The Admissibility of Evidence of the Accused’s Opportunity to Retest Physical Evidence in Criminal Cases

Rockne P. Harmon* and Edward J. Imwinkelried**

"[T]he reproducibility of experimental results... is their ultimate guarantee of... reliability."¹

“A wrongly accused person’s best insurance against the possibility of being falsely incriminated is the opportunity to have the testing repeated."²

I. INTRODUCTION

Testimony about deoxyribonucleic acid (DNA) analysis has become the gold standard in scientific evidence. During the 1990s, the National Research Council of the National Academy of Science (the Council) released two reports devoted to the subject of DNA typing. In 1992, the Council published DNA Technology in Forensic Science,³ and four years later the Council released The Evaluation of Forensic DNA Evidence.⁴ The latter report declared that “[t]he technology for DNA profiling and the methods for estimating frequencies and related statistics have progressed to the point where the reliability and validity of properly collected and analyzed DNA data should not be in doubt.”⁵ By 1997, DNA testing had

* Senior Deputy District Attorney, Alameda County, California (retired).
** Edward L. Barrett, Jr., Professor of Law, University of California Davis; former chair, Evidence Section, American Association of Law Schools.

1. JOHN ZIMAN, RELIABLE KNOWLEDGE: AN EXPLORATION OF THE GROUNDS FOR BELIEF IN SCIENCE 63 (1978).
4. COMM. ON DNA FORENSIC SCI.: AN UPDATE, NAT’L RESEARCH COUNCIL, supra note 2.
5. Id. at 2.
been used in over 24,000 civil and criminal cases in the United States.6 "In 2001 ... more than two-thirds of prosecutors' offices in the United States used DNA evidence during plea negotiations or felony trials . . . ."7 At the end of that decade, the Council published yet another report relevant to DNA evidence, Strengthening Forensic Science in the United States: A Path Forward,8 which asserts that nuclear DNA analysis is the only "forensic method [that] has been rigorously shown to have the capacity to consistently, and with a high degree of certainty, demonstrate a connection between evidence and a specific individual or source."9

The basic principles underlying DNA testing are so well settled that many courts now dispense with live foundational testimony and judicially notice the validity of those principles.10 Demonstrating the validity of those principles is an essential part of the predicate for admitting testimony about a DNA analysis, but other foundational elements must be established before the trial judge may admit such testimony.11 In particular, the proponent of the testimony must generally show that during the test in question, the analyst followed proper test procedure. At common law, some jurisdictions took the position that deficiencies in test procedure affect the weight, but not the admissibility, of scientific testimony.12 However, other jurisdictions adopted a contrary view.13 In two of the first cases to exclude

6. KEITH INMAN & NORAH RUDIN, AN INTRODUCTION TO FORENSIC DNA ANALYSIS 21 (1st ed. 1997).


9. Id. at 7.

10. 2 PAUL C. GIANNELLI & EDWARD J. IMWINKELRIED, SCIENTIFIC EVIDENCE § 18.05[a], at 82-91 (4th ed. 2007).


13. State v. Lowther, 740 P.2d 1017, 1020 (Haw. Ct. App. 1987) ("One of the foundational prerequisites for the admission of the Intoxilyzer test result into evidence is a 'showing that the testing method is reliable[.]'" (internal citations omitted)); Romano v. Kimmelman, 474 A.2d 1, 8 (N.J. 1984) ("In New Jersey, the results of scientific tests are admissible . . . only when they are shown to have 'sufficient scientific basis to produce uniform and reasonably reliable results and will contribute materially to the ascertainment of the truth.'" (internal citations omitted)); State v. Johnson, 199 A.2d 809, 822 (N.J. 1964) ("[T]he result of a reliable test, properly administered, is admissible. The real question is the reliability of a particular kind of test."); State v. Rimmasch, 775 P.2d 388, 398 (Utah 1989) ("The question of the admissibility of such evidence may be presented in two different ways: a request that the trial court take judicial notice of the 'inherent reliability' . . . or . . . that the trial court determine that these principles or techniques are inherently reliable after
DNA testimony,14 the "courts [barred] evidence for the stated reason that
the prosecution had failed to establish that the analysts followed proper
scientific procedures on the specific occasion when they conducted the
DNA test[s]."15 The trend appears to be toward that view. On one occasion,
the California Supreme Court broadly stated, "[c]areless testing affects the
weight of the evidence and not its admissibility."16 However, in 1998 the
court revisited the issue and announced a general rule that the trial judge
must determine "whether the procedures actually utilized in the case were
in compliance with [the accepted] methodology."17

In 2000, Federal Rule of Evidence (FRE) 702 was amended to expressly
codify a requirement for foundational proof that "the witness has applied
the principles and methods reliably to the facts of the case."18 The
amendment imposing that requirement was justified. The available
proficiency studies indicate that failure to follow proper test procedure is
often the Achilles heel of expert testimony.19 In the 1970s, the Law
Enforcement Assistance Administration sponsored the Laboratory
Proficiency Testing Program that involved 240 of the leading crime
laboratories.20 The Project Advisory Committee (the Committee) prepared
samples and submitted them blind to the participating laboratories.21 The
Committee had already determined the data that a proper forensic analysis
of the samples would yield, and compared the participating laboratories’
reports against that data.22 Some of the findings were troubling. Test #3
concerned blood analysis. Only 60% of the laboratories testing for the MN
system23 reached the correct finding.24 Test #8 was another blood test, in

an evidentiary hearing . . . .")

14. State v. Schwartz, 447 N.W.2d 422, 428 (Minn. 1989) ("Because the laboratory in
this case did not comport with these guidelines, the test results lack foundational adequacy
and, without more, are thus inadmissible."); People v. Castro, 545 N.Y.S.2d 985, 999 (N.Y.
Sup. Ct. 1989) ("[W]here the results are so unreliable, as was demonstrated in this case, the
results are inadmissible as a matter of law.").

15. Edward J. Imwinkelried, The Debate in the DNA Cases Over the Foundation for
the Admission of Scientific Evidence: The Importance of Human Error as a Cause of


17. People v. Venegas, 954 P.2d 525, 545 (Cal. 1998) (citing People v. Barney, 10
Cal. Rptr. 2d 731, 746-47 (Cal. Ct. App. 1992)).

18. FED. R. EVID. 702(3).


20. Id. at 26.

21. Id.

22. See id. (citations omitted).

23. The MN system is one of the six primary red blood cell (RBC) systems. 1
GIANNELLI & IMWINKELRIED, supra note 10 § 17.09[a], at 961.

24. PROJECT ADVISORY COMM., LAB. PROFICIENCY TESTING PROGRAM,
SUPPLEMENTARY REPORT SAMPLES 1-5, at 6 (1975).
which only 37.4% of the laboratories correctly concluded that the two bloodstains could have a common origin. In both instances, the Committee ultimately traced many of the mistakes to improper test procedure. In the 1970s-80s, the Centers for Disease Control conducted proficiency testing of laboratories conducting immunoassay drug analysis. After concluding that mistakes were so common that the situation amounted to a crisis, the researchers pointed to unsound test protocol as a common cause of erroneous test results.

The question that naturally arises is: How do the legal and scientific communities best guard against such errors? Recently, leading fingerprint and DNA authorities have addressed that precise question. In 2009, Peter Peterson and his colleagues wrote: “[A] reanalysis would be the best way to determine if [a government] examiner made a human error in [the] case.” Commenting in the same year on the analogous problem in the DNA setting, Bruce Budowle and his colleagues remarked that:

The most direct way to measure the reliability of the purported results is to have another qualified expert conduct his/her own review, as is advocated by the National Research Council for DNA analyses . . . . Reanalysis by a qualified examiner would be more meaningful and less costly than entertaining experts espousing hypothetical errors and error rates.

