purpose of the telephone call was to respond to these threats and to ensure [the son's] safety." The defendant argued that the statements were testimonial because an agent attempted, unsuccessfully, to record the call that they had set up. But the court rejected this argument, noting that the agent "primarily sought to record the call to obtain information about Aguilar's location and to facilitate the plan to rescue Aguilar. Far from an attempt to build a case for prosecution, Agent Goyco's actions were good police work directed at resolving a life-threatening hostage situation. * * * That Agent Goyco may have also recorded the call in part to build a criminal case does not alter our conclusion that the *primary* purpose of the call was to diffuse the emergency hostage situation."

Excited utterance not testimonial under the circumstances, even though made to law enforcement: *Leavitt v. Arave*, 371 F.3d 663 (9th Cir. 2004): In a murder case, the government introduced the fact that the victim had called the police the night before her murder and stated that she had seen a prowler who she thought was the defendant. The court found that the victim's statement was admissible as an excited utterance, as the victim was clearly upset and made the statement just after an attempted break-in. The court held that the statement was not testimonial under *Crawford*. The court explained as follows:

Although the question is close, we do not believe that Elg's statements are of the kind with which *Crawford* was concerned, namely, testimonial statements. * * * Elg, not the police,

initiated their interaction. She was in no way being interrogated by them but instead sought their help in ending a frightening intrusion into her home. Thus, we do not believe that the admission of her hearsay statements against Leavitt implicate the principal evil at which the Confrontation Clause was directed: the civil-law mode of criminal procedure, and particularly its use of ex parte examinations as evidence against the accused.

Note: The court's decision in *Leavitt* preceded the Supreme Court's treatment of 911 calls and statements to responding officers in *Davis/Hammon*, but the analysis appears consistent with that of the Supreme Court. The Court in *Davis/Hammon* acknowledged that statements to responding officers are non-testimonial if they are directed toward dealing with an emergency rather than prosecuting a crime. It is especially consistent with the pragmatic approach to applying the primary motive test established in *Michigan v. Bryant*.

911 call that a man had put a gun to another person's head was not testimonial: *United States v. Hughes*, 840 F.3d 1368 (11th Cir. 2016): In a felon-firearm prosecution, the trial court admitted a 911 call in which a bystander reported that the defendant had cocked a gun and put it to the head of a couple of people. The defendant argued that the 911 call was testimonial, but the court of appeals found no error. It concluded that "Hughes fails to distinguish the 911 caller's statements from those in *Davis* in any way whatsoever."

Expert Witnesses

Confusion over expert witnesses testifying on the basis of testimonial hearsay: *Williams v. Illinois*, 567 U.S. 50 (2012): This case is fully set forth in Part One. To summarize, the confusion is over whether an expert can, consistently with the Confrontation Clause, rely on testimonial hearsay so long as the hearsay is not explicitly introduced for its truth and the expert makes an independent judgment, i.e., is not just a conduit for the hearsay. That practice is permitted by Rule 703. Five members of the Court rejected the use of testimonial hearsay in this way, on the ground that it was based on an artificial distinction. But the plurality decision by Justice Alito embraces this Rule 703 analysis. At this stage, the answer appears to be that an expert can rely on testimonial hearsay so long as it is not in the form of an affidavit or certificate --- that proviso would then get Justice Thomas's approval. As seen elsewhere in this outline, some courts have found *Williams* to have no precedential effect other than over cases that present the same facts as *Williams*. And many courts have held that the use of testimonial hearsay by an expert is permitted without regard to its formality, so long as the expert makes an independent conclusion and the hearsay itself is not admitted into evidence.

Expert's reliance on testimonial hearsay does not violate the Confrontation Clause: *United States v. Law*, 528 F.3d 888 (D.C. Cir. 2008): The court found that an expert's testimony about the typical practices of narcotics dealers did not violate *Crawford*. While the testimony was based on interviews with informants, "Thomas testified based on his experience as a narcotics investigator; he did not relate statements by out-of-court declarants to the jury."

Note: This opinion precedes *Williams* and is questionable if you count the votes in *Williams*. But the case is quite consistent with the Alito opinion in *Williams* and many --- allowing the expert to use testimonial hearsay as long as the hearsay is not introduced at trial and the expert is not simply parroting the hearsay. And lower courts are treating the Alito opinion as controlling on an expert's reliance on testimonial hearsay.

Confrontation Clause violated where expert does no more than restate the results of a testimonial lab report: *United States v. Ramos-Gonzalez*, 664 F.3d 1 (1st Cir. 2011): In a drug case, a lab report indicated that substances found in the defendant's vehicle tested positive for cocaine. The lab report was testimonial under *Melendez-Diaz*, and the person who conducted the test was not produced for trial. The government sought to avoid the *Melendez-Diaz* problem by calling an expert to testify to the results, but the court found that the defendant's right to confrontation was nonetheless violated, because the expert did not make an independent assessment, but rather simply restated the report. The court explained as follows:

Where an expert witness employs her training and experience to forge an independent conclusion, albeit on the basis of inadmissible evidence, the likelihood of a Sixth

Amendment infraction is minimal. Where an expert acts merely as a well-credentialed conduit for testimonial hearsay, however, the cases hold that her testimony violates a criminal defendant's right to confrontation. See, e.g., *United States v. Ayala*, 601 F.3d 256, 275 (4th Cir.2010) (“[Where] the expert is, in essence, ... merely acting as a transmitter for testimonial hearsay,” there is likely a *Crawford* violation); *United States v. Johnson*, 587 F.3d 625, 635 (4th Cir.2009) (same); *United States v. Lombardozzi*, 491 F.3d 61, 72 (2d Cir.2007) (“ [T]he admission of [the expert's] testimony was error ... if he communicated out-of-court testimonial statements ... directly to the jury in the guise of an expert opinion.”). In this case, we need not wade too deeply into the thicket, because the testimony at issue here does not reside in the middle ground.

The government is hard-pressed to paint Morales's testimony as anything other than a recitation of Borrero's report. On direct examination, the prosecutor asked Morales to “say what are the results of the test,” and he did exactly that, responding “[b]oth bricks were positive for cocaine.” This colloquy leaves little room for interpretation. Morales was never asked, and consequently he did not provide, his independent expert opinion as to the nature of the substance in question. Instead, he simply parroted the conclusion of Borrero's report. Morales's testimony amounted to no more than the prohibited transmission of testimonial hearsay. While the interplay between the use of expert testimony and the Confrontation Clause will undoubtedly require further explication, the government cannot meet its Sixth Amendment obligations by relying on Rule 703 in the manner that it was employed here.

Note: Whatever *Williams* may mean, the court’s analysis in *Ramos-Gonzalez* surely remains valid. Five members of the *Williams* Court rejected the proposition that an expert can rely *at all* on testimonial hearsay even if the expert testifies to his own opinion. And even Justice Alito cautions that an expert may not testify if he does nothing more than parrot the testimonial hearsay.

Confrontation Clause not violated where testifying expert conducts his own testing that confirms the results of a testimonial report: *United States v. Soto*, 720 F.3d 51 (1st Cir. 2013): In a prosecution for identity theft and related offenses, a technician did a review of the defendant’s laptop and came to conclusions that inculpated the defendant. At trial, a different expert testified that he did the same test and it came out exactly the same as the test done by the absent technician. The defendant argued that this was surrogate testimony that violated *Bullcoming v. New Mexico*, in which the Court held that production of a surrogate who simply reported testimonial hearsay did not satisfy the Confrontation Clause. But the court disagreed:

Agent Pickett did not testify as a surrogate witness for Agent Murphy. * * * Unlike in *Bullcoming*, Agent Murphy's forensic report was not introduced into evidence through Agent Pickett. Agent Pickett testified about a conclusion he drew from his own independent examination of the hard drive. The government did not need to get Agent

Murphy's report into evidence through Agent Pickett. We do not interpret *Bullcoming* to mean that the agent who testifies against the defendant cannot know about another agent's prior examination or that agent's results when he conducts his examination. The government may ask an agent to replicate a forensic examination if the agent who did the initial examination is unable to testify at trial, so long as the agent who testifies conducts an independent examination and testifies to his own results.

The court reviewed the votes in *Bullcoming* and found that “it appears that six justices would find no Sixth Amendment violation when a second analyst retests evidence and testifies at trial about her conclusions about her independent examination.” This count resulted from the fact that Justice Ginsburg, joined by Justice Scalia, stated that the Confrontation problem in *Bullcoming* could have been avoided if the testifying expert had simply retested the substance and testified on the basis of the retest.

The *Soto* court did express concern, however, that the testifying expert did more than simply replicate the results of the prior test: he also testified that the tests came to identical results:

Soto's argument that Agent Murphy's report bolstered Agent Pickett's testimony hits closer to the mark. At trial, Agent Pickett testified that the incriminating documents in Exhibit 20 were found on a laptop that was seized from Soto's car. Although Agent Pickett had independent knowledge of that fact, he testified that "everything that was in John Murphy's report was exactly the way he said it was," and that Exhibit 20 "was contained in the same folder that John Murphy had said that he had found it in." * * * These two out-of-court statements attributed to Agent Murphy were arguably testimonial and offered for their truth. Agent Pickett testified about the substance of Agent Murphy's report which Agent Murphy prepared for use in Soto's trial. * * * Agent Pickett's testimony about Agent Murphy's prior examination of the hard drive bolstered Agent Pickett's independent conclusion that the Exhibit 20 documents were found on Soto's hard drive.

But the court found no plain error, in large part because the bolstering was cumulative.

See also Barbosa v. Mitchell, 812 F.3d 62 (1st Cir. 2016): On habeas review, the court found it not clearly established that expert reliance on a testimonial lab report violates the Confrontation Clause. The defendant was convicted in the time between *Melendez-Diaz* and *Williams*. The Court held that, “[t]o the contrary, four Justices [in *Williams*] later read *Melendez-Diaz* as not establishing at all, much less beyond doubt” the principle that such testimony violates the Confrontation Clause.

Expert reliance on a manufacturing label to conclude on point of origin did not violate the Confrontation Clause, because the label was not testimonial: *United States v. Torres-Colon*, 790 F.3d 26 (1st Cir. 2015): In a trial on a charge of unlawful possession of a firearm, the government's expert testified that the firearm was made in Austria. He relied on a manufacturing inscription on the firearm that stated “made in Austria.” The court found no

confrontation violation in the expert's testimony. The statement on the firearm was clearly not made by the manufacturer with the primary purpose of use in a criminal prosecution.

Expert's reliance on out-of-court accusations does not violate *Crawford*, unless the accusations are directly presented to the jury: *United States v. Lombardozzi*, 491 F.3d 61 (2nd Cir. 2007): The court stated that *Crawford* is inapplicable if testimonial statements are not used for their truth, and that "it is permissible for an expert witness to form an opinion by applying her expertise because, in that limited instance, the evidence is not being presented for the truth of the matter asserted." The court concluded that the expert's testimony would violate the Confrontation Clause "only if he communicated out-of-court testimonial statements . . . directly to the jury in the guise of an expert opinion." *See also United States v. Mejia*, 545 F.3d 179 (2nd Cir. 2008) (violation of Confrontation Clause where expert directly relates statements made by drug dealers during an interrogation).

Statements made to psychiatric expert were testimonial and were used by the jury for their truth at trial: *Lambert v. Warden*, 861 F.3d 459 (3rd Cir. 2017): Tillman shot two people and Lambert drove him to and from the crime. Tillman challenged his mental capacity and called a psychiatric expert to whom he made statements. Tillman did not testify at trial. The court found that the jury may have used these statements, related inferentially in the expert's testimony, against Lambert for their truth --- in which case there would have been a confrontation violation. The government argued that the statements were not offered to prove anything, only for judging the expert's opinion, but the court found that in the context of the case this was not a "legitimate" not for truth purpose --- the prosecutor raised the statements as inferential proof of Lambert's involvement and the trial court gave no limiting instruction. The court remanded for an assessment of whether the defense counsel's failure to object constituted ineffective assistance of counsel.

Expert reliance on printout from machine does not violate *Crawford*: *United States v. Summers*, 666 F.3d 192 (4th Cir. 2011): The defendant objected to the admission of DNA testing performed on a jacket that linked him to drug trafficking. The court first considered whether the Confrontation Clause was violated by the government's failure to call the FBI lab employees who signed the internal log documenting custody of the jacket. The court found no error in admitting the log, because chain-of-custody evidence had been introduced by the defense and therefore the defendant had opened the door to rebuttal. The court next considered whether the Confrontation Clause was violated by testimony of an expert who relied on DNA testing results by lab analysts who were not produced at trial. The court again found no error. It emphasized that the expert did his own testing, and his reliance on the report was limited to a "pure instrument read-out." The court stated that "[t]he numerical identifiers of the DNA allele here, insofar as they are nothing more than raw data produced by a machine" should be treated the same as gas chromatograph data, which the courts have held to be non-testimonial. *See also United States v. Shanton*, 2013 WL 781939 (4th Cir.) (Unpublished) (finding that the result concerning the admissibility of the expert testimony in *Summers* was unaffected by *Williams*: "[W]e believe five justices would affirm: Justice Thomas on the ground that the statements at issue were not testimonial and Justice Alito,

along with the three justices who joined his plurality opinion, on the ground that the statements were not admitted for the truth of the matter asserted.”).

Expert reliance on confidential informants in interpreting coded conversation does not violate *Crawford*: *United States v. Johnson*, 587 F.3d 625 (4th Cir. 2009): The court found no error in admitting expert testimony that decoded terms used by the defendants and coconspirators during recorded telephone conversations. The defendant argued that the experts relied on hearsay statements by cooperators to help them reach a conclusion about the meaning of particular conversations. The defendant asserted that the experts were therefore relying on testimonial hearsay. The court recognized that it is “appropriate to recognize the risk that a particular expert might become nothing more than a transmitter of testimonial hearsay.” But in this case, the experts never made reference to their interviews, and the jury heard no testimonial hearsay. “Instead, each expert presented his independent judgment and specialized understanding to the jury.” Because the experts “did not become mere conduits” for the testimonial hearsay, their consideration of that hearsay “poses no *Crawford* problem.” ***Accord United States v. Ayala*, 601 F.3d 256 (4th Cir. 2010)** (no violation of the Confrontation Clause where the experts “did not act as mere transmitters and in fact did not repeat statements of particular declarants to the jury.”). ***Accord United States v. Palacios*, 677 F.3d 234 (4th Cir. 2012):** Expert testimony on operation of a criminal enterprise, based in part on interviews with members, did not violate the Confrontation Clause because the expert “did not specifically reference” any of the testimonial interviews during his testimony, and simply relied on them as well as other information to give his own opinion.

Note: These cases are in doubt if you count the votes in *Williams*, but most courts have come to the same result after *Williams*: Finding no confrontation problem where an expert relies on testimonial hearsay, so long as the hearsay is not admitted into evidence and the expert draws his own conclusion from the data (rather than just parroting it).

Expert testimony translating coded conversations violated the right to confrontation where the government failed to make a sufficient showing that the expert was relying on her own evaluations rather than those of informants: *United States v. Garcia*, 752 F.3d 382 (4th Cir. 2014): The court reversed drug convictions in part because the law enforcement expert who translated purportedly coded conversations had relied, in coming to her conclusion, on input from coconspirators whom she had debriefed. The court distinguished *Johnson, supra*, on the ground that in this case the government had not done enough to show that the expert had conducted her own independent analysis in reaching her conclusions as to the meaning of certain conversations. The court noted that “the question is whether the expert is, in essence, giving an independent judgment or merely acting as a transmitter for testimonial hearsay.” In this case, “we cannot say that Agent Dayton was giving such independent judgments. While it is true she never made direct reference to the content of her interviews, this could just as well have been the result of the Government’s failure to elicit a proper foundation for Agent Dayton’s interpretations.” The

government argued that the information from the coconspirators only served to confirm the Agent's interpretations after the fact, but the court concluded that "[t]he record is devoid of evidence that this was, in fact, the sequence of Dayton's analysis, to Garcia's prejudice."

Expert opinion based in part on information learned during custodial interrogation did not violate *Crawford* where expert was more than a conduit: *United States v. Lockhart*, 844 F.3d 501 (5th Cir. 2016): In a sex trafficking prosecution, an officer testified as an expert that the defendants were gang members. The defendant argued that the testimony violated his right to confrontation because the officer, in reaching his conclusion, relied on statements made during custodial interrogations, as well as statements of other officers describing their experiences during interrogations. But the court found no error. The court explained that *Crawford* "in no way prevents expert witnesses from offering their independent judgments merely because those judgments were in some part informed by their exposure to otherwise inadmissible evidence." It further stated that "when the expert witness has consulted numerous sources, and uses that information, together with his own professional knowledge and experience, to arrive at his opinion, that opinion is regarded as evidence in its own right and not as hearsay in disguise." The court concluded that in this case the expert "did not serve as a conduit for inadmissible testimonial hearsay."

Police officer's reliance on statements from people he had arrested for drug crimes did not violate *Crawford*: *United States v. Collins*, 799 F.3d 554 (6th Cir. 2015): In a trial involving manufacture of methamphetamine, a law enforcement officer testified as an expert on the conversion ratio between pseudoephedrine and methamphetamine. He relied in part on statements from people he had interviewed after he had arrested them for manufacturing methamphetamine. The court found no plain error because there was "no evidence that the suspected methamphetamine manufacturers Agent O'Neil questioned throughout his career 'intended to bear testimony' against Collins or his co-defendants." Thus the expert was not relying on testimonial hearsay.

Note: The court appears to be applying --- maybe without realizing it --- Justice Alito's definition of testimoniality in *Williams*. The court is saying that the arrestees did not *target* their testimony toward the defendant. But under the view of five Justices in *Williams*, the statements of the arrestees would probably be testimonial, as they were under arrest --- just like Mrs. Crawford --- and the statements could be thought to be motivated toward *some* criminal prosecution.

Expert reliance on printout from machine and another expert's lab notes does not violate *Crawford*: *United States v. Moon*, 512 F.3d 359 (7th Cir. 2008): The court held that an expert's testimony about readings taken from an infrared spectrometer and a gas chromatograph (which determined that the substance taken from the defendant was narcotics) did not violate *Crawford* because "data is not 'statements' in any useful sense. Nor is a machine a 'witness against' anyone." Moreover, the expert's reliance on another expert's lab notes did not violate *Crawford* because the court concluded that an expert is permitted to rely on hearsay (including testimonial hearsay) in reaching his conclusion. The court noted that the defendant could "insist that the data underlying an expert's testimony be admitted, see Fed.R.Evid. 705, but by offering the evidence themselves defendants would waive any objection under the Confrontation Clause." The court observed that the notes of the chemist, evaluating the data from the machine, were testimonial and should not have been independently admitted, but it found no plain error in the admission of these notes.

Note: The court makes two holdings in *Moon*. The first is that expert reliance on a machine output does not violate *Crawford* because the machine is not a witness. That holding appears unaffected by *Williams* --- at least it can be said that *Williams* says nothing about whether machine output is testimony. The second holding, that an expert's reliance on lab notes he did not prepare, is at the heart of *Williams*. It would appear that such a practice would be permissible even after *Williams* because 1) *post-Williams* courts have found that an expert may rely on testimonial hearsay so long as the expert does his own analysis and the hearsay is not introduced at trial ; and 2) in any case, lab "notes" are not certificates or affidavits so they do not appear to be the kind of formalized statement that Justice Thomas finds to be testimonial.

Expert reliance on drug test conducted by another does not violate the Confrontation Clause --- though on remand from *Williams* the court states that part of the expert's testimony might have violated the Confrontation Clause, but finds harmless error: *United States v. Turner*, 591 F.3d 928 (7th Cir. 2010), on remand from Supreme Court, 709 F.3d 1187 (7th Cir. 2013) : At the defendant's drug trial, the government called a chemist to testify about the tests conducted on the substance seized from the defendant --- the tests indicating that it was cocaine. The defendant objected that the witness did not conduct the tests and was relying on testimonial statements from other chemists, in violation of *Crawford*. The court found no error, emphasizing that no statements of the official who actually tested the substance were admitted at trial, and that the witness unequivocally established that his opinions about the test reports were his own.

Note: The Supreme Court vacated the decision in *Turner* and remanded for reconsideration in light of *Williams*. On remand, the court declared that while a rule from *Williams* was difficult to divine, it at a minimum "casts doubt on using expert testimony in place of testimony from an analyst who actually examined and tested evidence bearing on a defendant's guilt, insofar as the expert is asked about matters which lie solely within the testing analyst's knowledge." But the court noted that even after *Williams*, much of what the expert testified to was permissible because it was based on personal knowledge:

We note that the bulk of Block's testimony was permissible. Block testified as both a fact and an expert witness. In his capacity as a supervisor at the state crime laboratory, he described the procedures and safeguards that employees of the laboratory observe in handling substances submitted for analysis. He also noted that he reviewed Hanson's work in this case pursuant to the laboratory's standard peer review procedure. As an expert forensic chemist, he went on to explain for the jury how suspect substances are tested using gas chromatography, mass spectrometry, and infrared spectroscopy to yield data from which the nature of the substance may be determined. He then opined, based on his experience and expertise, that the data Hanson had produced in testing the substances that Turner distributed to the undercover officer-introduced at trial as Government Exhibits 1, 2, and 3-indicated that the substances contained cocaine base. * * *

As we explained in our prior decision, an expert who gives testimony about the nature of a suspected controlled substance may rely on information gathered and produced by an analyst who does not himself testify. Pursuant to Federal Rule of Evidence 703, the information on which the expert bases his opinion need not itself be admissible into evidence in order for the expert to testify. Thus, the government could establish through Block's expert testimony what the data produced by Hanson's testing revealed concerning the nature of the substances that Turner distributed, without having to introduce either Hanson's documentation of her analysis or testimony from Hanson herself. And because the government did not introduce Hanson's report, notes, or test results into evidence, Turner was not deprived of his rights under the Sixth Amendment's Confrontation Clause simply because Block relied on the data contained in those documents in forming his opinion. Nothing in the Supreme Court's *Williams* decision undermines this aspect of our decision. On the contrary, Justice Alito's plurality opinion in *Williams* expressly endorses the notion that an appropriately credentialed individual may give expert testimony as to the significance of data produced by another analyst. Nothing in either Justice Thomas's concurrence or in Justice Kagan's dissent takes issue with this aspect of the plurality's reasoning. Moreover, as we have indicated, Block in part testified in his capacity as Hanson's supervisor, describing both the procedures and safeguards that employees of the state laboratory are expected to follow and the steps that he took to peer review Hanson's work in this case. Block's testimony on these points, which were within his personal knowledge, posed no Confrontation Clause problem.

The *Turner* court on remand saw two Confrontation problems in the expert's testimony: 1) his statement that Hanson followed standard procedures in testing the substances that Turner distributed to the undercover officer, and 2) his testimony that he reached the same conclusion about the nature of the substances that the analyst did. The court held that on those two points, "Block necessarily was relying on out-of-court statements contained in Hanson's notes and report. These portions of Block's testimony strengthened the government's case; and, conversely, their exclusion would have diminished

the quantity and quality of evidence showing that the substances Turner distributed comprised cocaine base in the form of crack cocaine.” And while the case was much like *Williams*, the court found two distinguishing factors: 1) it was tried to a jury, thus raising a question of whether Justice Alito’s not-for-truth analysis was fully applicable; and 2) the test was conducted with a suspect in mind, as Turner had been arrested with the substances to be tested in his possession. The defendant also argued that the report was “certified” and so was formal under the Thomas view. But the court noted that the analysts did not formally certify the results --- the certification was made by the Attorney General to the effect that the report was a correct copy of the *report*. Yet the court implied that it was sufficiently formal in any case, because it was “both official and signed, it constituted a formal record of the result of the laboratory tests that Hanson had performed, and it was clearly designed to memorialize that result for purposes of the pending legal proceeding against Turner, who was named in the report.”

Ultimately the court found it unnecessary to decide whether the defendant’s Confrontation rights were violated because the error, if any, in the use of the analyst’s report was harmless.

No confrontation violation where expert did not testify that he relied on a testimonial report: *United States v. Maxwell*, 724 F.3d 724 (7th Cir. 2013): In a narcotics prosecution, the analyst from the Wisconsin State Crime Laboratory who originally tested the substance seized from Maxwell retired before trial, so the government offered the testimony of his co-worker instead. The coworker did not personally analyze the substance herself, but concluded that it contained crack cocaine after reviewing the data generated by the original analyst. The court found no plain error in permitting this testimony, explaining that there could be no Confrontation problem, even after *Bullcoming* and *Williams*, where there is no testimony that the expert relied on the report:

What makes this case different (and relatively more straightforward) from those we have dealt with in the past is that Gee did not read from Nied's report while testifying * * * , she did not vouch for whether Nied followed standard testing procedures or state that she reached the same conclusion as Nied about the nature of the substance (as in *Turner*), and the government did not introduce Nied's report itself or any readings taken from the instruments he used (as in *Moon*). Maxwell argues that Nied's forensic analysis is testimonial, but Gee never said she relied on Nied's report or his interpretation of the data in reaching her own conclusion. Instead, Gee simply testified (1) about how evidence in the crime lab is typically tested when determining whether it contains a controlled substance, (2) that she had reviewed the data generated for the material in this case, and (3) that she reached an independent conclusion that the substance contained cocaine base after reviewing that data.

The court concluded that concluded that “Maxwell was not deprived of his Sixth Amendment right simply by virtue of the fact that Gee relied on Nied’s data in reaching her own conclusions, especially since she never mentioned what conclusions Nied reached about the substance.”

Expert’s reliance on report of another law enforcement agency did not violate the right to confrontation: *United States v. Huether*, 673 F.3d 789 (8th Cir. 2012): In a trial on charges of sexual exploitation of minors, an expert testified in part on the basis of a report by the National Center for Missing and Exploited Children. The court found no confrontation violation because the NCMEC report was not introduced into evidence and the expert drew his own conclusion and was not a conduit for the hearsay.

No confrontation violation where expert who testified did so on the basis of his own retesting: *United States v. Ortega*, 750 F.3d 1020 (8th Cir. 2014): In a drug conspiracy prosecution, the defendant argued that his right to confrontation was violated because the expert who testified at trial that the substances seized from a coconspirator’s car were narcotics had tested composite samples that another chemist had produced from the substances found in the car. But the court found no error, because the testifying expert had personally conducted his own test of the composite substances, and the original report of the other chemist who prepared the composite (and who concluded the substances were narcotics) was not offered by the government; nor was the testifying expert asked about the original test. The court noted that any objection about the composite really went to the chain of custody --- whether the composite tested by the expert witness was in fact derived from what was found in the car --- and the court observed that “it is up to the prosecution to decide what steps are so crucial as to require evidence.” The defendant made no showing of bad faith or evidence tampering, and so any question about the chain of custody was one of weight and not admissibility. Moreover, the government’s introduction of the original chemist’s statement about creating the composite sample did not violate the Confrontation Clause because “chain of custody alone does not implicated the Confrontation Clause” as it is “not a testimonial statement offered to prove the truth of the matter asserted.”

No Confrontation Clause violation where expert’s opinion was based on his own assessment and not on the testimonial hearsay: *United States v. Vera*, 770 F.3d 1232 (9th Cir. 2014): Appealing from convictions for drug offenses, the defendants argued that the testimony of a prosecution expert on gangs violated the Confrontation Clause because it was nothing but a conduit for testimonial hearsay from former gang members. The court agreed with the premise that expert testimony violates the Confrontation Clause when the expert “is used as little more than a conduit or transmitter for testimonial hearsay, rather than as a true expert whose considered opinion sheds light on some specialized factual situation.” But the court disagreed that the expert operated as a conduit in this case. The court found that the witness relied on his extensive experience with gangs and that his opinion “was not merely repackaged testimonial hearsay but was an original product that could have been tested through cross-examination.”

Expert’s reliance on notes prepared by lab technicians did not violate the Confrontation Clause: *United States v. Pablo*, 625 F.3d 1285 (10th Cir. 2010), *on remand for reconsideration under Williams*, 696 F.3d 1280 (10th Cir. 2012): The defendant was tried for rape and other charges. Two lab analysts conducted tests on the rape kit and concluded that the DNA found at the scene matched the defendant. The defendant complained that the lab results were introduced through the testimony of a forensic expert and the lab analysts were not produced for cross-examination. In the original appeal the court found no plain error, reasoning that the notes of the lab analysts were not admitted into evidence and were never offered for their truth. To the extent they were discussed before the jury, it was only to describe the basis of the expert’s opinion --- which the court found to be permissible under Rule 703. The court observed that “[t]he extent to which an expert witness may disclose to a jury otherwise inadmissible testimonial hearsay without implicating a defendant’s confrontation rights * * * is a matter of degree.” According to the court, if an expert “simply parrots another individual’s testimonial hearsay, rather than conveying her own independent judgment that only incidentally discloses testimonial hearsay to assist the jury in evaluating her opinion, then the expert is, in effect, disclosing the testimonial hearsay for its substantive truth and she becomes little more than a backdoor conduit for otherwise inadmissible testimonial hearsay.” In this case the court, applying the plain error standard, found insufficient indication that the expert had operated solely as a conduit for testimonial hearsay.

***Pablo* was vacated for reconsideration in light of *Williams*. On remand, the court once again affirmed the conviction.** The court stated that “we need not decide the precise mandates and limits of *Williams*, to the extent they exist.” The court noted that five members of the *Williams* Court “might find” that the expert’s reliance on the lab test in this case was for its truth. But “we cannot say the district court plainly erred in admitting Ms. Snider's testimony, as it is not plain that a majority of the Supreme Court would have found reversible error with the challenged admission.” The court explained as follows in a parsing of *Williams*:

On the contrary, it appears that five Justices would affirm the district court in this case, albeit with different Justices relying on different rationales as they did in *Williams*. The four-Justice plurality in *Williams* likely would determine that Ms. Snider's testimony was not offered for the truth of the matter asserted in Ms. Dick's report, but rather was offered for the separate purpose of evaluating Ms. Snider's credibility as an expert witness per Fed.R.Evid. 703; and therefore that the admission of her testimony did not offend the Confrontation Clause. Meanwhile, although Justice Thomas likely would conclude that the testimony was being offered for the truth of the matter asserted, he likely would further determine that the testimony was nevertheless constitutionally admissible because the appellate record does not show that the report was certified, sworn to, or otherwise imbued with the requisite “solemnity” required for the statements therein to be considered testimonial for purposes of the Confrontation Clause. Since Ms. Dick's report is not a part of the appellate record, we naturally cannot say that it plainly would meet Justice Thomas's solemnity test. In sum, it is not clear or obvious under current law that the district court erred in admitting Ms. Snider's testimony, so reversal is unwarranted on this basis.

The *Pablo* court on remand concluded that “the manner in which, and degree to which, an expert may merely rely upon, and reference during her in-court expert testimony, the out-of-court testimonial conclusions in a lab report made by another person not called as a witness is a nuanced legal issue without clearly established bright line parameters, particularly in light of the discordant 4-1-4 divide of opinions in *Williams*.”

Expert’s testimony on gang structure and practice did not violate the Confrontation Clause even though it was based in part on testimonial hearsay, where expert applied his own expertise. *United States v. Kamahale*, 748 F.3d 984 (10th Cir. 2014): Appealing from convictions for gang-related activity, the defendants argued that a government expert’s testimony about the structure and operation of the gang violated the Confrontation Clause because it was based in part on interviews with cooperating witnesses and other gang members. The court found no error and affirmed, concluding that the admission of expert testimony violates the Confrontation Clause “only when the expert is simply parroting a testimonial fact.” The court noted that in this case the expert “applied his expertise, formed by years of experience and multiple sources, to provide an independently formed opinion.” Therefore, no testimonial hearsay was offered for its truth against the defendant. *Compare United States v. Garcia*, 793 F.3d 1194 (10th Cir. 2015) (gang-expert’s testimony violated the Confrontation Clause, where he parroted statements from former gang members that were testimonial hearsay: “The government cannot plausibly argue that Webb applied his expertise to this statement. It involves no interpretation of gang culture or iconography, no calibrated judgment based on years of experience and the synthesis of multiple sources of information. He simply relayed what DV gang members told him. Admission of the testimony violated the Confrontation Clause.”).

Forfeiture

Constitutional standard for forfeiture --- like Rule 804(b)(6) --- requires a showing that the defendant acted wrongfully with the intent to keep the witness from testifying: *Giles v. California*, 554 U.S. 353 (2008): The Court held that a defendant does not forfeit his constitutional right to confront testimonial hearsay unless the government shows that the defendant engaged in wrongdoing *designed to keep the witness from testifying at trial*. Giles was charged with the murder of his former girlfriend. A short time before the murder, Giles had assaulted the victim, and she made statements to the police implicating Giles in that assault. The victim's hearsay statements were admitted against the defendant on the ground that he had forfeited his right to invoke the Confrontation Clause, because he murdered the victim. The government made no showing that Giles murdered the victim with the intent to keep her from testifying. The Court found an intent-to-procure requirement in the common law, and therefore, under the historical analysis mandated by *Crawford*, there is necessarily an intent-to-procure requirement for forfeiture of confrontation rights. Also, at one point in the opinion, the Court in dictum stated that "statements to friends and neighbors about abuse and intimidation, and statements to physicians in the course of receiving treatment," are not testimonial --- presumably because the primary motivation for making such statements is for something other than use at trial.

Murder of witness by co-conspirators as a sanction to protect the conspiracy against testimony constitutes forfeiture of both hearsay and Confrontation Clause objections: *United States v. Martinez*, 476 F.3d 961 (D.C. Cir. 2007): Affirming drug and conspiracy convictions, the court found no error in the admission of hearsay statements made to the DEA by an informant involved with the defendant's drug conspiracy. The trial court found by a preponderance of the evidence that the informant was murdered by members of the defendant's conspiracy, in part to procure his unavailability as a witness. The court of appeals affirmed this finding --- rejecting the defendant's argument that forfeiture could not be found because his co-conspirators would have murdered the informant anyway, due to his role in the loss of a drug shipment. The court stated that it is "surely reasonable to conclude that anyone who murders an informant does so intending *both* to exact revenge *and* to prevent the informant from disclosing further information and testifying." It concluded that the defendant's argument would have the "perverse consequence" of allowing criminals to avoid forfeiture if they could articulate more than one bad motivation for disposing of a witness. Finally, the court held that forfeiture under Rule 804(b)(6) by definition constituted forfeiture of the Confrontation Clause objection. It stated that *Crawford* and *Davis* "foreclose" the possibility that the admission of evidence under Rule 804(b)(6) could nonetheless violate the Confrontation Clause.