The retesting approach exploits the power of the scientific method. In its celebrated 1993 decision, Daubert v. Merrell Dow Pharmaceuticals, Inc., the Supreme Court discussed the legal standard for the admissibility of scientific evidence. Before enunciating the standard, the Court addressed

28. See id. at 2386.
30. Bruce Budowle et al., A Perspective on Errors, Bias, and Interpretation in the Forensic Sciences and Direction for Continuing Advancement, 54 J. Forensic Sci. 798, 802 (2009); see also James Wooley & Rockne P. Harmon, Letter to the Editor, The Forensic DNA Brouhaha: Science or Debate?, 51 Am. J. Hum. Genetics 1164, 1165 (1992) (“If scientists involved in testifying in DNA cases . . . insist that a retest be performed before they commit to simply criticizing the work already done, we would see a refocusing of the courtroom debate to issues that more directly relate to the ultimate issue of guilt versus innocence.”).
the nature of scientific methodology. In the course of his opinion, Justice Blackmun cited the classic work, Reliable Knowledge: An Exploration of the Grounds for Belief in Science, by John Ziman, the Henry Overton Wills Professor of Physics at the University of Bristol. Professor Ziman stressed that an experimenter must publicly disclose his or her detailed methodology to enable later researchers to replicate the experiment to see whether they can duplicate the prior result. Professor Ziman emphasizes that the possibility of retesting is one of the most potent methods of exposing errors in the prior experiment. In Daubert, Justice Blackmun stated that in evaluating the proponent’s foundation, the trial judge should consider whether there are “standards controlling the technique’s operation.” This factor is pertinent because “[t]he more standardized the procedures, the easier it is for other scientists to retest the proposition in question” and detect errors in the prior test. It was the power of scientific methodology that enabled subsequent researchers to debunk the “cold fusion” claims by recreating the experiment and reaching a very different result.

Given the solid scientific basis for the principles underlying DNA testing, a common defense strategy in DNA cases is to concede the general reliability of DNA testing but attack the procedures utilized in that case. This defense strategy raises the question: Can the prosecution retort that the defense neglected to retest the DNA samples when it had the opportunity to do so?

32. Id. at 589-92.
33. Id. at 593-94 (citing ZIMAN, supra note 1).
34. ZIMAN, supra note 1, at 31.
35. Id. at 60, 63-64, 68, 75-76; see also Bert L. Slonim & Lori B. Leskin, A Primer on Challenging Peer-Reviewed Scientific Literature in Mass Tort and Product Liability Actions, 79 U.S. L. Wk. 1231, 1233 (2010) (“Independent replication by independent scientists in independent settings provides the best assurance that a scientific finding is valid.”) (quoting Christine Laine et al., Reproducible Research: Moving Toward Research the Public Can Really Trust, 146 ANNALS INTERNAL MED. 450, 451 (2007)).
39. There is currently a sharp split of authority over this question. E.g., People v. Robinson, No. B198592, 2009 WL 2517556, at *35 (Cal. Ct. App. Aug. 19, 2009) (“Later in the trial, the prosecutor asked [the defense expert] Krane if the best way to challenge Wraxall’s analysis would be to have another laboratory look at the samples.”); People v. Lehmkuhl, 117 P.3d 98, 104 (Colo. App. 2004) (responding to a defense question on cross-examination, a prosecution expert stated: “[W]e at the Colorado Bureau of Investigation make . . . the evidence available for retesting . . . . And that is the best way to determine whether or not there is a false positive associated with the given test.”). Distinguish that
This question can arise at several stages of trial. First, the defense counsel might claim during opening statement that the government's experts used improper procedures in testing the DNA samples. If so, the prosecution might argue that the defense's opening statement has opened the door and sharpened the need for the government's expert on direct examination during the prosecution's case-in-chief to point out that the defense had the opportunity to expose any errors by retesting.40 Or, as often happens, if the defense counsel raises the issue during cross-examination of the government expert during the prosecution's case-in-chief,41 the

question from a related issue: Suppose that the defense has retested but chooses not to offer the results of the test at trial. In this situation, during pre-trial discovery the prosecution may attempt to discover the results of the defense analysis or comment at trial on the defense's failure to offer testimony about the results of its independent test. The defense may object to that attempt or comment on the grounds that the comment or attempt would violate the defendant's attorney-client privilege or work product protection. See State ex rel. McDougall v. Corcoran, 735 P.2d 767, 771 (Ariz. 1987) (attorney-client privilege); People v. Kaurish, 802 P.2d 278, 292 (Cal. 1990) (en banc) (attorney-client privilege). Compare State v. DeMarco, 646 A.2d 431, 435-36 (N.J. Super. Ct. App. Div. 1994) (citing State v. Mingo, 392 A.2d 590, 592-93 (N.J. 1978)) (holding that state was not entitled to discover reports prepared by experts for other clients in unrelated cases), with Utah Dep't of Transp. v. Rayco Corp., 599 P.2d 481, 491-92 (Utah 1979) (holding that due to the unique nature of the condemnation action, the appraisal report does not fall within the attorney's work product immunity). See generally Pope v. State, 207 S.W.3d 352, 357-66 (Tex. Crim. App. 2006) (discussing the work product protection as well as the attorney-client privilege); EDWARD J. IMWINKELRIED, THE NEW WIGMORE: EVIDENTIARY PRIVILEGES § 6.10.2, at 901 (Richard D. Friedman ed., 2d ed. 2010) (providing a discussion of special rules for experts under the attorney-client privilege); Michele DeStefano Beardslee, The Corporate Attorney-Client Privilege: Third-Rate Doctrine for Third-Party Consultants, 62 SMU L. REV. 727 (2009) (examining when communications with third-party consultants should be protected).

40. Cf. 2 EDWARD J. IMWINKELRIED, UNCHARGED MISCONDUCT EVIDENCE § 8:15, at 8-82, § 9:27, at 9-137 to -138 (rev. 2009) (collecting authorities which state that a defense counsel's opening statement can create a need for the prosecution to resort to uncharged misconduct evidence during its case-in-chief).

41. For purposes of this article, we are assuming arguendo that it is unobjectionable for the defense counsel to raise this issue. On occasion prosecutors have argued that this line of inquiry is objectionable on the ground that it interjects a speculative inquiry about third party culpability. It would seem that the logical relevance of the inquiry is to suggest that a third party might have committed the crime. There is a good deal of case law dealing with the issue of when the defense is entitled to introduce third party culpability evidence. On the one hand, an accused has a right to present such evidence when it is "capable of raising a reasonable doubt of defendant's guilt." People v. Hall, 718 P.2d 99, 104 (Cal. 1986). However, "[e]vidence of mere motive or opportunity to commit the crime . . . without more, will not suffice to raise a reasonable doubt about a defendant's guilt." Id.; see also State v. Renteria, 520 P.2d 316, 316 (Ariz. Ct. App. 1974); People v. Sandoval, 841 P.2d 862, 872 (Cal. 1992) (en banc). Relying on this line of authority, prosecutors have contended that since this line of questioning supports only a conjecture that a third party committed the charged crime, the third party culpability case law renders the questioning objectionable. To date, there are no published opinions addressing the merits of the contention.
prosecutor may endeavor to elicit the evidence during the redirect examination of the government’s expert. Alternatively, if the accused calls an expert to critique the government’s testing procedures during the defense’s case-in-chief, the prosecutor might broach the topic of possible retesting during the cross-examination of the defense expert. The prosecutor could also call an expert during the rebuttal stage to establish the sample’s availability for retesting. Finally, if the defense counsel mounted the attack on the government’s testing procedures for the first time during closing argument, the prosecution might move to reopen in order to present evidence that the defense had an opportunity to independently retest the DNA samples.