Fleeing prosecution constitutes forfeiture: *United States v. Ponzo*, 853 F.3d 558 (1st Cir. 2017): At the defendant's racketeering trial the government offered prior testimony of a witness from the trial of the defendant's coconspirators. The defendant was not tried with his

coconspirators because he had fled prosecution. By the time he was caught and tried, the witness had died. The defendant argued that admitting the dead witness's testimony at his trial violated his right to confrontation, but the court found that the defendant had forfeited that right by absenting himself from the prior trial. It reasoned as follows: "Had Ponzo been at the 1988 trial, he could have cross-examined Hildonen. But like a defendant who obtains a witness's absence by killing him, by fleeing and remaining on the lam for years, Ponzo effectively schemed to silence Hildonen's testimony against him. And Hildonen's subsequent unavailability signifies the success of that scheming. So Ponzo forfeited his confrontation rights. To hold otherwise would allow Ponzo to profit from his own wrong and would undermine the integrity of the criminal-trial system --- which we cannot allow."

Fact that defendant had multiple reasons for killing a witness does not preclude a finding of forfeiture: *United States v. Jackson*, 706 F.3d 262 (4th Cir. 2013): The defendant argued that the constitutional right to confrontation can be forfeited only when a defendant was motivated *exclusively* by a desire to silence a witness. (In this case the defendant argued that while he murdered a witness to silence him, he had additional reasons, including preventing the witness from harming the defendant's drug operation and as retaliation for robbing one of the defendant's friends.) The court rejected the argument, finding nothing in *Giles* to support it. To the contrary, the Court in *Giles* reasoned that the common law forfeiture rule was designed to prevent the defendant from profiting from his own wrong. Moreover, under a multiple-motive exception to forfeiture, defendants might be tempted to murder witnesses and then cook up another motive for the murder after the fact.

Forfeiture can be found on the basis of *Pinkerton* liability: *United States v. Dinkins*, 691 F.3d 358 (4th Cir. 2012): The court found that the defendant had forfeited his right of confrontation when a witness was killed by a coconspirator as an act to further the conspiracy by silencing the witness. The court concluded that in light of *Pinkerton* liability, "the Constitution does not guarantee an accused person against the legitimate consequence of his own wrongful acts."

Retaliatory murder of witnesses who testified against the accused in a prior case is not a forfeiture in the trial for murdering the witnesses: *United States v. Henderson*, 626 F.3d 626 (6th Cir. 2010): The defendant was convicted of bank robbery after two people (including his accomplice) testified against him. Shortly after the defendant was released from prison, the two witnesses were found murdered. At the trial for killing the two witnesses, the government offered statements made by the victims to police officers during the investigation of the bank robbery. These statements concerned their cooperation and threats made by the defendant. The trial judge admitted the statements after finding by a preponderance of the evidence that the defendant killed the witnesses. That decision, grounded in forfeiture, was made before *Giles* was decided. On appeal, the court found error under *Giles* because "Bass and Washington could not have been killed, in 1996 and 1998, respectively, to prevent them from testifying against [the defendant] in the bank robbery prosecution in 1981." Thus there was no showing of intent to keep the witnesses

from testifying, as *Giles* requires for a finding of forfeiture. The court found the errors to be harmless.

Forfeiture of confrontation rights, like forfeiture under Federal Rule 804(b)(6), is found upon a showing by a preponderance of the evidence: *United States v. Johnson*, 767 F.3d 815 (9th Cir. 2014): The court affirmed convictions for murder and armed robbery. At trial hearsay testimony of an unavailable witness was admitted against the defendant, after the government made a showing that the defendant had threatened the witness; the trial court found that the defendant had forfeited his right under both the hearsay rule and the Confrontation Clause to object to the hearsay. The court found no error. It held that a forfeiture of the right to object under the hearsay rule and under the Confrontation Clause is governed by the same standard: the government must establish by a preponderance of the evidence that the defendant acted wrongfully to cause the unavailability of a government witness, with the intent that the witness would not testify at trial. The defendant argued that the Constitution requires a showing of clear and convincing evidence before forfeiture of a right to confrontation can be found. But the court disagreed. It noted that a clear and convincing evidence standard had been applied by some lower courts when the Confrontation Clause regulated the admission of unreliable hearsay. But now, after *Crawford v. Washington*, the Confrontation Clause does not bar unreliable hearsay from being admitted; rather it regulates testimonial hearsay. The court stated that after *Crawford*, “the forfeiture exception is consistent with the Confrontation Clause, not because it is a means for determining whether hearsay is reliable, but because it is an equitable doctrine designed to prevent defendants from profiting from their own wrongdoing.” The court also noted that the Supreme Court’s post-*Crawford* decisions of *Davis v. Washington* and *Giles v. California* “strongly suggest, if not squarely hold, that the preponderance standard applies.” On the facts, the court concluded that “the evidence tended to show that Johnson alone had the means, motive, and opportunity to threaten [the witness], and did not show anyone else did. This was sufficient to satisfy the preponderance standard.”

Evaluating the kind of action the defendant must take to justify a finding of forfeiture: *Carlson v. Attorney General of California*, 791 F.3d 1003 (9th Cir. 2015): Reviewing the denial of a habeas petition, the court found that statements of victims to police were testimonial, but that the state trial court was not unreasonable in finding that the petitioner had forfeited his right to confront the declarants. In a careful analysis of Supreme Court cases, the court provided “a standard for the kind of action a defendant must take” to be found to have forfeited the right to confrontation. The court concluded that

[T]he forfeiture-by-wrongdoing doctrine applies where there has been affirmative action on the part of the defendant that produces the desired result, non-appearance by a prospective witness against him in a criminal case. Simple tolerance of, or failure to foil, a third party’s previously unexpressed decision either to skip town himself rather than testifying or to prevent another witness from appearing [is] not a sufficient reason to foreclose a defendant’s Sixth Amendment confrontation rights at trial.

On the merits --- and applying the standard of deference required by AEDPA, the court concluded that the trial court could reasonably have found, on the basis of circumstantial evidence, that the petitioner more likely than not was actively involved in procuring unavailability, with the intent to keep the witness from testifying.

Note: The court says that a defendant’s mere “acquiescence” is not enough to justify forfeiture. That language might raise a doubt as to whether a forfeiture may be found by the defendant’s mere membership in a conspiracy; many courts have found such membership to be sufficient where disposing of a witness is within the course and furtherance of the underlying conspiracy. See, e.g., *United States v. Dinkins*, 691 F.3d 358 (4th Cir. 2012). The *Carlson* court, however, cited the conspiracy cases favorably, and noted that in such cases, the defendant *has* acted affirmatively and committed wrongdoing by joining a conspiracy in which a foreseeable result is killing witnesses.

A different panel of the Ninth Circuit, in a case decided around the same time as *Carlson*, upheld a finding of forfeiture based on conspiratorial liability. See *United States v. Cazares*, 788 F.3d 956 (9th Cir. 2015).

The *Carlson* court noted that the restyled Rule 804(b)(6) provides that mere passive agreement with the wrongful act of another is not enough to find forfeiture, but that that forfeiture can be found if a defendant “acquiesced in wrongfully causing” the absence of the witness --- and that would include joining a conspiracy where one of the foreseeable consequences is to kill witnesses. The court found the restyling to be a helpful clarification of what the original rule meant by “acquiescence.”

Grand Jury, Plea Allocutions, Etc.

Grand jury testimony and plea allocution statement are both testimonial: *United States v. Bruno*, 383 F.3d 65 (2nd Cir. 2004): The court held that a plea allocution statement of an accomplice was testimonial, even though it was redacted to take out any direct reference to the defendant. It noted that the Court in *Crawford* had taken exception to previous cases decided by the Circuit that had admitted such statements as sufficiently reliable under *Roberts*. Those prior cases have been overruled by *Crawford*. The court also noted that the admission of grand jury testimony was error as it was clearly testimonial after *Crawford*. **See also *United States v. Becker***, 502 F.3d 122 (2nd Cir. 2007) (plea allocution is testimonial even though redacted to take out direct reference to the defendant: “any argument regarding the purposes for which the jury might or might not have actually considered the allocutions necessarily goes to whether such error was harmless, not whether it existed at all”); ***United States v. Snype***, 441 F.3d 119 (2nd Cir. 2006) (plea allocution of the defendant’s accomplice was testimonial even though all direct references to the defendant were redacted); ***United States v. Gotti***, 459 F.3d 296 (2nd Cir. 2006) (redacted guilty pleas of accomplices, offered to show that a bookmaking business employed five or more people, were testimonial under *Crawford*); ***United States v. Al-Sadawi***, 432 F.3d 419 (2nd Cir. 2005) (*Crawford* violation where the trial court admitted portions of a cohort’s plea allocution against the defendant, even though the statement was redacted to take out any direct reference to the defendant).

Defendant charged with aiding and abetting has confrontation rights violated by admission of primary wrongdoer’s guilty plea: *United States v. Head*, 707 F.3d 1026 (8th Cir. 2013): The defendant was charged with aiding and abetting a murder committed by her boyfriend in Indian country. The trial court admitted the boyfriend’s guilty plea to prove the predicate offense. The court found that the guilty plea was testimonial and reversed the aiding and abetting conviction. The court relied on *Crawford*’s statement that “prior testimony that the defendant was unable to cross-examine” is one of the “core class of ‘testimonial’ statements.”

Grand jury testimony is testimonial: *United States v. Wilmore*, 381 F.3d 868 (9th Cir. 2004): The court held, unsurprisingly, that grand jury testimony is testimonial under *Crawford*. It could hardly have held otherwise, because even under the narrowest definition of “testimonial” (i.e., the specific types of hearsay mentioned by the *Crawford* Court) grand jury testimony is covered within the definition.

Implied Testimonial Statements

Testimony that a police officer's focus changed after hearing an out-of-court statement impliedly included accusatorial statements from an accomplice and so violated the defendant's right to confrontation: *United States v. Meises*, 645 F.3d 5 (1st Cir. 2011): At trial an officer testified that his focus was placed on the defendant after an interview with a cooperating witness. The government did not explicitly introduce the statement of the cooperating witness. On appeal, the defendant argued that the jury could surmise that the officer's focus changed because of an out-of-court accusation of a declarant who was not produced at trial. The government argued that there was no confrontation violation because the testimony was all about the actions of the officer and no hearsay statement was admitted at trial. But the court agreed with the defendant and reversed the conviction. The court noted that it was irrelevant that the government did not introduce the actual statements, because such statements were effectively before the jury in the context of the trial. The court stated that "any other conclusion would permit the government to evade the limitations of the Sixth Amendment and the Rules of Evidence by weaving an unavailable declarant's statements into another witness's testimony by implication. The government cannot be permitted to circumvent the Confrontation Clause by introducing the same substantive testimony in a different form." *Compare United States v. Occhiuto*, 784 F.3d 862 (1st Cir. 2015): In a narcotics prosecution, an officer testified that he arranged for a cooperating informant to buy drugs from the defendant; that he monitored the transactions; and that the drugs that were in evidence were the same ones that the defendant had sold to the informant. The defendant argued that the officer's conclusion about the drugs must have rested on assertions from the informant, and therefore his right to confrontation was violated. The defendant relied upon *Meises*, but the court distinguished that case, because here the officer's testimony was based on his own personal observations and did not necessarily rely on anything said by the informant. The fact that the officer's surveillance was not airtight did not raise a confrontation issue, rather it raised a question of weight as to the officer's conclusion.

Statements to law enforcement were testimonial, and right to confrontation was violated even though the statements were not stated in detail at trial: *Ocampo v. Vail*, 649 F.3d 1098 (9th Cir. 2011): In a murder case, an officer testified that on the basis of an interview with Vazquez, the police were able to rule out suspects other than the defendant. Vazquez was not produced for trial. The state court found no confrontation violation on the ground that the officer did not testify to the substance of anything Vazquez said. But the court found that the state court unreasonably applied *Crawford* and reversed the district court's denial of a grant of habeas corpus. The statements from Vazquez were obviously testimonial because they were made during an investigation of a murder. And the court held that the Confrontation Clause bars not only quotations from a declarant, but also any testimony at trial that conveys the substance of a declarant's testimonial hearsay statement. It reasoned as follows:

Where the government officers have not only “produced” the evidence, but then condensed it into a conclusory affirmation for purposes of presentation to the jury, the difficulties of testing the veracity of the source of the evidence are not lessened but exacerbated. With the language actually used by the out-of-court witness obscured, any clues to its truthfulness provided by that language --- contradictions, hesitations, and other clues often used to test credibility --- are lost, and instead a veneer of objectivity conveyed.

* * *

Whatever locution is used, out-of-court statements admitted at trial are “statements” for the purpose of the Confrontation Clause * * * if, fairly read, they convey to the jury the substance of an out-of-court, testimonial statement of a witness who does not testify.

See also United States v. Brooks, 772 F.3d 1161 (9th Cir. 2014): An agent testified that he telephoned a postal supervisor and provided him a description of the suspect, and then later searched a particular parcel with a tracking number and mailing information he had been provided over the phone as identifying the package mailed by the suspect. The postal supervisor was not produced for trial. The government argued that the agent’s testimony did not violate the Confrontation Clause because the postal supervisor’s actual statements were never offered at trial. But the court declared that “out-of-court statements need not be repeated verbatim to trigger the protections of the Confrontation Clause.” Fairly read, the agent’s testimony revealed the substance of the postal supervisor’s statements. And those statements were made with the motivation that they be used in a criminal prosecution. Therefore the agent’s testimony violated the Confrontation Clause.

Informal Circumstances, Private Statements, No Law Enforcement Involvement, etc.

Statement of young child to his teacher is not sufficiently formal to be testimonial: *Ohio v. Clark*, 135 S.Ct. 2173 (2015): This case is fully discussed in Part I. The case involved a statement from a three-year-old boy to his teachers. It accused the defendant of injuring him. The Court held that a statement is extremely unlikely to be found testimonial in the absence of some participation by or with law enforcement. The presence of law enforcement is what signifies that a statement is made formally with the motivation that it will be used in a criminal prosecution. The Court did not establish a bright-line rule, however, leaving at least the remote possibility that an accusation might be testimonial even if law enforcement had no role in the making of the statement.

Private conversations and casual remarks are not testimonial: *United States v. Malpica-Garcia*, 489 F.3d 393 (1st Cir. 2007): In a drug prosecution, the defendant argued that testimony of his former co-conspirators violated *Crawford* because some of their assertions were not based on personal knowledge but rather were implicitly derived from conversations with other people (e.g., that the defendant ran a protection racket). The court found that if the witnesses were in fact relying on accounts from others, those accounts were not testimonial. The court noted that the information was obtained from people “in the course of private conversations or in casual remarks that no one expected would be preserved or later used at trial.” There was no indication that the statements were made “to police, in an investigative context, or in a courtroom setting.”

Informal letter found reliable under the residual exception is not testimonial: *United States v. Morgan*, 385 F.3d 196 (2nd Cir. 2004): In a drug trial, a letter written by the co-defendant was admitted against the defendant. The letter was written to a boyfriend and implicated both the defendant and the co-defendant in a conspiracy to smuggle drugs. The court found that the letter was properly admitted under Rule 807, and that it was not testimonial under *Crawford*. The court noted the following circumstances indicating that the letter was not testimonial: 1) it was not written in a coercive atmosphere; 2) it was not addressed to law enforcement authorities; 3) it was written to an intimate acquaintance; 4) it was written in the privacy of the co-defendant’s hotel room; 5) the co-defendant had no reason to expect that the letter would ever find its way into the hands of the police; and 6) it was not written to curry favor with the authorities or with anyone else. These were the same factors that rendered the hearsay statement sufficiently reliable to qualify under Rule 807.

Informal conversation between defendant and undercover informant was not testimonial under *Davis*: *United States v. Burden*, 600 F.3d 204 (2nd Cir. 2010): Appealing RICO and drug convictions, the defendant argued that the trial court erred in admitting a recording of a drug transaction between the defendant and a cooperating witness. The defendant argued that

the statements on the recording were testimonial, but the court disagreed and affirmed. The defendant's part of the conversation was not testimonial because he was not aware at the time that the statement was being recorded or would be potentially used at his trial. As to the informant, "anything he said was meant not as an accusation in its own right but as bait."

Note: Other courts, as seen in the "Not Hearsay" section below, have come to the same result as the Second Circuit in *Burden*, but using a different analysis: 1) admitting the defendant's statement does not violate the Confrontation Clause because it is his own statement and he doesn't have a right to confront himself; 2) the informant's statement, while testimonial, is not offered for its truth but only to put the defendant's statements in context --- therefore it does not violate the right to confrontation because it is not offered as an accusation.

Prison telephone calls between defendant and his associates were not testimonial: *United States v. Jones*, 716 F.3d 851 (4th Cir. 2013): Appealing from convictions for marriage fraud, the defendant argued that the trial court erred in admitting telephone conversations between the defendant and his associates, who were incarcerated at the time. The calls were recorded by the prison. The court found no error in admitting the conversations because they were not testimonial. The calls involved discussions to cover up and lie about the crime, and they were casual, informal statements among criminal associates, so it was clear that they were not primarily motivated to be used in a criminal prosecution. The defendant argued that the conversations were testimonial because the parties knew they were being recorded. But the court noted that "a declarant's understanding that a statement could potentially serve as criminal evidence does not necessarily denote testimonial intent" and that "just because recorded statements are used at trial does not mean they were created for trial." The court also noted that a prison "has significant institutional reasons for recording phone calls outside or procuring forensic evidence --- i.e., policing its own facility by monitoring prisoners' contact with individuals outside the prison."

Following *Clark*, the court finds that a report of sex abuse to a nurse by a 4 ½ year old child is not testimonial: *United States v. Barker*, 820 F.3d 167 (5th Cir. 2016): The court held that a statement by a 4 ½ year-old girl, accusing the defendant of sexual abuse, was not testimonial in light of *Ohio v. Clark*. The girl made the statement to a nurse who was registered by the state to take such statements. The court held that like in *Clark* the statement was not testimonial because: 1) it was made by a child too young to understand the criminal justice system; 2) it was not made to law enforcement; 3) the nurse's primary motive was to treat the child; and 4) the fact that the nurse was required to report the abuse to law enforcement did not change her motivation to treat the child.

Statements made to an undercover informant setting up a drug transaction are not testimonial: *Brown v. Epps*, 686 F.3d 281 (5th Cir. 2012): The court found no error in the state court’s admission of an intercepted conversation between the defendant, an accomplice, and an undercover informant. The conversation was to set up a drug deal. The court held that statements “unknowingly made to an undercover officer, confidential informant, or cooperating witness are not testimonial in nature because the statements are not made under circumstances which would lead an objective witness to reasonably believe that the statements would be available for later use at trial.” The court elaborated further:

The conversations did not consist of solemn declarations made for the purpose of establishing some fact. Rather, the exchange was casual, often profane, and served the purpose of selling cocaine. Nor were the unidentified individuals' statements made under circumstances that would lead an objective witness reasonably to believe that they would be available for use at a later trial. To the contrary, the statements were furthering a criminal enterprise; a future trial was the last thing the declarants were anticipating. Moreover, they were unaware that their conversations were being preserved, so they could not have predicted that their statements might subsequently become available at trial. * * * No witness goes into court to proclaim that he will sell you crack cocaine in a Wal-Mart parking lot. An objective analysis would conclude that the primary purpose of the unidentified individuals' statements was to arrange the drug deal. Their purpose was not to create a record for trial and thus is not within the scope of the Confrontation Clause.

Statements made by a victim to her friends and family are not testimonial: *Doan v. Carter*, 548 F.3d 449 (6th Cir. 2008): The defendant challenged a conviction for murder of his girlfriend. The trial court admitted a number of statements from the victim concerning physical abuse that the defendant had perpetrated on her. The defendant argued that these statements were testimonial but the court disagreed. The defendant contended that under *Davis* a statement is nontestimonial only if it is in response to an emergency, but the court rejected the defendant’s “narrow characterization of nontestimonial statements.” The court relied on the statement in *Giles v. California* that “statements to friends and neighbors about abuse and intimidation * * * would be excluded, if at all, only by hearsay rules.” *See also United States v. Boyd*, 640 F.3d 657 (6th Cir. 2011) (statements were non-testimonial because the declarant made them to a companion; stating broadly that “statements made to friends and acquaintances are non-testimonial”).

Suicide note implicating the declarant and defendant in a crime was testimonial under the circumstances: *Miller v. Stovall*, 608 F.3d 913 (6th Cir. 2010): A former police officer involved in a murder wrote a suicide note to his parents, indicating he was going to kill himself so as not go to jail for the crime that he and the defendant committed. The note was admitted against the defendant. The court found that the note was testimonial and its admission against the defendant violated his right to confrontation, because the declarant could “reasonably

anticipate” that the note would be passed on to law enforcement --- especially because the declarant was a former police officer.

Note: The court’s “reasonable anticipation” test appears to be a broader definition of testimoniality than that applied by the Supreme Court in *Davis* and especially *Bryant*. The Court in *Davis* looked to the “primary motivation” of the speaker. In this case, the “primary motivation” of the declarant was probably to explain to his parents why he was going to kill himself, rather than to prepare a case against the defendant. So the case appears wrongly decided.

Informal statements made about planned criminal activity are not testimonial: *United States v. Klemis*, 899 F.3d 436 (7th Cir. 2017): In a narcotics prosecution in which a user died, the court held that statements by the victim to a friend, that he had stolen from her in order to pay a drug debt to the defendant, were not testimonial. The court reasoned that the Supreme Court in *Ohio v. Clark* declared that a statement was very unlikely to be testimonial if it was made outside the law enforcement context. Here, spontaneous statements to a friend about attempts to borrow or steal from her to pay a drug debt, were not “efforts to create an out-of-court substitute for trial testimony.”

Statements made by an accomplice to a jailhouse informant are not testimonial: *United States v. Honken*, 541 F.3d 1146 (8th Cir. 2008): When the defendant’s murder prosecution was pending, the defendant’s accomplice (Johnson) was persuaded by a fellow inmate (McNeese) that Johnson could escape responsibility for the crime by getting another inmate to falsely confess to the crime --- but that in order to make the false confession believable, Johnson would have to disclose where the bodies were buried. Johnson prepared maps and notes describing where the bodies were buried, and gave it to McNeese with the intent that it be delivered to the other inmate who would falsely confess. In fact this was all a ruse concocted by McNeese and the authorities to get Johnson to confess, in which event McNeese would get a benefit from the government. The notes and maps were admitted at the defendant’s trial, over the defendant’s objection that they were testimonial. The defendant argued that Johnson had been subjected to the equivalent of a police interrogation. But the court held that the evidence was not testimonial, because Johnson didn’t know that he was speaking to a government agent. It explained as follows:

Johnson did not draw the maps with the expectation that they would be used against Honken at trial * * * . Further, the maps were not a “solemn declaration” or a “formal statement.” Rather, Johnson was more likely making a casual remark to an acquaintance. We simply cannot conclude Johnson made a “testimonial” statement against Honken without the faintest notion that she was doing so.

See also *United States v. Spotted Elk*, 548 F.3d 641 (8th Cir. 2008) (private conversation between inmates about a future course of action is not testimonial).

Statement from one friend to another in private circumstances is not testimonial: *United States v. Wright*, 536 F.3d 819 (8th Cir. 2008): The defendant was charged with shooting two people in the course of a drug deal. One victim died and one survived. The survivor testified at trial to a private conversation he had with the other victim, before the shootings occurred. The court held that the statements of the victim who died were not testimonial. The statements were made under informal circumstances to a friend. The court relied on the Supreme Court’s statement in *Giles v. California* that “statements to friends and neighbors about abuse and intimidation, and statements to physicians in the course of receiving treatment,” are not testimonial.

Accusatory statements in a victim’s diary are not testimonial: *Parle v. Runnels*, 387 F.3d 1030 (9th Cir. 2004): In a murder case, the government offered statements of the victim that she had entered in her diary. The statements recounted physical abuse that the victim received at the hand of the defendant. The court held that the victim’s diary was not testimonial, as it was a private diary of daily events. There was no indication that it was prepared for use at a trial.

Jailhouse conversations among coconspirators were not testimonial: *United States v. Alcorta*, 853 F.3d 1123 (10th Cir. 2017): Affirming drug convictions, the court rejected the defendant’s argument that admitting jailhouse conversations of his coconspirators violated his right to confrontation. The court stated that to be testimonial, the statements must be made “with the primary purpose of creating evidence for the prosecution.” The court concluded that “[t]he statements here --- jailhouse conversations between criminal codefendants (none of whom were cooperating with the government) --- do not satisfy that definition because that was not their purpose; quite the opposite.”

Private conversation between mother and son is not testimonial: *United States v. Brown*, 441 F.3d 1330 (11th Cir. 2006): In a murder prosecution, the court admitted testimony that the defendant’s mother received a phone call, apparently from the defendant; the mother asked the caller whether he had killed the victim, and then the mother started crying. The mother’s reaction was admitted at trial as an excited utterance. The court found no violation of *Crawford*. The court reasoned as follows:

We need not divine any additional definition of “testimonial” evidence to conclude that the private conversation between mother and son, which occurred while Sadie Brown was sitting at her dining room table with only her family members present, was not testimonial. The phone conversation Davis overheard obviously was not made under examination, was not transcribed in a formal document, and was not made under circumstances leading an objective person to reasonably believe the statement would be available for use at a later trial. Thus, it is not testimonial and its admission is not barred by *Crawford*. (Citations omitted).

Defendant’s lawyer’s informal texts with I.R.S. agent found not testimonial: *United States v. Wilson*, 788 F.3d 1298 (11th Cir. 2015): The defendant was charged with converting

checks that he knew to be issued as a result of fraudulently filed income tax returns. He claimed that he was a legitimate cashier and did not know that the checks were obtained by fraud. The trial court admitted texts sent by the defendant's lawyer to the I.R.S. The texts involved the return of certain records that the I.R.S. agent had allowed the defendant to take to copy; the texts contradicted the defendant's account at trial that he didn't know he had to return the boxes (in essence a showing of consciousness of guilt). The defendant argued that the lawyer's texts to the I.R.S. agent were testimonial, but the court disagreed: "Here, the attorney communicated through informal text messages to coordinate the delivery of the boxes. The cooperative and informal nature of those text messages was such that an objective witness would not reasonably expect the texts to be used prosecutorially." *See also United States v. Mathis*, 767 F.3d 1264 (11th Cir. 2014) (text messages between defendant and a minor concerning sex were informal, haphazard communications and therefore not made with the primary motive to be used in a criminal prosecution).

Interpreters

Interpreter is not a witness but merely a language conduit and so testimony recounting the interpreter's translation does not violate *Crawford: United States v. Orm Hieng*, 679 F.3d 1131 (9th Cir. 2012): At the defendant's drug trial, an agent testified to inculpatory statements the defendant made through an interpreter. The interpreter was not called to testify, and the defendant argued that admitting the interpreter's statements about what the defendant said violated his right to confrontation. The court found that the interpreter had acted as a "mere language conduit" and so he was not a witness against the defendant within the meaning of the Confrontation Clause. The court noted that in determining whether an interpreter acts as a language conduit, a court must undertake a case-by-case approach, considering factors such as "which party supplied the interpreter, whether the interpreter had any motive to lead or distort, the interpreter's qualifications and language skill, and whether actions taken subsequent to the conversation were consistent with the statements as translated." The court found that these factors cut in favor of the lower court's finding that the interpreter in this case had acted as a language conduit. Because the interpreter was only a conduit, the witness against the defendant was not the interpreter, but rather himself. The court concluded that when it is the defendant whose statements are translated, "the Sixth Amendment simply has no application because a defendant cannot complain that he was denied the opportunity to confront himself." *See also United States v. Romo-Chavez*, 681 F.3d 955 (9th Cir. 2012)(where an interpreter served only as a language conduit, the defendant's own statements were properly admitted under Rule 801(d)(2)(A), and the Confrontation Clause was not violated because the defendant was his own accuser and he had no right to cross-examine himself); *United States v. Aifang Ye*, 808 F.3d 395 (9th Cir. 2015) (adhering to pre-*Crawford* case law that a translator acting as a language conduit does not implicate the Confrontation Clause, because that case law "is not clearly irreconcilable with *Crawford*"; finding on the facts that the translator was a language conduit, by applying the four-factor test from *Orm Hieng*). .

Interpreter's statements were testimonial: *United States v. Charles*, 722 F.3d 1319 (11th Cir. 2013): The defendant was convicted of knowingly using a fraudulently authored travel document. When the defendant was detained at the airport, he spoke to the Customs Officer through an interpreter. At trial, the defendant's statements were reported by the officer. The interpreter was not called. The court held that the defendant had the right to confront the interpreter. It stated that the interpreter's translations were testimonial because they were rendered in the course of an interrogation and for these purposes the interpreter was the relevant declarant. But the court found that the error was not plain and affirmed the conviction. The court did not address the conflicting authority in the Ninth Circuit, *supra*. *See also United States v. Curbelo*, 726 F.3d 1260 (11th Cir. 2013) (transcripts of a wiretapped conversation that were translated constituted the translator's implicit out-of-court representation that the translation was correct, and the translator's implicit assertions were testimonial; but there was no violation of the Confrontation Clause because a party to the conversation testified to what was said based on his

independent review of the recordings and the transcript, and the transcript itself was never admitted at trial).

Interrogations, Tips to Law Enforcement, Etc.

Formal statement to police officer is testimonial: *United States v. Rodriguez-Marrero*, 390 F.3d 1 (1st Cir. 2004): The defendant's accomplice gave a signed confession under oath to a prosecutor in Puerto Rico. The court held that any information in that confession that incriminated the defendant, directly or indirectly, could not be admitted against him after *Crawford*. Whatever the limits of the term "testimonial," it clearly covers sworn statements by accomplices to police officers.

Accomplice's statements during police interrogation are testimonial: *United States v. Alvarado-Valdez*, 521 F.3d 337 (5th Cir. 2008): The trial court admitted the statements of the defendant's accomplice that were made during a police interrogation. The statements were offered for their truth --- to prove that the accomplice and the defendant conspired with others to transport cocaine. Because the accomplice had absconded and could not be produced for trial, admission of his testimonial statements violated the defendant's right to confrontation.

Identification of a defendant, made to police by an incarcerated person, is testimonial: *United States v. Pugh*, 405 F.3d 390 (6th Cir. 2005): In a bank robbery prosecution, the court found a *Crawford* violation when the trial court admitted testimony from a police officer that he had brought a surveillance photo down to a person who was incarcerated, and that person identified the defendant as the man in the surveillance photo. This statement was testimonial under *Crawford* because "the term 'testimonial' at a minimum applies to police interrogations." The court also noted that the statement was sworn and that a person who "makes a formal statement to government officers bears testimony." *See also United States v. McGee*, 529 F.3d 691 (6th Cir. 2008) (confidential informant's statement identifying the defendant as the source of drugs was testimonial).

Circuit Court's opinion that an anonymous tip to law enforcement is testimonial was reversed by the Supreme Court on AEPDA grounds: *Etherton v. Rivard*, 800 F.3d 737 (6th Cir. 2015), *rev'd sub nom.*, *Woods v. Etherton*, 136 S.Ct. 1149 (2016): On habeas review, the court held that an anonymous tip to law enforcement, accusing the defendant of criminal misconduct, was testimonial. It further held that the defendant's right to confrontation was violated at his trial where the tip was admitted into evidence for its truth. It noted that "[t]he prosecutor's repeated references both to the existence and the details of the tip went far beyond what was necessary for background --- thereby indicating the content of the tip was admitted for its truth." **But the Supreme Court, in a per curiam opinion, reversed the Sixth Circuit**, holding that it gave insufficient deference to the state court's determination that the anonymous tips were properly admitted for the non-hearsay purpose of explaining the context of the police investigation. The Court stated that a "fairminded jurist" could conclude "that repetition of the tip did not establish that the uncontested facts it conveyed were submitted for their truth. Such a jurist might reach that

conclusion by placing weight on the fact that the truth of the facts was not disputed. No precedent of this Court clearly forecloses that view.”

Accomplice statement to law enforcement is testimonial: *United States v. Nielsen*, 371 F.3d 574 (9th Cir. 2004): Nielsen resided in a house with Volz. Police officers searched the house for drugs. Drugs were found in a floor safe. An officer asked Volz who had access to the floor safe. Volz said that she did not but that Nielsen did. This hearsay statement was admitted against Nielsen at trial. The court found this to be error, as the statement was testimonial under *Crawford*, because it was made to police officers during an interrogation. The court noted that even the first part of Volz’s statement --- that she did not have access to the floor safe --- violated *Crawford* because it provided circumstantial evidence that Nielsen did have access.

Statement made by an accomplice after arrest, but before formal interrogation, is testimonial: *United States v. Summers*, 414 F.3d 1287 (10th Cir. 2005): The defendant’s accomplice in a bank robbery was arrested by police officers. As he was walked over to the patrol car, he said to the officer, “How did you guys find us?” The court found that the admission of this statement against the defendant violated his right to confrontation under *Crawford*. The court explained as follows:

Although Mohammed had not been read his *Miranda* rights and was not subject to formal interrogation, he had nevertheless been taken into physical custody by police officers. His question was directed at a law enforcement official. Moreover, Mohammed’s statement * *
* implicated himself and thus was loosely akin to a confession.

Statements made by accomplice to police officers during a search are testimonial: *United States v. Arbolaez*, 450 F.3d 1283 (11th Cir. 2006): In a marijuana prosecution, the court found error in the admission of statements made by one of the defendant’s accomplices to law enforcement officers during a search. The government argued that the statements were offered not for truth but to explain the officers’ reactions to the statements. But the court found that “testimony as to the details of statements received by a government agent . . . even when purportedly admitted not for the truthfulness of what the informant said but to show why the agent did what he did after he received that information constituted inadmissible hearsay.” The court also found that the accomplice’s statements were testimonial under *Crawford*, because they were made in response to questions from police officers.

Investigative Reports

Reports by a law enforcement officer on prior statements made by a cooperating witness were testimonial: *United States v. Moreno*, 809 F.3d 766 (3rd Cir. 2016): After a cooperating witness testified on direct, defense counsel attacked his credibility on the ground that he had made a deal. On redirect, the trial court allowed the witness to read into evidence the reports of a law enforcement officer who had interviewed the witness. The reports indicated that the witness had made statements consistent with his in-court testimony. The court of appeals found a violation of the Confrontation Clause, because the officer's hearsay statements (about what the witness had told him) were testimonial and the officer was not produced for cross-examination. The court found that the reports were "investigative reports prepared by a government agent in actual anticipation of trial."

Joined Defendants

Testimonial hearsay offered by another defendant violates *Crawford* where the statement can be used against the defendant: *United States v. Nguyen*, 565 F.3d 668 (9th Cir. 2009): In a trial of multiple defendants in a fraud conspiracy, one of the defendants offered statements he made to a police investigator. These statements implicated the defendant. The court found that the admission of the codefendant's statements violated the defendant's right to confrontation. The statements were clearly testimonial because they were made to a police officer during an interrogation. The court noted that the confrontation analysis "does not change because a co-defendant, as opposed to the prosecutor, elicited the hearsay statement. The Confrontation Clause gives the accused the right to be confronted with the witnesses against him. The fact that Nguyen's co-counsel elicited the hearsay has no bearing on her right to confront her accusers."

Judicial Findings and Judgments

Judicial findings and an order of judicial contempt are not testimonial: *United States v. Sine*, 493 F.3d 1021 (9th Cir. 2007): The court held that the admission of a judge's findings and order of criminal contempt, offered to prove the defendant's lack of good faith in a tangentially related fraud case, did not violate the defendant's right to confrontation. The court found "no reason to believe that Judge Carr wrote the order in anticipation of Sine's prosecution for fraud, so his order was not testimonial."

See also United States v. Ballesteros-Selinger, 454 F.3d 973 (9th Cir. 2006) (holding that an immigration judge's deportation order was nontestimonial because it "was not made in anticipation of future litigation").

Law Enforcement Involvement

Following *Clark*, the court finds that a report of sex abuse to a nurse by a 4 ½ year old child is not testimonial: *United States v. Barker*, 820 F.3d 167 (5th Cir. 2016): The court held that a statement by a 4 ½ year-old girl, accusing the defendant of sexual abuse, was not testimonial in light of *Ohio v. Clark*. The girl made the statement to a nurse who was registered by the state to take such statements. The court held that like in *Clark* the statement was not testimonial because: 1) it was made by a child too young to understand the criminal justice system; 2) it was not made to law enforcement; 3) the nurse's primary motive was to treat the child; and 4) the fact that the nurse was required to report the abuse to law enforcement did not change her motivation to treat the child.

Accusations made to child psychologist appointed by law enforcement were testimonial: *McCarley v. Kelly*, 759 F.3d 535 (6th Cir. 2014): A three year old boy witnessed a murder but would not talk to the police about it. The police sought out a child psychologist, who interviewed the boy with the understanding that she would try to “extract information” from him about the crime and refer that information to the police. Helping the child was, at best, a secondary motive. Under these circumstances, the court found that the child's statements to the psychologist were testimonial and erroneously admitted in the defendant's state trial. The court noted that the sessions “were more akin to police interrogations than private counseling sessions.”

Note: *McCarley* was decided before *Ohio v. Clark*, where the Supreme Court held that the statement of a young child is extremely unlikely to be testimonial, because the child would not have a primary motive that the statement would be used in a criminal prosecution. *McCarley* differs in one respect from *Clark*, though. In *McCarley*, the party taking the statement definitely had a primary motive to use it in a criminal prosecution. This was not the case in *Clark*, where the child was being interviewed by his teachers. Still, the result in *McCarley* is questionable after *Clark* --- and especially so in light of the holding in *Michigan v. Bryant* that primary motivation must be assessed from the perspective of a reasonable person in the position of *both* the speaker and the interviewer.

Police officer's count of marijuana plants found in a search is testimonial: *United States v. Taylor*, 471 F.3d 832 (7th Cir. 2006): The court found plain error in the admission of testimony by a police officer about the number of marijuana plants found in the search of the defendant's premises. The officer did not himself count all of the plants; part of his total count was based on a hearsay statement of another officer who assisted in the count. The court held that the officer's hearsay statement about the amount of plants counted was clearly testimonial as it was an evaluation prepared for purposes of criminal prosecution.

Social worker’s interview of child-victim, with police officers present, was the functional equivalent of interrogation and therefore testimonial: *Bobadilla v. Carlson*, 575 F.3d 785 (8th Cir. 2009): The court affirmed the grant of a writ of habeas after a finding that the defendant’s state conviction for child sexual abuse was tainted by the admission of a testimonial statement by the child-victim. A police officer arranged to have the victim interviewed at the police station five days after the alleged abuse. The officer sought the assistance of a social worker, who conducted the interview using a forensic interrogation technique designed to detect sexual abuse. The court found that “this interview was no different than any other police interrogation: it was initiated by a police officer a significant time after the incident occurred for the purpose of gathering evidence during a criminal investigation.” The court found it important that the interview took place at the police station, it was recorded for use at trial, and the social worker utilized a structured, forensic method of interrogation at the behest of the police. Under the circumstances, the social worker “was simply acting as a surrogate interviewer for the police.”

Note: *Bobadilla* was decided before *Ohio v. Clark*, where the Supreme Court held that the statement of a young child is extremely unlikely to be testimonial, because the child would not have a primary motive that the statement would be used in a criminal prosecution. *Bobadilla* differs in one respect from *Clark*, though. In *Bobadilla*, the party taking the statement definitely had a primary motive to use it in a criminal prosecution. This was not the case in *Clark*, where the child was being interviewed by his teachers. Still, the result in *Bobadilla* is questionable after *Clark* --- and especially so in light of the holding in *Michigan v. Bryant* that primary motivation must be assessed from the perspective of a reasonable person in the position of *both* the speaker and the interviewer.

Statements made by a child-victim to a forensic investigator are testimonial: *United States v. Bordeaux*, 400 F.3d 548 (8th Cir. 2005): In a child sex abuse prosecution, the trial court admitted hearsay statements made by the victim to a forensic investigator. The court reversed the conviction, finding among other things that the hearsay statements were testimonial under *Crawford*. The court likened the exchange between the victim and the investigator to a police interrogation. It elaborated as follows:

The formality of the questioning and the government involvement are undisputed in this case. The purpose of the interview (and by extension, the purpose of the statements) is disputed, but the evidence requires the conclusion that the purpose was to collect information for law enforcement. First, as a matter of course, the center made one copy of the videotape of this kind of interview for use by law enforcement. Second, at trial, the prosecutor repeatedly referred to the interview as a “forensic” interview . . . That [the victim’s] statements may have also had a medical purpose does not change the fact that they were testimonial, because *Crawford* does not indicate, and logic does not dictate, that multi-purpose statements cannot be testimonial.

Note: This case was decided before *Ohio v. Clark*, where the Supreme Court held that the statement of a young child is extremely unlikely to be testimonial, because the child would not have a primary motive that the statement would be used in a criminal prosecution. This case differs in one respect from *Clark*, though --- the party taking the statement definitely had a primary motive to use it in a criminal prosecution. This was not the case in *Clark*, where the child was being interviewed by his teachers. Still, the result here is questionable after *Clark* --- and especially so in light of the holding in *Michigan v. Bryant* that primary motivation must be assessed from the perspective of a reasonable person in the position of *both* the speaker and the interviewer.

Moreover, the court concedes that there may have been a dual motive here --- treatment being the other motive. At a minimum, a court would have to make the finding that the prosecutorial motive was primary, and the court did not do this.

See also United States v. Eagle, 515 F.3d 794 (8th Cir. 2008) (statements from a child concerning sex abuse, made to a forensic investigator, are testimonial). *Compare United States v. Peneaux*, 432 F.3d 882 (8th Cir. 2005) (distinguishing *Bordeaux* where the child’s statement was made to a treating physician rather than a forensic investigator, and there was no evidence that the interview resulted in any referral to law enforcement: “Where statements are made to a physician seeking to give medical aid in the form of a diagnosis or treatment, they are presumptively nontestimonial.”); *United States v. DeLeon*, 678 F.3d 317 (4th Cir. 2012) (discussed below under “medical statements” and distinguishing *Bordeaux* and *Bobodilla* as cases where statements were essentially made to law enforcement officers and not for treatment purposes).

Machine-Generated Information

Printout from machine is not hearsay and therefore its admission does not violate *Crawford*: *United States v. Washington*, 498 F.3d 225 (4th Cir. 2007): The defendant was convicted of operating a motor vehicle under the influence of drugs and alcohol. At trial, an expert testified on the basis of a printout from a gas chromatograph machine. The machine issued the printout after testing the defendant's blood sample. The expert testified to his interpretation of the data issued by the machine --- that the defendant's blood sample contained PCP and alcohol. The defendant argued that *Crawford* was violated because the expert had no personal knowledge of whether the defendant's blood contained PCP or alcohol. He read *Crawford* to require the production of the lab personnel who conducted the test. But the court rejected this argument, finding that the machine printout was not hearsay, and therefore its use at trial by the expert could not violate *Crawford* even though it was prepared for use at trial. The court reasoned as follows:

The technicians could neither have affirmed or denied independently that the blood contained PCP and alcohol, because all the technicians could do was to refer to the raw data printed out by the machine. Thus, the statements to which Dr. Levine testified in court . . . did not come from the out-of-court technicians [but rather from the machine] and so there was no violation of the Confrontation Clause. . . . The raw data generated by the diagnostic machines are the "statements" of the machines themselves, not their operators. But "statements" made by machines are not out-of-court statements made by declarants that are subject to the Confrontation Clause.

The court noted that the technicians might have needed to be produced to provide a chain of custody, but observed that the defendant made no objection to the authenticity of the machine's report.

Note: The result in *Washington* appears unaffected by *Williams*, as the Court in *Williams* had no occasion to consider whether a machine output can be testimonial hearsay.

See also *United States v. Summers*, 666 F.3d 192 (4th Cir. 2011): (expert's reliance on a "pure instrument read-out" did not violate the Confrontation Clause because such a read-out is not "testimony").

Printout from machine is not hearsay and therefore does not violate *Crawford*: *United States v. Moon*, 512 F.3d 359 (7th Cir. 2008): The court held that an expert's testimony about readings taken from an infrared spectrometer and a gas chromatograph (which determined that the substance taken from the defendant was narcotics) did not violate *Crawford* because "data is not 'statements' in any useful sense. Nor is a machine a 'witness against' anyone."

Google satellite images, and machine-generated location markers, are not hearsay and therefore, even if prepared for trial, their admission does not violate the Confrontation Clause: *United States v. Lizarraga-Tirado*, 789 F.3d 1107 (4th Cir. 2015): The defendant was convicted of illegal entry as a previously removed alien. The defendant contended that when he was arrested, he was still on the Mexican side of the border. At trial the arresting officer testified that she contemporaneously recorded the coordinates of the defendant’s arrest using a handheld GPS device. To illustrate the location of these coordinates, the government introduced a Google Earth satellite image. The image contained a “tack” showing the location of the coordinates to be on the United States side of the border. There was no testimony on whether the tack was automatically generated or manually placed and labeled. The defendant argued that both the satellite image and the tack were inadmissible hearsay and that their admission violated his right to confrontation. As to the satellite image itself, the court found that “[b]ecause a satellite image, like a photograph, makes no assertion, it isn’t hearsay.” The court found the tack to be a more difficult question. It noted that “[u]nlike a satellite image itself, labeled markers added to a satellite image do make clear assertions. Indeed, that is what makes them useful.” The court concluded that if a tack is placed manually and then labeled, “it’s classic hearsay” --- for example, a dot manually labeled with the name of a town “asserts that there’s a town where you see the dot.” On the other hand, “[a] tack placed by the Google Earth program and automatically labeled with GPS coordinates isn’t hearsay” because it is completely machine-generated and so no assertion is being made.

In this case, the court took judicial notice that the tack was automatically generated because the court itself accessed Google Earth and typed in the same coordinates to which the arresting officer testified --- which resulted in a tack identical to the one shown on the satellite image admitted at trial. Thus the program “analyze[d] the GPS coordinates and, without any human intervention, place[d] a labeled tack on the satellite image.” The court concluded that “[b]ecause the program makes the relevant assertion --- that the tack is accurately placed at the labeled GPS coordinates --- there’s no statement as defined by the hearsay rule.” The court noted that any issues of malfunction or tampering present questions of authenticity, not hearsay, and the defendant made no authenticity objection. Finally, “[b]ecause the satellite images and tack-coordinates pair weren’t hearsay, their admission also didn’t violate the Confrontation Clause.”

Electronic tabulation of phone calls is not a statement and therefore cannot be testimonial hearsay: *United States v. Lamons*, 532 F.3d 1251 (11th Cir. 2008): Bomb threats were called into an airline, resulting in the disruption of a flight. The defendant was a flight attendant accused of sending the threats. The trial court admitted a CD of data collected from telephone calls made to the airline; the data indicated that calls came from the defendant’s cell phone at the time the threats were made. The defendant argued that the information on the CD was testimonial hearsay, but the court disagreed, because the information was entirely machine-generated. The court stated that “the witnesses with whom the Confrontation Clause is concerned are *human* witnesses” and that the purposes of the Confrontation Clause “are ill-served through confrontation of the machine’s human operator. To say that a wholly machine-generated statement is unreliable is to speak of mechanical error, not mendacity. The best way to advance the truth-seeking process * * * is through the process of authentication as provided in Federal Rule of

Evidence 901(b)(9).” The court concluded that there was no hearsay statement at issue, and therefore the Confrontation Clause was inapplicable.

Medical/Therapeutic Statements

Statements by victim of abuse to treatment manager of Air Force medical program were admissible under Rule 803(4) and non-testimonial: *United States v. DeLeon*, 678 F.3d 317 (4th Cir. 2012): The defendant was convicted of murdering his eight-year-old son. Months before his death, the victim had made statements about incidents in which he had been physically abused by the defendant as part of parental discipline. The statements were made to the treatment manager of an Air Force medical program that focused on issues of family health. The court found that the statements were properly admitted under Rule 803(4) and (essentially for that reason) were non-testimonial because their primary purpose was not for use in a criminal prosecution of the defendant. The court noted that the statements were not made in response to an emergency, but that emergency was only one factor under *Bryant*. The court also recognized that the Air Force program “incorporates reporting requirements and a security component” but stated that these factors were not sufficient to render statements to the treatment manager testimonial. The court explained why the “primary motive” test was not met in the following passage:

We note first that Thomas [the treatment manager] did not have, nor did she tell Jordan [the child] she had, a prosecutorial purpose during their initial meeting. Thomas was not employed as a forensic investigator but instead worked * * * as a treatment manager. And there is no evidence that she recorded the interview or otherwise sought to memorialize Jordan’s answers as evidence for use during a criminal prosecution. * * * Rather, Thomas used the information she gathered from Jordan and his family to develop a written treatment plan and continued to provide counseling and advice on parenting techniques in subsequent meetings with family members. * * * Thomas also did not meet with Jordan in an interrogation room or at a police station but instead spoke with him in her office in a building that housed * * * mental health service providers.

Importantly, ours is also not a case in which the social worker operated as an agent of law enforcement. * * * Here, Thomas did not act at the behest of law enforcement, as there was no active criminal investigation when she and Jordan spoke. * * * An objective review of the parties’ actions and the circumstances of the meeting confirms that the primary purpose was to develop a treatment plan --- not to establish facts for a future criminal prosecution. Accordingly, we hold that the contested statements were nontestimonial and that their admission did not violate DeLeon’s Sixth Amendment rights.

Note: The court’s analysis is strongly supported by the subsequent Supreme Court decision in *Ohio v. Clark*. The *Clark* Court held that: 1) Statements by children are extremely unlikely to be primarily motivated for use in a criminal prosecution; and 2) public officials do not become an agent of law enforcement by asking about suspected child abuse.

Following *Clark*, the court finds that a report of sex abuse to a nurse by a 4½ year old child is not testimonial: *United States v. Barker*, 820 F.3d 167 (5th Cir. 2016): The court held that a statement by a 4½ year-old girl, accusing the defendant of sexual abuse, was not testimonial in light of *Ohio v. Clark*. The girl made the statement to a nurse who was registered by the state to take such statements. The court held that like in *Clark* the statement was not testimonial because: 1) it was made by a child too young to understand the criminal justice system; 2) it was not made to law enforcement; 3) the nurse’s primary motive was to treat the child; and 4) the fact that the nurse was required to report the abuse to law enforcement did not change her motivation to treat the child.

Statements admitted under Rule 803(4) are presumptively non-testimonial: *United States v. Peneaux*, 432 F.3d 882 (8th Cir. 2005): “Where statements are made to a physician seeking to give medical aid in the form of a diagnosis or treatment, they are presumptively nontestimonial.”

Miscellaneous

Labels on electronic devices, indicating that they were made in Taiwan, are not testimonial: *United States v. Napier*, 787 F.3d 333 (6th Cir. 2015): In a child pornography prosecution, the government proved the interstate commerce element by offering two cellphones used to commit the crimes. The cellphones were each labeled “Made in Taiwan.” The defendant argued that the statements on the labels were hearsay and testimonial. But the court found that the labels clearly were not made with the primary motive of use in a criminal prosecution.

Note: The court in *Napier* reviewed the confrontation argument for plain error, because the defendant objected at trial only on hearsay grounds; a hearsay objection does not preserve a claim of error on confrontation grounds.

Statement of an accomplice made to his attorney is not testimonial: *Jensen v. Pflizer*, 439 F.3d 1086 (9th Cir. 2006): Taylor was in custody for the murder of Kevin James. He confessed the murder to his attorney, and implicated others, including Jensen. After Taylor was released from jail, Jensen and others murdered him because they thought he talked to the authorities. Jensen was tried for the murder of both James and Taylor, and the trial court admitted the statements made by Taylor to his attorney (Taylor’s next of kin having waived the privilege). The court found that the statements made by Taylor to his attorney were not testimonial, as they “were not made to a government officer with an eye toward trial, the primary abuse at which the Confrontation Clause was directed.” Finally, while Taylor’s statements amounted to a confession, they were not given to a police officer in the course of interrogation.

Non-Testimonial Hearsay and the Right to Confrontation

Clear statement and holding that *Crawford* overruled *Roberts* even with respect to non-testimonial hearsay: *Whorton v. Bockting*, 549 U.S. 406 (2007): The habeas petitioner argued that testimonial hearsay was admitted against him in violation of *Crawford*. His trial was conducted ten years before *Crawford*, however, and so the question was whether *Crawford* applies retroactively to benefit habeas petitioners. Under Supreme Court jurisprudence, a new rule is applicable on habeas only if it is a “watershed” rule that is critical to the truthseeking function of a trial. The Court found that *Crawford* was a new rule because it overruled *Roberts*. It further held that *Crawford* was not essential to the truthseeking function; its analysis on this point is pertinent to whether *Roberts* retains any vitality with respect to non-testimonial hearsay. The Court declared as follows:

Crawford overruled *Roberts* because *Roberts* was inconsistent with the original understanding of the meaning of the Confrontation Clause, not because the Court reached the conclusion that the overall effect of the *Crawford* rule would be to improve the accuracy of fact finding in criminal trials. Indeed, in *Crawford* we recognized that even under the *Roberts* rule, this Court had never specifically approved the introduction of testimonial hearsay statements. Accordingly, it is not surprising that the overall effect of *Crawford* with regard to the accuracy of fact-finding in criminal cases is not easy to assess.

With respect to *testimonial* out-of-court statements, *Crawford* is more restrictive than was *Roberts*, and this may improve the accuracy of fact-finding in some criminal cases. Specifically, under *Roberts*, there may have been cases in which courts erroneously determined that testimonial statements were reliable. But see 418 F.3d at 1058 (O’Scannlain, J., dissenting from denial of rehearing en banc) (observing that it is unlikely that this occurred “in anything but the exceptional case”). *But whatever improvement in reliability Crawford produced in this respect must be considered together with Crawford’s elimination of Confrontation Clause protection against the admission of unreliable out-of-court nontestimonial statements. Under Roberts, an out-of-court nontestimonial statement not subject to prior cross-examination could not be admitted without a judicial determination regarding reliability. Under Crawford, on the other hand, the Confrontation Clause has no application to such statements and therefore permits their admission even if they lack indicia of reliability.* (Emphasis added).

One of the main reasons that *Crawford* is not retroactive (the holding in *Bochtig*) is that it is not essential to the accuracy of a verdict. And one of the reasons *Crawford* is not essential to accuracy is that, with respect to non-testimonial statements, *Crawford* conflicts with accurate factfinding because it lifts all constitutional reliability requirements imposed by *Roberts*. Thus, if hearsay is non-testimonial, there is no constitutional limit on its admission.

Non-Verbal Information

Videotape of drug transaction was not hearsay and so its introduction did not violate the right to confrontation: *United States v. Wallace*, 753 F.3d 671 (7th Cir. 2014): In a drug prosecution, the government introduced a videotape, without sound, which appeared to show the defendant selling drugs to an undercover informant. The defendant argued that the tape was inadmissible hearsay and violated his right to confrontation, because the undercover informant was never called to testify. But the court disagreed and affirmed his conviction. The court reasoned that the video was

a picture; it was not a witness who could be cross-examined. The agent narrated the video at trial, and his narration was a series of statements, so he was subject to being cross-examined and was, and thus was “confronted.” [The informant] could have testified to what he saw, but what could he have said about the recording device except that the agents had strapped it on him and sent him into the house, whether the device recorded whatever happened to be in front of it? Rule 801(a) of the Federal Rules of Evidence does define “statement” to include “nonverbal conduct,” but only if the person whose conduct it was “intended it as an assertion.” We can’t fit the videotape in this definition.

Photographs of seized evidence was not testimony so its admission did not violate the Confrontation Clause: *United States v. Brooks*, 772 F.3d 1161 (9th Cir. 2014): In a narcotics trial, the defendant objected to the admission of photographs of a seized package on the ground it would violate his right to confrontation. But the court disagreed. It noted that the *Crawford* Court defined “testimony” as “a solemn declaration or affirmation made for the purpose of establishing or proving some fact.” The photographs did not meet that definition because they “were not ‘witnesses’ against Brooks. They did not ‘bear testimony’ by declaring or affirming anything with a ‘purpose.’”

See also the cases under the heading “Machine-Generated Evidence” supra.

Not Offered for Truth

Statements made to defendant in a conversation were testimonial but were not barred by *Crawford*, as they were admitted to provide context for the defendant's own statements: *United States v. Bostick*, 791 F.3d 127 (D.C.Cir. 2015): In a surreptitiously taped conversation, the defendant made incriminating statements to a confidential informant in the course of a drug transaction. The defendant argued that admitting the informant's part of the conversation violated his right to confrontation because the informant was motivated to develop the conversation for purposes of prosecution. But the court found that the Confrontation Clause was inapplicable because the informant's statements were not offered for their truth, but rather to provide "context" for the defendant's own statements regarding the drug transaction. (And the defendant had no right to confront his own statements). Statements that are not hearsay cannot violate the Confrontation Clause even if they fit the definition of testimoniality.

Statements made to defendant in a conversation were testimonial but were not barred by *Crawford*, as they were admitted to provide context for the defendant's own statements: *United States v. Hansen*, 434 F.3d 92 (1st Cir. 2006): After a crime and as part of cooperation with the authorities, the father of an accomplice surreptitiously recorded his conversation with the defendant, in which the defendant admitted criminal activity. The court found that the father's statements during the conversation were testimonial under *Crawford* --- as they were made specifically for use in a criminal prosecution. But their admission did not violate the defendant's right to confrontation. The defendant's own side of the conversation was admissible as a statement of a party-opponent, and the father's side of the conversation was admitted not for its truth but to provide context for the defendant's statements. *Crawford* does not bar the admission of statements not offered for their truth. *Accord United States v. Walter*, 434 F.3d 30 (1st Cir. 2006) (*Crawford* "does not call into question this court's precedents holding that statements introduced solely to place a defendant's admissions into context are not hearsay and, as such, do not run afoul of the Confrontation Clause."); *United States v. Santiago*, 566 F.3d 65 (1st Cir. 2009) (statements were not offered for their truth "but as exchanges with Santiago essential to understand the context of Santiago's own recorded statements arranging to 'cook' and supply the crack"); *United States v. Liriano*, 761 F.3d 131 (1st Cir. 2014) (even though statements were testimonial, admission did not violation the Confrontation Clause where they were properly offered to place the defendant's responses in context). *See also Furr v. Brady*, 440 F.3d 34 (1st Cir. 2006) (the defendant was charged with firearms offenses and intimidation of a government witness; an accomplice's confession to law enforcement did not implicate *Crawford* because it was not admitted for its truth; rather, it was admitted to show that the defendant knew about the confession and, in contacting the accomplice thereafter, intended to intimidate him).

Note: Five members of the Court in *Williams* disagreed with Justice Alito’s analysis that the Confrontation Clause was not violated because the testimonial lab report was not admitted for its truth. The question from *Williams* is whether those five Justices (now four, actually) are opposed to *any* use of the not-for-truth analysis in answering Confrontation Clause challenges. The answer is apparently that their objection to the not-for truth analysis in *Williams* does not extend to situations in which (in their personal view) the statement has a *legitimate* not-for-truth purpose. Thus, Justice Thomas distinguishes the expert’s use of the lab report from the prosecution’s admission of an accomplice’s confession in *Tennessee v. Street*, where the confession “was not introduced for its truth, but only to impeach the defendant’s version of events.” In *Street* the defendant challenged his confession on the ground that he had been coerced to copy Peele’s confession. Peele’s confession was introduced not for its truth but only to show that it differed from Street’s. For that purpose, it didn’t matter whether it was true. Justice Thomas stated that “[u]nlike the confession in *Street*, statements introduced to explain the basis of an expert’s opinion are not introduced for a plausible nonhearsay purpose” because “to use the inadmissible information in evaluating the expert’s testimony, the jury must make a preliminary judgment about whether this information is true.” Justice Kagan in her opinion essentially repeats Justice Thomas’s analysis and agrees with his distinction between legitimate and illegitimate use of the “not-for-truth” argument. Both Justices Kagan and Thomas agree with the Court’s statement in *Crawford* that the Confrontation Clause “does not bar the use of testimonial statements for purposes other than establishing the truth of the matter asserted.” Both would simply add the proviso that the not-for-truth use must be *legitimate* or *plausible*.

It follows that the cases under this “not-for-truth” headnote are probably unaffected by *Williams*, as they largely permit admission of testimonial statements as offered “not-for-truth” only when that purpose is legitimate, i.e., *only when the statement is offered for a purpose as to which it is relevant regardless of whether it is true or not.*

Statements by informant to police officers, offered implausibly to prove the “background” of the police investigation, probably violate *Crawford*, but admission is not plain error: *United States v. Maher*, 454 F.3d 13 (1st Cir. 2006): At the defendant’s drug trial, several accusatory statements from an informant (Johnson) were admitted ostensibly to explain

why the police focused on the defendant as a possible drug dealer. The court found that these statements were testimonial under *Crawford*, because “the statements were made while the police were interrogating Johnson after Johnson’s arrest for drugs; Johnson agreed to cooperate and he then identified Maher as the source of drugs. . . . In this context, it is clear that an objectively reasonable person in Johnson’s shoes would understand that the statement would be used in prosecuting Maher at trial.” The court then addressed the government’s argument that the informant’s statements were not admitted for their truth, but to explain the background of the police investigation:

The government’s articulated justification --- that any statement by an informant to police which sets context for the police investigation is not offered for the truth of the statements and thus not within *Crawford* --- is impossibly overbroad [and] may be used not just to get around hearsay law, but to circumvent *Crawford*’s constitutional rule. . . . Here, Officer MacVane testified that the confidential informant had said Maher was a drug dealer, even though the prosecution easily could have structured its narrative to avoid such testimony. The . . . officer, for example, could merely say that he had acted upon “information received,” or words to that effect. It appears the testimony was primarily given exactly for the truth of the assertion that Maher was a drug dealer and should not have been admitted given the adequate alternative approach.

The court noted, however, that the defendant had not objected to the admission of the informant’s statements. It found no plain error, noting among other things, the strength of the evidence and the fact that the testimony “was followed immediately by a sua sponte instruction to the effect that any statements of the confidential informant should not be taken as standing for the truth of the matter asserted, i.e., that Maher was a drug dealer who supplied Johnson with drugs.”

Accomplice statements purportedly offered for “background” were actually admitted for their truth, resulting in a Confrontation Clause violation: *United States v. Cabrera-Rivera*, 583 F.3d 26 (1st Cir. 2009): In a robbery prosecution, the government offered hearsay statements that accomplices made to police officers. The government argued that the statements were not offered for their truth, but rather to explain how the government was able to find other evidence in the case. But the court found that the accusations were not properly admitted for the purpose of explaining the police investigation. The government at trial emphasized the details of the accusations that had nothing to do with leading the government to other evidence; and the government did not contend that one of the accomplice’s confessions led to any other evidence. Because the statements were testimonial, and because they were in fact offered for their truth, admission of the statements violated *Crawford*.

Note: The result in *Cabrera-Rivera* is certainly unchanged by *Williams*. The prosecution's was not offering the accusations for any *legitimate not-for-truth* purpose.

Statements offered to provide context for the defendant's part of a conversation were not hearsay and therefore could not violate the Confrontation Clause: *United States v. Hicks*, 575 F.3d 130 (1st Cir. 2009): The court found no error in admitting a telephone call that the defendant placed from jail in which he instructed his girlfriend how to package and sell cocaine. The defendant argued that admission of the girlfriend's statements in the telephone call violated *Crawford*. But the court found that the girlfriend's part of the conversation was not hearsay and therefore did not violate the defendant's right to confrontation. The court reasoned that the girlfriend's statements were admissible not for their truth but to provide the context for understanding the defendant's incriminating statements. The court noted that the girlfriend's statements were "little more than brief responses to Hicks's much more detailed statements." *See also United States v. Occhiuto*, 784 F.3d 862 (1st Cir. 2015) (statements by undercover informant made to defendant during a drug deal were properly admitted; they were offered not for their truth but to provide context for the defendant's own statements, and so they did not violate the Confrontation Clause).

Accomplice's confession, when offered in rebuttal to explain why police did not investigate other suspects and leads, is not hearsay and therefore its admission does not violate *Crawford*: *United States v. Cruz-Diaz*, 550 F.3d 169 (1st Cir. 2008): In a bank robbery prosecution, defense counsel cross-examined a police officer about the decision not to pursue certain investigatory opportunities after apprehending the defendants. Defense counsel identified "eleven missed opportunities" for tying the defendants to the getaway car, including potential fingerprint and DNA evidence. In response, the officer testified that the defendant's co-defendant had given a detailed confession. The defendant argued that introducing the cohort's confession violated his right to confrontation, because it was testimonial under *Crawford*. But the court found the confession to be not hearsay --- as it was offered for the not-for-truth purpose of explaining why the police conducted the investigation the way they did. Accordingly admission of the statement did not violate *Crawford*.

The defendant argued that the government's true motive was to introduce the confession for its truth, and that the not-for-truth purpose was only a pretext. But the court disagreed, noting that the government never tried to admit the confession until defense counsel attacked the thoroughness of the police investigation. Thus, introducing the confession for a not-for-truth purpose was proper rebuttal. The defendant suggested that "if the government merely wanted to

explain why the FBI and police failed to conduct a more thorough investigation it could have had the agent testify in a manner that entirely avoided referencing Cruz’s confession” --- for example, by stating that the police chose to truncate the investigation “because of information the agent had.” But the court held that this kind of sanitizing of the evidence was not required, because it “would have come at an unjustified cost to the government.” Such generalized testimony, without any context, “would not have sufficiently rebutted Ayala’s line of questioning” because it would have looked like one more cover-up. The court concluded that “[w]hile there can be circumstances under which Clause concerns prevent the admission of the substance of a declarant’s out-of-court statement where a less prejudicial narrative would suffice in its place, this is not such a case.” *See also United States v. Diaz*, 670 F.3d 332 (1st Cir. 2012) (testimonial statement from one police officer to another to effect an arrest did not violate the right to confrontation because it was not hearsay: “The government offered Perez’s out-of-court statement to explain why Veguilla had arrested [the defendant], not as proof of the drug sale that Perez allegedly witnesses. Out-of-court statements providing directions from one individual to another do not constitute hearsay.”).

False alibi statements made to police officers by accomplices are testimonial, but admission does not violate the Confrontation Clause because they are not offered for their truth: *United States v. Logan*, 419 F.3d 172 (2nd Cir. 2005): The defendant was convicted of conspiracy to commit arson. The trial court admitted statements made by his coconspirators to the police. These statements asserted an alibi, and the government presented other evidence indicating that the alibi was false. The court found no Confrontation Clause violation in admitting the alibi statements. The court relied on *Crawford* for the proposition that the Confrontation Clause “does not bar the use of testimonial statements for purposes other than proving the truth of the matter asserted.” The statements were not offered to prove that the alibi was true, but rather to corroborate the defendant’s own account that the accomplices planned to use the alibi. Thus “the fact that Logan was aware of this alibi, and that [the accomplices] actually used it, was evidence of conspiracy among [the accomplices] and Logan.”

Note: The *Logan* court reviewed the defendant’s Confrontation Clause argument under the plain error standard. This was because defense counsel at trial objected on grounds of hearsay, but did not make a specific Confrontation Clause objection.

Statements made to defendant in a conversation were testimonial but were not barred by *Crawford*, as they were admitted to provide context for the defendant’s statements: *United States v. Paulino*, 445 F.3d 211 (2nd Cir. 2006): The court stated: “It has long been the rule that so long as statements are not presented for the truth of the matter asserted, but only to establish a context, the defendant’s Sixth Amendment rights are not transgressed. Nothing in *Crawford v. Washington* is to the contrary.”

Note: This typical use of “context” is not in question after *Williams*, because the focus is on the defendant’s statements and not on the truth of the declarant’s statements. Use of context could be *illegitimate* however if the focus is in fact on the truth of the declarant’s statements. See, e.g., *United States v. Powers* from the Sixth Circuit, *infra*.

Co-conspirator statements made to government officials to cover-up a crime (whether true or false) do not implicate *Crawford* because they were not offered for their truth: *United States v. Stewart*, 433 F.3d 273 (2nd Cir. 2006): In the prosecution of Martha Stewart, the government introduced statements made by each of the defendants during interviews with government investigators. Each defendant’s statement was offered against the other, to prove that the story told to the investigators was a cover-up. The court held that the admission of these statements did not violate *Crawford*, even though they were “provided in a testimonial setting.” It noted first that to the extent the statements were false, they did not violate *Crawford* because “*Crawford* expressly confirmed that the categorical exclusion of out-of-court statements that were not subject to contemporaneous cross-examination does not extend to evidence offered for purposes other than to establish the truth of the matter asserted.” The defendants argued, however, that some of the statements made during the course of the obstruction were actually true, and as they were made to government investigators, they were testimonial. The court observed that there is some tension in *Crawford* between its treatment of co-conspirator statements (by definition not testimonial) and statements made to government investigators (by their nature testimonial), where truthful statements are made as part of a conspiracy to obstruct justice. It found, however, that admitting the truthful statements did not violate *Crawford* because they were admitted not for their truth, but rather to provide context for the false statements. The court explained as follows:

It defies logic, human experience and even imagination to believe that a conspirator bent on impeding an investigation by providing false information to investigators would lace the totality of that presentation with falsehoods on every subject of inquiry. To do so would be to alert the investigators immediately that the conspirator is not to be believed, and the effort to obstruct would fail from the outset. * * * The truthful portions of statements in furtherance of the conspiracy, albeit spoken in a testimonial setting, are intended to make the false portions believable and the obstruction effective. Thus, the truthful portions are offered, not for the narrow purpose of proving merely the truth of those portions, but for the far more significant purpose of showing each conspirator’s attempt to lend credence to the entire testimonial presentation and thereby obstruct justice.