If anything, this question is likely to arise more frequently in the future. Of course, a retest is impossible if the first test consumes the entire sample. However, by exploiting the polymerase chain reaction (PCR) amplification technique, analysts have been able to evaluate smaller and smaller samples. Consequently, today it is more probable that after the government testing, there will be a remaining, uncontaminated sample for the defense to retest. Further, because both courts and legislators appreciate the importance of exculpatory DNA test results, there has been a legislative and judicial trend to expand discovery in DNA cases and permit retesting. In 2006, the American Bar Association approved a set of Standards on DNA Evidence. Standard 4.2(a) provides: “Upon motion, made with notice to the prosecution, a court should permit the defense to inspect and test DNA evidence in the prosecution’s possession or control.” Just as the advancing technology increases the probability that there will be a residual sample for the defense to test, the reforms in discovery law enhance the probability that, on request, the defense will be granted access to the sample. In short, in the future there will be more cases in which the prosecution will desire to meet defense attacks on the government’s testing procedures by demonstrating that the defense did not avail itself of the


43. Cf. IMWINKELRIED, supra note 40, § 8:12, at 8-68 (discussing situations in which during closing argument, the defense counsel reneges on a promise not to dispute a fact that uncharged misconduct evidence is logically relevant to prove).

44. 2 GIANNELLI & IMWINKELRIED, supra note 10, § 18.03[c], at 25-32.

45. Id. § 18.01, at 6.


47. 2 GIANNELLI & IMWINKELRIED, supra note 10, ch. 18A, at 121.

48. Id. at 127.
opportunity to retest the DNA sample.

At present, there is a division of judicial sentiment over the admissibility of prosecutorial evidence that the defense had access to the DNA sample tested by the government experts. In its 1996 report, the National Research Council noted this issue and observed that "[t]he law with regard to [this] question[] is far from clear."49 Some disagreement still persists. At the risk of oversimplification, the courts fall into three schools of thought:

1. Some courts endorse a general rule that the prosecution may not comment on the defense's failure to present evidence rebutting the prosecution's scientific testimony analyzing physical evidence in the case.50 These courts fear that such a comment will mislead the lay jurors into thinking that in order to gain an acquittal, the defendant has an obligation to present rebuttal evidence.51 In a Colorado case, the trial judge invoked the state equivalent of FRE 403 as the basis for an order barring inquiry about the availability of a DNA sample to the defense for retesting.52 That rule authorizes a trial judge to exclude otherwise admissible evidence when the judge concludes that the probative dangers accompanying the admission of the evidence substantially outweigh the probative value of the evidence.53 The judge characterized the prosecution’s evidence as 49. COMM. ON DNA FORENSIC SCI.: NAT’L RESEARCH COUNCIL, supra note 2, at 182-83.

50. Hayes v. State, 660 So. 2d 257, 265-66 (Fla. 1995); see also People v. Oliver, 713 N.E.2d 727, 735-36 (Ill. App. Ct. 1999). Oliver is a somewhat ambivalent opinion. The Oliver court declared that "if a defendant attacks evidence presented by the prosecution, the prosecution may point out that the evidence is uncontradicted in order to show the lack of evidentiary basis for the defense’s argument." Id. at 736 (citing People v. Gant, 559 N.E.2d 923, 927 (Ill. 1990)). More specifically, the court concluded that the prosecution may "bring out on cross-examination that the defense’s criticisms of the prosecution's expert witnesses were not based on any independent testing that it had done." Id. However, the opinion also includes broad language that subject to a right of fair rebuttal, "the prosecution should not comment on the failure of the defendant to present evidence." Id. at 735-36. Moreover, even though the defense in Oliver called an expert to challenge the manner in which the prosecution's expert had conducted the testing, the court held that "insofar as the questioning focused the jury’s attention on the defendant’s failure to introduce any serology evidence that was favorable to the defense, it was improper." Id. at 736. That language in Oliver is at odds with the holding in People v. Panah, 107 P.3d 790, 835 (Cal. 2005). The Panah court held that a prosecutor’s comment about the possibility of defense retesting was a proper rebuttal” to “defense counsel’s claim that the prosecutor had failed to produce either fingerprint or DNA evidence.” Id. In addition, the court rejected the defense’s contention that the comment improperly shifted the burden of proof to the accused. Id. at 835.


52. Lehmkuhl, 117 P.3d at 104.

53. FED. R. EVID. 403.
unduly prejudicial. The judge evidently believed that the admission of the testimony would create a significant risk of "prejudice" in the technical sense of tempting the jury to decide the case on an improper basis; the jury might convict due to the mistaken belief that the defendant was obliged to present rebuttal evidence to establish his or her innocence. Some of the courts subscribing to this view have stated that they will admit the prosecution's evidence only in extreme cases in which the prosecution can successfully invoke the curative admissibility doctrine. In the strict, technical sense, curative admissibility is applicable only if the defense injected inadmissible evidence into the trial. Without more, a simple challenge by the defense to the prosecution expert's test procedures would not inject any inadmissible evidence and, hence, would not trigger curative admissibility.

2. At the polar extreme, most courts appear to approve of the introduction of the prosecution's evidence that the defense had the opportunity to retest the physical evidence. These courts rely on the straightforward argument that accurate comments on the state of the record are logical and relevant. Further, they believe that merely presenting the jury with testimony of the sample's availability to the defense "[does] not imply that it was [the accused's] responsibility to have the sample retested."

54. Lehmkuhl, 117 P.3d at 104.
55. FED. R. EVID. 403 advisory committee's note ("'Unfair prejudice' within its context means an undue tendency to suggest decision on an improper basis, commonly, though not necessarily, an emotional one.").
57. Gov't of Virgin Islands v. Archibald, 987 F.2d 180, 187 (3d Cir. 1993); United States v. Nardi, 633 F.2d 972, 977 (1st Cir. 1980); Lala v. Peoples Bank & Trust Co. of Cedar Rapids, 420 N.W.2d 804, 807-08 (Iowa 1988); James M. Beck, Comment, Evidence—Curative Admissibility in Missouri, 32 Mo. L. REV. 505, 505-08 (1967).
59. See Myers, 133 P.3d at 329.
3. A third group of courts have developed a compromise view. They stop short of universally prohibiting the introduction of evidence of the availability of the sample for defense testing. They admit the testimony as a response to defense claims other than the mere allegation that the prosecution's expert erred in conducting the test. In the published opinions, the courts have accepted the testimony when the defense leveled accusations such as the prosecution "deliberately" and "maliciously" refused to conduct testing that would have exonerated the accused, or the contention that the police had conducted only limited scientific testing to avoid linking anyone other than the accused to the crime. Before these courts allow the prosecution to introduce evidence of the sample for defense testing, the defense need not inject inadmissible evidence—the sort of misconduct that triggers the curative admissibility doctrine. However, the defense must do more than suggest that the government expert violated correct procedure in testing the physical evidence and, therefore, the test result is inaccurate.

It is fair to say that the published opinions are not only conflicting, but are also conclusory. For example, although many courts have held that it is "logical" and "relevant" to permit prosecutorial comment, the vast majority of the courts do not elaborate on the logic. As we shall see in Part II, only a few courts have even hinted at a specific theory of logical relevance to justify the admission of the testimony.

While this article faults those opinions for conclusory analysis, the thesis of this article is that the courts following the prevailing view have reached the correct conclusion. Part II of this article describes and critically evaluates the theories of logical relevance that are mentioned or implicit in the opinions. It concludes that there is a defensible theory of logical relevance for introducing evidence of the availability of physical evidence for defense retesting. Given that conclusion, Part III of this article addresses the question of whether any constitutional provision forbids the receipt of the evidence. Part III concludes that if the judge gives the jury

63. State v. Bakalov, 979 P.2d 799, 819 (Utah 1999). The court used those two adverbs when it restated the defense's arguments. Id. The record does not indicate whether the defense counsel explicitly used either adverb. See id. When the court characterizes the prosecution comment as a fair response to an earlier defense remark, it can be difficult to evaluate the accuracy of the court's characterization if the court does not directly quote the defense remark. See id.; see also, supra note 41 (discussing the question of whether, given the case law governing third party culpability evidence, it is objectionable for the defense to question about other testing of the physical evidence and thereby invite the jury to speculate that a third party might have perpetrated the charged offense).