Note: Offering a testimonial statement to prove it is false is a typical and presumably legitimate not-for-character purpose and so would appear to be unaffected by *Williams*. That is, to the extent some members of the Court apply a distinction between legitimate and illegitimate not-for-truth usage, offering the statement to prove it is false is certainly on the legitimate side of the line. It is one of the clearest cases of a statement not being offered to prove that the assertions therein are true. Of course, the government must provide independent evidence that the statement is in fact false.

Accomplice statements to police officer were testimonial, but did not violate the Confrontation Clause because they were admitted to show they were false: *United States v. Trala*, 386 F.3d 536 (3rd Cir. 2004): An accomplice made statements to a police officer that misrepresented her identity and the source of the money in the defendant's car. While these were accomplice statements to law enforcement, and thus testimonial, their admission did not violate *Crawford*, as they were not admitted for their truth. In fact the statements were admitted because they were false. Under these circumstances, cross-examination of the accomplice would serve no purpose. *See also United States v. Lore*, 430 F.3d 190 (3rd Cir. 2005) (relying on *Trala*, the court held that grand jury testimony was testimonial, but that its admission did not violate the Confrontation Clause because the self-exculpatory statements denying all wrongdoing "were admitted because they were so obviously false.").

Confessions of other targets of an investigation were testimonial, but did not violate the Confrontation Clause because they were offered to rebut charges against the integrity of the investigation: *United States v. Christie*, 624 F.3d 558 (3rd Cir. 2010): In a child pornography investigation, the FBI obtained the cooperation of the administrator of a website, which led to the arrests of a number of users, including the defendant. At trial the defendant argued that the investigation was tainted because the FBI, in its dealings with the administrator, violated its own guidelines in treating informants. Specifically the defendant argued that these misguided law enforcement efforts led to unreliable statements from the administrator. In rebuttal, the government offered and the court admitted evidence that twenty-four other users identified by the administrator confessed to child pornography-related offenses. The defendant argued that admitting the evidence of the others' confessions violated the hearsay rule and the Confrontation Clause, but the court rejected these arguments and affirmed. It reasoned that the confessions were not offered for their truth, but to show why the FBI could believe that the administrator was a reliable source, and therefore to rebut the charge of improper motive on the FBI's part. As to the confrontation argument, the court declared that "our conclusion that the testimony was properly

introduced for a non-hearsay purpose is fatal to Christie's *Crawford* argument, since the Confrontation Clause does not bar the use of testimonial statements for purposes other than establishing the truth of the matter asserted."

Accomplice's testimonial statement was properly admitted for impeachment purposes, but failure to give a limiting instruction was error: *Adamson v. Cathel*, 633 F.3d 248 (3rd Cir. 2011): The defendant challenged his confession at trial by arguing that the police fed him the details of his confession from other confessions by his alleged accomplices, Aljamaar and Napier. On cross-examination, the prosecutor introduced those confessions to show that they differed from the defendant's confession on a number of details. The court found no error in the admission of the accomplices' confessions. While testimonial, they were offered for impeachment and not for their truth and so did not violate the Confrontation Clause. However, the trial court gave no limiting instruction, and the court found that failure to be error. The court concluded as follows:

Without a limiting instruction to guide it, the jury that found Adamson guilty was free to consider those facially incriminating statements as evidence of Adamson's guilt. The careful and crucial distinction the Supreme Court made between an impeachment use of the evidence and a substantive use of it on the question of guilt was completely ignored during the trial.

Note: The use of the cohort's confessions to show differences from the defendant's confession is precisely the situation reviewed by the Court in *Tennessee v. Street*. As noted above, while some Justices in *Williams* rejected the "not-for-truth" analysis as applied to expert reliance on testimonial statements, all of the Justices approved of that analysis as applied to the facts of *Street*.

Statements made in a civil deposition might be testimonial, but admission does not violate the Confrontation Clause if they are offered to prove they are false: *United States v. Holmes*, 406 F.3d 337 (5th Cir. 2005): The defendant was convicted of mail fraud and conspiracy, stemming from a scheme with a court clerk to file a backdated document in a civil action. The defendant argued that admitting the deposition testimony of the court clerk, given in the underlying civil action, violated his right to confrontation after *Crawford*. The clerk testified that the clerk's office was prone to error and thus someone in that office could have mistakenly backdated the document at issue. The court considered the possibility that the clerk's testimony was a statement in furtherance of a conspiracy, and noted that coconspirator statements ordinarily

are not testimonial under *Crawford*. It also noted, however, that the clerk’s statement “is not the run-of-the-mill co-conspirator’s statement made unwittingly to a government informant or made casually to a partner in crime; rather, we have a co-conspirator’s statement that is derived from a formalized testimonial source --- recorded and sworn civil deposition testimony.” Ultimately the court found it unnecessary to determine whether the deposition testimony was “testimonial” within the meaning of *Crawford* because it was not offered for its truth. Rather, the government offered the testimony “to establish its *falsity* through independent evidence.” *See also United States v. Acosta*, 475 F.3d 677 (5th Cir. 2007) (accomplice’s statement offered to impeach him as a witness --- by showing it was inconsistent with the accomplice’s refusal to answer certain questions concerning the defendant’s involvement with the crime --- did not violate *Crawford* because the statement was not admitted for its truth and the jury received a limiting instruction to that effect); *United States v. Smith*, 822 F.3d 755 (5th Cir. 2016)(testimonial statement from an accomplice did not violate the Confrontation Clause because it was “introduced in the context of how Agent Michalik developed suspects . . . for the charged bank robberies. This court has consistently held that out-of-court statements providing background information to explain the actions of investigators are not hearsay” and so do not violate the Confrontation Clause).

Informant’s accusation, offered to explain why police acted as they did, was testimonial but it was not hearsay, and so its admission did not violate the Confrontation Clause: *United States v. Deitz*, 577 F.3d 672 (6th Cir. 2009): The court found no error in allowing an FBI agent to testify about why agents tailed the defendant to what turned out to be a drug transaction. The agent testified that a confidential informant had reported to them about Deitz’s drug activity. The court found that the informant’s statement was testimonial --- because it was an accusation made to a police officer --- but it was not hearsay and therefore its admission did not violate Deitz’s right to confrontation. The court found that admitting the testimony “explaining why authorities were following Deitz to and from Dayton was not plain error as it provided mere background information, not facts going to the very heart of the prosecutor’s case.” The court also observed that “had defense counsel objected to the testimony at trial, the court could have easily restricted its scope.” *See also United States v. Al-Maliki*, 787 F.3d 784 (6th Cir. 2015) (in a prosecution for child sex abuse, the trial court admitted the defendant’s wife’s statement to police accusing the defendant of sexual abuse; the court found no error because it was offered for the limited purpose of explaining why an official investigation began: “Two conclusions follow: It is not hearsay, * * * and the government did not violate the Confrontation Clause”); *United States v. Doney*, 833 F.3d 692 (6th Cir. 2016) (informant’s tip leading to search of the defendant’s vehicle was not hearsay as it was offered “merely by way of background”); *United States v. Davis*, 577 F.3d 660 (6th Cir. 2009): A woman’s statement to police that she had recently seen the defendant with a gun in a car that she described along with the license plate was not hearsay ---and so even though testimonial did not violate the defendant’s right to confrontation --- because it was offered

only to explain the police investigation that led to the defendant and the defendant's conduct when he learned the police were looking for him. *Accord United States v. Napier*, 787 F.3d 333 (6th Cir. 2015): In a child pornography prosecution, the government offered a document from Time Warner cable, obtained pursuant to a government subpoena, showing that an email address was accessed at the defendant's home and that the defendant was the subscriber to the account. The court found no confrontation violation because the document was offered not for its truth, but rather "to demonstrate how the Cincinnati office of the FBI located Napier." The court noted that the trial court gave the jury a limiting instruction that the document could be considered only to prove the course of the investigation.

Undercover statements offered to show representations about money-laundering, in a sting operation, were not offered for truth and so admitting them did not violate the Confrontation Clause: *United States v. King*, 865 F.3d 848 (6th Cir. 2017) (Sutton, J.): The defendant was the target of a sting operation. The undercover informant represented in several conversations with the defendant that he had drug money to launder, and the defendant responded with the details of how he would launder the money. The defendant argued that the undercover informant's part of the conversation was testimonial because it was primarily motivated for use in a criminal prosecution. But the court noted that the threshold requirement for violating the Confrontation Clause is that the out-of-court statement is admitted for its truth. That was not the case here. They were not offered to prove, for example, that the informant had drug money and wanted to clean it. Rather, the prosecution used the statements to prove that the informant made representations about having drug money and the defendant believed him.

Statement offered to prove the defendant's knowledge of a crime was non-hearsay and so did not violate the accused's confrontation rights: *United States v. Boyd*, 640 F.3d 657 (6th Cir. 2011): A defendant charged with being an accessory after the fact to a carjacking and murder had told police officers that his friend Davidson had told him that he had committed those crimes. At trial the government offered that confession, which included the underlying statements of Boyd. The defendant argued that admitting Davidson's statements violated his right to confrontation. But the court found no error because the hearsay was not offered for its truth: "Davidson's statements to Boyd were offered to prove Boyd's knowledge [of the crimes that Davidson had committed] rather than for the truth of the matter asserted."

Admission of complaints offered for non-hearsay purpose did not violate the Confrontation Clause: *United States v. Adams*, 722 F.3d 788 (6th Cir. 2013): The defendants were convicted for participation in a vote-buying scheme in three elections. They complained that

their confrontation rights were violated when the court admitted complaints that were contained within state election reports. The court of appeals rejected that argument, because the complaints were offered for proper non-hearsay purposes. Some of the information was offered to prove it was false, and other information was offered to show that the defendants adjusted their scheme based on the complaints received. The court did find, however, that the complaints were erroneously admitted under Rule 403, because of the substantial risk that the jury would use the assertions for their truth; that the probative value for the non-hearsay purpose was “minimal at best”; and the government had other less prejudicial evidence available to prove the point. Technically, this should mean that there was a violation of the Confrontation Clause, because the evidence was not *properly* offered for a not-for-truth purpose. But the court did not make that holding. It reversed on evidentiary grounds.

Informant’s statements were not properly offered for “context,” so their admission violated *Crawford*: *United States v. Powers*, 500 F.3d 500 (6th Cir. 2007): In a drug prosecution, a law enforcement officer testified that he had received information about the defendant’s prior criminal activity from a confidential informant. The government argued on appeal that even though the informant’s statements were testimonial, they did not violate the Confrontation Clause, because they were offered “to show why the police conducted a sting operation” against the defendant. But the court disagreed and found a *Crawford* violation. It reasoned that “details about Defendant’s alleged prior criminal behavior were not necessary to set the context of the sting operation for the jury. The prosecution could have established context simply by stating that the police set up a sting operation.” *See also United States v. Hearn*, 500 F.3d 479 (6th Cir.2007) (confidential informant’s accusation was not properly admitted for background where the witness testified with unnecessary detail and “[t]he excessive detail occurred twice, was apparently anticipated, and was explicitly relied upon by the prosecutor in closing arguments”).

Admitting informant’s statement to police officer for purposes of “background” did not violate the Confrontation Clause: *United States v. Gibbs*, 506 F.3d 479 (6th Cir. 2007): In a trial for felon-firearm possession, the trial court admitted a statement from an informant to a police officer; the informant accused the defendant of having firearms hidden in his bedroom. Those firearms were not part of the possession charge. While this accusation was testimonial, its admission did not violate the Confrontation Clause, “because the testimony did not bear on Gibbs’s alleged possession of the .380 Llama pistol with which he was charged.” Rather, it was admitted “solely as background evidence to show why Gibbs’s bedroom was searched.” *See also United States v. Macias-Farias*, 706 F.3d 775 (6th Cir. 2013) (officer’s testimony that he had

received information from someone was offered not for its truth but to explain the officer's conduct, thus no confrontation violation).

Admission of the defendant's conversation with an undercover informant does not violate the Confrontation Clause, where the undercover informant's part of the conversation is offered only for "context": *United States v. Nettles*, 476 F.3d 508 (7th Cir. 2007): The defendant made plans to blow up a government building, and the government had an undercover informant contact him and ostensibly offer to help him obtain materials. At trial, the court admitted a recorded conversation between the defendant and the informant. Because the informant was not produced for trial, the defendant argued that his right to confrontation was violated. But the court found no error, because the admission of the defendant's part of the conversation was not barred by the Confrontation Clause, and the informant's part of the conversation was admitted only to place the defendant's part in "context." Because the informant's statements were not offered for their truth, they did not implicate the Confrontation Clause.

The *Nettles* court did express some concern about the breadth of the "context" doctrine, stating: "We note that there is a concern that the government may, in future cases, seek to submit based on 'context' statements that are, in fact, being offered for their truth." But the court found no such danger in this case, noting the following: 1) the informant presented himself as not being proficient in English, so most of his side of the conversation involved asking the defendant to better explain himself; and 2) the informant did not "put words in Nettles's mouth or try to persuade Nettles to commit more crimes in addition to those that Nettles had already decided to commit." *See also United States v. Tolliver*, 454 F.3d 660 (7th Cir. 2006) (statements of one party to a conversation with a conspirator were offered not for their truth but to provide context to the conspirator's statements: "*Crawford* only covers testimonial statements proffered to establish the truth of the matter asserted. In this case . . . Shye's statements were admissible to put Dunklin's admissions on the tapes into context, making the admissions intelligible for the jury. Statements providing context for other admissible statements are not hearsay because they are not offered for their truth. As a result, the admission of such context evidence does not offend the Confrontation Clause because the declarant is not a witness against the accused."); *United States v. Bermea-Boone*, 563 F.3d 621 (7th Cir. 2009): A conversation between the defendant and a coconspirator was properly admitted; the defendant's side of the conversation was a statement of a party-opponent, and the accomplice's side was properly admitted to provide context for the defendant's statements: "Where there is no hearsay, the concerns addressed in *Crawford* do not come in to play. That is, the declarant, Garcia, did not function as a witness against the accused."; *United States v. York*, 572 F.3d 415 (7th Cir. 2009) (informant's recorded statements in a conversation with the defendant were admitted for context and therefore did not violate the Confrontation Clause: "we see no indication that Mitchell tried to put words in York's mouth");

United States v. Hicks, 635 F.3d 1063 (7th Cir. 2011): (undercover informant’s part of conversations were not hearsay, as they were offered to place the defendant’s statements in context; because they were not offered for truth their admission did not violate the defendant’s right to confrontation); *United States v. Gaytan*, 649 F.3d 573 (7th Cir. 2011) (undercover informant’s statements to the defendant in a conversation setting up a drug transaction were clearly testimonial, but not offered for their truth: “Gaytan’s responses [‘what you need?’ and ‘where the loot at?’] would have been unintelligible without the context provided by Worthen’s statements about his or his brother’s interest in ‘rock’”; the court noted that there was no indication that the informant was “putting words in Gaytan’s mouth”); *United States v. Foster*, 701 F.3d 1142 (7th Cir. 2012) (“Here, the CI’s statement regarding the weight [of the drug] was not offered to show what the weight *actually* was * * * but rather to explain the defendant’s acts and make his statements intelligible. The defendant’s statement to ‘give me sixteen fifty’ (because the original price was 17) would not have made sense without reference to the CI’s comment that the quantity was off. Because the statements were admitted only to prove context, *Crawford* does not require confrontation.”); *United States v. Faruki*, 803 F.3d 847 (7th Cir. 2015) (no confrontation violation where out-of-court statements were offered to place the defendant’s own statements in context).

For more on “context” see *United States v. Wright*, 722 F.3d 1064 (7th Cir. 2013): In a drug prosecution, the defendant’s statement to a confidential information that he was “stocked up” would have been unintelligible without providing the context of the informant’s statements inquiring about drugs, “and a jury would not have any sense of why the conversation was even happening.” The court also noted that “most of the CI’s statements were inquiries and not factual assertions.” The court expressed concern, however, that the district court’s limiting instruction on “context” was boilerplate, and that the jury “could have been told that the CI’s half of the conversation was being played only so that it could understand what Wright was responding to, and that the CI’s statements standing alone were not to be considered as evidence of Wright’s guilt.”

In *United States v. Smith*, 816 F.3d 479 (7th Cir. 2016), a public corruption case, the court rejected the use of “context” where placing the defendant’s statement in “context” only worked if the informant’s statement to the defendant were true. In *Smith*, the court gave an example of an informant saying to the defendant “Last week I paid you \$7000 for a letter that my client will use to seek a grant. Do you remember?” And the defendant says “Yes.” The court noted that the informant’s statement puts the defendant’s answer in context, but only if the informant was speaking the truth. In that situation, the informant’s statement would be hearsay and potentially triggered the right to confrontation --- but that right was not violated in this case because the informant’s statements were not offered for truth but rather were verbal acts establishing a corrupt agreement. *See also United States v. Amaya*, 828 F.3d 518 (7th Cir. 2016), where an informant’s statement “that was a big ass pistol” was offered to put the defendant’s statement “Hell yea” in

context. But the court found that context was unworkable because the informant's statement was only relevant to context if it were true --- only if a gun was present would the "Hell yea" mean anything pertinent to the case. Yet the informant's statement was found not testimonial, because it was simply blurted out, and so was not made with the primary motive that it would be used in a criminal prosecution.

Note: The concerns expressed in *Nettles* and the other 7th Circuit cases discussed above --- about possible abuse of the "context" usage --- are along the same lines as those expressed by Justices Thomas and Kagan in *Williams*, when they seek to distinguish legitimate and illegitimate not-for-truth purposes. If context is a pretext and the statement is in fact offered for the truth, then the statement is not being offered for a legitimate not-for-truth purpose.

Police report offered for a purpose other than proving the truth of its contents is properly admitted even if it is testimonial: *United States v. Price*, 418 F.3d 771 (7th Cir. 2005): In a drug conspiracy trial, the government offered a report prepared by the Gary Police Department. The report was an "intelligence alert" identifying some of the defendants as members of a street gang dealing drugs. The report was found in the home of one of the conspirators. The government offered the report at trial to prove that the conspirators were engaging in counter-surveillance, and the jury was instructed not to consider the accusations in the report as true, but only for the fact that the report had been intercepted and kept by one of the conspirators. The court found that even if the report was testimonial, there was no error in admitting the report as proof of awareness and counter-surveillance. It relied on *Crawford* for the proposition that the Confrontation Clause does not bar the use of out-of-court statements "for purposes other than proving the truth of the matter asserted." *See also United States v. Ambrose*, 668 F.3d 943 (7th Cir. 2012) (conversation between two crime family members about actions of a cooperating witness were not offered for their truth but rather to show that information had been leaked; because the statements were not offered for their truth, there was no violation of the right to confrontation).

Accusation offered not for truth, but to explain police conduct, was not hearsay and did not violate the defendant's right to confrontation: *United States v. Dodds*, 569 F.3d 336 (7th Cir. 2009): Appealing a firearms conviction, the defendant argued that his right to confrontation was violated when the trial court admitted a statement from an unidentified witness to a police officer. The witness told the officer that a black man in a black jacket and black cap was pointing a gun at people two blocks away. The court found no confrontation violation because "the

problem that *Crawford* addresses is the admission of hearsay” and the witness’s statement was not hearsay. It was not admitted for its truth --- that the witness saw the man he described pointing a gun at people --- but rather “to explain why the police proceeded to the intersection of 35th and Galena and focused their attention on Dodds, who matched the description they had been given.” The court noted that the trial judge did not provide a limiting instruction, but also noted that the defendant never asked the court to do so and that the lack of an instruction was not raised on appeal. *See also United States v. Taylor*, 569 F.3d 742 (7th Cir. 2009): An accusation from a bystander to a police officer that the defendant had just taken a gun across the street was not hearsay because it was offered to explain the officers’ actions in the course of their investigation: “for example, why they looked across the street * * * and why they handcuffed Taylor when he approached.” The court noted that absent “complicating circumstances, such as a prosecutor who exploits nonhearsay statements for their truth, nonhearsay testimony does not present a confrontation problem.” The court found no “complicating circumstances” in this case.

Note: The Court’s reference in *Taylor* to the possibility of exploiting a not-for-truth purpose runs along the same lines as those expressed by Justice Thomas and Kagan in *Williams*.

Testimonial statement was not legitimately offered for context or background and so was a violation of *Crawford*: *United States v. Adams*, 628 F.3d 407 (7th Cir. 2010): In a narcotics prosecution, statements made by confidential informants to police officers were offered against the defendant. For example, the government offered testimony from a police officer that he stopped the defendant’s car on a tip from a confidential informant that the defendant was involved in the drug trade and was going to buy crack. A search of the car uncovered a large amount of money and a crack pipe. The government offered the informant’s statement not for the truth of the assertion but as “foundation for what the officer did.” The trial court admitted the statement and gave a limiting instruction. But the court of appeals found error, though harmless, because the informant’s statements “were not necessary to provide any foundation for the officer’s subsequent actions.” It explained as follows:

The CI’s statements here are different from statements we have found admissible that gave context to an otherwise meaningless conversation or investigation. [cites omitted] Here the CI’s accusations did not counter a defense strategy that police officers randomly targeted Adams. And, there was no need to introduce the statements for context --- even if the CI’s statements were excluded, the jury would have fully understood that the officer searched Adams and the relevance of the items recovered in that search to the charged crime.

See also United States v. Walker, 673 F.3d 649 (7th Cir. 2012) (confidential informant's statements to the police --- that he got guns from the defendant --- were not properly offered for context but rather were testimonial hearsay: "The government repeatedly hides behind its asserted needs to provide 'context' and relate the 'course of investigation.' These euphemistic descriptions cannot disguise a ploy to pin the two guns on Walker while avoiding the risk of putting Ringswald on the stand. * * * A prosecutor surely knows that hearsay results when he elicits from a government agent that 'the informant said he got this gun from X' as proof that X supplied the gun."); *Jones v. Basinger*, 635 F.3d 1030 (7th Cir. 2011) (accusation made to police was not offered for background and therefore its admission violated the defendant's right to confrontation; the record showed that the government encouraged the jury to use the statements for their truth).

Note: *Adams*, *Walker* and *Jones* are all examples of illegitimate use of not-for-truth purposes and so finding a Confrontation violation in these cases is quite consistent with the analysis of not-for-truth purposes in the Thomas and Kagan opinions in *Williams*.

Statements by a confidential informant included in a search warrant were testimonial and could not be offered at trial to explain the police investigation: *United States v. Holmes*, 620 F.3d 836 (8th Cir. 2010): In a drug trial, the defendant tried to distance himself from a house where the drugs were found in a search pursuant to a warrant. On redirect of a government agent --- after defense counsel had questioned the connection of the defendant to the residence --- the trial judge permitted the agent to read from the statement of a confidential informant. That statement indicated that the defendant was heavily involved in drug activity at the house. The government acknowledged that the informant's statements were testimonial, but argued that the statements were not hearsay, as they were offered only to show the officer's knowledge and the propriety of the investigation. But the court found the admission to be error. It noted that informants' statements are admissible to explain an investigation "only when the propriety of the investigation is at issue in the trial." In this case, the defendant did not challenge the validity of the search warrant and did not dispute the propriety of the investigation. The court stated that if the real purpose of admitting the evidence was to explain the officer's knowledge and the nature of the investigation, "a question asking whether someone had told him that he had seen Holmes at the residence would have addressed the issue * * * without the need to go into the damning details of what the CI told Officer Singh." **Compare *United States v. Brooks*, 645 F.3d 971 (8th Cir. 2011)** ("In this case, the statement at issue [a report by a confidential informant that Brooks was selling narcotics and firearms from a certain premises] was not offered to prove the truth of the matter asserted --- that is, that Brooks was indeed a drug and firearms dealer. It was offered purely to

explain why the officers were at the multi-family dwelling in the first place, which distinguishes this case from *Holmes*. In *Holmes*, it was undisputed that officers had a valid warrant. Accordingly less explanation was necessary. Here, the CI's information was necessary to explain why the officers went to the residence without a warrant and why they would be more interested in apprehending the man on the stairs than the man who fled the scene. Because the statement was offered only to show why the officers conducted their investigation in the way they did, the Confrontation Clause is not implicated here.”). *See also United States v. Shores*, 700 F.3d 366 (8th Cir. 2012) (confidential informant's accusation made to police officer was properly offered to prove the propriety of the investigation: “From the early moments of the trial, it was clear that Shores would be premising his defense on the theory that he was a victim of government targeting.”); *United States v. Wright*, 739 F.3d 1160 (8th Cir. 2014) (Officer's statement to another officer, “come into the room, I've found something” was not hearsay because it was offered only to explain why the second officer came into the room and to rebut the defense counsel's argument that the officer entered the room in response to a loud noise: “If the underlying statement is testimonial but not hearsay, it can be admitted without violating the defendant's Sixth Amendment rights.”).

Accusatory statements offered to explain why an officer conducted an investigation in a certain way are not hearsay and therefore admission does not violate *Crawford*: *United States v. Brown*, 560 F.3d 754 (8th Cir. 2009): Challenging drug conspiracy convictions, one defendant argued that it was error for the trial court to admit an out-of-court statement from a shooting victim to a police officer. The victim accused a person named “Clean” who was accompanied by a man named Charmar. The officer who took this statement testified that he entered “Charmar” into a database to help identify “Clean” and the database search led him to the defendant. The court found no error in admitting the victim's statement, stating that “it is not hearsay when offered to explain why an officer conducted an investigation in a certain way.” The defendant argued that the purported nonhearsay purpose for admitting the evidence “was only a subterfuge to get Williams' statement about Brown before the jury.” But the court responded that the defendant “did not argue at trial that the prejudicial effect of the evidence outweighed its nonhearsay value.” The court also observed that the trial court twice instructed the jury that the statement was admitted for the limited purpose of understanding why the officer searched the database for Charmar. Finally, the court held that because the statement properly was not offered for its truth, “it does not implicate the confrontation clause.”

Statement offered as foundation for good faith basis for asking question on cross-examination does not implicate *Crawford*: *United States v. Spears*, 533 F.3d 715 (8th Cir. 2008): In a bank robbery case, the defendant testified and was cross-examined and asked about her knowledge of prior bank robberies. In order to inquire about these bad acts, the government was required to establish to the court a good-faith basis for believing that the acts occurred. The government's good-faith basis was the confession of the defendant's associate to having taken part in the prior robberies. The defendant argued that the associate's statements, made to police officers, were testimonial. But the court held that *Crawford* was inapplicable because the associate's statements were not admitted for their truth --- indeed they were not admitted at all. The court noted that there was "no authority for the proposition that use of an out-of-court testimonial statement merely as the good faith factual basis for relevant cross-examination of the defendant at trial implicates the Confrontation Clause."

Admitting testimonial statements that were part of a conversation with the defendant did not violate the Confrontation Clause because they were not offered for their truth: *United States v. Spencer*, 592 F.3d 866 (8th Cir. 2010): Affirming drug convictions, the court found no error in admitting tape recordings of a conversation between the defendant and a government informant. The defendant's statements were statements by a party-opponent and admitting the defendant's own statements cannot violate the Confrontation Clause. The informant's statements were not hearsay because they were admitted only to put the defendant's statements in context.

Statement offered to prove it was false is not hearsay and so did not violate the Confrontation Clause: *United States v. Yielding*, 657 F.3d 688 (8th Cir. 2011): In a fraud prosecution, the trial court admitted the statement of an accomplice to demonstrate that she used a false cover story when talking to the FBI. The court found no error, noting that "the point of the prosecutor's introducing those statements was simply to prove that the statements were made so as to establish a foundation for later showing, through other admissible evidence, that they were false." The court found that the government introduced other evidence to show that the declarant's assertions that a transaction was a loan were false. The court cited *Bryant* for the proposition that because the statements were not hearsay, their admission did not violate the Confrontation Clause.

Admitting testimonial statements to show a common (false) alibi did not violate the Confrontation Clause: *United States v. Young*, 753 F.3d 757 (8th Cir. 2014): Young was accused of conspiring with Mock to murder Young's husband and make it look like an accident. The

government introduced the statement that Mock made to police after the husband was killed. The statement was remarkably consistent in all details with the alibi that Young had independently provided, and many of the assertions were false. The government offered Mock's statement for the inference that she had Young had collaborated on an alibi. Young argued that introducing Mock's statement to the police violated her right to confrontation, but the court disagreed. It observed that the Confrontation Clause does not bar the admission of out-of-court statements that are not hearsay. In this case, Mock's statement was not offered for its truth but rather "to show that Young and Mock had a common alibi, scheme, or conspiracy. In fact, Mock's statements to Deputy Salsberry are valuable to the government because they are false."

Statement offered for impeachment was not hearsay and therefore admission did not violate the defendant's right to confrontation: *United States v. Cotton*, 823 F.3d 430 (8th Cir. 2016): "Cotton first argued that admission of Frazier's post-arrest statement violated his rights under the Confrontation Clause. Because the statement was offered for impeachment [as a prior inconsistent statement of a hearsay declarant] and not to prove the truth of the matter asserted, there was no Confrontation Clause violation in this case."

Statements not offered for truth do not violate the Confrontation Clause even if testimonial: *United States v. Faulkner*, 439 F.3d 1221 (10th Cir. 2006): The court stated that "it is clear from *Crawford* that the [Confrontation] Clause has no role unless the challenged out-of-court statement is offered for the truth of the matter asserted in the statement." *See also United States v. Mitchell*, 502 F.3d 931 (9th Cir. 2007) (information given by an eyewitness to a police officer was not offered for its truth but rather "as a basis" for the officer's action, and therefore its admission did not violate the Confrontation Clause); *United States v. Brinson*, 772 F.3d 1314 (10th Cir. 2014) (In a prosecution for sex trafficking, statements made to an undercover police officer that set up a meeting for sex were properly admitted as not hearsay and so their admission did not violate the Confrontation Clause: "The prosecution did not present the out-of-court statements to prove the truth of the statements about the location, price, or lack of a condom. Rather, the prosecution offered these statements to explain why Officer Osterdyk went to Room 123, how he knew the price, and why he agreed to pay for oral sex."; the court also found that the statements were not testimonial anyway because the declarant did not know she was talking to a police officer.); *United States v. Ibarra-Diaz*, 805 F.3d 908 (10th Cir. 2015) (confidential informant's statements to a police officer about the defendant's interest in doing a drug deal were testimonial, but the right to confrontation was not violated because the statements were offered to "explain why the officer did not put a body wire on the CI for this significant drug transaction --- i.e., because, unlike situations

where the detective is in control of the informant from the outset and * * * of the circumstances of the informant's dealings with a potential target, in this instance the CI just called the detective 'out of the blue' about the possible drug transaction"; other statements from accomplices were properly admitted because they were not offered for their truth but to explain the conduct of the detective who heard the statements).

Accomplice's confession, offered to explain a police officer's subsequent conduct, was not hearsay and therefore did not violate the Confrontation Clause: *United States v. Jiminez*, 564 F.3d 1280 (11th Cir. 2009): The court found no plain error in the admission of an accomplice's confession in the defendant's drug conspiracy trial. The police officer who had taken the accomplice's confession was cross-examined extensively about why he had repeatedly interviewed the defendant and about his decision not to obtain a written and signed confession from him. This cross-examination was designed to impeach the officer's credibility and to suggest that he was lying about the circumstances of the interviews and about the defendant's confession. In explanation, the officer stated that he approached the defendant the way he did because the accomplice had given a detailed confession that was in conflict with what the defendant had said in prior interviews. The court held that in these circumstances, the accomplice's confession was properly admitted to explain the officer's motivations, and not for its truth. Accordingly its admission did not violate the Confrontation Clause, even though the statement was testimonial.

Note: The court assumed that the accomplice's confession was admitted for a proper, not-for-truth purpose, even though there was no such finding on the record, and the trial court never gave a limiting instruction. Part of the reason for this deference is that the court was operating under a plain error standard. The defendant at trial objected only on hearsay grounds, and this did not preserve any claim of error on confrontation clause grounds. The concurring judge noted, however, "that the better practice in this case would have been for the district court to have given an instruction as to the limited purpose of Detective Wharton's testimony" because "there is no assurance, and much doubt, that a typical jury, on its own, would recognize the limited nature of the evidence."

See also United States v. Augustin, 661 F.3d 1105 (11th Cir. 2011) (no confrontation violation where declarant's statements "were not offered for the truth of the matters asserted, but rather to provide context for [the defendant's] own statements").

Present Sense Impression

911 call describing ongoing drug crime is admissible as a present sense impression and not testimonial under *Bryant: United States v. Polidore*, 690 F.3d 705 (5th Cir. 2012): In a drug trial, the defendant objected that a 911 call from a bystander to a drug transaction --- together with the bystander's answers to questions from the 911 operators --- was testimonial and also admitted in violation of the rule against hearsay. On the hearsay question, the court found that the bystander's statements in the 911 call were admissible as present sense impressions, as they were made while the transaction was ongoing. As to testimoniality, the court held that the case was unlike the 911 call cases decided by the Supreme Court, as there was no ongoing emergency --- rather the caller was simply recording that a crime was taking place across the street, and no violent activity was occurring. But the court noted that under *Bryant* an ongoing emergency is relevant but not dispositive of whether statements about a crime are testimonial. Ultimately the court found that the caller's statements were not testimonial, reasoning as follows:

[A]lthough the 911 caller appeared to have understood that his comments would start an investigation that could lead to a criminal prosecution, the primary purpose of his statements was to request police assistance in stopping an ongoing crime and to provide the police with the requisite information to achieve that objective. * * * The 911 caller simply was not acting as a witness; he was not testifying. What he said was not a weaker substitute for live testimony at trial. In other words, the caller's statements were not ex parte communications that created evidentiary products that aligned perfectly with their courtroom analogues. No witness goes into court to report that a man is currently selling drugs out of his car and to ask the police to come and arrest the man while he still has the drugs in his possession.

Present sense impression, describing an event that occurred months before a crime, is not testimonial: *United States v. Danford*, 435 F.3d 682 (7th Cir. 2005): The defendant was convicted of insurance fraud after staging a fake robbery of his jewelry store. At trial, one of the employees testified to a statement made by the store manager, indicating that the defendant had asked the manager how to disarm the store alarm. The defendant argued that the store manager's statement was testimonial under *Crawford*, but the court disagreed. The court stated that "the conversation between [the witness] and the store manager is more akin to a casual remark than it is to testimony in the *Crawford*-sense. Accordingly, we hold that the district court did not err in admitting this testimony under Fed.R.Evid. 803(1), the present-sense impression exception to the hearsay rule."