64. See generally People v. Panah, 107 P.3d 790 (Cal. 2005) (noting that although the police had subjected the blood sample to ABO testing, the police had not conducted a DNA test).
proper instructions about the use of the evidence, the admission of the evidence does not run afoul of the Constitution. Positing those two conclusions, the law should permit a new trial focus on the replication of test results as one of the most important rudiments of sound scientific methodology.

II. THE LOGICAL RELEVANCE OF THE PROSECUTION’S EVIDENCE PERTAINING TO THE AVAILABILITY OF PHYSICAL EVIDENCE TO THE DEFENSE FOR SCIENTIFIC RETESTING

To be admissible, any proffered item of evidence must be logically relevant. The logical relevance of the evidence is a necessary condition for the introduction of the evidence. Thus, before admitting testimony about the availability of the sample for defense retesting, the trial judge must be satisfied that there is a tenable theory for finding that the testimony is logically relevant. The published opinions briefly mention four different theories. The first two theories focus on members of the defense team, either a defense expert or the accused.

A. Theory #1: If the Defense Expert’s Testimony Attacks the Testing Procedure Used by the Prosecution’s Witnesses, the Expert’s Failure to Retest the Sample is Impeaching; the Failure Amounts to Prior Inconsistent Conduct

One of the most popular methods of impeachment is proving that before trial, the witness made a statement inconsistent with his or her trial testimony. Proof of a prior inconsistent statement is probably the most common method of impeachment in civil cases in which the parties often conduct pretrial depositions of the trial witnesses. Such impeachment can also occur in criminal cases when the witness makes an inconsistent statement at a grand jury or preliminary hearing. However, prior inconsistent statements do not exhaust the possibilities:

Like prior inconsistent statements, prior inconsistent acts are admissible to impeach. Suppose that in an embezzlement prosecution, the prosecution offers a character witness’s testimony that the defendant is an untrustworthy person. To impeach the character witness, the defense

65. FED. R. EVID. 401.  
66. FED. R. EVID. 613.  
68. United States v. Xheka, 704 F.2d 974, 987 (7th Cir. 1983) (holding that where there were important discrepancies between trial testimony of a witness called by the prosecution and his previous grand jury testimony, the prosecution was properly allowed to impeach the witness through introduction of his previous grand jury testimony as substantive evidence).
could elicit testimony that the witness had made an unsecured, signature loan to the defendant. A person who truly believed the defendant to be untrustworthy would probably not make such a loan to the defendant.\textsuperscript{69}

In this context, the argument asserts that any serious, honest scientist would realize that the best way to remove substantial doubts about a prior test is to subject the physical evidence to a retest. If so, the defense expert's failure to retest the sample is inconsistent with his or her testimony that there is good reason to question the procedures employed in the prior test. In a 2009 decision, a California court seemingly approved this argument.\textsuperscript{70} In that case, a defense witness who had not tested the DNA sample questioned the procedures utilized by the prosecution's expert.\textsuperscript{71} The court noted the prosecutor's argument that "the best way" to resolve a question about the prior test was to retest.\textsuperscript{72} The court concluded that the defense expert's failure to do so "undermine[d]" the credibility of the expert's testimony.\textsuperscript{73}

Although this theory obviously has merit, it has limited utility—it applies only when the defense calls an expert to provide testimony challenging the procedures used by the government's expert. The rub is that the defense can raise the issue without calling an expert to the stand. The defense frequently uses the cross-examination of the government expert as the vehicle for presenting its challenges to the government expert's test procedures. In that event, since there is no defense expert, the prosecution cannot rely on the argument that the evidence of the sample's availability for retesting is logically relevant to impeach a defense witness. No witness has taken the stand. Indeed, the defense might have foregone the opportunity to present its case-in-chief.

Article VI of the Federal Rules of Evidence, prescribing the limitations on impeachment, is entitled "Witnesses."\textsuperscript{74} While the impeachment rules permit the attorney to attack the credibility of the opposing witnesses,\textsuperscript{75} the rules do not authorize the attorney to attack the credibility of the opposing attorney.\textsuperscript{76} Indeed, the rules of ethics generally forbid a trial attorney from

\textsuperscript{69} 1 EDWARD J. IMWINKELRIED ET AL., COURTROOM CRIMINAL EVIDENCE § 712, at 310 (4th ed. 2005).
\textsuperscript{71} \textit{Id.} at *13.
\textsuperscript{72} \textit{Id.} at *12.
\textsuperscript{73} \textit{Id.} at *13.
\textsuperscript{74} FED. R. EVID. 601-15.
\textsuperscript{75} IMWINKELRIED ET AL., supra note 69, § 704, at 273.
disparaging the credibility of the opposing attorney. The cumulative impact of the rules of evidence and ethics is that, in these circumstances, the prosecutor cannot argue that if the defense attorney truly believed that the government expert's testing procedures were flawed, he or she should have arranged for retesting.

B. Theory #2: By Failing to Arrange for Retesting, the Accused has Implicitly Admitted that the Government Expert Did Not Err in Reaching an Inculpatory Test Result; the Accused's Failure Constitutes an Admission by Conduct

The initial theory of logical relevance is a credibility theory, which targets a defense witness. The second theory also focuses on a member of the defense team; however, the theories differ in two important respects. First, under the second theory the target is the accused, rather than a non-party defense witness. Second, under this theory the testimony about the sample's availability for defense retesting could conceivably be treated as substantive evidence rather than mere credibility evidence. To fully understand the second theory, we must pause briefly to discuss the admission by conduct doctrine.

Suppose that the accused is standing trial for murder. Before trial, the accused learns that the prosecution intends to call an eyewitness to the killing, and attempts to murder the eyewitness. At trial, the prosecution could offer evidence of the accused's attempt on the witness's life. All jurisdictions treat such evidence as substantive proof of guilt, labeling it either evidence of "consciousness of guilt" or an "admission by conduct." Ordinarily, an accused would not engage in such misconduct unless he believed himself to be guilty and thought that killing a vital prosecution witness was the only way to evade conviction. Moreover, if the accused believes himself to be guilty, that is certainly persuasive evidence of guilt. Importantly, the courts have extended the doctrine beyond misconduct constituting obstruction of justice. To be specific, many courts

77. Id.
78. Such arguments amount to an explicit or implicit attack on the defense counsel's credibility. Distinguish that situation from a case in which, after defense cross-examination raises questions about the prosecution expert's testing procedures, the prosecutor states in closing that the best way to remove any doubts about the procedures would be to retest. That statement is a relatively straightforward response to the merits of the defense argument. See Wooley & Harmon, supra note 30, at 1164-65.
80. 1 IMWINKELRIED, supra note 40, § 3:4, at 3-31.
81. 2 DIX ET AL., supra note 67, § 265, at 226.
have expanded the scope of the doctrine to include a litigant's failure to call a witness or produce evidence. These courts reason that the litigant's failure to call the witness or proffer the evidence supports an adverse, substantive inference that the tenor of the testimony or exhibit was unfavorable to the litigant's case.

Like the first, this theory is plausible. The accused's failure to take advantage of the sample's availability for retesting arguably supports an inference of guilt; the accused's realization of his or her guilt explains the failure, since the accused presumably fears that a retest will serve only to confirm the accuracy of the first test outcome and, therefore, his or her guilt. However, this theory also suffers from several major limitations—limitations that preclude this theory from serving as a general basis for admitting testimony about a sample's availability for defense retesting.

Although the majority of jurisdictions apply the admission by conduct doctrine to litigants' failures to present evidence, a minority of courts do not recognize its application in this situation. The inference adverse to the litigant is often highly speculative, since there can be myriad reasons why a litigant would not call a particular witness or offer a certain exhibit. Further, some jurisdictions that generally recognize this application refuse to do so in criminal cases. These courts are especially loath to subject an accused to the risk of erroneous conjecture.

Even in the jurisdictions applying this extension of the doctrine in criminal cases, the courts tend to apply the extension cautiously. The courts have taken a conservative approach to this variation of the admission by conduct doctrine. A number of courts have refused to apply the doctrine in scientific evidence cases. In one case, the court emphasized

82. Id. § 264.

83. Id.

84. Id. § 264, at 222 n.11 (citing Herbert v. Wal-Mart Stores, Inc., 911 F.2d 1044, 1048 (5th Cir. 1990)); State v. Brewer, 505 A.2d 774, 776-77 (Me. 1985) (explaining that at early common law a party vouched for the credibility of any witness he or she called to the stand). On that assumption, it was risky calling an adverse witness and it was more reasonable to expect the opponent to call any witness realistically allied with the opposition. However, modern evidence codes have abolished the voucher rule. E.g., FED. R. EVID. 607.

85. DIX ET AL., supra note 67, § 264, at 222-23.

86. Id. § 264, at 223 n.21 (citing State v. Malave, 737 A.2d 442, 446-52 (Conn. 1999); Schmitt v. Commonwealth, 547 S.E.2d 186, 198 (Va. 2000)).

87. Id. § 264, at 222 n.14 and accompanying text (citing Commonwealth v. Crawford, 629 N.E.2d 1332, 1336-37 (Mass. 1994); State v. Francis, 669 S.W.2d 85, 89 (Tenn. 1984)).

88. Id. § 264, at 222.

89. See, e.g., People v. Fischer, No. G036972, 2007 WL 4443868, at *6-7 (Cal. Ct. App. Dec. 20, 2007). In its opinion, the California appellate court discussed three different
that the prosecutor had not suggested that by failing to retest, the accused was "somehow admitting guilt." In another case, the court explicitly rejected the prosecution's contention that the accused's failure was "evidence of... consciousness of guilt."

The courts' reluctance to stretch the doctrine to this fact situation is not surprising. In the vast majority of cases in which the courts have applied the doctrine, the litigant already has a relationship with a witness, such as a relative, or has already hired the expert. The instant fact situation is distinguishable. In this setting, the accused either does not hire an expert or hires an expert only to critique the prosecution expert's methodology—not to retest the evidence. If the courts invoked the admission by conduct doctrine here, the introduction of the evidence could suggest to the jury that in some sense, an innocent accused was obliged to retain an expert to retest. As Part III demonstrates, the Constitution forbids imposing any such legal obligation on the accused. To be sure, the trial judge can give the jury an instruction bluntly telling them that the accused has absolutely no legal duty to present evidence; but the suggestion may persist that the accused has an obligation in some normative sense. It is, therefore, understandable that many courts prefer to moot that suggestion by refusing to extend the admission by conduct doctrine.

Types of remarks by the prosecution and approved some. *Id.* For instance, the court first dealt with the prosecutor's response to a defense attack on a lack of prosecution evidence and held that "the prosecutor was entitled to argue the defense presented a red herring by emphasizing the so-called 'missing' DNA evidence." *Id.* at *6. However, the appellate court's analysis of the third type of remark about the lack of defense retesting indicated that it was somewhat reluctant to apply the admission by conduct doctrine, stating that

"[The trial [judge] closely monitored the prosecutor ... and prevented any improper argument. When the prosecutor sallied forward with "If they wanted to have these tests-" and "If they believed-. . .DNA-" and similar predicate remarks concerning DNA testing and subpoena powers, the trial [judge] sustained defense counsel's objections and ordered the prosecutor to proceed to his next point."

*Id.* at *7.

92. See generally 2 DIX ET AL., supra note 67, § 264, at 221 & n.9.
93. Another potential contributing factor could be the courts' desire to avoid the task of making the factual determination whether, realistically, the accused has access to an expert who could retest. The accused sometimes finds it difficult to persuade a court to appoint an expert to assist in his or her defense. Laurence A. Benner, *The Presumption of Guilt: Systematic Factors that Contribute to Ineffective Assistance of Counsel in California*, 45 CAL. W. L. REV. 263, 295 (2009) ("Our study disclosed that while funds are in theory supposed to be available to the defense for forensic testing, one half (50%) of the institutional public defenders experienced difficulty obtaining DNA testing and an almost equal number (48%) had difficulty obtaining other forensic testing."); Paul C. Giannelli, *Ake v. Oklahoma: The Right to Expert Assistance in a Post-Daubert, Post-DNA World*, 89...
C. Theory #3: The Evidence is Merely a Logical Comment on the State of the Record at Trial

The first two candidate theories relate to members of the defense team: either a defense witness or the accused. The third theory shifts focus to the state of the record at trial. According to this theory, any litigant has a right to make logical,\textsuperscript{94} reasonable\textsuperscript{95} comments on the state of the record;\textsuperscript{96} and evidence, pointing out that the defense had the opportunity to supplement the record, qualifies as a fair comment. In Louisiana, a statutory provision states that during closing argument, an attorney may discuss both “evidence admitted” and “the lack of evidence.”\textsuperscript{97} If the attorney may comment on the absence of evidence during summation, one would think that it is also permissible for the attorney to present evidence highlighting the fact that the opponent has neglected to present arguably relevant evidence.

Although the third theory does not suffer from the same weaknesses as


the prior two, this theory also has its limitations. One is that the theory rests on an oversimplification. If the accused elects against testifying at trial, it would be an accurate comment on "the lack of evidence" to point out that the accused did not testify. However accurate the comment is, though, that comment would be a clear-cut violation of *Griffin v. California*, discussed in Part III.

In addition, although this theory is a step in the right direction, it is incomplete. As previously stated, the courts espousing this theory assert that the evidence is logical and relevant. However, in the final analysis, that bald assertion is insufficient. Suppose that in response to an objection, a proponent, such as a prosecutor, represented to the trial judge that the proffered item of evidence was "logically relevant." The trial judge would not have to accept that representation at face value. The trial judge is entitled to demand that the proponent specify "the process of inference." If the logical relevance of the evidence was obvious to the judge, he or she could overrule the objection. However, if the relevance were not patent, the judge would not be obliged to accept the proponent's *ipse dixit* claim. Rather, the judge would be well within his or her rights to turn to the attorney and say, "You need to tell me what fact of consequence this is logically relevant to and explain how it is logically relevant to that fact." The third theory does not furnish full answers to those questions.

D. Theory #4: Proof that the Prosecution Experts Made the Sample Available to the Defense for Retesting Shows that the Experts Followed Good Scientific Methodology and the Experts' Realization that the Sample Would Later be Available to the Defense Would Give Them a Stronger Incentive to Follow Correct Test Procedure

At trial, an attorney not only has to persuade the judge to admit the evidence that the attorney proffers, but also must convince the trier of fact to ascribe significant weight to the evidence, believe the evidence, and return a verdict based on that evidence. A litigant not only has a right to present admissible evidence to the trier; the attorney also has the right to attempt to persuade the trier that the evidence deserves substantial weight. In *Old Chief v. United States*, the Supreme Court acknowledged that a prosecutor must do far more than offer enough admissible evidence to make out a legally sufficient case to sustain the initial burden of

Writing for the majority, Justice Souter stated that to gain a conviction, a prosecutor must present a narrative with "persuasive power" and "descriptive richness." The narrative must demonstrate the "human significance" of the evidence and "convince the jurors that a guilty verdict would be morally reasonable." It can, after all, be "difficult [for a juror to return a verdict] that can send another human being to prison."