Present-sense impressions of DEA agents during a buy-bust operation were safety-related and so not testimonial: *United States v. Solorio*, 669 F.3d 943 (9th Cir. 2012): Appealing from a conviction arising from a “buy-bust” operation, the defendant argued that hearsay statements of DEA agents at the scene --- which were admitted as present sense impressions ---were testimonial and so should have been excluded under *Crawford*. The court disagreed. It concluded that the statements were made in order to communicate observations to other agents in the field and thus assure the success of the operation, “by assuring that all agents involved knew what was happening and enabling them to gauge their actions accordingly.” Thus the statements were not testimonial because the primary purpose for making them was not to prepare a statement for trial but rather to assure that the arrest was successful and that the effort did not escalate into a dangerous situation. The court noted that the buy-bust operation “was a high-risk situation involving the exchange of a large amount of money and a substantial quantity of drugs” and also that the defendant was visibly wary of the situation.

Records, Certificates, Etc.

Reports on forensic testing by law enforcement are testimonial: *Melendez-Diaz v. Massachusetts*, 557 U.S. 305 (2009): In a drug case, the trial court admitted three “certificates of analysis” showing the results of the forensic tests performed on the seized substances. The certificates stated that “the substance was found to contain: Cocaine.” The certificates were sworn to before a notary public by analysts at the State Laboratory Institute of the Massachusetts Department of Public Health. The Court, in a highly contentious 5-4 case, held that these certificates were “testimonial” under *Crawford* and therefore admitting them without a live witness violated the defendant’s right to confrontation. The majority noted that affidavits prepared for litigation are within the core definition of “testimonial” statements. The majority also noted that the only reason the certificates were prepared was for use in litigation. It stated that “[w]e can safely assume that the analysts were aware of the affidavits’ evidentiary purpose, since that purpose --- as stated in the relevant state-law provision --- was reprinted on the affidavits themselves.”

The implications of *Melendez-Diaz* --- beyond requiring a live witness to testify to the results of forensic tests conducted primarily for litigation --- are found in the parts of the majority opinion that address the dissent’s arguments that the decision will lead to substantial practical difficulties. These implications are discussed in turn:

1. In a footnote, the majority declared in dictum that “documents prepared in the regular course of equipment maintenance may well qualify as nontestimonial records.” Apparently these are more like traditional business records than records prepared primarily for litigation, though the question is close --- the reason these records are maintained, with respect to forensic testing equipment, is so that the tests conducted can be admitted as reliable. At any rate, the footnote shows some flexibility, in that not every record involved in the forensic testing process will necessarily be found testimonial.

2. The dissent argued that forensic testers are not “accusatory” witnesses in the sense of preparing factual affidavits about the crime itself. But the majority rejected this distinction, declaring that the text of the Sixth Amendment “contemplates two classes of witnesses: those against the defendant and those in his favor. The prosecution *must* produce the former; the defendant *may* call the latter. Contrary to respondent’s assertion, there is not a third category of witnesses, helpful to the prosecution, but somehow immune from confrontation.” This statement raises questions about the reasoning of some lower courts that have admitted autopsy reports and other certificates after *Crawford*. These cases are discussed below.

3. Relatedly, the defendant argued that the affidavits at issue were nothing like the affidavits found problematic in the case of Sir Walter Raleigh. The Raleigh affidavits were a substitute for a witness testifying to critical historical facts about the crime. But the

majority responded that while the ex parte affidavits in the Raleigh case were the paradigmatic confrontation concern, “the paradigmatic case identifies the core of the right to confrontation, not its limits. The right to confrontation was not invented in response to the use of the ex parte examinations in Raleigh’s Case.”

4. The majority noted that cross-examining a forensic analyst may be necessary because “[a]t least some of that methodology requires the exercise of judgment and presents a risk of error that might be explored on cross-examination.” This implies that if the evidence is nothing but a machine print-out, it will not run afoul of the Confrontation Clause. As discussed earlier in this Outline, a number of courts have held that machine printouts are not hearsay at all because a machine can’t make a “statement,” and have also held that a machine’s output is not “testimony” within the meaning of the Confrontation Clause. This case law appears to survive the Court’s analysis in *Melendez-Diaz* and the later cases of *Bullcoming* and *Williams* do not touch the question of machine evidence.

5. The majority does approve the basic analysis of Federal courts after *Crawford* with respect to business and public records, i.e., that if the record is admissible under FRE 803(6) or 803(8) it is, for that reason, non-testimonial under *Crawford*. For business records, this is because, to be admissible under Rule 803(6), it cannot be prepared primarily for litigation. For public records, this is because law enforcement reports prepared for a specific litigation are excluded under Rule 803(8)(A)(ii) and (A)(iii).

6. In response to an argument of the dissent, the majority states that certificates that merely authenticate proffered documents are not testimonial. As seen below, this probably means that certificates of authenticity prepared under Rules 902(11), (13) and (14) may be admitted without violating the Confrontation Clause.

7. As counterpoint to the argument about prior practice allowing certificates authenticating records, the *Melendez-Diaz* majority cited a line of cases about affidavits offered to prove the *absence* of a public record:

Far more probative here are those cases in which the prosecution sought to admit into evidence a clerk’s certificate attesting to the fact that the clerk had searched for a particular relevant record and failed to find it. Like the testimony of the analysts in this case, the clerk’s statement would serve as substantive evidence against the defendant whose guilt depended on the nonexistence of the record for which the clerk searched. Although the clerk’s certificate would qualify as an official record under respondent’s definition --- it was prepared by a public officer in the regular course of his official duties --- and although the clerk was certainly not a “conventional witness” under the dissent’s approach, the clerk was nonetheless subject to confrontation. See *People v. Bromwich*, 200 N. Y. 385, 388-389, 93 N. E. 933, 934 (1911).

This passage should probably be read to mean that any use of a certificate of absence of a public record in a criminal case is prohibited. But the Court did find that a

notice-and-demand provision would satisfy the Confrontation Clause because if, after notice, the defendant made no demand to produce, a waiver could properly be found. Accordingly, the Committee proposed an amendment to Rule 803(10) that added a notice-and-demand provision. That amendment was approved by the Judicial Conference and became effective December 1, 2013.

It should be noted that the continuing viability of *Melendez-Diaz* has been placed into some doubt by the death of Justice Scalia, who wrote the majority opinion.

Admission of a testimonial forensic certificate through the testimony of a witness with no personal knowledge of the testing violates the Confrontation Clause under *Melendez-Diaz*: *Bullcoming v. New Mexico*, 564 U.S. 647 (2011): The Court reaffirmed the holding in *Melendez-Diaz* that certificates of forensic testing prepared for trial are testimonial, and held further that the Confrontation Clause was not satisfied when such a certificate was entered into evidence through the testimony of a person who was not involved with, and had no personal knowledge of, the testing procedure. Justice Ginsburg, writing for the Court, declared as follows:

The question presented is whether the Confrontation Clause permits the prosecution to introduce a forensic laboratory report containing a testimonial certification --- made for the purpose of proving a particular fact --- through the in-court testimony of a scientist who did not sign the certification or perform or observe the test reported in the certification. We hold that surrogate testimony of that order does not meet the constitutional requirement. The accused's right is to be confronted with the analyst who made the certification, unless that analyst is unavailable at trial, and the accused had an opportunity, pretrial, to cross-examine that particular scientist.

Lower Court Cases on Records and Certificates Decided Before Melendez-Diaz

Certification of business records under Rule 902(11) is not testimonial: *United States v. Adefehinti*, 519 F.3d 319 (D.C. Cir. 2007): The court held that a certification of business records under Rule 902(11) was not testimonial even though it was prepared for purposes of litigation. The court reasoned that because the underlying business records were not testimonial, it would make no sense to find the authenticating certificate testimonial. It also noted that Rule 902(11) provided a procedural device for challenging the trustworthiness of the underlying records: the proponent must give advance notice that it plans to offer evidence under Rule 902(11), in order to provide the opponent with a fair opportunity to challenge the certification and the underlying records. The court stated that in an appropriate case, “the challenge could presumably take the form of calling a certificate’s signatory to the stand. So hedged, the Rule 902(11) process seems a far cry from the threat of *ex parte* testimony that *Crawford* saw as underlying, and in part defining, the Confrontation Clause.” In this case, the Rule 902(11) certificates were used only to admit documents that were acceptable as business records under Rule 803(6), so there was no error in the certificate process.

Warrant of deportation is not testimonial: *United States v. Garcia*, 452 F.3d 36 (1st Cir. 2006): In an illegal reentry case, the defendant argued that his confrontation rights were violated by the admission of a warrant of deportation. The court disagreed, finding that the warrant was not testimonial under *Crawford*. The court noted that every circuit considering the matter has held “that defendants have no right to confront and cross-examine the agents who routinely record warrants of deportation” because such officers have no motivation to do anything other than “mechanically register an unambiguous factual matter.”

Note: Other circuits before Melendez-Diaz reached the same result on warrants of deportation. See, e.g., *United States v. Valdez-Matos*, 443 F.3d 910 (5th Cir. 2006) (warrant of deportation is non-testimonial because “the official preparing the warrant had no motivation other than mechanically register an unambiguous factual matter”); *United States v. Torres-Villalobos*, 487 F.3d 607 (8th Cir. 2007) (noting that warrants of deportation “are produced under circumstances objectively indicating that their primary purpose is to maintain records concerning the movements of aliens and to ensure compliance with orders of deportation, not to prove facts for use in future criminal prosecutions.”); *United States v. Bahena-Cardenas*, 411 F.3d 1067 (9th Cir. 2005) (a warrant of deportation is non-testimonial “because it was not made in anticipation of litigation, and because it is simply a routine, objective, cataloging of an unambiguous factual matter.”); *United States v. Cantellano*, 430 F.3d 1142 (11th Cir. 2005) (noting that a warrant of deportation “is recorded routinely and not in preparation for a criminal trial”).

Note: Warrants of deportation still satisfy the Confrontation Clause after *Melendez-Diaz*. Unlike the forensic analysis in that case, a warrant of deportation is prepared for regulatory purposes and is clearly not prepared for the illegal reentry litigation, because by definition that crime has not been committed at the time the certificate is prepared. As seen below, post-*Melendez-Diaz* courts have found warrants of deportation to be non-testimonial. See also *United States v. Lopez*, 747 F.3d 1141 (9th Cir. 2014) (adhering to pre-*Melendez-Diaz* case law holding that deportation documents in an A-file are not testimonial when admitted in illegal re-entry cases).

Proof of absence of business records is not testimonial: *United States v. Munoz-Franco*, 487 F.3d 25 (1st Cir. 2007): In a prosecution for bank fraud and conspiracy, the trial court admitted the minutes of the Board and Executive Committee of the Bank. The defendants did not challenge the admissibility of the minutes as business records, but argued that it was constitutional error to allow the government to rely on the absence of certain information in the minutes to prove that the Board was not informed about such matters. The court rejected the defendants’ confrontation argument in the following passage:

The Court in *Crawford* plainly characterizes business records as “statements that by their nature [are] not testimonial.” 541 U.S. at 56. If business records are nontestimonial, it follows that the absence of information from those records must also be nontestimonial.

Note: This analysis appears unaffected by *Melendez-Diaz*, as no certificate or affidavit is involved and the record itself was not prepared for litigation purposes.

Business records are not testimonial: *United States v. Jamieson*, 427 F.3d 394 (6th Cir. 2005): In a prosecution involving fraudulent sale of insurance policies, the government admitted summary evidence under Rule 1006. The underlying records were business records. The court found that admitting the summaries did not violate the defendant’s right to confrontation. The underlying records were not testimonial under *Crawford* because they did not “resemble the formal statement or solemn declaration identified as testimony by the Supreme Court.” *See also United States v. Baker*, 458 F.3d 513 (6th Cir. 2006) (“The government correctly points out that business records are not testimonial and therefore do not implicate the Confrontation Clause concerns of *Crawford*.”).

Note: The court's analysis of business records appears unaffected by *Melendez-Diaz*, because the records were not prepared primarily for litigation and no certificate or affidavit was prepared for use in the litigation.

Post office box records are not testimonial: *United States v. Vasilakos*, 508 F.3d 401 (6th Cir. 2007): The defendants were convicted of defrauding their employer, an insurance company, by setting up fictitious accounts into which they directed unearned commissions. The checks for the commissions were sent to post office boxes maintained by the defendants. The defendants argued that admitting the post office box records at trial violated their right to confrontation. But the court held that the government established proper foundation for the records through the testimony of a postal inspector, and that the records were therefore admissible as business records; the court noted that "the Supreme Court specifically characterizes business records as non-testimonial."

Note: The court's analysis of business records is unaffected by *Melendez-Diaz*.

Drug test prepared by a hospital with knowledge of possible use in litigation is not testimonial; certification of that business record under Rule 902(11) is not testimonial: *United States v. Ellis*, 460 F.3d 920 (7th Cir. 2006): In a trial for felon gun possession, the trial court admitted the results of a drug test conducted on the defendant's blood and urine after he was arrested. The test was conducted by a hospital employee, and indicated a positive result for methamphetamine. At trial, the hospital record was admitted without a qualifying witness; instead, a qualified witness prepared a certification of authenticity under Rule 902(11). The court held that neither the hospital record nor the certification were testimonial within the meaning of *Crawford* and *Davis* --- despite the fact that both records were prepared with the knowledge that they would be used in a prosecution. As to the medical reports, the *Ellis* court concluded as follows:

While the medical professionals in this case might have thought their observations would end up as evidence in a criminal prosecution, the objective circumstances of this case indicate that their observations and statements introduced at trial were made in nothing else but the ordinary course of business. * * * They were employees simply recording observations which, because they were made in the ordinary course of business, are "statements that by their nature were not testimonial." *Crawford*, 541 U.S. at 56.

Note: *Ellis* is cited by the dissent in *Melendez-Diaz* (not a good thing for its continued viability), and the circumstances of preparing the toxic screen in *Ellis* are somewhat similar to those in *Melendez-Diaz*. That said, toxicology tests conducted by *private*

organizations may be found nontestimonial if it can be shown that law enforcement was not involved in or managing the testing. The *Melendez-Diaz* majority emphasized that the forensic analyst knew that the test was being done for a prosecution, as that information was right on the form. Essentially, after *Melendez-Diaz*, the less the tester knows about the use of the test, and the less involvement by the government, the better for admissibility. Primary motive for use in a prosecution is obviously less likely to be found if the tester is a private organization.

Note that the Seventh Circuit, in a case after *Melendez-Diaz*, adhered fully to its ruling in *Ellis* that business records are not testimonial. *United States v. Brown*, 822 F.3d 966 (7th Cir. 2016) (relying on *Ellis* to find that Western Union records of wire transfers were not testimonial: “Logically, if they are made in the ordinary course of business, then they are not made for the purpose of later prosecution.”).

As to the certification of business record, prepared under Rule 902(11) specifically to qualify the medical records in this prosecution, the *Ellis* court similarly found that it was not testimonial because the records that were certified were prepared in the ordinary course, and the certifications were essentially ministerial. The court explained as follows:

The certification at issue in this case is nothing more than the custodian of records at the local hospital attesting that the submitted documents are actually records kept in the ordinary course of business at the hospital. The statements do not purport to convey information about *Ellis*, but merely establish the existence of the procedures necessary to create a business record. They are made by the custodian of records, an employee of the business, as part of her job. As such, we hold that written certification entered into evidence pursuant to Rule 902(11) is nontestimonial just as the underlying business records are. Both of these pieces of evidence are too far removed from the "principal evil at which the Confrontation Clause was directed" to be considered testimonial.

Note: Three circuits have held that the reasoning of *Ellis* remains sound after *Melendez-Diaz*, and that 902(11) certificates are not testimonial. See *United States v. Yeley-Davis*, 632 F.3d 673 (10th Cir. 2011), *United States v. Johnson*, 688 F.3d 494 (8th Cir. 2012), and *United States v. Anekwu*, 695 F.3d 967 (9th Cir. 2012) all *infra*.

Odometer statements, prepared before any crime of odometer-tampering occurred, are not testimonial: *United States v. Gilbertson*, 435 F.3d 790 (7th Cir. 2006): In a prosecution for odometer-tampering, the government proved its case by introducing the odometer statements

prepared when the cars were sold to the defendant, and then calling the buyers to testify that the mileage on the odometers when they bought their cars was substantially less than the mileage set forth on the odometer statements. The defendant argued that introducing the odometer statements violated *Crawford*. He contended that the odometer statements were essentially formal affidavits, the very kind of evidence that most concerned the Court in *Crawford*. But the court held that the concern in *Crawford* was limited to affidavits prepared for trial as a testimonial substitute. This concern did not apply to the odometer statements. The court explained as follows:

The odometer statements in the instant case are not testimonial because they were not made with the respective declarants having an eye towards criminal prosecution. The statements were not initiated by the government in the hope of later using them against Gilbertson (or anyone else), nor could the declarants (or any reasonable person) have had such a belief. The reason is simple: each declaration was made *prior* to Gilbertson even engaging in the crime. Therefore, there is no way for the sellers to anticipate that their statements regarding the mileage on the individual cars would be used as evidence against Gilbertson for a crime he commits in the future.

Note: this result is unaffected by *Melendez-Diaz* as the records clearly were not prepared for purposes of litigation --- the crime had not occurred at the time the records were prepared.

Tax returns are business records and so not testimonial: *United States v. Garth*, 540 F.3d 766 (8th Cir. 2008): The defendant was accused of assisting tax filers to file false claims. The defendant argued that her right to confrontation was violated when the trial court admitted some tax returns of the filers. But the court found no error. The tax returns were business records, and the defendant made no argument that they were prepared for litigation, “as is expected of testimonial evidence.”

Note: this result is unaffected by *Melendez-Diaz*.

Certificate of a record of a conviction found not testimonial: *United States v. Weiland*, 420 F.3d 1062 (9th Cir. 2006): The court held that a certificate of a record of conviction prepared by a public official was not testimonial under *Crawford*: “Not only are such certifications a ‘routine cataloguing of an unambiguous factual matter,’ but requiring the records custodians and other officials from the various states and municipalities to make themselves available for cross-examination in the countless criminal cases heard each day in our country would present a

serious logistical challenge without any apparent gain in the truth-seeking process. We decline to so extend *Crawford*, or to interpret it to apply so broadly.”

Note: The reliance on burdens in countless criminal cases is precisely the argument that was rejected in *Melendez-Diaz*. Nonetheless, certificates of conviction are quite probably non-testimonial, because the *Melendez-Diaz* majority states that a certificate is not testimonial if it does nothing more than authenticate another document --- and specifically uses as an example a certificate of conviction.

In *United States v. Albino-Loe*, 747 F.3d 1206 (9th Cir. 2014), the court adhered to its ruling in *Weiland*, declaring that a routine certification of authenticity of a record (in that case documents in an A-file) are not testimonial in nature, because they “did not accomplish anything other than authenticating the A-file documents to which they were attached.”

Absence of records in database is not testimonial; and drug ledger is not testimonial: *United States v. Mendez*, 514 F.3d 1035 (10th Cir. 2008): In an illegal entry case, an agent testified that he searched the ICE database for information indicating that the defendant entered the country legally, and found no such information. The ICE database is “a nation-wide database of information which archives records of entry documents, such as permanent resident cards, border crossing cards, or certificates of naturalization.” The defendant argued that the entries into the database (or the asserted lack of entries in this case) were testimonial. But the court disagreed, because the records “are not prepared for litigation or prosecution, but rather administrative and regulatory purposes.” The court also observed that Rule 803(8) tracked *Crawford* exactly: a public record is admissible under Rule 803(8) unless it is prepared with an eye toward litigation or prosecution; and under *Crawford*, “the very same characteristics that preclude a statement from being classified as a public record are likely to render the statement testimonial.”

Mendez also involved drug charges, and the defendant argued that admitting a drug ledger with his name on it violated his right to confrontation under *Crawford*. The court also rejected this argument. It stated first that the entries in the ledger were not hearsay at all, because they were offered to show that the book was a drug ledger and thus a “tool of the trade.” As the entries were not offered for truth, their admission could not violate the Confrontation Clause. But the court further held that even if the entries were offered for truth, they were not testimonial, because “[a]t no point did the author keep the drug ledger for the *primary purpose* of aiding police in a criminal investigation, the focus of the *Davis* inquiry.” (emphasis the court’s). The court noted that it was not enough that the statements were relevant to a criminal prosecution, otherwise “any piece of evidence which aids the prosecution would be testimonial.”

Note: Both holdings in the above case survive *Melendez-Diaz*. The first holding is about the absence of public records, where the records themselves were not prepared in testimonial circumstances. If that absence had been proved by a *certificate*, then the Confrontation Clause, after *Melendez-Diaz*, would have been violated. But the absence was proved by a testifying agent. The second holding states the accepted proposition that business records admissible under Rule 803(6) are, for that reason, non-testimonial. Drug ledgers in particular are absolutely not prepared for purposes of litigation.

Lower Court Cases on Records and Certificates After Melendez-Diaz

Letter describing results of a search of court records is testimonial after *Melendez-Diaz*: *United States v. Smith*, 640 F.3d 358 (D.C. Cir. 2011): To prove a felony in a felon firearm case, the government admitted a letter from a court clerk stating that “it appears from an examination of the files in this office” that Smith had been convicted of a felony. Each letter had a seal and a signature by a court clerk. The court found that the letters were testimonial. The clerk did not merely authenticate a record, rather he created a record of the search he conducted. The letters were clearly prepared in anticipation of litigation --- they “respond[ed] to a prosecutor’s question with an answer.”

Note: The analysis in *Smith* provides more indication that certificates of the absence of a record are testimonial after *Melendez-Diaz*. The clerk’s letters in *Smith* are exactly like a CNR; the only difference is that they report on the presence of a record rather than an absence.

Autopsy reports generated through law enforcement involvement found testimonial after *Melendez-Diaz*: *United States v. Moore*, 651 F.3d 30 (D.C. Cir. 2011): The court found autopsy reports to be testimonial. The court emphasized the involvement of law enforcement in the generation of the autopsy reports admitted in this case:

The Office of the Medical Examiner is required by D.C.Code 5-1405(b)(11) to investigate “[d]eaths for which the Metropolitan Police Department [“MPD”], or other law enforcement agency, or the United States Attorney's Office requests, or a court orders investigation.” The autopsy reports do not indicate whether such requests were made in the instant case but the record shows that MPD homicide detectives and officers from the Mobile Crimes Unit were present at several autopsies. Another autopsy report was supplemented with diagrams containing the notation: “Mobile crime diagram (not [Medical Examiner] --- use for info only).” Still another report included a “Supervisor's Review Record” from the MPD Criminal Investigations Division commenting: “Should have indictment re John Raynor for this murder.” Law enforcement officers thus not only observed the autopsies, a fact that would have signaled to the medical examiner that the autopsy might bear on a criminal investigation, they participated in the creation of reports. Furthermore, the autopsy reports were formalized in signed documents titled “reports.” These factors, combined with the fact that each autopsy found the manner of death to be a homicide caused by gunshot wounds, are “circumstances which would lead an objective

witness reasonably to believe that the statement would be available for use at a later trial.” *Melendez-Diaz*, 129 S.Ct. at 2532 (citation and quotation marks omitted).

In a footnote, the court emphasized that it was *not* holding that all autopsy reports are testimonial:

Certain duties imposed by the D.C.Code on the Office of the Medical Examiner demonstrate, the government suggests, that autopsy reports are business records not made for the purpose of litigation. It is unnecessary to decide as a categorical matter whether autopsy reports are testimonial, and, in any event, it is doubtful that such an approach would comport with Supreme Court precedent.

Finally, the court rejected the government’s argument that there was no error because the expert witness simply relied on the autopsy reports in giving independent testimony. In this case, the autopsy reports were clearly entered into evidence. *See also United States v. McGill*, 815 F.3d 846 (D.C.Cir. 2016) (relying on *Moore* to find a Confrontation violation where drug analysis reports and autopsy reports were admitted through testimony from witnesses other than the reports’ authors).

State court did not unreasonably apply federal law in admitting autopsy report as non-testimonial: *Nardi v. Pepe*, 662 F.3d 107 (1st Cir. 2011): The court affirmed the denial of a habeas petition, concluding that the state court did not unreasonably apply federal law in admitting an autopsy report as non-testimonial. The court reasoned as follows:

Abstractly, an autopsy report can be distinguished from, or assimilated to, the sworn documents in *Melendez-Diaz* and *Bullcoming*, and it is uncertain how the Court would resolve the question. We treated such reports as not covered by the Confrontation Clause, *United States v. De La Cruz*, 514 F.3d 121, 133-34 (1st Cir.2008), but the law has continued to evolve and no one can be certain just what the Supreme Court would say about that issue today. However, our concern here is with “clearly established” law when the SJC acted. * * * That close decisions in the later Supreme Court cases extended *Crawford* to new situations hardly shows the outcomes were clearly preordained. And, even now it is uncertain whether, under its primary purpose test, the Supreme Court would classify autopsy reports as testimonial.

Immigration interview form was not testimonial: *United States v. Phoeun Lang*, 672 F.3d 17 (1st Cir. 2012): The defendant was convicted of making false statements and unlawfully applying for and obtaining a certificate of naturalization. The defendant argued that his right to

confrontation was violated because the immigration form (N-445) on which he purportedly lied contained verification checkmarks next to his false responses. Thus the contention was that the verification checkmarks were testimonial hearsay of the immigration agent who conducted the interview. But the court found no error. The court concluded that the form was not “primarily to be used in court proceedings.” Rather it was a record prepared as “a matter of administrative routine, for the primary purpose of determining Lang’s eligibility for naturalization.” For essentially the same reasons, the court held that the form was admissible under Rule 803(8)(A)(ii) despite the fact that the rule appears to exclude law enforcement reports. The court distinguished between “documents produced in an adversarial setting and those produced in a routine non-adversarial setting for purposes of Rule 803(8)(A)(ii).” The court relied on the passage in *Melendez-Diaz* which declared that the test for admissibility or inadmissibility under Rule 803(8) was the same as the test of testimoniality under the Confrontation Clause, i.e., whether the primary motive for preparing the record was for use in a criminal prosecution.

Note: This case was decided before *Williams*, but it would appear to satisfy both the Alito and the Kagan version of the “primary motive” test. Both tests agree that a statement cannot be testimonial unless the primary motive for making it is to have it used in a criminal prosecution. The difference is that Justice Alito provides another qualification --- the statement is testimonial only if it was made to be used in the defendant’s criminal prosecution. In *Phoehn Lang* the first premise was not met --- the statements were made for administrative purposes, and not primarily for use in any criminal prosecution.

Expert’s reliance on standard samples for comparison does not violate the Confrontation Clause because any communications regarding the preparation of those samples was not testimonial: *United States v. Razo*, 782 F.3d 31 (1st Cir. 2015). A chemist testified about the lab analysis she performed on a substance seized from the defendant’s coconspirator. The crime lab used a “known standard” methamphetamine sample to create a reference point for comparison with seized evidence. That sample was received from a chemical company. The chemist testified that in comparing the seized sample with the known standard sample, she relied on the manufacturer’s assurance that the known standard sample was 100% pure. The court found no confrontation violation because the known standard sample --- and the manufacturer’s assurance about it --- were not testimonial. Any statements regarding the known standard sample were not made with the primary motivation that they would be used at a criminal trial, because the sample was prepared for general use by the laboratory. The court noted that the chemist’s conclusions about the *seized* sample would raise confrontation questions, but the government produced the chemist to be cross-examined about those conclusions. As to the

standard sample, it was prepared “prior to and without regard to any particular investigation, let alone any particular prosecution.”

Note: In reaching its result, the *Razo* court provided a good interpretation of *Williams*. The court saw support in the fact that the Alito plurality would find any communications regarding the known standard sample to be non-testimonial because that sample was “not prepared for the primary purpose of accusing a targeted individual.” And the fifth vote of support would come from Justice Thomas, because nothing about the known standard sample was in the nature of a formalized statement.

Certain records of internet activity sent to law enforcement found testimonial: *United States v. Cameron*, 699 F.3d 621 (1st Cir. 2012): In a child pornography prosecution, the court held that admission of certain records about suspicious internet activity violated the defendant’s right to Confrontation Clause. The evidence principally at issue related to accounts with Yahoo. Yahoo received an anonymous report that child pornography images were contained in a Yahoo account. Yahoo sent a report --- called a “CP Report”--- to the National Center for Missing and Exploited Children (NCMEC), listing the images being sent with the report, attaching the images, and listing the date and time at which the image was uploaded and the IP Address from which it was uploaded. NCMEC in turn sent a report of child pornography to the Maine State Police Internet Crimes Against Children Unit (ICAC), which obtained a search warrant for the defendant’s computers. The government introduced testimony of a Yahoo employee as to how certain records were kept and maintained by the company, but the government did not introduce the Image Upload Data indicating the date and time each image was uploaded to the Internet. The government also introduced testimony by a NCMEC employee explaining how NCMEC handled tips regarding child pornography. The court held that admission of various data collected by Yahoo and Google automatically in order to further their business purposes was proper, because the data was contained in business records and was not testimonial for Sixth Amendment purposes. But the court held, 2-1, that the reports Yahoo prepared and sent to NCMEC were different and were testimonial because the primary purpose for the reports was to record past events that were potentially relevant to a criminal prosecution. The court relied on the following considerations to conclude that the CP Reports were testimonial: 1) they referred to a “suspect” screen name, email address, and IP address --- and Yahoo did not treat its customers as “suspects” in the ordinary course of its business; 2) before a CP Report is created, someone in the legal department at Yahoo has to determine that an account contained child pornography images; 3) Yahoo did not simply keep the reports but sent them to NCMEC, which was under the circumstances an agent of law enforcement, because it received a government grant to accept reports of child pornography and forward them to law enforcement. The government argued that Confrontation was not at issue

because the CP Reports contained business records that were unquestionably nontestimonial, such as records of users' IP addresses. But the court responded that the CP Reports were themselves statements. The court noted that "[i]f the CP Reports simply consisted of the raw underlying records, or perhaps underlying records arranged and formatted in a reasonable way for presentation purposes, the Reports might well have been admissible."

The government also argued that the CP Reports were not testimonial under the Alito definition of primary motive in *Williams*. Like the DNA reports in *Williams*, the CP Reports were prepared at a time when the perpetrator was unknown and so they were not targeted toward a particular individual. The court distinguished *Williams* by relying on a statement in the Alito opinion that at the time of the DNA report, the technicians had "no way of knowing whether it will turn out to be incriminating or exonerating." In contrast, when the CP Reports were prepared, Yahoo personnel knew that they were incriminating: "Yahoo's employees may not have known *whom* a given CP Report might incriminate, but they almost certainly were aware that a Report would incriminate *somebody*."

Finally, the court held that the NCMEC reports sent to the police were testimonial, because they were statements independent of the CP Reports, and they were sent to law enforcement for the primary purpose of using them in a criminal prosecution. One judge, dissenting in part, argued that the connection between an identified user name, the associated IP address, and the digital images archived from that user's account all existed well before Yahoo got the anonymous tip, were an essential part of the service that Yahoo provided, and thus were ordinary business records that were not testimonial.

Note: *Cameron* cannot be read to hold that business records admissible under Rule 803(6) can be testimonial under *Crawford*. The court notes that under *Palmer v. Hoffman*, 318 U.S. 109 (1943), records are not admissible as business records when they are calculated for use in court. *Palmer* is still good law under Rule 803(6), as the Court recognized in *Melendez-Diaz*. The *Cameron* court noted that the Yahoo reports were subject to the same infirmity as the records found inadmissible in *Hoffman*: they were not made for business purposes, but rather for purposes of litigation. Thus according to the court, the Yahoo reports were probably not admissible as business records anyway.

Airline records of passengers on a plane are not testimonial: *Tran v. Roden*, 847 F.3d 44 (1st Cir. 2017): On habeas review of a murder conviction, the court reviewed whether the admission of a manifest prepared by United Airlines violated the defendants' right to confrontation. The manifest showed that two people with the same names as the defendants were on a flight out of the country. This was evidence of consciousness of guilt. The court found that the manifest was a business record prepared by United, outside the context of litigation, and therefore

it was not testimonial. The defendants argued that the record was testimonial because it was *delivered* by United to the prosecution. But the court found this irrelevant, because the question under the Confrontation Clause is whether a document was *prepared* with the primary motive of use in a criminal prosecution. The defendants relied on *Cameron*, immediately above, but the court distinguished *Cameron* by noting that the Yahoo records in that case were *prepared* by Yahoo with the intent to send them to the government in order to investigate and prosecute child pornography.

Telephone records are not testimonial: *United States v. Burgos-Montes*, 786 F.3d 92 (1st Cir. 2015): The government introduced phone records of a conspirator. They were accompanied by a certification made under Rule 902(11). The defendant argued that the phone records were testimonial but the court disagreed. The defendant argued that the records were produced by the phone company in response to a demand from the government, but the court found this irrelevant. The records were gathered and maintained by the phone company in the routine course of business. “The fact that the print-out of this data in this particular format was requested for litigation does not turn the data contained in the print-out into information created for litigation.”

Routine autopsy report was not testimonial: *United States v. James*, 712 F.3d 79 (2nd Cir. 2013): The court considered whether its *pre-Melendez-Diaz* case law --- stating that autopsy reports were not testimonial --- was still valid. The court adhered to its view that “routine” autopsy reports were not testimonial because they are not prepared with the primary motivation that they will be used in a criminal trial. Applying the test of “routine” to the facts presented, the court found as follows:

Somaipersaud's autopsy was nothing other than routine --- there is no suggestion that Jindrak or anyone else involved in this autopsy process suspected that Somaipersaud had been murdered and that the medical examiner's report would be used at a criminal trial. [A government expert] testified that causes of death are often undetermined in cases like this because it could have been a recreational drug overdose or a suicide. The autopsy report itself refers to the cause of death as "undetermined" and attributes it both to "acute mixed intoxication with alcohol and chlorpromazine" combined with "hypertensive and arteriosclerotic cardiovascular disease."

The autopsy was completed on January 24, 1998, and the report was signed June 16, 1998, substantially before any criminal investigation into Somaipersaud's death had begun. [N]either the government nor defense counsel elicited any information suggesting that law enforcement was ever notified that Somaipersaud's death was suspicious, or that

any medical examiner expected a criminal investigation to result from it. Indeed, there is reason to believe that none is pursued in the case of most autopsies.

The court noted that “something in the order of ten percent of deaths investigated by the OCME lead to criminal investigations.” It distinguished the 11th Circuit’s opinion --- discussed below --- which found an autopsy report to be testimonial, noting that “the decision was based in part on the fact that the Florida Medical Examiner's Office was created and exists within the Department of Law Enforcement. Here, the OCME is a wholly independent office.” Thus, an autopsy report prepared outside the auspices of a criminal investigation is very unlikely to be found testimonial under the Second Circuit’s view.

Note: In considering the effect of *Williams*, the court found that in fact there was no lesson at all to be derived from *Williams*, as there was no rationale on which five members of the Court could agree. Thus, the Court found that *Williams* controlled only cases exactly like it.

Business records are not testimonial: *United States v. Bansal*, 663 F.3d 634 (3rd Cir. 2011): In a prosecution related to a controlled substance distribution operation, the trial court admitted records kept by domestic and foreign businesses of various transactions. The court rejected the claim that the records were testimonial, stating that “the statements in the records here were made for the purpose of documenting business activity, like car sales and account balances, and not for providing evidence to law enforcement or a jury.”

Admission of credit card company’s records identifying customer accounts that had been compromised did not violate the right to confrontation: *United States v. Keita*, 742 F.3d 184 (4th Cir. 2014): In a prosecution for credit card fraud, the trial court admitted “common point of purchase” records prepared by American Express. These were internal documents revealing which accounts have been compromised. American Express creates the reports daily as part of regular business practice, and they are used by security analysts to determine whether to contact law enforcement or to investigate the matter internally in the first instance. The court held that the records were not testimonial (even though they could possibly be used for criminal prosecution), relying on the language in *Melendez-Diaz* stating that “business records are generally admissible absent confrontation.” The court concluded that the records were primarily prepared for the administration of Amex’s regularly conducted business.

Admission of purported drug ledgers violated the defendant's confrontation rights where the proof of authenticity was the fact that they were produced by an accomplice at a proffer session: *United States v. Jackson*, 625 F.3d 875 (5th Cir. 2010), amended 636 F.3d 687 (5th Cir. 2011): In a drug prosecution, purported drug ledgers were offered to prove the defendant's participation in drug transactions. An officer sought to authenticate the ledgers as business records but the court found that he was not a "qualified witness" under Rule 803(6) because he had no knowledge that the ledgers came from any drug operation associated with the defendant. The court found that the only adequate basis of authentication was the fact that the defendant's accomplice had produced the ledgers at a proffer session with the government. But because the production at the proffer session was unquestionably a testimonial statement --- and because the accomplice was not produced to testify --- admission of the ledger against the defendant violated his right to confrontation under *Crawford*.

Note: The *Jackson* court does not hold that business records are testimonial. The reasoning is muddled, but the best way to understand it is that the evidence used to authenticate the business record --- the cohort's production of the records at a proffer session --- was testimonial.

Pseudoephedrine logs are not testimonial: *United States v. Towns*, 718 F.3d 404 (5th Cir. 2013): In a methamphetamine prosecution, the agent testified to patterns of purchasing pseudoephedrine at various pharmacies. This testimony was based on logs kept by the pharmacies of pseudoephedrine purchases. The court found that the logs --- and the certifications to the logs provided by the pharmacies --- were properly admitted as business records. It further held that the records were not testimonial. As to the Rule 803(6) question, the court found irrelevant the fact that the records were required by statute to be kept and were pertinent to law enforcement. The court stated that "the regularly conducted activity here is selling pills containing pseudoephedrine; the purchase logs are kept in the course of that activity. Why they are kept is irrelevant at this stage." As to the certifications from the records custodians of the pharmacies, the court found them proper under Rule 803(6) and 902(11) ---the certifications tracked the language of Rule 803(6) and there was no requirement that the custodians do anything more, such as explain the process of record keeping. As to the Confrontation Clause, the court noted that the Supreme Court in *Melendez-Diaz* had declared that business records are ordinarily non-testimonial. Moreover, the logs were not prepared solely with an eye toward trial. The court concluded as follows:

The pharmacies created these purchase logs *ex ante* to comply with state regulatory measures, not in response to an active prosecution. Additionally, requiring a driver's license for purchases of pseudoephedrine deters crime. The state thus has a clear interest in businesses creating these logs that extends beyond their evidentiary value. Because the

purchase logs were not prepared specifically and solely for use at trial, they are not testimonial and do not violate the Confrontation Clause.

Court rejects the “targeted individual” test in reviewing an affidavit pertinent to illegal immigration: *United States v. Duron-Caldera*, 737 F.3d 988 (5th Cir. 2013): The defendant was charged with illegal reentry. The dispute was over whether he was in fact an alien. He claimed he was a citizen because his mother, prior to his birth, was physically present in the U.S. for at least ten years, at least five of which were before she was 14. To prove that this was not the case, the government offered an affidavit from the defendant’s grandmother, prepared 40 years before the instant case. The affidavit was prepared in connection with an investigation into document fraud, including the alleged filing of fraudulent birth certificates by the defendant’s parents and grandmother. The affidavit accused others of document fraud, and stated that the defendant’s mother did not reside in the United States for an extended period of time. The trial court admitted the affidavit but the court of appeals held that it was testimonial and reversed. The government argued that the affidavit was a business record because it was found in regularly kept immigration records. But the court noted that it could not qualify as a business record because the grandmother was not acting in the ordinary course of regularly conducted activity.

The court found that the government had not shown that the affidavit was prepared outside the context of a criminal investigation, and therefore the affidavit was testimonial under the primary motive test. The government relied on the Alito opinion in *Williams*, under which the affidavit would not be testimonial, because it clearly was not targeted toward the defendant, as he was only a child when it was prepared. But the court rejected the targeted individual test. It noted first that five members of the court in *Williams* had rejected the test. It also stated that the targeted individual limitation could not be found in any of the *Crawford* line of cases before *Williams*: noting, for example, that in *Crawford* the Court defined testimonial statements as those one would expect to be used “at a later trial.” Finally, the court contended that the targeted individual test was inconsistent with the terms of the Confrontation Clause, which provide a right of the accused to be confronted with the “*witnesses against him.*” In this case, the grandmother, by way of affidavit, was a witness against the defendant.

Reporter’s Note: The court’s construction of the Confrontation Clause could come out the other way. The reference to “witnesses against him” in the Sixth Amendment could be interpreted as *at the time the statement was made*, it was being directed at the defendant. The *Duron-Caldera* court reads “witnesses” as of the time the statement is being introduced. But at that time, the witness is not there. All the “witnessing” is done at the time the statement is made; and if the witness is not

targeting the individual at the time the statement is made, it could well be argued that the witness is not testifying “against *him*.”

Another note from *Duron-Caldera*: The court notes that there is no rule to be taken from *Williams* under the *Marks* test --- under which you take the narrowest view on which the plurality and the concurrence can agree. In *Williams*, there is nothing on which the plurality and Justice Thomas agreed.

Pseudoephedrine purchase records are not testimonial: *United States v. Collins*, 799 F.3d 554 (6th Cir. 2015): Relying on the Fifth Circuit’s decision in *United States v. Towns, supra*, the court held that pharmaceutical records of pseudoephedrine purchases were not testimonial. The court noted that while law enforcement officers use the records to track purchases, the “system is designed to prevent customers from purchasing illegal quantities of pseudoephedrine by indicating to the pharmacy employee whether the customer has exceeded federal or state purchasing restrictions” and accordingly was not primarily motivated to generate evidence for a prosecution.

Pseudoephedrine logs are not testimonial: *United States v. Lynn*, 851 F.3d 786 (7th Cir. 2017): Affirming convictions for methamphetamine manufacturing and related offenses, the court found no error in admitting logs of pseudoephedrine purchases prepared by pharmacies. These logs indicated that the defendant and associates had purchased pseudoephedrine, a necessary ingredient of methamphetamine. The defendant argued that introducing the logs violated his right to confrontation because they were prepared in anticipation of a prosecution and so were testimonial. But the court disagreed. It stated that “regulatory bodies may have legitimate interests in maintaining these records that far exceed their evidentiary value in a given case. For example, requiring identification for each pseudoephedrine purchase may deter misuse or pseudoephedrine-related drug offenses.” The logs were therefore not testimonial.

Preparing an exhibit for trial is not testimonial: *United States v. Vitrano*, 747 F.3d 922 (7th Cir. 2014): In a prosecution for fraud and perjury, the government offered records of phone calls made by the defendant. The defendant argued that there was a confrontation violation because the technician who prepared the phone calls as an exhibit did not testify. The court found that the confrontation argument was properly rejected, because no statements of the technician were admitted at trial. The court declared that “[p]reparing an exhibit for trial is not itself testimonial.”

Records of wire transfers are not testimonial: *United States v. Brown*, 822 F.3d 966 (7th Cir. 2016): In a drug prosecution, the government offered records of Western Union wire transfers. The court found that the records were not testimonial, noting that “[l]ogically, if they are made in the ordinary course of business, then they are not made for the purpose of later prosecution.” It concluded that the records were “routine and prepared in the ordinary course of business, not in anticipation of prosecution.”

Note: The Western Union records in *Brown* were proven up by way of certificates offered under Rule 902(11). The court did not even mention any possible concern that those certifications would themselves be testimonial. It focused only on the testimoniality of the underlying records.

Records of sales at a pharmacy are business records and not testimonial under *Melendez-Diaz*: *United States v. Mashek*, 606 F.3d 922 (8th Cir. 2010): The defendant was convicted of attempt to manufacture methamphetamine. At trial the court admitted logbooks from local pharmacies to prove that the defendant made frequent purchases of pseudoephedrine. The defendant argued that the logbooks were testimonial under *Melendez-Diaz*, but the court disagreed and affirmed his conviction. The court first noted that the defendant probably waived his confrontation argument because at trial he objected only on the evidentiary grounds of hearsay and Rule 403. But even assuming the defendant preserved his confrontation argument, “*Melendez-Diaz* does not provide him any relief. The pseudoephedrine logs were kept in the ordinary course of business pursuant to Iowa law and are business records under Federal Rule of Evidence 803(6). Business records under Rule 803(6) are not testimonial statements; *see Melendez-Diaz*, 129 S.Ct. At 2539-40 (explaining that business records are typically not testimonial).” **Accord**, *United States v. Ali*, 616 F.3d 745 (8th Cir. 2010) (business records prepared by financial services company, offered as proof that tax returns were false, were not testimonial, as “*Melendez-Diaz* does not apply to the HSBC records that were kept in the ordinary course of business.”); *United States v. Wells*, 706 F.3d 908 (8th Cir. 2013) (*Melendez-Diaz* did not preclude the admission of pseudoephedrine logs, because they constitute non-testimonial business records under Federal Rule of Evidence 803(6)).

Rule 902(11) authentication was not testimonial: *United States v. Thompson*, 686 F.3d 575 (8th Cir. 2012): To prove unexplained wealth in a drug case, the government offered and the court admitted a record from the Iowa Workforce Development Agency showing no reported wages for Thompson's social security number during 2009 and 2010. The record was admitted through an affidavit of self-authentication offered pursuant to Rule 902(11). The court found that the earnings records themselves were non-testimonial because they were prepared for administrative purposes. As to the exhibit, the court stated that “[b]ecause the IWDA record itself

was not created for the purpose of establishing or proving some fact at trial, admission of a certified copy of that record did not violate Thompson's Confrontation Clause rights.” The court emphasized that “[b]oth the majority and dissenting opinions in *Melendez-Diaz* noted that a clerk's certificate authenticating a record --- or a copy thereof --- for use as evidence was traditionally admissible even though the certificate itself was testimonial, having been prepared for use at trial.” It concluded that “[t]o the extent Thompson contends that a copy of an existing record or a printout of an electronic record constitutes a testimonial statement that is distinguishable from the non-testimonial statement inherent in the original business record itself, we reject this argument.” *See also United States v. Johnson*, 688 F.3d 494 (8th Cir. 2012) (certificates of authenticity presented under Rule 902(11) are not testimonial, and the notations on the lab report by the technician indicating when she checked the samples into and out of the lab did not raise a confrontation question because they were offered only to establish a chain of custody and not to prove the truth of any matter asserted).

GPS tracking reports were properly admitted as non-testimonial business records: *United States v. Brooks*, 715 F.3d 1069 (8th Cir. 2013): Affirming bank robbery and related convictions, the court rejected the defendant’s argument that admission at trial of GPS tracking reports violated his right to confrontation. The reports recorded the tracking of a GPS device that was hidden by a teller in the money taken from the bank. The court held that the records were properly admitted as business records under Rule 803(6), and they were not testimonial. The court reasoned that the primary purpose of the tracking reports was to track the perpetrator in an ongoing pursuit --- not for use at trial. The court stated that “[a]lthough the reports ultimately were used to link him to the bank robbery, they were not *created* . . . to establish some fact at trial. Instead, the GPS evidence was generated by the credit union’s security company for the purpose of locating a robber and recovering stolen money.”

Certificates attesting to Indian blood are not testimonial: *United States v. Rainbow*, 813 F.3d 1097 (8th Cir. 2016): To prove a jurisdictional element of a charge that the defendants committed an assault within Indian Country, the government offered certificates of degree of Indian blood. The certificates certified that the respective defendants possessed the requisite degree of Indian blood. The defendants argued that, because the certificates were formalized and prepared for litigation, they were testimonial and so admitting them violated their right to confrontation. The certificates were prepared by a clerk of an officer of the BIA, and introduced at trial by the assistant supervisor of that office. The certificates reflected information about what was in records regularly kept by the BIA. The court found that the certificates were not testimonial. It explained as follows:

Although Archambault [the assistant supervisor] testified that he had these particular certificates prepared for his testimony, BIA officials regularly certify blood quantum for the purpose of establishing eligibility for federal programs available only to Indians. Archambault explained that his office maintained the records of tribal enrollment and of each member's blood quantum. He could look up an individual's enrollment status and blood quantum at any time—that information existed regardless of whether any crime was committed. Unlike the analysts in *Melendez-Diaz* and *Bullcoming*, the enrollment clerk here did not complete forensic testing on evidence seized during a police investigation, but instead performed the ministerial duty of preparing certificates based on information that was kept in the ordinary course of business. An objective witness would not necessarily know that the certificates would be used at a later trial, because certificates of degree of Indian blood are regularly used in the administration of the BIA's affairs. Simply put, the enrollment clerk prepared certificates using records maintained in the ordinary course of business by the Standing Rock Agency, and the BIA routinely issues certificates in the administration of its affairs. Thus, the certificates were admissible as non-testimonial business records.

Prior conviction in which the defendant did not have the opportunity to cross-examine witnesses cannot be used in a subsequent trial to prove the facts underlying the conviction: *United States v. Causevic*, 636 F.3d 998 (8th Cir. 2011): The defendant was charged with making materially false statements in an immigration matter --- specifically that he lied about committing a murder in Bosnia. To prove the lie at trial, the government offered a Bosnian judgment indicating that the defendant was convicted in absentia of the murder. The court held that the judgment was testimonial to prove the underlying facts, and there was no showing that the defendant had the opportunity to cross-examine the witnesses in the Bosnian court. The court distinguished proof of the *fact* of a conviction being entered (such as in a felon-firearm prosecution), as in that situation the public record is prepared for recordkeeping and not for a trial. In contrast the factual findings supporting the judgment were obviously generated for purposes of a criminal prosecution.

Note: The statements of facts underlying the prior conviction are testimonial under both versions of the primary motive test contested in *Williams*. They meet the Kagan test because they were obviously prepared for purpose of --- indeed as part of --- a criminal prosecution. And they meet the Alito proviso because they targeted the specific defendant against whom they were used at trial.

Affidavit that birth certificate existed was testimonial: *United States v. Bustamante*, 687 F.3d 1190 (9th Cir. 2012): The defendant was charged with illegal entry and the dispute was whether he was a United States citizen. The government contended that he was a citizen of the Philippines but could not produce a birth certificate, as the records had been degraded and were poorly kept. Instead it produced an affidavit from an official who searched birth records in the Philippines as part of the investigation into the defendant’s citizenship by the Air Force 30 years earlier. The affidavit stated that birth records indicated that the defendant was born in the Philippines, and the affidavit purported to transcribe the information from the records. The court held that the affidavit was testimonial under *Melendez-Diaz* and reversed the conviction. The court distinguished this case from cases finding that birth records and certificates of authentication are not testimonial:

Our holding today does not question the general proposition that birth certificates, and official duplicates of them, are ordinary public records “created for the administration of an entity's affairs and not for the purpose of establishing or proving some fact at trial.” *Melendez-Diaz*, 129 S.Ct. at 2539-40. But Exhibit 1 is not a copy or duplicate of a birth certificate. Like the certificates of analysis at issue in *Melendez-Diaz*, despite being labeled a copy of the certificate, Exhibit 1 is “quite plainly” an affidavit. It is a typewritten document in which Salupisa testifies that he has gone to the birth records of the City of Bacolod, looked up the information on Napoleon Bustamante, and summarized that information at the request of the U.S. government for the purpose of its investigation into Bustamante's citizenship. Rather than simply authenticating an existing non-testimonial record, Salupisa created a new record for the purpose of providing evidence against Bustamante. The admission of Exhibit 1 without an opportunity for cross examination therefore violated the Sixth Amendment.

Filed statement of registered car owner, made after impoundment, that he sold the car to the defendant, was testimonial: *United States v. Esparza*, 791 F.3d 1067 (9th Cir. 2015): The defendant was arrested entering the United States with marijuana hidden in the gas tank and dashboard; the fact in dispute was the defendant’s knowledge, and specifically whether he owned the car he was driving. At the time of arrest, the registered owner was Donna Hernandez. The government relied on two hearsay statements made in records filed with the DMV by Hernandez that she had sold the car to the defendant six days before the defendant’s arrest. But these records were filed *after* the defendant was arrested and Hernandez had received a notice indicating that the car had been seized because it was used to smuggle marijuana into the country. Under the circumstances, the court found that the post-hoc records filed by Hernandez with the DMV were testimonial. The court noted that Hernandez did not create the record “for the routine administration of the DMV’s affairs.” Nor was Hernandez merely “a private citizen who, in the course of a routine sale, simply notified the DMV of the transfer of her car. Instead, her car had

already been seized for serious criminal violations, and she sent the transfer form to the DMV only after receiving a notice of seizure from [Customs and Border Protection].”

Note: This is an interesting case in which a statement was found testimonial in the absence of significant law enforcement involvement in the generation of the statement. As the Court has noted in *Bryant* and *Clark*, law enforcement involvement is critical to finding a statement testimonial, because a statement not made to or with law enforcement is unlikely to be sufficiently formal, and unlikely to be primarily motivated for use in a criminal trial. But at least it can be said that there is formality here --- Hernandez filed formal statements claiming that the ownership was transferred. And there was involvement of the state both in spurring her interest in filing (by sending her the notice) and in receiving her filing.

Government concedes a *Melendez-Diaz* error in admitting affidavit on the absence of a public record: *United States v. Norwood*, 603 F.3d 1063 (9th Cir. 2010): In a drug case, the government sought to prove that the defendant had no legal source for the large amounts of cash found in his car. The trial court admitted an affidavit of an employee of the Washington Department of Employment Security, which certified that a diligent search failed to disclose any record of wages reported for the defendant in a three-month period before the crime. On appeal, the government conceded that the affidavit was erroneously admitted in light of the intervening decision in *Melendez-Diaz*. (The court found the error to be harmless).

CNR is testimonial but a warrant of deportation is not: *United States v. Orozco-Acosta*, 607 F.3d 1156 (9th Cir. 2010): In an illegal reentry case, the government proved removal by introducing a warrant of deportation under Rule 803(8), and it proved unpermitted reentry by introducing a certificate of non-existence of permission to reenter (CNR) under Rule 803(10). The trial was conducted and the defendant convicted before *Melendez-Diaz*. On appeal, the government conceded that introducing the CNR violated the defendant’s right to confrontation because under *Melendez-Diaz* that record is testimonial. The court in a footnote agreed with the government’s concession, stating that its previous cases holding that CNRs were not testimonial were “clearly inconsistent with *Melendez-Diaz*” because like the certificates in that case, a CNR is prepared solely for purposes of litigation, after the crime has been committed. In contrast, however, the court found that the warrant of deportation was properly admitted even under *Melendez-Diaz*. The court reasoned that “neither a warrant of removal’s sole purpose nor even its primary purpose is use at trial.” It explained that a warrant of removal must be prepared in every case resulting in a final order of removal, and only a “small fraction of these warrants are used in immigration prosecutions.” The court concluded that “*Melendez-Diaz* cannot be read to establish

that the mere possibility that a warrant of removal --- or, for that matter, any business or public record --- could be used in a later criminal prosecution renders it testimonial under *Crawford*.” The court found that the error in admitting the CNR was harmless and affirmed the conviction. *See also United States v. Rojas-Pedroza*, 716 F.3d 1253 (9th Cir. 2013) (adhering to *Orozco-Acosta* in response to the defendant’s argument that it had been undermined by *Bullcoming* and *Bryant*; holding that a Notice of Intent in the defendant’s A-File --- which apprises the alien of the determination that he is removable --- was non-testimonial because its “primary purpose is to effect removals, not to prove facts at a criminal trial.”); *United States v. Lopez*, 762 F.3d 852 (9th Cir. 2014) (verification of removal, recording the physical removal of an alien across the border, is not testimonial; like a warrant of removal, it is made for administrative purposes and not primarily designed to be admitted as evidence at a trial; the only difference from a warrant of removal “is that a verification of removal is used to record the removal of aliens pursuant to expedited removal procedures, while the warrant of removal records the removal of aliens following a hearing before an immigration judge”; also holding that, for the same reasons, the verification of removal was admissible as a public record under Rule 803(8)(A)(ii), despite the Rule’s apparent exclusion of law enforcement reports); *United States v. Albino-Loe*, 747 F.3d 1206 (9th Cir. 2014) (statements concerning the defendant’s alienage in a notice of removal --- which is the charging document for deportation --- are not testimonial in an illegal entry case; the primary purpose of a notice of removal “is simply to effect removals, not to prove facts at a criminal trial”); *United States v. Torralba-Mendia*, 784 F.3d 652 (9th Cir. 2015) (I-213 Forms, offered to show that passengers detained during an investigation were deported, were admissible under the public records hearsay exception and were not testimonial: “The admitted record of a deportable alien contains the same information as a verification of removal: The alien’s name, photograph, fingerprints, as well as the date, port and method of departure[T]he admitted forms are a ministerial, objective observation [and] Agents complete I-213 forms regardless of whether the government decides to prosecute anyone criminally.”).

Documents in alien registration file not testimonial: *United States v. Valdovinos-Mendez*, 641 F.3d 1031 (9th Cir. 2011): In an illegal re-entry prosecution, the defendant argued that admission of documents from his A-file violated his right to Confrontation. The court held that the challenged documents a --- Warrant of Removal, a Warning to Alien ordered Deported, and the Order from the Immigration Judge --- were not testimonial. They were not prepared with the primary motive of use in a criminal prosecution, because at the time they were prepared the crime of illegal reentry had not occurred.

Forms prepared by border patrol agents interdicting aliens found not testimonial: *United States v. Morales*, 720 F.3d 1194 (9th Cir. 2013): In a prosecution for illegally transporting

aliens, the trial court admitted Field 826 forms, prepared by Border Patrol agents who interviewed the aliens. The Field 826 form records the date and location of arrest, the funds found in the alien's possession, and basic biographical data about the alien, and also provides the alien options, including the making of a concession that the alien is illegally in the country and wishes to return home. The court of appeals rejected the defendant's argument that these forms were testimonial. It stated that "a Border Patrol agent uses the form in the field to document basic information, to notify the aliens of their administrative rights, and to give the aliens a chance to request their preferred disposition. The Field 826s are completed whether or not the government decides to prosecute the aliens or anyone else criminally. The nature and use of the Field 826 makes clear that its primary purpose is administrative, not for use as evidence at a future criminal trial. Even though statements within the form may become relevant to later criminal prosecution, this potential future use does not automatically place the statements within the ambit of 'testimonial.'" The court did find that the part of the report that contained information from the aliens was improperly admitted in violation of the *hearsay* rule. The Field 826 is a public record but information coming from the alien is not information coming from a public official. The court found the violation of the hearsay rule to be harmless error. (The court appears wrong about the hearsay rule because statements coming from the alien would be admissible as party-opponent statements in a public record.)

Return of Service, offered to prove that the Defendant had been provided with notice of a hearing on a domestic violence protection order, was not testimonial: *United States v. Fryberg*, 854 F.3d 1126 (9th Cir. 2017): The defendant was convicted for possession of a firearm by a prohibited person. The prohibition was that he was subject to a domestic violence protection order. Critical to the validity of that order was that the defendant was served with notice of a hearing on a permanent protection order. As proof of that the defendant was served with that notice, the government offered the return of service by a law enforcement officer, completed on the day that service was purportedly made. The court held that the return of service was admissible over a hearsay exception as a public record; it was not barred by the law enforcement prohibition of Rule 803(8) because it was a ministerial, non-adversarial record, proving only that service was made. The court further held that the return of service was admissible over a confrontation objection, because it was not testimonial. The court likened the return of service to the certificate of deportation upheld in *Orozco-Acosta, supra*. The court stated that the primary purpose for preparing the return of service was not to have it used as evidence in a prosecution but rather to inform the court "that the defendant had been served with notice of the hearing on the protection order, which enabled the hearing to proceed." At the time the notice was filed, no crime had yet occurred and so the return of service was not primarily prepared for the purpose of a criminal prosecution.

Social Security application was not testimonial as it was not prepared under adversarial circumstances: *United States v. Berry*, 683 F.3d 1015 (9th Cir. 2012): The court affirmed the defendant's conviction for social security fraud for taking money paid for maintenance of his son while the defendant was a representative payee. The trial judge admitted routine Social Security Administration records showing that the defendant applied for benefits on behalf of the son. The defendant argued that an SSA application was tantamount to a police report and therefore the record was inadmissible under Rule 803(8), and also that its admission violated his right to confrontation. The court disagreed, reasoning that "a SSA interviewer completes the application as part of a routine administrative process" and such a record is prepared for each and every request for benefits. "No affidavit was executed in conjunction with preparation of the documents, and there was no anticipation that the documents would become part of a criminal proceeding. Rather, every expectation was that Berry would use the funds for their intended purpose." The court quoted *Melendez-Diaz* for the proposition that "[b]usiness and public records are generally admissible absent confrontation not because they qualify under an exception to the hearsay rules, but because --- having been created for the administration of an entity's affairs and not for the purpose of establishing or proving some fact at trial --- they are not testimonial." The court concluded as follows:

[N]o reasonable argument can be made that the agency documents in this case were created solely for evidentiary purposes and/or to aid in a police investigation. Importantly, no police investigation even existed when the documents were created. * * * Because the evidence at trial established that the SSA application was part of a routine, administrative procedure unrelated to a police investigation or litigation, we conclude that the district court did not abuse its discretion by admitting the application under Fed.R.Evid. 803(8), and no constitutional violation occurred.

Affidavit seeking to amend a birth certificate, prepared by border patrol agents for use at trial, was testimonial: *United States v. Macias*, 789 F.3d 1011 (9th Cir. 2015): The defendant was arrested for illegal reentry but claimed that he had a California birth certificate and was a U.S. citizen. He was charged with illegal reentry and making a false claim of citizenship. During his trial he introduced a "delayed registration of birth" document issued by the State of California, and the jury deadlocked. After the trial, border patrol agents conducted an investigation into the defendant's place of birth, interviewing family members and reviewing family documents, and determined that he had been born in Mexico. They then attempted to correct the birthplace on the California document; pursuant to California law, they submitted sworn affidavits in an application to amend the California document. At the second trial, the government introduced the delayed registration as well as the amending affidavit. On appeal, the defendant argued that the

amending affidavit was testimonial and its admission violated his right to confrontation. The court reviewed this claim for plain error because at trial the defendant's objection was on hearsay grounds only. The court found that the amending affidavit was clearly testimonial, as its sole purpose was to create evidence for the defendant's second trial. However, the court found that the plain error did not affect the defendant's substantial rights, because the government at trial introduced the defendant's Mexican birth certificate, as well as testimony from family members that the defendant was born in Mexico.

Affidavits authenticating business records and foreign public records are not testimonial: *United States v. Anekwu*, 695 F.3d 967 (9th Cir. 2012): In a fraud case, the government authenticated foreign public records and business records by submitting certificates of knowledgeable witnesses. This is permitted by 18 U.S.C. § 3505 for foreign records in criminal cases. The court found that the district court did not commit plain error in finding that the certificates were not testimonial. The certificates were not themselves substantive evidence but rather a means to authenticate records. The court relied on the 10th Circuit's decision in *Yeley-Davis*, immediately below, and on the statement in *Melendez-Diaz* that certificates that do no more than authenticate other records are not testimonial.

Records of cellphone calls kept by provider as business records are not testimonial, and Rule 902(11) affidavit authenticating the records is not testimonial: *United States v. Yeley-Davis*, 632 F.3d 673 (10th Cir. 2011): In a drug case the trial court admitted cellphone records indicating that the defendant placed calls to coconspirators. The foundation for the records was provided by an affidavit of the records custodian that complied with Rule 902(11). The defendant argued that both the cellphone records and the affidavit were testimonial. The court rejected both arguments and affirmed the conviction. As to the records, the court found that they were not prepared "simply for litigation." Rather, the records were kept for Verizon's business purposes, and accordingly were not testimonial. As to the certificate, the court relied on pre-*Melendez-Diaz* cases such as *United States v. Ellis*, *supra*, which found that authenticating certificates were not the kind of affidavits that the Confrontation Clause was intended to cover. The defendant responded that cases such as *Ellis* had been abrogated by *Melendez-Diaz*, but the court disagreed:

If anything, the Supreme Court's recent opinion supports the conclusion in *Ellis*. *
* * Justice Scalia expressly described the difference between an affidavit created to provide evidence against a defendant and an affidavit created to authenticate an admissible record: "A clerk could by affidavit authenticate or provide a copy of an otherwise admissible record, but could not do what the analysts did here: create a record for the sole

purpose of providing evidence against a defendant.” Id. at 2539. In addition, Justice Scalia rejected the dissent's concern that the majority's holding would disrupt the long-accepted practice of authenticating documents under Rule 902(11) and would call into question the holding in *Ellis*. See *Melendez-Diaz*, 129 S.Ct. at 2532 n. 1 (“Contrary to the dissent's suggestion, ... we do not hold, and it is not the case, that anyone whose testimony may be relevant in establishing the ... authenticity of the sample ... must appear in person as part of the prosecution's case.”); see also id. at 2547 (Kennedy, J., dissenting) (expressing concern about the implications for evidence admitted pursuant to Rule 902(11) and future of *Ellis*). The Court's ruling in *Melendez-Diaz* does not change our holding that Rule 902(11) certifications of authenticity are not testimonial.

The court found *Yeley-Davis* “dispositive” in *United States v. Brinson*, 772 F.3d 1314 (10th Cir. 2014), in which the court admitted a certificate of authenticity of credit card records. The court again distinguished *Melendez-Diaz* as a case concerned with affidavits showing the results of a forensic analysis --- whereas the certificate of authenticity “does not contain any ‘analysis’ that would constitute out-of-court testimony. Without that analysis, the certificate is simply a non-testimonial statement of authenticity.” See also *United States v. Keck*, 643 F.3d 789 (10th Cir. 2011): Records of wire-transfer transactions were not testimonial because they “were created for the administration of Moneygram’s affairs and not the purpose of establishing or proving some fact at trial. And since the wire-transfer data are not testimonial, the records custodian’s actions in preparing the exhibits [by cutting and pasting the data] do not constitute a Confrontation Clause violation.”

Immigration forms containing biographical data, country of origin, etc. are not testimonial: *United States v. Caraballo*, 595 F.3d 1214 (11th Cir. 2010): In an alien smuggling case, the trial court admitted I-213 forms prepared by an officer who found aliens crammed into a small room in a boat near the shore of the United States. The forms contained basic biographical information, and were used at trial to prove that the persons were aliens and not admissible. The defendant argued that the forms were inadmissible hearsay and also testimonial. The court of appeals found no error. On the hearsay question, the court held that the forms were properly admitted as public records --- the exclusion of law enforcement records in Rule 803(8) did not apply because the forms were routine and nonadversarial documents requested from every alien entering the United States. Nor were the forms testimonial, even after *Melendez-Diaz*. The court distinguished *Melendez-Diaz* in the following passage:

Like a Warrant of Deportation * * * (and unlike the certificates of analysis in *Melendez-Diaz*), the basic biographical information recorded on the I-213 form is routinely

requested from every alien entering the United States, and the form itself is filled out for anyone entering the United States without proper immigration papers. * * * Rose gathered that biographical information from the aliens in the normal course of administrative processing at the Pembroke Pines Border Patrol Station in Pembroke Pines, Florida. * * *

The I-213 form is primarily used as a record by the INS for the purpose of tracking the entry of aliens into the United States. This routine, objective cataloging of unambiguous biographical matters becomes a permanent part of every deportable/inadmissible alien's A-File. It is of little moment that an incidental or secondary use of the interviews underlying the I-213 forms actually furthered a prosecution. The Supreme Court has instructed us to look only at the *primary* purpose of the law enforcement officer's questioning in determining whether the information elicited is testimonial. The district court properly ruled that the primary purpose of Rose's questioning of the aliens was to elicit routine biographical information that is required of every foreign entrant for the proper administration of our immigration laws and policies. The district court did not violate Caraballo's constitutional rights in admitting the smuggled aliens's redacted I-213 forms.

Summary charts of admitted business records is not testimonial: *United States v. Naranjo*, 634 F.3d 1198 (11th Cir. 2011): In a prosecution for concealing money laundering, the defendant argued that his confrontation rights were violated when the government presented summary charts of business records. The court found no error. The bank records and checks that were the subject of the summary were business records and “[b]usiness records are not testimonial.” And “[s]ummary evidence also is not testimonial if the evidence underlying the summary is not testimonial.”

Autopsy reports prepared as part of law enforcement are found testimonial under *Melendez-Diaz*: *United States v. Ignasiak*, 667 F.3d 1217 (11th Cir. 2012): In a prosecution against a doctor for health care fraud and illegally dispensing controlled substances, the court held that autopsy reports of the defendant's former patients were testimonial under *Melendez-Diaz*. The court relied heavily on the fact that the autopsy reports were filed by an arm of law enforcement. The court reasoned as follows:

We think the autopsy records presented in this case were prepared “for use at trial.” Under Florida law, the Medical Examiners Commission was created and exists within the Department of Law Enforcement. Fla. Stat. 406.02. Further, the Medical Examiners Commission itself must include one member who is a state attorney, one member who is a public defender, one member who is sheriff, and one member who is the attorney general

or his designee, in addition to five other non-criminal justice members. *Id.* The medical examiner for each district “shall determine the cause of death” in a variety of circumstances and “shall, for that purpose, make or have performed such examinations, investigations, and autopsies as he or she shall deem necessary or as shall be requested by the state attorney.” Fla. Stat. 406.11(1). Further, any person who becomes aware of a person dying under circumstances described in section 406.11 has a duty to report the death to the medical examiner. Failure to do so is a first degree misdemeanor.