In that light, the prosecutor should be entitled to show that when he or she conducted the DNA test, the government expert followed the Federal Bureau of Investigation guidelines for processing the sample and interpreting the electropherogram chart depicting the alleles present in the sample. More broadly, the prosecutor ought to be permitted to also show that the government expert acted in the best scientific tradition of openness, preserved some of the sample, and made the remaining sample available to the defense. Two cases have hinted at this theory in passing. In a 2008 California case, the appellate court commented that the fact that the expert made the sample available for defense retesting legitimately increases the weight of the evidence; the fact does so by showing that the expert was "not trying to hide errors." In a 2002 decision, the Supreme Judicial Court of Massachusetts advanced the common sense argument that while he or she is conducting the test, the government expert is more likely to scrupulously observe procedure if he or she knows that the sample can later be "subjected to scrutiny by defense experts."

Admitting the evidence on this theory of logical relevance serves the prosecution's legitimate interests. In Justice Souter's words, any intelligent prosecutor endeavors to "satisfy the jurors' expectations about what proper proof should be." In the typical DNA case, after establishing that the

103. Id. at 187.
104. Id. at 187-88.
105. Id. at 188.
106. Id. at 187.
107. 2 GIANNELLI & IMWINKELRIED, supra note 10, § 18.03[d] (illustrating and discussing such charts).
109. Commonwealth v. Evans, 778 N.E.2d 885, 896 (Mass. 2002); see also People v. Calbert, No. B196326, 2008 WL 76779, at *2 (Cal. Ct. App. Jan. 8, 2008) (suggesting a further reason for informing the jury of the sample's availability for defense retesting; if the jury learns that the government testing did not consume the entire sample, some jurors might wonder why the government did not conduct more thorough testing; those jurors will find the government testimony more satisfactory if the government expert explains that "one of the reasons to preserve part of the sample is to make it available if the defense wants to conduct its own tests."); D.C. McDonald, Opinion Evidence, 16 OSGOODE HALL L.J. 321, 325-36 (1978) (laying out the parameters for expert testimony).
110. Old Chief, 519 U.S. at 188.
crime scene sample and the accused's sample share certain alleles, the prosecution expert will evaluate the statistical significance of the match by testifying to the probability of a random match. Indeed, some courts bar evidence of a DNA match unless it is accompanied by statistical testimony assessing the significance of the match. In the 1990s and the early part of the 2000s, experts often testified to random match probabilities in the billions. However, today in court, it is not uncommon for an expert to testify to a match probability in the trillions, quadrillions, or beyond.

To reduce the risks of boring or confusing the jury, it usually makes sense for the proponent of scientific testimony to spend relatively little time making the foundational showing that the witness followed correct test procedure. However, assume that:

[T]he proponent ultimately asks the jury to accept the expert's breathtaking opinion. Suppose that, in a civil products liability case, liability will turn on a measurement of a minute quantity in a microgram amount. Neutron activation analysis is capable of making such a measurement. Or assume that, in a criminal case, the prosecution proffers an expert's testimony that there is only a one in 7.87 trillion probability that a randomly chosen member of the population would possess the same set of DNA markers as the accused. If the proponent expects the jury to accept such an exact measurement or a staggering random match probability, the expert must convince the jury that he or she conducted the test in a meticulous fashion.

Showing proper test procedure is an essential part of the foundation for the ultimate opinion stated as a random match probability. In these situations, if the proponent wants to persuade the jury to accept the ultimate opinion, the proponent needs to convince the jury that when the expert conducted the test, the expert dotted every "i" and crossed every "t". The upshot is that, although this theory of logical relevance has received scant attention in the published opinions, it emerges as the soundest basis for admitting testimony about the sample's availability for defense retesting.

111. 2 GIANNELLI & IMWINKELRIED, supra note 10, § 18.04[c], at 58.
114. Id.
116. Id. at 122 (internal citations omitted).
III. CONSTITUTIONAL OBJECTIONS TO THE ADMISSIBILITY OF TESTIMONY ABOUT THE AVAILABILITY OF PHYSICAL EVIDENCE TO THE DEFENSE FOR RETESTING

Even if evidence of the sample’s availability for retesting passes muster under the common-law and statutory standards for admissibility, its admission could conceivably violate the Constitution. In the past, defense counsel has relied on two constitutional guarantees as the basis for objections to admission.

A. The Fifth Amendment Privilege Against Self-Incrimination

The attacks premised on the privilege against self-incrimination have taken two forms:

1. Compulsion to testify

One attack is the contention that the introduction of the evidence violates the privilege because it virtually compels the accused to testify and thereby waive his or her privilege against self-incrimination.\(^{117}\) For good reasons, this attack has had little success.

To begin, in the overwhelming majority of cases, the admission of this type of evidence cannot pressure the accused to testify because the accused would be incompetent to testify about retesting the sample. Unless the accused possesses the necessary qualifications, he cannot serve as an expert under FRE 702.\(^{118}\) Introducing the evidence might pressure the accused to call a defense expert, but in the typical case, there is no pressure on the accused to testify.

Even in the rare case in which the accused could qualify as an expert, the governing Supreme Court precedent invalidates the argument. In Williams v. Florida, the Court squarely rejected the argument that amassing otherwise admissible evidence against the accused runs afoul of the privilege, even when the evidence virtually impels the accused to take the stand to try to explain it away.\(^{119}\) The issue has arisen in a number of cases involving evidence of the accused’s uncharged misconduct.\(^{120}\) Under FRE 404(b), the prosecution may offer such evidence on non-character theories of logical relevance, such as showing a distinctive modus operandi exhibited by the charged and uncharged offenses.\(^{121}\) The admission of

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118. FED. R. EVID. 702 ("If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence ... a witness qualified as an expert by knowledge, skill, expertise, training, or education, may testify.").
120. IMWINKELRIED, supra note 40, § 10:25, at 62-64 nn.9-12.
121. FED. R. EVID. 404(b).
uncharged misconduct evidence is much more likely to compel the accused to testify; the accused obviously has personal knowledge of whether he or she committed the uncharged act, and is, therefore, in the best position to serve as a rebuttal witness. Yet, even here, relying on Williams, the courts have brushed aside the defense's argument.122

2. Comment violative of Griffin v. California123

In Griffin v. California, the Supreme Court announced the famous "comment" rule: At trial, neither the prosecutor nor the trial judge may comment on the accused's exercise of the privilege against self-incrimination.124 It is clear from the Court's decision that the accused exercises that right simply by electing against testifying.125 Thus, it is constitutional error for either the judge or the prosecutor to call the jury's attention to the fact that the accused did not testify. On occasion, defense counsel have argued that the "comment" rule forbids the prosecutor from pointing out that the defense has not retested the physical evidence and called a defense expert to rebut the prosecution expert's testimony.126 Defense counsel are correct in arguing that the Griffin rule prohibits more than direct, explicit comment about an accused's personal failure to testify at trial. The rule also bars indirect comments that a reasonable juror would naturally interpret as an implicit reference to the accused's failure to testify.127 What if, during closing argument, the prosecutor characterizes the government's case as "unchallenged,""128 "uncontradicted,""129

122. Williams, 399 U.S. at 83-84.
124. Id. at 615.
125. See id. at 611.
128. Williams v. Lane, 826 F.2d 654, 664 (7th Cir. 1987).
129. Lent v. Wells, 861 F.2d 972, 975 (6th Cir. 1988); United States v. Singer, 732 F.2d 631, 638 (8th Cir. 1984); Williams v. Wainwright, 673 F.2d 1182, 1184 (11th Cir. 1982); United States v. Rodriguez, 556 F.2d 638, 641-42 (2d Cir. 1977); United States v. Estrada de Castillo, 549 F.2d 583, 584 (9th Cir. 1976); Hensley v. Rose, 429 F. Supp. 75, 77 (E.D. Tenn. 1975); Phillips v. State, 676 S.W.2d 753, 755 (Ark. Ct. App. 1984); State v. Robinson, 641 S.W.2d 423, 426 (Mo. 1982).
"uncontroverted,"130 "undenied,"131 "undisputed,"132 "unimpeached,"133 "unrebutted,"134 or "unrefuted"?135 There are a number of decisions finding that, on the specific facts of the case, this type of characterization amounted to forbidden indirect comment on the accused’s failure to testify.136 However, the courts have done so only when the evidence at trial made it clear to the jury that only the accused possessed the information needed to rebut the prosecution’s testimony.137 There is no constitutional violation if, on the facts of the case, it was plausible that the defense could have resorted to documentary evidence,138 or any witness other than the defendant,139 to rebut the prosecution’s evidence.