* * *

In light of this statutory framework, and the testimony of Dr. Minyard, the autopsy reports in this case were testimonial: “made under circumstances which would lead an objective witness reasonably to believe that the statement would be available for use at a later trial.” As such, even though not all Florida autopsy reports will be used in criminal trials, the reports in this case are testimonial and subject to the Confrontation Clause.

Note: The Court’s test for testimoniality is broader than that used by the Supreme Court. The Supreme Court finds statements to be testimonial only when they are *primarily motivated* to be used in a criminal prosecution. The 11th Circuit’s “reasonable anticipation” test would cover many more statements, and accordingly the court’s decision in *Ignasiak* is subject to question.

State of Mind Statements

Statement admissible under the state of mind exception is not testimonial: *Horton v. Allen*, 370 F.3d 75 (1st Cir. 2004): Horton was convicted of drug-related murders. At his state trial, the government offered hearsay statements from Christian, Horton’s accomplice. Christian had told a friend that he was broke; that he had asked a drug supplier to front him some drugs; that the drug supplier declined; and that he thought the drug supplier had a large amount of cash on him. These statements were offered under the state of mind exception to show the intent to murder and the motivation for murdering the drug supplier. The court held that Christian’s statements were not “testimonial” within the meaning of *Crawford*. The court explained that the statements “were not ex parte in-court testimony or its equivalent; were not contained in formalized documents such as affidavits, depositions, or prior testimony transcripts; and were not made as part of a confession resulting from custodial examination. . . . In short, Christian did not make the statements under circumstances in which an objective person would reasonably believe that the statement would be available for use at a later trial.”

Testifying Declarant

Cross-examination sufficient to admit prior statements of the witness that were testimonial: *United States v. Acosta*, 475 F.3d 677 (5th Cir. 2007): The defendant's accomplice testified at his trial, after informing the court that he did not want to testify, apparently because of threats from the defendant. After answering questions about his own involvement in the crime, he refused on direct examination to answer several questions about the defendant's direct participation in the crime. At that point the government referenced statements made by the accomplice in his guilty plea. On cross-examination, the accomplice answered all questions; the questioning was designed to impeach the accomplice by showing that he had a motive to lie so that he could receive a more lenient sentence. The government then moved to admit the accomplice's statements made to qualify for a safety valve sentence reduction --- those statements directly implicated the defendant in the crime. The court found that statements made pursuant to a guilty plea and to obtain a safety valve reduction were clearly testimonial. However, the court found no error in admitting these statements, because the accomplice was at trial subject to cross-examination. The court noted that the accomplice admitted making the prior statements, and answered every question he was asked on cross-examination. While the cross-examination did not probe into the underlying facts of the crime or the accomplice's previous statements implicating the defendant, the court noted that "Acosta could have probed either of these subjects on cross-examination." The accomplice was therefore found sufficiently subject to cross-examination to satisfy the Confrontation Clause. *See also, United States v. Smith*, 822 F.3d 755 (5th Cir. 2016) (defendant's accomplice gave testimonial statements to a police officer, but admission of those statements did not violate the right to confrontation because the accomplice testified at trial subject to cross-examination).

Crawford inapplicable where hearsay statements are made by a declarant who testifies at trial: *United States v. Kappell*, 418 F.3d 550 (6th Cir. 2005): In a child sex abuse prosecution, the victims testified and the trial court admitted a number of hearsay statements the victims made to social workers and others. The defendant claimed that the admission of hearsay violated his right to confrontation under *Crawford*. But the court held that *Crawford* by its terms is inapplicable if the hearsay declarant is subject to cross-examination at trial. The defendant complained that the victims were unresponsive or inarticulate at some points in their testimony, and therefore they were not subject to effective cross-examination. But the court found this claim foreclosed by *United States v. Owens*, 484 U.S. 554 (1988). Under *Owens*, the Constitution requires only an opportunity for cross-examination, not cross-examination in whatever way the defendant might wish. The defendant's complaint was that his cross-examination would have been more effective if the victims had been older. "Under *Owens*, however, that is not enough to establish a Confrontation Clause violation."

Admission of testimonial statements does not violate the Confrontation Clause because declarant testified at trial --- even though the declarant did not recall making the statements: *Cookson v. Schwartz*, 556 F.3d 647 (7th Cir. 2009): In a child sex abuse prosecution, the trial court admitted the victim's hearsay statements accusing the defendant. These statements were testimonial. The victim then testified at trial, describing some incidents perpetrated by the defendant. But the victim could not remember making any of the hearsay statements that had previously been admitted into evidence. The court found no error in admitting the victim's testimonial hearsay, because the victim had been subjected to cross-examination at trial. The defendant argued that the victim was in effect unavailable because she lacked memory about the statements. But the court found this argument was foreclosed by *United States v. Owens*, 484 U.S. 554 (1988). The court noted that the defendant in this case was better off than the defendant in *Owens* because the victim in this case "could remember the underlying events described in the hearsay statements."

Witness's reference to statements made by a victim in a forensic report did not violate the Confrontation Clause because the declarant testified at trial: *United States v. Charbonneau*, 613 F.3d 860 (8th Cir. 2010): Appealing from child-sex-abuse convictions, the defendant argued that it was error for the trial court to allow the case agent to testify that he had conducted a forensic interview with one of the victims and that the victim identified the perpetrator. The court recognized that the statements by the victim may have been testimonial. But in this case the victim testified at trial. The court declared that "*Crawford* did not alter the principle that the Confrontation Clause is satisfied when the hearsay declarant, here the child victim, actually appears in court and testifies in person."

Statements of interpreter do not violate the right to confrontation where the interpreter testified at trial: *United States v. Romo-Chavez*, 681 F.3d 955 (9th Cir. 2012): The court held that even if the translator of the defendant's statements could be thought to have served as a witness against the defendant, there was no confrontation violation because the translator testified at trial. "He may not have remembered the interview, but the Confrontation Clause includes no guarantee that every witness called by the prosecution will refrain from giving testimony that is marred by forgetfulness, confusion, or evasion. All the Confrontation Clause requires is the ability to cross-examine the witness about his faulty recollections."

Statements to police officers implicating the defendant in the conspiracy are testimonial, but no confrontation violation because the declarant testified: *United States v.*

Allen, 425 F.3d 1231 (9th Cir. 2005): The court held that a statement made by a former coconspirator to a police officer, after he was arrested, identifying the defendant as a person recruited for the conspiracy, was testimonial. There was no error in admitting this statement, however, because the declarant testified at trial and was cross-examined. *See also United States v. Lindsey*, 634 F.3d 541 (9th Cir. 2011) (“Although Gibson’s statements to Agent Arbuthnot qualify as testimonial statements, they do not offend the Confrontation Clause because Gibson himself testified at trial and was cross-examined by Lindsey’s counsel.”).

Admitting hearsay accusation did not violate the right to confrontation where the declarant testified and was subject to cross-examination about the statement: *United States v. Pursley*, 577 F.3d 1204 (10th Cir. 2009): A victim of a beating identified the defendant as his assailant to a federal marshal. That accusation was admitted at trial as an excited utterance. The victim testified at trial to the underlying event, and he also testified that he made the accusation, but he did not testify on either direct or cross-examination *about* the statement. The defendant argued that admitting the hearsay statement violated his right to confrontation. The court assumed *arguendo* that the accusation was testimonial --- even though it had been admitted as an excited utterance. But even if it was testimonial hearsay, the defendant’s confrontation rights were not violated because he had a full opportunity to cross-examine the victim about the statement. The court stated that the defendant’s “failure to seize this opportunity demolishes his Sixth Amendment claim.” The court observed that the defendant had a better opportunity to confront the victim “than defendants have had when testifying declarants have indicated that they cannot remember their out-of-court statements. Yet, courts have found no Confrontation Clause violation in that situation.”

Statement to police admissible as past recollection recorded is testimonial but admission does not violate the right to confrontation: *United States v. Jones*, 601 F.3d 1247 (11th Cir. 2010): Affirming firearms convictions, the court held that the trial judge did not abuse discretion in admitting as past recollection recorded a videotaped police interview of a 16-year-old witness who sold a gun to the defendant and rode with him to an area out of town where she witnessed the defendant shoot a man. The court also rejected a Confrontation Clause challenge. Even though the videotaped statement was testimonial, the declarant testified at trial --- as is necessary to qualify a record under Rule 803(5) --- and was subject to unrestricted cross-examination.

Waiver

Waiver found where defense counsel’s cross-examination opened the door for testimonial hearsay: *United States v. Lopez-Medina*, 596 F.3d 716 (10th Cir. 2010): In a drug trial, an officer testified about the investigation that led to the defendant. On cross-examination, defense counsel inquired into the information that the officer received from an informant --- presumably to discredit the basis for the police having targeted the defendant. The trial court then on redirect allowed the government to question the officer and elicit some of the accusations about the defendant that the informant’s had made to the officer. The court found no error. It recognized that “a confidential informant’s statements to a law enforcement officer are clearly testimonial.” But the court concluded that the defendant “opened the door to further questioning of Officer Johnson regarding the information he received from the confidential informant. Where, as here, defense counsel purposefully and explicitly opens the door on a particular (and otherwise inadmissible) line of questioning, such conduct operates as a limited waiver allowing the government to introduce further evidence on that same topic.” The court observed that a waiver would not be found if there was any indication that the defendant had disagreed with defense counsel’s decision to open the door. But there was no indication of dissent in this case. **Accord,** *United States v. Acosta*, 475 F.3d 677 (5th Cir. 2007) (waiver found where defense counsel opened the door to testimonial hearsay). **Contra, and undoubtedly wrong,** *United States v. Cromer*, 389 F.3d 662, 679 (6th Cir. 2004) (“the mere fact that Cromer may have opened the door to the testimonial, out-of-court statement that violated his confrontation right is not sufficient to erase that violation”).

June 17, 2017

To whom it may concern:

When the President's Council of Advisors on Science and Technology (PCAST) Report first was published in 2016, it was obvious that the report was not particularly helpful from a scientific perspective as it was myopic, full of error, and did not provide data to support its contentions. A more significant concern regarding the failings of the PCAST Report was that it claimed its focus was on science, but obviously was dedicated substantially to policy. Initially I considered writing a critique about the failings of the PCAST Report to assist the community. But the problems with this report were so obvious that I did not think it would be necessary to devote time to such an effort. Indeed my prediction was correct in that the report would be (and has been) rejected by the scientific community as well as overwhelmingly by the courts. However, the PCAST Report is being relied on by the Public Defender Service in *U.S. v. Benito Valdez* (Motion to Exclude the Testimony of the Government's proposed expert witness in Firearms Examination and Memorandum of Points and Authorities in Support, dated June 2, 2017) as a scientifically sound review of the state of the forensic sciences. Therefore, it has become necessary to address the serious limitations of the PCAST Report and convey that it is an unsound, unsubstantiated, non-peer-reviewed document that should not be relied upon for supporting or refuting the state of the forensic sciences.

My credentials to be able to opine on the failings of the PCAST Report are based on my work of more than 30 years in research, development, validation, and implementation of DNA typing methodologies for forensic applications (my CV is attached). I received a Ph.D. in Genetics in 1979 from Virginia Polytechnic Institute and State University. From 1979-1982, I was a postdoctoral fellow at the University of Alabama at Birmingham and carried out research predominately on genetic risk factors for such diseases as insulin dependent diabetes mellitus, melanoma, and acute lymphocytic leukemia. In 1983, I joined the research unit at the FBI Laboratory Division to carry out research, development, and validation of methods for forensic biological analyses. The positions I held at the FBI include: research chemist, program manager for DNA research, Chief of the Forensic Science Research Unit, and the Senior Scientist for the Laboratory Division of the FBI. I have contributed to the fundamental sciences as they apply to forensics in analytical development, population genetics, statistical interpretation of evidence, and in quality assurance. Some of my technical efforts have been: 1) development of analytical assays for typing myriad protein genetic marker systems, 2) designing electrophoretic instrumentation, 3) developing molecular biology analytical systems to include RFLP typing of VNTR loci and PCR-based SNP, VNTR and STR assays, and direct sequencing methods for mitochondrial DNA, 4) new technologies such as use of massively parallel sequencing; and 5) designing image analysis systems. I worked on laying some of the foundations for the current

statistical analyses in forensic biology and defining the parameters of relevant population groups. I have published approximately 600 articles (more than any other scientist in the area of forensic genetics), made more than 730 presentations (many of which were as an invited speaker at national and international meetings), and testified in well over 250 criminal cases in the areas of molecular biology, population genetics, statistics, quality assurance, validation, and forensic biology. In addition, I have authored or co-authored books on molecular biology techniques, electrophoresis, protein detection, forensic genetics, and microbial forensics. I was directly involved in developing the quality assurance standards for the forensic DNA field in the United States. I have been a chair and member of the Scientific Working Group on DNA Methods, Chair of the DNA Commission of the International Society of Forensic Genetics, and a member of the DNA Advisory Board. I was one of the original architects of the CODIS National DNA database, which maintains DNA profiles from convicted felons, from evidence in unsolved cases, and from missing persons.

Some of my efforts over the last 16 years also are in counter terrorism, including identification of victims from mass disasters, microbial forensics and bioterrorism. I was an advisor to New York State in the effort to identify the victims from the WTC attack. In the area of microbial forensics, I was the chair of the Scientific Working Group on Microbial Genetics and Forensics, whose mission was to set QA guidelines, develop criteria for biologic and user databases, set criteria for a National Repository, and develop forensic genomic applications. I also have served on the Steering Committee for the Colloquium on Microbial Forensics sponsored by American Society of Microbiology, was an organizer of four Microbial Forensics Meetings held at The Banbury Center in the Cold Spring Harbor Laboratory, and participated on several steering committees for NAS sponsored meetings.

In 2009 I became Executive Director of the Institute of Applied Genetics and Professor at the University of North Texas Health Science Center at Fort Worth, Texas. I currently direct the Center for Human Identification. I also direct an active research program in the areas of human forensic identification, microbial forensics, emerging infectious disease, human microbiome, molecular biology technologies, and pharmacogenetics (or molecular autopsy). I also currently am an appointed member of the Texas Forensic Science Commission.

Of note, the PCAST Committee relied on my work and as a noted expert which is supported by the report's citation of my work several times all in a favorable manner. Indeed, I am the scientist at the FBI that is mentioned as Dr. Lander's co-author to bolster his credentials in the forensic sciences (see footnotes 17 and 20). My work is cited in footnotes 33, 149, 183, 185, 187, and 209.

The report lacks scientific substance. It is cloaked with a veneer of science but in actuality is an attempt to set policy. The report discusses and advocates validation (a topic all should agree is important). Yet the topic is only addressed superficially providing definitions that already are well known with generalizations and terms it calls criteria. Nothing novel was provided by the report (see examples in references 1-7 that already have discussed the same criteria but to a greater degree than in the report). Moreover, the report does not provide any substantial guidance on how to perform validation studies for any of the disciplines it addresses. There are basic validation criteria such as sample size, power analyses, types of samples, sensitivity, specificity, dynamic range, purity of analyte, etc. that the report does not address per se or only touches upon (and instead uses black box studies for its only endeavor into sampling uncertainty and for a

misguided attempt at addressing the potential for error). The PCAST Committee could have done a service to the community if it had selected some validation studies that it claims to have reviewed (although such claims are suspect as there is no documentation supporting the claims) and described specifically those studies that the PCAST Committee deemed inappropriate and/or inadequate. Then, the PCAST Committee could have laid out how those studies should have been performed with the real substantive criteria and examples that are necessary to perform a validation study. Leading by example would have been helpful; instead the report just dismisses most of the work performed in 2000 plus articles that it claims (sic) to have reviewed. The report criticizes the forensic community for a lack of validation studies but does not describe what is lacking in any substantive way.

The Report does not describe data from each of the disciplines that could be relied upon. It is difficult to believe that in 2000 papers, the PCAST Committee claims to have relied upon, that there are no data of value. There are no indications that the PCAST Committee actually assessed the data in the literature. There is little if any documentation in this regard which should be extremely troubling to all given the PCAST Committee's strong positions of the importance of validation, documentation, and peer-reviewed publication for the forensic science community. The PCAST Committee clearly takes a "do as I say, not as I do" position. The report contains no discussion on the criteria that were used to assess the literature, the criteria that were used to dismiss the literature as inadequate, and no documentation that any data (if existing) are readily available to support that the PCAST committee performed a sound, full and complete review. Again, these issues are most disconcerting because it is apparent that the PCAST Committee in its undertaking did not hold itself up to the same standards of validation, documentation, and peer-review that it espouses the forensic community should embrace (compounded as a number of the criticisms in the report are unfounded). The report provides some guidance on basic statistics, such as estimating false positive rates (which are not novel). However, this lecturing on proper statistics is troubling to say the least as the report misuses statistics in its own cursory efforts.

The following are examples from the report to support my above claims. They are not comprehensive as it is unnecessary to go page-by-page to indicate the serious problems with the PCAST Report. A few examples should suffice to demonstrate why this report has been so underwhelming and been ignored by most scientists and the courts. In pointing out the failings of the report I will focus on topics that transcend the disciplines and specifically on my area of expertise, i.e., DNA; I could not adequately address the other disciplines and what data do or do not exist in those forensic science areas. I leave specifics of other disciplines to those with requisite expertise. However, I stress that since the report misinforms on forensic DNA applications, which is considered the "gold standard" and well-documented in the scientific literature (even the report acknowledges that), then there is a strong indication that perhaps the report missed the mark on the other disciplines as well.

I take the position that improvements in forensic sciences are needed. Indeed, all science continues to improve. It is never static. In my field of DNA typing, I and others have been and currently are working on developing better/improved methods, such as the use of next generation sequencing and new software tools. It would be improper to say that any method is perfect and cannot be made better. That position, though, is not a wholesale condemnation of the forensic sciences. Each discipline, or better yet each application, should be assessed in context as a holistic system (not solely based on validation as the report seemingly myopically espouses) and

the types/quality of samples encountered in specific cases. The report's generalization of issues avoids addressing an extremely important question – was the analysis/interpretation in this case performed correctly?

The first two examples presented below are particularly egregious and point to the dearth of substance in the report. The report states on page 2

“In the course of its study, PCAST compiled and reviewed a set of more than 2,000 papers from various sources—including bibliographies prepared by the Subcommittee on Forensic Science of the National Science and Technology Council and the relevant Working Groups organized by the National Institute of Standards and Technology (NIST); submissions in response to PCAST's request for information from the forensic-science stakeholder community; and PCAST's own literature searches.”

On page 67 of the report it is stated

“PCAST compiled a list of 2019 papers from various sources—including bibliographies prepared by the National Science and Technology Council's Subcommittee on Forensic Science, the relevant Scientific Working Groups (predecessors to the current OSAC), and the relevant OSAC committees; submissions in response to PCAST's request for information from the forensic-science stakeholder community; and our own literature searches.”

There were two citations to support the review of the 2000 or so papers that the PCAST relied upon:

www.nist.gov/forensics/workgroups.cfm.

www.whitehouse.gov/sites/default/files/microsites/ostp/PCAST/pcast_forensics_references.pdf.

Neither of these sites appear to show (or allow for ready identification) what those articles were that the PCAST Committee reviewed and then relied upon. More so, there are no criteria and no data in the report or at these sites on what the PCAST Committee actually read, noted, reviewed, quantified, calculated, accepted, rejected, and/or debated. The report advocates emphatically and repeatedly the virtues of validation, documentation, and peer-review. Yet the report does not contain such information and thus does not meet as a minimum the requirements that it lambasted the forensic science community for lacking. This inconsistency between recommended requirements and lack of performance by the PCAST Committee is most noted as there is substantial documentation in the forensic science community (in many disciplines) but not in this report.

This lack of documentation should be considered in light of the report's statements on pages 1 and 22

“PCAST concluded that there are two important gaps: (1) the need for clarity about the scientific standards for the validity and reliability of forensic methods and (2) the need to

evaluate specific forensic methods to determine whether they have been scientifically established to be valid and reliable.”

The report also states on pages 4 and 21

“It is the proper province of the scientific community to provide guidance concerning scientific standards for scientific validity, and it is on those *scientific* standards that PCAST focuses here.”

Yet the PCAST Committee did not provide its data to support the validity of its own work. There simply is no accounting of the PCAST Committee’s work to demonstrate it assessed the 2000 papers and how it came to the conclusions it rendered.

This evident failing is exacerbated by the reports statement on page 6

“The forensic examiner must have been shown to be *capable* of reliably applying the method and must *actually* have done so. Demonstrating that an expert is *capable* of reliably applying the method is crucial—especially for subjective methods, in which human judgment plays a central role. From a scientific standpoint, the ability to apply a method reliably can be demonstrated only through empirical testing that measures how often the expert reaches the correct answer. Determining whether an examiner has *actually* reliably applied the method requires that the procedures actually used in the case, the results obtained, and the laboratory notes be made available for scientific review by others.”

No one knows what method(s) the PCAST Committee used; but it is clear that it did not hold itself to the same standard either by *capability* or *actually* performing. This report cannot be held up for scientific review (as indicated on page 6 of the report – see immediately above). There are no notes or results available.

As the report says repeatedly (see pages 6 and 32)

“We note, finally, that neither experience, nor judgment, nor good professional practices (such as certification programs and accreditation programs, standardized protocols, proficiency testing, and codes of ethics) can substitute for actual evidence of foundational validity and reliability.”

The academic and professional standings of the PCAST Committee members are not a substitute for good practices (none of which are documented). No one should take seriously this report because it has little substance to support its contentions.

The second most egregious example is the misuse and disregard for statistics. It may appear to the casual observer that the PCAST Committee is steeped in statistics and thus all statistics presented must be meaningful. For example, the report dedicates Appendix A for some discussion on statistics. But this guidance is rather basic and not particularly helpful to guide the community for any specific discipline or application. Yet when it comes to substance the PCAST Committee fails again which is evident in its own use of statistics. Consider the statements in the report on page 3

“Reviews by the National Institute of Justice and others have found that DNA testing during the course of investigations has cleared tens of thousands of suspects and that DNA-based re-examination of past cases has led so far to the exonerations of 342 defendants. Independent reviews of these cases have revealed that many relied in part on faulty expert testimony from forensic scientists who had told juries incorrectly that similar features in a pair of samples taken from a suspect and from a crime scene (hair, bullets, bitemarks, tire or shoe treads, or other items) implicated defendants in a crime with a high degree of certainty.”

Then on page 26

“DNA-based re-examination of past cases, moreover, has led so far to the exonerations of 342 defendants, including 20 who had been sentenced to death, and to the identification of 147 real perpetrators.”

A similar statement is found on page 44 (footnote 94). These findings appear to support the assertion on page 44 of the report

“It is *important* because it has become apparent, over the past decade, that faulty forensic feature comparison has led to numerous miscarriages of justice.”

I do not dispute that there have been 342 post-conviction exonerations. I am not sure what the number of exonerations is when the report says “many relied in part on faulty expert testimony” – because the report does not quantify what is meant by many. However, one wrongful analysis or testimony is one too many, and every effort should be made to minimize forensic science errors. The exoneration of 342 convicted felons is serious and topic in its own right (and again way too many). But this number is statistically meaningless and out of context. The PCAST Committee should have recognized this obvious aspect of the use of numbers. The PCAST Committee did not perform any statistical analyses or even appear to collect the data necessary to put these numbers in proper perspective. The PCAST Committee should have identified how many cases in total that have been reviewed to date (especially given that the report discusses the proper way to calculate a false positive rate, the Committee does not follow through with the same verve). This number of 342 may be and is likely a very small percentage of the total number of cases reviewed, especially since the innocence project has been around for 25 years (see <https://25years.innocenceproject.org/>). Moreover, the PCAST Committee did not convey how many post-conviction analyses that have been performed over the past 25 years in which there was no evidence of improper scientific performance, findings or faulty testimony. It would seem that such obvious basic information eluded the PCAST Committee. Those cases that were reviewed over the past 25 years in which no misuse of forensic science analyses were detected would indicate that perhaps the forensic science field is not so scientifically corrupt as the report implies. More so it would indicate that proper results can be obtained (at least most of the time).

The report discusses error rates substantially using statements such as on page 6

“Similarly, an expert’s expression of *confidence* based on personal professional experience or expressions of *consensus* among practitioners about the accuracy of their field is no substitute for error rates estimated from relevant studies.”

The PCAST Report also recommends

“For subjective feature-comparison methods, because the individual steps are not objectively specified, the method must be evaluated as if it were a “black box.”

Smrz et al (8) (a paper of which I am a co-author) recommended the black box approach after the review of the FBI Laboratory’s latent print misidentification related to the Madrid bombing incident, and the PCAST Report advocates the use of such black box studies. I concur that a black box approach has some value but strongly caution that one must consider the proper utility of such studies. The authors of the PCAST Report calculated upper bound error rates based on the results of the very few black box studies they discuss; the PCAST Committee seemingly implies that these upper bound error rates are somehow meaningful to report in every case analysis. A black box study can demonstrate generally whether or not a method can yield reliable results where a human is substantially involved in the interpretation of results. But it does not necessarily help address error that may or may not have occurred during a specific case analysis.

There are several problems with such a simplistic generalization that the authors of the PCAST Report have taken regarding use of black box studies. A black box study only tests those individuals involved in the study. Therefore, the performance of the rest of the analysts of the forensic science community is not covered by the study, and the results of the study may not apply to those analysts. Some individuals perform better than others in black box studies. The average rate inflates the performance of the poorer analysts and deflates the performance of the better analysts tested in the study. Therefore, the error rate values calculated by the PCAST authors likely do not apply to most analysts. Moreover, the information content and quality of results from a forensic science analysis vary from sample to sample. Treating all sample results equally and applying a single error rate does not convey the chance for error in a particular analysis. As the PCAST Report states (see below) DNA mixture interpretation is more challenging than interpretation of single source DNA profiles. If the PCAST Committee recognizes that differences in the quality of DNA evidence affect difficulty of interpretation, then the PCAST Committee should have been able to realize that the same holds for black box study results and different quality evidence (another obvious inconsistency in the report).

A known error rate or proficiency test mistake is at best some indirect measure of the verity of the proposed results in any given sample analysis, but can never be a direct measure of the reliability of the specific result(s) in question (9). Consider a hypothetical crossing of a street where there is a 1% error (arbitrary for sake of discussion) of being hit by a car. At the beginning of the journey crossing the road there is a 1% error of being hit. While crossing the road the chance can increase or decrease depending on circumstances (possibly being greater at the center of the road and less within lanes). If the individual successfully crosses the road, then the error drops to zero. Of course, different roads (such as a busy interstate vs a rural back road) have different *a priori* chances of error (i.e., similar to the quality of evidence affects the degree of difficulty). Ultimately the issue of crossing the road is did the individual successfully cross the road or get hit. The same holds for casework, i.e., is there an error or is there not an error in the performance or analysis. Given that the black box studies mentioned in the report did have a good degree of success, there is support that a process can generate a reliable result. Thus it still comes back to determining if an error of consequence was committed in a specific case. Oddly not mentioned in the PCAST Report is that most of the forensic disciplines addressed carry out non-consumptive forms of examination. Therefore, the most direct way to measure the truth of

the purported results is to have another expert conduct his/her own review, as is advocated by the National Research Council Report II for DNA analyses (10). Re-analysis would be more meaningful instead of espousing hypothetical error rates, which may not apply to the actual results and/or analysts involved. Indeed, the above mentioned black box studies and the missing data on total number of cases from innocence project case reviews do support that tests can yield reliable results but that most of the problems (as discussed below for DNA mixtures) have been due to misapplication. Therefore, case peer-review can be an effective approach to identify misapplications. However, the PCAST Report seems to ignore the value of this practice which demonstrates the reports myopic assessment of the forensic sciences and lack of consideration of a holistic systems approach.

The PCAST Report singles out validation as essentially the sole basis for reliability. Instead under a systems approach there are several components that impact an outcome, and the reliance on these several features increases validity and reliability in any one case. Quality performance is an essential component for obtaining reliable results and for reducing the chance of error. Quality assurance provides an infrastructure to promote high performance, address errors that arise, and improve processes. In addition to validation studies, there are other mechanisms such as technical review of a case that reduce error. This technical review is performed within the laboratory before issuing a report and also outside the laboratory when an expert witness is acquired by the opposing side to assess results and interpretations. The PCAST Report seems to ignore the value of these additional quality measures and the strength of the adversary system. Error rates are difficult to calculate; they are fluid. When an error of consequence (i.e., a false “match”) occurs, under a sound quality assurance program corrective action is taken (to include review of cases analyzed by the examiner prior to and post the discovery of the error). When the corrective action is such that the individual will no longer commit that error, it no longer impacts negatively on the individual’s future performance. In fact, he/she is better educated and less likely to err. The calculation of a current error rate then should not include past error(s). Having said that, past error should not be ignored; if desired, it could be raised in court or other deliberations. The defense (or prosecution), if it believes it useful, should make use of such information during a cross-examination of an expert. But the PCAST Report does not address the shortcomings of the calculated error rate as it uses it; it treats the upper bound error rate calculation from black box studies as if they are robust and specific (which they are not).

Notably the PCAST Report tends to dismiss experience and judgment, implying it has little value. I agree that experience and judgment standing alone should be considered with caution. However, the vast majority of forensic science disciplines work in a systems approach, i.e., many facets to the process; experience is but one factor among several to effect a quality result. Even though the PCAST Report dismisses experience it again shows its inconsistencies about the province of experience. Consider the following statements on page 55 of the report

“In some settings, an expert may be scientifically capable of rendering judgments based primarily on his or her “experience” and “judgment.” Based on experience, a surgeon might be scientifically qualified to offer a judgment about whether another doctor acted appropriately in the operating theater or a psychiatrist might be scientifically qualified to offer a judgment about whether a defendant is mentally competent to assist in his or her defense.”

“By contrast, “experience” or “judgment” cannot be used to establish the scientific validity and reliability of a metrological method, such as a forensic feature-comparison method. The frequency with which a particular pattern or set of features will be observed in different samples, which is an essential element in drawing conclusions, is not a matter of “judgment.” It is an empirical matter for which only empirical evidence is relevant. Moreover, a forensic examiner’s “experience” from extensive casework is not informative—because the “right answers” are not typically known in casework and thus examiners cannot accurately know how often they erroneously declare matches and cannot readily hone their accuracy by learning from their mistakes in the course of casework.”

Even to a lay person these statements should be obviously inconsistent, troubling and point to the inadequacy of the PCAST Committee addressing the topic of forensic science reliability. I fail to see why the medical and psychology fields can have another expert review another’s work (on what may be life and death decisions) and opine on the analyses/interpretations; yet a qualified forensic science analyst cannot perform a technical review of forensic work to assess analyses/interpretations (especially since the report has ignored data that support that at some level forensic testing is reliable). The logic of the PCAST Committee escapes me.

The PCAST Report discusses DNA typing and the limitations that have been encountered with mixture interpretation. For example on page 75 the report states

“DNA analysis of complex mixtures—defined as mixtures with more than two contributors—is inherently difficult and even more for small amounts of DNA.”

I concur that it is more challenging to interpret DNA mixtures compared with single-source DNA profiles. But the report fails to add that difficult does not necessarily translate into impossible or that proper interpretations can be made. The difficulties with mixture interpretation were not due to a lack of good, valid approaches to employ as there were valid approaches and also not due to the fact that there is some subjective judgment with interpretations. The issue, and it is a serious one, was that many of the practitioners in the forensic DNA community were inadequately trained, did not seek out solutions, or instead chose to wait for guidance (see pages 77-78 of the PCAST report and discussion on Texas and mixture interpretation). These issues were similar to the mixture interpretation problems at the Department of Forensic Sciences in Washington, DC (in which I was the scientist who identified the problems).

The PCAST Report assails the use of the Combined Probability of Inclusion (CPI) which is one of the methods used by the community and endorsed by the DNA Advisory Board (11) 17 years ago. However, the discussion of the Texas Forensic Science Commission (TFSC) (of which I was deeply involved in the review of mixture interpretation for the State) and how it pursued and addressed inappropriate interpretation of mixtures actually implies that valid methods do exist; otherwise how could a group of international experts (of which I was one of the experts) assess the situation, determine that there are problems in the application of interpretation guidelines, and provide guidance to the community to implement sound procedures?

The PCAST Committee on page 78 of the report states

“The TFSC also convened an international panel of scientific experts—from the Harvard Medical School, the University of North Texas Health Science Center, New Zealand’s

forensic research unit, and NIST—to clarify the proper use of CPI. These scientists presented observations at a public meeting, where many attorneys learned for the first time the extent to which DNA-mixture analysis involved subjective interpretation. Many of the problems with the CPI statistic arose because existing guidelines did not clearly, adequately, or correctly specify the proper use or limitations of the approach.”

The report properly focuses on lack of detailed guidelines on interpretation and does not suggest that the principles of how to calculate the CPI are erroneous. Indeed, nowhere in the report are there any data to indicate that the CPI is foundationally erroneous.

Yet, the report then states on page 78

“In summary, the interpretation of complex DNA mixtures with the CPI statistic has been an inadequately specified—and thus inappropriately subjective—method. As such, the method is clearly not foundationally valid.”

The allegation that the CPI is not foundationally valid demonstrates the lack of understanding (and again the lack of documentation of review) by the PCAST Committee. In fact, these statements also demonstrate another report inconsistency – this time about the principles of statistical calculations related to DNA profiles. On page 72 the report states

“The process for calculating the random match probability (that is, the probability of a match occurring by chance) is based on well-established principles of population genetics and statistics.”

The random match probability is one approach to calculating a statistic for single-source samples and appears to be endorsed by the PCAST Committee as well-established and thus valid. Yet, the PCAST Committee takes the opposite position for the CPI stating it is not foundationally valid. If one reads my colleagues and my most recent paper on the CPI (12), cited in the PCAST Report, it is clear that the principles of the foundational validity of the CPI are the same as those for the random match probability. Consider a similar situation which is the chance of drawing four aces in a row from a standard deck of cards is estimated to be 1 in 270,275. This value is based on probability theory and does not require an empirical testing to be published in the peer reviewed literature to support its validity. The CPI and random match probability use the same population frequency data and the same well-established principles of population genetics and statistics. While this is another example of myopia by the PCAST Committee, it borders on the bizarre that the PCAST Committee failed to understand the foundations of DNA statistics.

All know the PCAST Committee had access to the most recent paper on the use of the CPI (and the references within that paper) as it is stated on page 78 of the report

“Because the paper appeared just as this report was being finalized, PCAST has not had adequate time to assess whether the rules are also *sufficient* to define an objective and scientifically valid method for the application of CPI.”

I note that the CPI is a rather simple concept and its foundations are basic. It is surprising that the PCAST Committee, which touts its vast expertise, could not readily assess the paper. Given the importance of their report and this topic it also is surprising that they would not have done so before finalizing their report.

The PCAST Report recognizes that probabilistic genotyping is an advancement to improve or reduce subjectivity in DNA mixtures (see page 79). I concur. But the report states on page 79

“Appropriate evaluation of the proposed methods should consist of studies by multiple groups, *not associated with the software developers*, that investigate the performance and define the limitations of programs by testing them on a wide range of mixtures with different properties.”

Also the report states on page 81

“Because empirical evidence is essential for establishing the foundational validity of a method, PCAST urges forensic scientists to submit and leading scientific journals to publish high-quality validation studies that properly establish the range of reliability of methods for the analysis of complex DNA mixtures.”

Publication is part of the peer-review process and I support publication by the developers and others who adopt the method. But the PCAST Committee has placed a requirement that is unrealistic to meet which is publication by the user laboratories. It is likely that a few at most laboratories will be able to publish their validation testing of the software. Anyone who serves on editorial boards of scientific journals should know that journals are unlikely to publish additional studies because they are not considered novel. Yet, the PCAST Committee failed to recognize this fact.

It is important to stress that the report contains no criticisms of probabilistic genotyping and still there are no data contained in the report that demonstrate that the PCAST Committee actually reviewed (or better yet tested) the current probabilistic genotyping software programs (even though it claims to have done extensive review, such as the undocumented 2000 papers).

Forensic laboratories are required to perform validation studies, and there are substantial data on mixtures that support the validity of mixture interpretation and use of probabilistic genotyping. Mixture studies are required to be performed by every laboratory engaged in analyzing such evidence as part of their validation studies. Many of these studies lack novelty and thus will never be published in peer-review journals. However, the PCAST Committee could have contacted a number of forensic DNA laboratories who have implemented one of the probabilistic genotyping software programs (as there were laboratories operating or near implementation of the tools at the time of the report’s publication) to gain access to the validation data to determine whether there are sufficient data to support the already peer-reviewed published work. There is no indication that the PCAST Committee made any effort to become informed to opine on the reliability and validity of probabilistic genotyping.

The PCAST Committee simply ignored a wealth of validation data residing in crime laboratories. If the PCAST Committee had taken a holistic approach, they would have considered the totality of data in determining whether there is support for the validity and reliability of probabilistic genotyping. Peer-review publications by the developers and validation data by the users combined clearly support the software and its applications. Indeed, this failure of the PCAST Committee of not considering all available data is reminiscent of a similar situation that occurred 25 years ago with another report – the National Research Council I Report (NRC I) (13). The NRC I Report proposed a non-scientific, *ad hoc* way to calculate statistics called the ceiling principle. The ceiling principle had no genetics foundation or validity and was roundly rejected. One of the bases for the proposed ceiling principle approach (espoused by the NRC I Committee) was a lack of population data. There were substantial population data in crime

laboratories world-wide at the time the NRC I Report was published; but the NRC I Committee did not seek out the data. As soon as the NRC I Report was published, I reached out to my colleagues around the world and gathered the existing data which were then compiled into a five volume compendium (14). If the NRC I Committee had chosen to consider extant population data, they might have prepared a more informed Report. The outcome was that the National Academy of Sciences convened a second committee and produced the sound NRC II Report (10), which was steeped in fundamental population genetics and statistical applications. The findings of the NRC II Report in part were based on the data I compiled in the five volume compendium which were available prior to the publication of the rejected NRC I Report. The PCAST Report has taken the same blinded approach and ignored extant data with a similar outcome as 25 years ago – a report that provides little value for assessing the state-of-the-art and even less value for providing guidance to improve the forensic sciences.


In conclusion, the few examples above demonstrate that the PCAST Report 1) is **not** scientifically sound, 2) is **not** based on data, 3) is **not** well-documented, 4) misapplies statistics, 5) is full of inconsistencies, and 6) does **not** provide helpful guidance to obtain valid results in forensic analyses.

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I declare under penalty of perjury that the forgoing is true and correct to the best of my knowledge.



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Review Article

Finding the way forward for forensic science in the US—A commentary on the PCAST report

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ABSTRACT

A recent report by the US President's Council of Advisors on Science and Technology (PCAST), (2016) has made a number of recommendations for the future development of forensic science. Whereas we all agree that there is much need for change, we find that the PCAST report recommendations are founded on serious misunderstandings. We explain the traditional forensic paradigms of *match* and *identification* and the more recent foundation of the logical approach to evidence evaluation. This forms the groundwork for exposing many sources of confusion in the PCAST report. We explain how the notion of treating the scientist as a black box and the assignment of evidential weight through error rates is overly restrictive and misconceived. Our own view sees inferential logic, the development of calibrated knowledge and understanding of scientists as the core of the advance of the profession.

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In Memoriam

This paper is dedicated to the memory of Bryan Found who did so much to advance the profession of forensic scientist through his work on calibrating and enhancing the performance of experts under controlled conditions. He will be sorely missed.

1. Introduction

This paper is written in response to a recent report on forensic science of the US President's Council of Advisors on Science and Technology (PCAST) [1]. There have already been several responses to the report from the forensic community [2–7] which have resulted in an addendum to the report [8]. Our main concern is that the report (and its addendum) fails to recognise the advances in the logic of forensic inference that have taken place over the last 50 years or so. This is a serious omission which has led PCAST to a narrowly-focussed and unhelpful view of the future of forensic science.

The structure of our paper is as follows. In Section 2 we briefly outline our view of the requirements imposed by logic on the assessment of the probative value of evidence. This allows us to set up a framework against which we can contrast some of the suggestions of the report. In Sections 3 and 4 we briefly explain the notions of “match” and “identification” paradigms that have underpinned much of forensic inference over the last century or so. Section 5 will point out misconceptions, fallacies, sources of confusion and improper terminology in the PCAST report. Our contrasting view of the future path for forensic science follows in Section 6.

2. The logical approach

Much has been written over the past 40 years on inference in forensic science. The frequency of appearance of articles, papers and books on the topic has increased markedly in recent years. Practically all of this material is founded on a logical, probabilistic approach to the assessment of the probative value of scientific observations [9,10]. The PCAST report mentions this body of work only briefly and pays scant attention to its principles [11], which we list and explain briefly as follows.

2.1. Framework of circumstances

It is necessary to consider the evidence within a framework of circumstances.

A simple example will illustrate this. Imagine that a sample¹ has been obtained from a crime scene which yielded a DNA profile from which the genotype of the originator of the sample has been inferred. A suspect for the crime is known to have the same genotype. Because the alleles revealed by a DNA profile will be found in different proportions in different ethnic groups, it is relevant to the assessment of the probative value of this

correspondence of genotypes that a credible eyewitness of the crime said that the offender was of a particular ethnic appearance.

It follows that, when presenting an evaluation, the scientist should clearly state the framework of circumstances that are relevant to their assessment of the probative value of the observations, with a caveat that, if details of the circumstances change, the evaluation must be revisited.

2.2. Propositions

The probative value of the observations cannot be assessed unless two propositions are addressed.

In a criminal trial, these will represent what the scientist believes the prosecution may allege and a sensible alternative that represents the defence position.² In taking account of both sides of the argument, the scientist is able to assess the evidence in a balanced, justifiable way and display to the court an unbiased approach, irrespective of which side calls the witness.

Propositions may be formed at any of at least four levels in a hierarchy of propositions [12–14]. These levels are termed offence, activity, source and sub-source. We do not discuss these in any depth here. Most of the PCAST report appears to address questions at the source or sub-source level. Examples of these would be:

1. Sub-source: The DNA came from the person of interest (POI),³ or
2. Source: This fingerprint was made by the POI.

2.3. Probability of the observations

It is necessary for the scientist to consider the probability⁴ of the observations given the truth of each of the two propositions in turn.

The ratio of these two probabilities is widely known as the *likelihood ratio* (LR) and this is a measure of the weight of evidence that the observations provide in addressing the issue of which of the propositions is true. A likelihood ratio greater than one provides support for the truth of the prosecution proposition. A likelihood ratio less than one provides support for the truth of the defence proposition.

It cannot be sufficiently emphasized that it is the scientist's role to provide expert opinion on the probability of the *observations* given the proposition. The role of assigning a value to the probability of the *proposition* given the observations is that of the jury in a criminal trial. This probability will take account, not just of the scientific observations, but also of all of the other evidence presented at court.

² We recognise that the scientist, particularly at an early stage of proceedings, may not know the position that defence will take. It is common practice for the scientist to adopt what appears to be a reasonable proposition, given what is known of the circumstances—making it clear that this is provisional and subject to change at any time.

³ A source level DNA proposition would specify the nature of the recovered material, e.g. “the semen came from the POI”.

⁴ This could be a probability density, depending on the nature of the observations. But the principle remains unchanged.

¹ The term “sample” is used generically to describe what is available for forensic examination. The term is not used here to suggest any statistical sampling process.

3. The match paradigm

In most forensic comparisons, one of the items will be from a known origin (such as: a reference sample for DNA profiling from a particular individual; a pair of shoes from a suspect; a set of control fragments of glass from a broken window). The other will be from an unknown, or disputed origin (such as: DNA recovered from a crime scene; a footwear mark from the point of entry at a burglary; or a few small fragments of glass recovered from the clothing of a suspect). It is convenient to refer to these as the *reference* and *questioned* samples, respectively. The matter of interest to the court relates to the origin of the questioned sample. This question will be addressed scientifically by carrying out observations on both samples. These observations may be purely qualitative: such as, for example, the shapes of the loops of letters such as “y” and “g” in a passage of handwriting. They may be quantitative and discrete, such as the alleles in a DNA STR profile. Or they may be quantitative and continuous, such as the refractive index of glass fragments. The match paradigm calls for a judgement, by the scientist, as to whether or not the two sets of observations agree within the range of what would be expected if the questioned sample had come from the same origin as the reference sample. The basis for that judgement may, in the case of quantitative observations, be based on a set of pre-determined criteria; but where the observations are qualitative such criteria may be vague or purely judgemental.

If the two sets of observations are considered to be outside the range of what may have been expected if the two samples had come from the same source then the result may be reported as a “non-match”. Depending on the nature of the observations, this provides the basis for a strong implication that the questioned and reference samples came from different sources. In many instances this conclusion will be non-controversial in the sense that prosecution and defence will be content to accept it.

However, when the result of the comparison is a “match” it does not logically follow that the two samples do share the same source or even that they are likely to be from the same source. It is possible that the two samples came from two different sources that, by coincidence, have similar properties. Throughout the history of forensic science there has been the notion – often imperfectly expressed – that the smaller the probability of such a coincidence, the greater the evidential value to be associated with the observed match. In DNA profiling, for example, we encounter the notion of a “match probability”. The implication of this approach is that the jury should assign an evidential weight that is related to the inverse of the match probability.

The logical approach has done much to clarify the rather woolly inference that historically has been associated with the match paradigm but it has also demonstrated the considerable advantages of the single stage approach implied by the assignment of weight through the calculation of the likelihood ratio, over the rather clumsy and inefficient two-stage approach implied by the match paradigm. This has already been pointed out by Morrison et al. [4].

4. The identification paradigm

Historically, fingerprint comparison was seen to be the gold standard by which the power of any other forensic technique could be judged. The paradigm here was the notion of “identification”⁵ or

“individualization” (the terms are used synonymously here). Provided that sufficient corresponding detail was observed, the outcome of a comparison between a fingerprint of questioned origin and a print taken from a known person would be reported as a categorical opinion: the two were definitely made by the same person.

So, the match and identification paradigms are related with the difference that in the latter the scientist is allowed to state that the match probability is so infinitesimally small that it is reasonable to conclude that the two items came from the same source. Historically, many examiners would have claimed that the source was established with certainty to the exclusion of all others.

The identification paradigm went largely unchallenged for many years until later in the 20th century when its logical basis was questioned (see, for example, [16] or more recently [17,18]) and also when, in a number of high profile cases, misidentifications with serious consequences were exposed.

An example of the paradigm is given in box 6, p. 137 of the PCAST report (DOJ proposed uniform language) (emphasis added).

The examiner may state that it is his/her opinion that the shoe/tire *is the source of the impression* because there is sufficient quality and quantity of corresponding features such that the examiner would not expect to find that same combination of features repeated in another source. This is the highest degree of association between a questioned impression and a known source.

The PCAST report rightly indicates that the conclusions conveying “100 percent certainty” or “zero or negligible error rates” are not scientifically defensible. Such conclusions tend to overestimate the weight to be assigned to the forensic observations.

5. Misconceptions, fallacies and confusions in the PCAST report

The most serious weakness in the PCAST report is their flawed paradigm for forensic evaluation. Unfortunately, the report contains more misconceptions, fallacies, confusions and improper wording. In this section we will discuss the main problems with the report.

5.1. Confusion between the match and identification paradigms

This is the first source of confusion in the report. For example, from p. 90 of the report (emphasis added):

An FBI examiner concluded with “100 percent certainty” that the fingerprint *matched* Brandon Mayfield . . . even though Spanish authorities were unable to confirm the *identification*.

On p. 48 we find (emphasis added):

To meet the scientific criteria of foundational validity, two key elements are required:

(1) a reproducible and consistent procedure for (a) identifying features within evidence samples; (b) comparing the features in two samples; and (c) determining based on the similarity between the features in two samples, whether the samples should be declared to be a proposed *identification* (“*matching rule*”).

We have seen that declaring a match and declaring an identification are not the same thing. Declaring a match implies nothing about evidential weight whereas declaring an identification implies evidential weight amounting to complete certainty.

The PCAST report proposes an approach that is fusion of the match and identification paradigms. See, from p. 45/46:

⁵ Kirk [15] defined the term identification as only placing an object in a restricted class. The criminalist would, for example, identify a particular mark as a fingerprint. Individualization was defined by Kirk as establishing which finger left the mark. An opinion of the kind “this latent mark was made by the finger which made this reference print” is an individualization.

Because the term “match” is likely to imply an inappropriately high probative value, a more neutral term should be used for an examiner’s belief that two samples came from the same source. We suggest the term “proposed identification” to appropriately convey the examiner’s conclusion, along with the possibility that it might be wrong. We will use this term throughout the report.

If a scientist says that the questioned and reference samples match, the immediate inference to be drawn from this (as we have explained) is that they might have come from the same source but it is also true that they might not have come from the same source. These two statements make no implication with regard to evidential weight. Weight only comes from the second stage of the paradigm which entails coming up with some impression of rarity. The identification paradigm, on the other hand, is different in that implies a statement of certainty: the two samples certainly came from the same source.

The PCAST paradigm requires that the scientist should make a categorical statement (an identification) that cannot be justified on logical grounds as we have already explained. Most scientists would be comfortable with the notion of observing that two samples *matched* but would, rightly, refuse to take the logically unsupportable step of inferring that this observation amounts to an *identification*.

5.2. Judgement

The report emphasises the value of empirical data (emphasis added):

The frequency with which a particular pattern or set of features will be observed in different samples, which is an essential element in drawing conclusions, *is not a matter of ‘judgment’*. It is an empirical matter *for which only empirical evidence is relevant*. ([1], p. 6)

This denial of the importance of judgement betrays a poor understanding of the nature of forensic science. We offer a simple example.

Mr POI is the suspect for a crime who was arrested at time T in location Z . Some questioned material has been found on the clothing of Mr POI which is to be compared with reference material taken from the crime scene. Denote the observations on the two samples by y and x respectively. Whichever paradigm we follow, we are interested in the probability of finding material with observations y on the clothing of Mr POI if he had nothing to do with the crime. Ideally, of course, we would like a survey carried out near to time T and in the general region of Z and of people of a socio-economic group Q that would include Mr POI. But this is, of course unrealistic. What we do have is a survey of materials on clothing carried out at some earlier time T' and at another location Z' and of a slightly different socio-economic group Q' . Who is to make a judgement on the relevance of this survey data to the case at hand? We would argue that this is where the knowledge and understanding of the forensic scientist is of crucial importance.

The reality is, of course, that the perfect database never exists. The council is wrong: it is most certainly *not* the case that “only empirical evidence” is relevant. Without downplaying the importance of data collections, they can only inform judgement—it is judgement that is paramount and informed judgement is founded in reliable knowledge.

5.3. Subjective versus Objective

PCAST give their definition of the distinction between “objectivity” and “subjectivity” p. 5—footnote 3.

Feature-comparison methods may be classified as either objective or subjective. By objective feature-comparison methods, we mean methods consisting of procedures that are each defined with enough standardized and quantifiable detail that they can be performed by either an automated system or human examiners exercising little or no judgment. By subjective methods, we mean methods including key procedures that involve significant human judgment . . .

What is suggested is that many of the decisions be moved from the examiner to the procedure and/or software. The procedure or software will have been written by one or more people and the decisions about what models are used or how decisions are made are now enshrined in paper or code. Hence all the subjective judgements are now made by this person or group of people via the paper or code. Whereas this approach could be viewed as repeatable and reproducible, the objectivity is illusory.

In the US environment, subjectivity has been associated with bias and sloppy thinking, and objectivity with an absence of bias and rigorous thinking. It is worthwhile examining whence the fear of subjectivity arises. There is considerable proof that humans are susceptible to quite a number of cognitive effects many of which can affect judgement. We suspect that the fear is that these effects bias the decisions in ways that are detrimental to justice. Hence, it is bias arising from cognitive effects that is the enemy, not subjectivity.

If we return to the concept of enforced precision, we could assume that trials could be conducted on such a system and that the outputs could be calibrated. Such a system could be of low susceptibility to bias arising from cognitive effects. We suspect that these are the goals sought by PCAST. We certainly could support calibrating subjective judgements but we see little value in pretending that writing them down or coding them makes them objective.

5.4. Transposed conditional

We are concerned by the report’s poor use of the notion of probability. In particular we note in the report many instances where the fallacy of the transposed conditional either occurs explicitly or is implied. We have seen that the logic of forensic inference directs us to assign a value to the probability of the observations given the truth of a proposition. The probability of the truth of a proposition is for the jury *not* the scientist. Confusion between these two different probabilities has been called the “prosecutor’s fallacy” [19]. We prefer the term *transposed conditional* because, in our experience, the fallacy is regularly committed by prosecutors, defence attorneys, the judiciary and the media alike.

The fallacy is widespread, even though it can be grounds for a retrial if given in testimony by an expert witness. The document [20] that attempts to explain DNA statistics to defence attorneys in the US describes – incorrectly – a likelihood ratio for a mixture profile as:

4.73 quadrillion times more likely⁶ to have originated from [suspect] and [victim/complainant] than from an unknown individual in the U.S. Caucasian population and [victim/complainant].” ([20], p. 52)

⁶ We are fully aware of the distinction made in statistical theory between “likelihood” and “probability”. We believe that attempting to explain that distinction in this paper would cause more confusion than the worth of it. It is our experience that in courts of law the two terms are taken to be synonymous.

This is a classic example of the transposed conditional. It is a transposition of the likelihood ratio, which would be more correctly presented as follows:

The DNA profile is 4.73 quadrillion times more likely to be obtained if the DNA had originated from the suspect and the victim/complainant rather than if it had originated from an unknown individual in the U.S. Caucasian population and the victim/complainant.

The contrast between these two statements, though apparently subtle, is profound. The first is an expression of the probability (or odds) that a particular proposition is true—this, we have seen, is the probability that the jury must address, not the scientist.⁷ The second considers the probability of the *observations*, given the truth of one proposition then the other, which is the appropriate domain for the expertise of the scientist. It is important to realise that the first statement is not a simple rephrasing of the second statement. Whereas the second may be a valid representation of the scientist's evaluation in a given case, the first most definitely cannot be.

Consider the following quote from the first paragraph on footwear methodology in the PCAST report ([1], p. 114):

Footwear analysis is a process that typically involves comparing a known object, such as a shoe, to a complete or partial impression found at a crime scene, to assess whether the object is likely to be the source of the impression.

This is wrong. We state again that it is not for the scientist to present a probability for the truth of the proposition that the object was the source of the impression. The scientist addresses the probability of the outcome of the comparison *if* the object were the source of the impression: this probability forms the numerator of the likelihood ratio. Just as important, of course, is the probability of the outcome of the comparison *if* some other object were the source of the impression. The latter forms the denominator of the likelihood ratio. It is the two probabilities, taken together, that determine the evidential weight in relation to the two propositions of interest to the court.

The PCAST report sentence clearly states that the objective of the footwear analysis is to present a probability for the proposition given the observations, and not for the observations given the proposition. This is clearly a transposition of the conditional.

Similarly, the scientist is not in a position to consider the probability addressed in the following ([1], p. 65 and repeated on p. 146):

... determining, based on the similarity between the features in two sets of features, whether the samples should be declared to be likely to come from the same source . . .

We have seen that it is not for the scientist to consider the probability that the samples came from the same source given the observation of a “match”. It is another example of the fallacy of the transposed conditional.

This confusion is systematic in the original report and we note that it continues into the addendum ([8], p. 1) (emphasis added):

These methods seek to determine whether a questioned sample *is likely to come* from a known source based on shared features in certain types of evidence.

We have seen that this is most certainly *not* what a feature-comparison should aspire to. It is not the role of the forensic

scientist to offer a probability for the proposition that a questioned sample came from a given source since this would require the scientist to take account of all of the non-scientific information which properly lies within the domain of the jury.

The need for precision of language when presenting probabilities is exemplified by two quotations from the report. First, from p. 8 when talking about the interpretation of a DNA profile:

Could a suspect's DNA profile be present within the mixture profile? And, what is the probability that such an observation might occur by chance?

As we read it, this second sentence can be taken to mean:

What is the probability that such an observation would be made if the suspect's DNA were not present in the mixture?

Within the logical paradigm, this is a legitimate question to ask—it is the probability of the observations given that one of the propositions were true.

However, later in the report we find (p. 52):

the random match probability—that is, the probability that the match occurred by chance”.

There is an economy of phrasing here that obscures meaning and the reader could be forgiven for believing that the question implied by the second phrase is:

What is the probability that the two samples had come from different sources and matched by chance?

This is a probability of a proposition (the two samples came from different sources) given the observation (a match) and would imply a transposed conditional. We are aware that the council may respond that this is not at all what they meant—to which we would respond that the council should have been far more careful in its phraseology.

5.5. “Probable match”

In giving their definition of the distinction between “objectivity” and “subjectivity” p. 5—see footnote 3 the report states:

how to determine whether the features are sufficiently similar to be called a probable match.

The council do not say what they mean by a “probable match” but it seems to us that it is another example of confusion between the match and identification paradigms. Following the match paradigm there is no such thing as a probable match—the two samples either match or they do not.

5.6. Foundational validity and accuracy

The report distinguishes two types of scientific validity: “foundational validity” and “validity as applied”. We confine ourselves to the first of these (p. 4):

Foundational validity for a forensic-science method requires that it be shown based on empirical studies to be *repeatable, reproducible, and accurate*, at levels that have been measured and are appropriate to the intended application. Foundational validity, then, means that a method can, *in principle*, be reliable.

Repeatability refers to the ability of the same operator with the same equipment to obtain the same (or closely similar) results when repeating analysis of the same material. Reproducibility refers to the ability of the equipment to obtain the same (or closely similar) results with different operators. As such, both are

⁷ In Bayesian terms, the first statement is one of posterior odds. This can be derived from the second statement either by assigning prior odds of one (which would be highly prejudicial in most criminal trials) or by making the mistake of transposing the conditional. Neither is acceptable behaviour for a scientist.

expressions of precision, which is how close each measurement or result is to the others.

Accuracy is a measure of how close one or a set of measurements is to the true answer. This has an obvious meaning when we know or could know the true answer. We could imagine some measurement such as the weight of an object where that object has been weighed by some very advanced technique and we can accept that as the “true” weight. We wish then to consider the accuracy of some other, perhaps cheaper, technique. We could assess the accuracy of this second technique by using it to weigh the object multiple times and observing the deviation of the results from the “true” weight of the object.

For some questions in forensic science, such as “How much heroin is in this seized sample?” or “How much ethanol is in this blood sample?”, the notion of the accuracy of an applied analytical technique is relevant because it is possible to assess a technique’s accuracy using trials with known quantities of heroin or ethanol. However, when it comes to answering a question such as “What is the probability that there would have been a match with a suspect’s shoe if it did not make the mark at the scene of crime?”, then there is no sense in which there is a “true answer”. The values that experts assign for such probabilities will vary depending on the specific knowledge of the experts and the nature of any databases that experts may use to inform their probabilities.

We could use a weather forecaster as an illustration. If she says that there is a 0.8 probability of a sunny day tomorrow, there can be no sense in which this is a “true” statement. Equally, if tomorrow brings rain, she is not “wrong” in any sense. Nor is she “inaccurate”. A probabilistic statement of this nature may be unhelpful or misleading, in the sense that it may lead us to make a poor decision, but it cannot be either true or false.

Once we abandon the idea of a true answer for probabilities, we are left with the difficult question of what we mean by accuracy. We suggest that the report does a disservice to the important task of calibrating probabilities by a simplistic allusion to accuracy.

The PCAST report says (p. 46):

Without appropriate estimates of accuracy, an examiner’s statement that two samples are similar – or even indistinguishable – is scientifically meaningless; it has no probative value, and considerable potential for prejudicial impact. Nothing – not training, personal experience nor professional practices – can substitute for adequate empirical demonstration of accuracy.

We have seen that the report is wrong here—it is not a matter of “accuracy” but of evidential weight.

5.7. The PCAST paradigm

The PCAST report proposes an approach that is fusion of the match and identification paradigms. See, from p. 45/46:

Because the term “match” is likely to imply an inappropriately high probative value, a more neutral term should be used for an examiner’s belief that two samples came from the same source. We suggest the term “proposed identification” to appropriately convey the examiner’s conclusion, along with the possibility that it might be wrong. We will use this term throughout the report.

First, we have seen that the term “match”, if used properly, makes no implication of probative value: it implies that the two samples might have come from the same source but also might have come from different sources. This is evidentially neutral. Second, we have seen that there is no place for the “examiner’s

belief that two samples came from the same source”: it is not for the scientist to assign a probability to the proposition that the two samples came from the same source.

Next we must consider what the council understand the phrase “proposed identification” to mean. Do they mean that, because it is an identification, it is a categorical opinion? Note that the qualifier “proposed” does not make the identification less than categorical – if it were probabilistic it could not be “wrong”.⁸ If it is not probabilistic then the scientist is to provide a categorical opinion while telling the court that he/she might be wrong! It is difficult to believe that any professional forensic scientist would be happy to be put in this position.

5.8. The scientist as a “black box”

On page 49 we find:

For subjective methods, procedures must still be carefully defined—but they involve substantial human judgment. For example, different examiners may recognize or focus on different features, may attach different importance to the same features, and may have different criteria for declaring proposed identifications. Because the procedures for feature identification, the matching rule, and frequency determinations about features are not objectively specified, the overall procedure must be treated as a kind of “black box” inside the examiner’s head.

The report justifiably emphasises weaknesses of qualitative opinions. The intuitive “black box” view of the scientist will certainly have been true in many instances in the past and, indeed, in certain quarters in the present day. But for us the solution is emphatically not to continue to treat this as an acceptable state of affairs for the future. The PCAST view appears to be “it’s a black box, so let’s treat it like a black box”. Our approach has been, and will continue, to break down intuitive mental barriers by expanding transparency, knowledge and understanding. We do not see the future forensic scientist as an *ipse dixit* machine—whatever the opinion, we expect the scientist to be able to explain it in whatever detail is necessary for the jury to comprehend the mental processes that led to it.

5.9. Black box studies

That the council intend the proposed identification to be categorical is clarified in the following from page 49 (emphasis added):

In black-box studies, many examiners are presented with many independent comparison problems – typically, involving “questioned” samples and one or more “known” samples – and asked to declare whether the questioned samples came from the same source as one of the known samples.⁹ The researchers then determine how often examiners reach erroneous conclusions.

PCAST proposes that the error rates from such experiments would be used to assign evidential value at court.

We are strongly against the notion that the scientist should be forced into the position of giving categorical opinions in this way. Whereas, we are strongly in favour of the notion of calibrating the

⁸ Though, of course, it would be logically incorrect because it would imply a transposed conditional.

⁹ In footnote 111 the report says: “Answers may be expressed in such terms as “match/no match/inconclusive” or “identification/exclusion/inconclusive”. This strengthens our belief that the council see match and identification as interchangeable”.

opinions of forensic scientists under controlled conditions we see those opinions expressed in terms of statements of evidential weight. We return to the subject of calibration later.

5.10. Governance

PCAST suggests that forensic science should be governed by those, such as metrologists, from outside the profession. This speaks to the view, reinforced by a very selective reference list, that the forensic science discipline is not to be trusted with developing procedures, testing them, and self-governance. We do not reject input from outside the profession: we welcome it. But our own observations are that those outside may be engaged to different extents, varying from a passing interest to years of study. They may be unduly influenced by headlines in newspapers highlighting or exaggerating deficiencies. On occasion, these same commentators from outside the profession may not recognise the limitations in their own knowledge base where it concerns specifically forensic aspects, may be reticent to consult subject matter experts from amongst practising scientists and may give well-intentioned, but erroneous, advice [1,21].

6. Our view of the future

6.1. Logical inference

The recommendations of the PCAST report are founded on a conflation of two classical forensic paradigms: match and identification. These paradigms are as old as forensic science but their inadequacies and illogicalities have been comprehensively exposed over the last 50 years or so. All of us maintain, and have done so in our writings, that the future of forensic science should be founded first on the notion of logical inference and second on the notion of calibrated knowledge. The former leads to a framework of principles (which have been adopted by ENFSI) and we are disappointed that PCAST has apparently chosen to ignore, or at most pay lip service to, this fundamental change. The second is a deeper and far richer concept than the profoundly limited notion of false-positive and false-negative error rates: this is the notion of *calibration*.

6.2. Calibration

We are most definitely in favour of the studying of expert opinion under controlled circumstances, see for example Evett [22] but proficiency testing is far more than the counting of errors. The PCAST black-box approach calls for a categorical opinion that is recorded as right or wrong but we have seen that forensic interpretation is far richer and more informative than simple yes/no answers. In a source level proficiency test we expect the participants to respond with a statement of evidential weight in relation to one of two clearly stated propositions. Support thus expressed for a proposition that is, in fact, false is undesirable because it is misleading—not “wrong”. Obviously, the desirable outcome of the proficiency test is a small value for the expected weight of evidence in relation to a false proposition. But whatever the outcome, the study must be seen as a learning exercise for all participants: the pool of knowledge has grown. The notion of an error rate to be presented to courts is misconceived because it fails to recognise that the science moves on as a result of proficiency tests. The work led by Found and Rogers [23] has shown how the profession of handwriting comparison in Australia and New Zealand has grown in stature because of the culture of advancing knowledge through repeated study under controlled conditions. To repeat then, our vision is not of the black-box/error rate but of continuous development through calibration and feedback of opinions.

A striking example of forensic calibration is the evolution of fingerprints evidence from the identification paradigm to the logical paradigm via mathematical modelling [24,25]. Instead of the categorical identification, we have a mathematical approach that leads to a likelihood ratio. The validation of such approaches is founded on two desiderata: we require large likelihood ratios in cases in which the prosecution proposition is true; and small likelihood ratios in cases in which the defence proposition is true. Investigation of performance in relation to these two desiderata is undertaken by considering two sets of comparisons: one set in which it is known that the two samples came from the same source; and one set in which it is known that the two samples came from different sources. There have been major advances over recent years in how the likelihood ratio distributions from such experiments may be compared and evaluated (Ramos [26], Brümmer [27] see also Robertson et al. [28] for a layman’s introduction to calibration). The elegance and performance of such methods far transcends the crude PCAST notion of “false-positive” and “false-negative” error rates.

6.3. Knowledge and data

The PCAST report focuses on “feature-comparison” methods and, as we have explained, this has meant that it is concerned with inference relating to source-level propositions. At this level, the report sees data as the sole means for assigning probabilities. An important part of the role of the forensic scientist is concerned with inference with regard to activity-level propositions. Consider, for example, a question of the form “what is the probability of finding this number of fragments of glass on Mr POI’s jacket if he is the person who smashed the window at the crime scene?” The answer is heavily dependent on circumstantial information (how large is the window? where was the person who smashed the window standing? was any implement used? how much time elapsed between the breaking of the window and the seizure of the jacket from Mr POI? etc.) and the variation in this between cases is vast. There is no single database to inform such probabilities. The scientist will, it is hoped, be thoroughly familiar with all of the published literature on glass transfer in crime cases [29] and may, if resources permit, carry out experiments that reproduce the current case circumstances. The knowledge and judgement of other scientists who have encountered similar questions is also relevant. We agree with PCAST that length of experience is not a measure of reliability of scientific opinion: the foundation is reliable knowledge. Too little effort has been devoted within the forensic sphere thus far to the harnessing of knowledge through knowledge based systems but see [29] for examples of how such a system was created for glass evidence interpretation.

We do not deny the importance of data collections but the view that data may replace judgement is misconceived. A data collection should be used to inform reliable knowledge—not replace it.

We have explained that our view of the scientist is the antithesis of the PCAST “black box” automaton. Although there is a need for data, PCAST are mistaken in seeing it as the be-all and end-all: qualitative judgement will always be at the centre of forensic science evidence evaluation. We reject the PCAST vision of the scientist who gives a categorical opinion and a statement about the probability that the opinion is wrong. We see the model scientist as deeply knowledgeable about her domain of expertise and able to rationalise the opinion in terms that the jury will understand. The principles have been expressed elsewhere [11] as balance, logic, robustness and transparency. There is no place for the black box. We agree that the scientist should be able to provide the court with evidence of performance under controlled conditions. Found and Rogers [23] have provided a model for handwriting comparison

and we see such approaches as extending into other areas: the emphasis is on calibration of probabilistic assessments.

7. Conclusion

The 44th US president's request was "to consider whether there are additional steps that could usefully be taken on the scientific side to strengthen the forensic-science disciplines and ensure the validity of forensic evidence used in the Nation's legal system" ([1], p. 1). We suggest that the report has very little emphasis on positive steps and does much to reinforce poor thinking and terminology.

Our own view of the future of forensic science is based on the principle that forensic inference should be founded on a logical framework for reasoning in the face of uncertainty. That framework is provided by probability theory coupled with the recognition that probability is necessarily subjective and conditioned by knowledge and judgement. It follows that our view of the forensic scientist is a knowledgeable, logical and reasonable person. Whereas data collections are valuable they should be viewed within the context of reliable knowledge. The overarching paradigm of reliable knowledge should be founded on the notion of knowledge management, including comprehensive systems for the calibration of expert opinion.

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