In this light, unless the other evidence in the case informs the jury that the accused is a scientist capable of personally retesting the sample, a
reference to the sample's availability for defense retesting will not violate *Griffin*. In the run-of-the-mill case, even if a prosecutor introduces evidence of the sample's availability and characterizes the government expert's testimony as "uncontradicted," there is no risk that the jury will naturally interpret that characterization as a reference to the accused's refusal to testify. On the contrary, the jury would think it was extraordinary if the accused attempted to take the stand to critique the procedures used by the government's expert. In sum, just as *Williams* invalidates the first defense attack premised on the privilege against self-incrimination, the lower court cases applying *Griffin* undercut the *Griffin* attack in all but the most extraordinary fact patterns.

B. The Constitutionally Mandated Rule Allocating the Burden of Proving the Accused's Guilt Beyond a Reasonable Doubt to the Prosecution

Neither the Fifth nor the Sixth Amendment expressly provides that the prosecution must shoulder the burden of proving each element of a charged crime by proof beyond a reasonable doubt. Nevertheless, the Supreme Court has ruled that the Constitution both allocates the ultimate burden of proof to the prosecution and the mandatory measure of the burden is proof beyond a reasonable doubt. These two rulings enable defense counsel to mount two attacks on the admission of evidence of a sample's availability for defense retesting.

1. The allocation of the burden

The thrust of the first argument is that the admission of the testimony is at odds with the presumption of innocence, allocating the ultimate burden of proof to the government. In this fact pattern, the prosecutor is not explicitly telling the jury that the accused has a burden to prove his or her innocence, yet the mere introduction of the testimony strongly implies to the jury that the accused has the burden of retesting in order to establish his or her innocence.

Most courts have rejected this argument. In doing so, the courts assert that without more, testimony about the availability of the sample for retesting does not imply that the accused has an obligation to retest. The problem with these cases is that, realistically, it is hard to deny that the admission of the evidence suggests that the accused has some sort of obligation to retest. The obligation may not be a legal duty. However, the

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introduction of the testimony seems to impliedly signal to the jury that, in a normative sense, the accused ought to retest if he or she wants to seriously argue that the prosecution expert’s test procedures were flawed. Writing for the United States Court of Appeals for the Armed Forces in its 2004 *United States v. Mason* decision, Chief Judge Crawford asserted:

In the case at bar, trial counsel’s question to the DNA expert of whether either party had requested a retest suggested that Appellant may have been obligated to request a retest, and therefore obligated to prove his own innocence. In so doing, trial counsel improperly implied that the burden of proof had shifted to Appellant, in violation of due process.  

Chief Judge Crawford made this assertion even though it was the defense’s cross-examination, which broached the subject of the government’s failure to have the evidence retested by a second laboratory. However, that assertion still rings true. As soon as a lay juror hears the testimony about the sample’s availability for retesting, there is a danger that the juror will think, “If the accused genuinely doubts that the government expert followed correct test procedure, the accused should have retested the sample.” As soon as the word “should” pops into the juror’s mind, the juror may begin thinking that the accused has some type of burden or obligation to present proof.

However, this problem is solvable. The trial judge can eliminate or minimize the risk that the jurors will fall into this erroneous thinking by explicitly and forcefully reminding the jury that: The prosecution has the burden of proving every essential element of the charged crime beyond a reasonable doubt, the accused has no burden on those issues, and the accused has no obligation to produce evidence to establish his or her innocence. At least at defense counsel’s request, the judge should be required to administer that instruction to the jury. Several courts have held that the judge’s delivery of such an instruction undercuts the constitutional objection to the admission of the testimony about the sample’s availability for retesting. In the *Mason* case, the Court of Appeals for the Armed Forces found error, but held that the delivery of such an instruction

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144. Id.
145. The defense bar may not favor imposing a *sua sponte* obligation on the trial judge to administer such an instruction. If their trial strategy involves deemphasizing the incriminating DNA evidence and defending on another theory, they may fear that the instruction will only serve to highlight the DNA evidence. *But see Lakeside v. Oregon*, 435 U.S. 333, 340-41 (1978) (holding, even over defense objection, that a trial judge may instruct a jury that they may not infer guilt from the accused’s silence at trial).
rendered the error harmless beyond a reasonable doubt.\textsuperscript{147}

Of course, there are those who question the efficacy of similar jury instructions.\textsuperscript{148} Is it realistic to think that the jury will be willing and able to follow the instruction and avoid thinking that the accused has a burden? In the vast majority of cases, the courts presume that jurors will make a good faith effort to comply with judicial instructions and that the instruction will be reasonably effective.\textsuperscript{149} However, in extreme cases,\textsuperscript{150} even the Supreme Court has found it fanciful to think that a juror could perform the mental gymnastics of complying with a judicial instruction. Those cases, though, involved certain common denominators, all of which represented a "perfect storm" of concurring factors to render the instruction ineffective:

In all these cases, the evidence was directly relevant to a critical issue in the case, and the source of the evidence was a declarant who presumably had personal knowledge of the facts [of the case]. In these circumstances, it would be very difficult for a rational juror to disregard the probative worth of the evidence.\textsuperscript{151}

The case against the efficacy of an instruction on the burden of proof regarding testing and retesting seems far less compelling.

2. The measure of the burden

The remaining potential defense argument is that the admission of the evidence about the sample’s availability for retesting enables the prosecution to wrongfully increase the quantum of evidence that it uses to establish guilt beyond a reasonable doubt. To appreciate this argument, it is critical to distinguish it from another argument. This is not a case in which, during closing arguments, the prosecutor misstated the measure of the burden by using language that could mislead the jury into relaxing the threshold for conviction.\textsuperscript{152} For example, the prosecutor is not telling the

\begin{footnotesize}
\textsuperscript{147} Mason, 59 M.J. at 424-26.


\textsuperscript{150} Id. at 439-40 (discussing Shepard v. United States, 290 U.S. 96 (1933) (rejecting the prosecution’s argument that a limiting instruction as to purpose would have been effective)); Bruton v. United States, 391 U.S. 123, 133 (1968) (rejecting the prosecution’s argument that a limiting instruction as to party would be effective); Jackson v. Denno, 378 U.S. 368, 389 (1964) (rejecting the prosecution’s argument that a curative instruction to disregard would be effective).

\textsuperscript{151} CARLSON \& IMWINKELRIED, supra note 149, § 15.3(A), at 441.

\end{footnotesize}
jury that they can find reasonable doubt only if they can articulate a reason for their doubt as to the accused’s guilt. In that case, the prosecutor’s remarks can have the negative effect of lowering the measure of the burden. Rather, in the situation now under consideration, the prosecutor’s remark can have the affirmative effect on the jurors’ minds of seemingly increasing the quantum of proof presented to satisfy the standard of proof beyond a reasonable doubt. The prosecutor is discussing the significance of the testimony about the sample’s availability for retesting; in the course of that discussion, the prosecutor invites the jury to reason that the testimony is substantive evidence that the jurors may consider in deciding whether there is proof beyond a reasonable doubt. Is that invitation unconstitutional?

It is submitted that the answer to that question turns on the analysis set out in Part II of this article. The first two theories of logical relevance discussed in Part II focus on the conduct of members of the defense team. The initial theory was a credibility theory that would be used to impeach a defense expert. In contrast, the second theory treated the defense’s failure to retest as substantive evidence, that is, an admission by conduct on the part of the accused. There is some tension between the second theory and the constitutionally mandatory burden of proof beyond a reasonable doubt. If the prosecutor relied on this theory in closing argument, the prosecutor would be converting the accused’s inaction into substantive evidence and then employing that substantive evidence to satisfy the mandated burden. The defense could plausibly argue that, in effect, the prosecutor is attempting to impose a burden on the accused; the accused would have a burden in the practical sense that if he or she did not retest, their failure would provide substantive evidence against them.

However, as Part II noted, there is a sounder theory of logical relevance for admitting evidence of the sample’s availability for defense retesting. Rather than focusing on a member of the defense team, the fourth theory shifts attention to the prosecution expert who conducts the original test. Under this theory, in order to persuade the jury to ascribe significant weight to the government expert’s testimony, the prosecutor may show that the expert followed sound scientific practice by facilitating an independent replication of the test. Moreover, if the government expert realizes that his or her analysis can be challenged by retesting, the expert has greater motivation to scrupulously follow correct procedure in conducting the original test. This is not only a plausible theory of logical relevance; there is also no inconsistency or tension between the theory and the

153. See Humphrey v. Cain, 120 F.3d 526, 526 (5th Cir. 1997) ("[S]erious doubt for which good reason can be given violated due process."); Beverly v. Walker, 118 F.3d 900, 900-01, 903 (2d Cir. 1997) (holding that for a doubt to be reasonable, a juror should be able to communicate the reason for it to his or her fellow jurors).
constitutionally mandated burden of proof. In arguing that the government has met the required standard of proof beyond a reasonable doubt, the prosecutor is relying on a sound, legitimate theory of logical relevance to enhance the weight of the prosecution’s evidence.

Of course, if the trial judge foreclosed the prosecutor from employing the admission by conduct theory, but permitted the prosecutor to resort to the fourth theory, the defense counsel might request a limiting instruction on the testimony about the sample’s availability for retesting. The preceding discussion of the allocation of the burden pointed out that, on occasion, the Supreme Court has held that a limiting instruction was constitutionally inadequate protection against the misuse of the prosecution’s evidence. However, the same discussion noted that those occasions are rare. Once again, the common denominators of these Supreme Court decisions are lacking in the instant fact situation.

IV. CONCLUSION

If the trend continues toward the view that it is permissible for prosecutors to adduce testimony that the physical evidence analyzed by prosecution experts was available for defense retesting, that ruling will have an immediate impact on many of the participants in the criminal justice system. Prosecutors will have a potent argument to convince the jury that government experts observed the correct procedure in conducting the original test. For their part, defense counsel will have to give additional thought to requesting retesting and, if necessary, moving for funds to hire an expert to retest. A defense counsel who neglects to seriously explore the retesting option might well be found guilty of ineffective assistance of counsel and malpractice. Finally, trial judges will have to think long and hard before denying an indigent accused’s motion for funds for an independent retest. A consensus admitting testimony of the sample’s

154. *See* Fed. R. Evid. 105 (“When evidence which is admissible ... for one purpose but not admissible ... for another purpose is admitted, the court, upon request, shall restrict the evidence to its proper scope and instruct the jury accordingly.”).


157. *See supra* Part II.B (discussing the holding in *Ake* that in some cases, the accused has a due process right to the appointment of an expert. The judge may well be more favorably disposed if the accused seeks funds for an expert to retest rather than for an expert to perform the limited function of critiquing a test already conducted by the prosecution; the former type of appointment is more likely to serve the public interest in obtaining a verdict consistent with the accused’s factual guilt or innocence. However, as defense counsel can sometimes forego seeking such appointments precisely because they fear that a retest will only confirm their client’s guilt. Counsel are especially likely to decide against filing the motion if, in that jurisdiction, the prosecution could discover the results of the retest.); *supra*
availability for retesting will raise the stakes in such motions. If the judge
denies the motion, the judge may be handicapping the defense in a bona
fide effort to expose an improperly conducted test. Further, if the judge
rejects the motion, the judge will probably have to bar the otherwise
admissible testimony about the sample's availability. When the accused is
indigent and the judge refuses to provide funding for a retest, the sample is
"available" to the defense in only the most theoretical sense, and it would
obviously be unfair to allow the prosecutor to introduce the testimony.158

More fundamentally, though, the consensus would drive home two key
lessons to all the participants in the system. The first lesson is the
importance of the issue of correct testing procedure. As the Supreme Court
observed in Daubert, the scholarly articles addressing the general standard
for admitting scientific evidence were "legion."159 The rendition of the
Daubert decision then proceeded to generate further, considerable literature
on that subject.160 That subject is undeniably worthy of attention. However,
as the Introduction pointed out, in the proficiency studies of forensic
testimony, the most common cause of misanalysis is the failure to observe
correct testing procedure.161 The expert employed a methodology that
satisfies the validation standard announced in Daubert, but the expert either
forgot to take a required step in the procedure or intentionally took a
shortcut, perhaps due to time constraints. The debate over the general
standard for admitting expert testimony has sometimes obscured the vital
issue of the use of correct test procedures.

The second lesson will be a more complete understanding of scientific
methodology. Daubert was a step in the right direction. Under the prior

note 39 and accompanying text (discussing the split of authority over the question of
whether either the attorney-client privilege or the work product protection applies to such
defense records).

158. The trial judge, exercising his or her discretion under FRE 403, might bar the
evidence to avoid undue delay and distraction. If the judge were to admit the testimony
about the sample's unavailability, the defense would probably present testimony explaining
the accused's inability to pay for retesting. Thus, some judges believe they have the
authority to exclude a proponent's expert testimony when the opponent is too poor to afford
J., concurring); Victor G. Savikas & David L. Silverman, Making the Poverty Objection:
Parties Without Fancy Exhibits Could Claim Unfair Prejudice, But Not All Judges Would
Agree, 31 NAT'L L.J., July 26, 1999, at C1, C6. But see generally Edward J. Imwinkelried,
Impoverishing the Trier of Fact: Excluding the Proponent's Expert Testimony Due to the


160. Edward J. Imwinkelried, The Daubert Decision on the Admissibility of Scientific
Evidence: The Supreme Court Chooses the Right Piece for All the Evidentiary Puzzles, 9 ST.

161. See PETERSON ET AL., supra note 26 and accompanying text.
Frye standard,\textsuperscript{162} the courts focused on the general acceptance of the scientific theory or technique. However, the popularity of a technique is merely a rough surrogate or proxy for its validity.\textsuperscript{163} Daubert abandoned that crude proxy and forced the bench and bar to deal directly with the genuine determinants of scientific validity, such as the extent and caliber of the empirical testing of a theory.\textsuperscript{164} The courts began grappling with such issues as the size of databases, their representativeness, and the realism of the testing conditions. Daubert thus prompted a better understanding of the scientific processes involved in the original testing of scientific hypotheses. However, even that improved understanding is incomplete. As Professor Ziman has stressed, in reality there are two reasons for trusting a scientifically validated proposition.\textsuperscript{165} One is the quality of the original testing of the hypothesis.\textsuperscript{166} The other is the openness of the scientific tradition: facilitating the replication of the original test to expose flaws.\textsuperscript{167} The opportunity for retesting is one of the greatest strengths of scientific methodology.\textsuperscript{168} Hopefully, the controversy over the admissibility of testimony of samples' availability for retesting will help the legal community develop a deeper understanding of one of the fortes of the scientific process.

\textsuperscript{162.} Frye v. United States, 293 F. 1013, 1014 (D.C. Cir. 1923).
\textsuperscript{164.} \textit{Id.} at 724.
\textsuperscript{165.} ZIMAN, \textit{supra} note 1, at 64, 68, 75-76.
\textsuperscript{166.} \textit{See id.} at 64, 68, 75.
\textsuperscript{167.} \textit{See id.} at 64, 68, 75-76.
\textsuperscript{168.} \textit{Id.}