Georgia State University Law Review

Volume 34
Issue 4 *Summer 2018*

Article 1

8-1-2018

Garbage In, Garbage Out: Revising Strickland As Applied To Forensic Science Evidence

Mark Loudon-Brown
Southern Center for Human Rights, mloudonbrown@schr.org

GARBAGE IN, GARBAGE OUT: REVISING *STRICKLAND* AS APPLIED TO FORENSIC SCIENCE EVIDENCE

Mark Loudon-Brown*

INTRODUCTION

As a public defender some years ago, I tried a case in which the prosecution sought to admit the results produced by a software program called the Forensic Statistical Tool, or "FST."[1] At the time, FST had recently been developed and put into use by the Office of the Chief Medical Examiner (OCME) of New York City to analyze mixtures of DNA recovered from potentially incriminating evidence.[2] It was a new program, novel by my estimation, so I filed a motion requesting a *Frye*[3] hearing to challenge the admissibility of the incriminating results produced by the software. The motion spanned some thirty pages, complete with exhibits that included various laboratory reports and articles regarding the OCME's proffered validation studies. I handed a courtesy copy of the relatively bulky motion to the judge one morning at the beginning of court. He denied the request without so much as turning the first page.

Unfortunately, this type of judicial reaction to an admissibility challenge is not uncommon. Judges routinely overrule admissibility challenges, as if to say, "once admissible, always admissible." As one practitioner has observed, "Even when the most vulnerable forensic sciences—hair microscopy, bite marks, and handwriting—are attacked, the courts routinely affirm admissibility citing earlier

* Senior Attorney, Southern Center for Human Rights. Many thanks to Patrick Mulvaney, Managing Attorney of the Capital Litigation Unit at the Southern Center for Human Rights, for discussing ideas and reading drafts.

1. The record of the case has since been sealed, so all identifying information has been withheld.

2. For a more detailed discussion of the FST software, see *People v. Collins*, 15 N.Y.S.3d 564, 567, 577–82 (Sup. Ct. 2015). There the court found that the results produced by the FST software did not meet the *Frye* test. *Id.* at 587.

3. *See* Frye v. United States, 293 F. 1013 (D.C. Cir. 1923). The case was tried in the Bronx, New York, which is a *Frye* jurisdiction.

decisions rather than facts established at a hearing."[4] A prominent federal judge and law school dean concurred in a piece that they coauthored:

> [J]udges frequently rely on the experience of a forensic practitioner, and the long-standing use of a given technique, rather than focusing on the technique's scientific validity. . . . Therefore, even as many judges have come to recognize the weak scientific underpinnings of some methods, they continue to allow such testimony primarily because nearly all other judges have done so before.[5]

If sophisticated-sounding scientific evidence is an undesirable subject matter for a judge to tackle anew, it can be even more daunting for a defense attorney to confront, particularly one faced with a crushing caseload. It can be tempting to avoid a challenge to a vulnerable forensic science discipline—be it new, novel, or simply recently called into question—when the lawyer reasonably believes that the evidence will be admitted regardless.[6] Worse still, it may seem reasonable to disregard any adversarial challenge to incriminatory science altogether, and to opt instead for a different defense or to encourage a guilty plea. With hundreds of other clients to assist, why invest the time and resources needed to comprehend a new scientific technique sufficiently to cross-examine an expert who has dedicated his or her career to learning the field?[7] It is an

4. Peter J. Neufeld, *The (Near) Irrelevance of* Daubert *to Criminal Justice and Some Suggestions for Reform*, 95 AM. J. PUB. HEALTH S107, S110 (2005); *see also* Hon. Alex Kozinski, *Criminal Law 2.0*, 44 GEO. L.J. ANN. REV. CRIM. PROC. III, at XXXV (2015) ("Few defense lawyers challenge the reliability of expert evidence because few trial judges grant requests for *Daubert* hearings.").

5. Harry T. Edwards & Jennifer L. Mnookin, *A Wake-Up Call on the Junk Science Infesting Our Courtrooms*, WASH. POST (Sept. 20, 2016), https://www.washingtonpost.com/opinions/a-wake-up-call-on-the-junk-science-infesting-our-courtrooms/2016/09/19/85b6eb22-7e90-11e6-8d13-d7c704ef9fd9_story.html?utm_term=.833de5d38ced [http://perma.cc/BT3C-KJHC].

6. If this decision seems reasonable to the defense attorney, all the more reasonable it will look to a court of review searching for reasons to affirm a conviction.

7. *See* Neufeld, *supra* note 4 ("Unlike the extremely well-litigated civil challenges, the criminal defendant's challenge is usually perfunctory. . . . Defense lawyers generally fail to build a challenge with appropriate witnesses and new data. Thus, even if inclined to mount a *Daubert* challenge, they lack

intimidating endeavor. Defense challenges to forensic evidence, therefore, are often inconsequential at best or incompetent at worst.[8]

The appellate courts have not rectified this situation or the incentives it engenders. Admissibility decisions are reviewed for abuse of discretion.[9] Claims of ineffective assistance of counsel (IAC) succeed only upon satisfaction of the highly deferential two-pronged standard announced in *Strickland v. Washington*.[10] As one solution, I propose that when it comes to the admission of forensic science evidence against a criminal defendant at trial, the *Strickland* standard should be altered.

Once a reviewing court finds that an attorney performed deficiently in combating incriminating forensic science evidence, *Strickland* prejudice should be presumed. In other words, if a reviewing court has determined that trial counsel was deficient in his or her adversarial testing of incriminating forensic evidence, that court *must* reverse the conviction and order a new trial, lest defendants be deprived of their Sixth Amendment right to effective assistance of counsel and the integrity of convictions founded on forensic evidence be left in doubt. It should not matter whether, in the opinion of a court reading a cold record that was deficiently developed as far as the forensic science is concerned, the defendant was prejudiced by the deficiency.

A few benefits would flow from this revision. First, rather than allowing courts to bypass the deficiency prong in favor of finding no prejudice, the revision would require courts to address the deficiency question when incriminating forensic science evidence is at issue—if the court finds defense counsel's assistance sufficient, the inquiry

---

the requisite knowledge and skills, as well as the funds, to succeed.").

8. *Id.*

9. Gen. Elec. Co. v. Joiner, 522 U.S. 136, 139 (1997). One former federal judge has suggested that this standard of review change. Kozinski, *supra* note 4, at xxxv. "Failure to hold a *Daubert* hearing where the reliability of expert evidence has been credibly challenged should be considered an error of law, as should the refusal to allow a defense memory expert where the case turns on conflicting recollections of past events." *Id.*

10. Strickland v. Washington, 466 U.S. 668, 687 (1984). The two prongs are (1) deficient performance and (2) prejudice to the defense. *Id.*

ends; if not, the court, in reversing, thereby reiterates citable standards for defense counsel going forward. This, in turn, would act as an enforcement mechanism to ensure that the criminal defense bar performs consistently with what is constitutionally required of it in the future.

Second, presuming prejudice in the forensic science IAC context will more properly police trial courts that are inclined to treat challenges to forensic evidence hastily and help ensure the integrity of convictions based on forensic science. Rather than asking courts to undertake the nigh impossible task of deciphering how an effective challenge to sophisticated scientific evidence could hypothetically have altered the outcome of a case, the law would ensure that the science is effectively challenged in the first place.

I. The Foundation to Alter Strickland

In 1984, the United States Supreme Court, in *Strickland v. Washington*, held that to succeed on a claim of ineffective assistance of counsel, a defendant must show that his or her counsel's performance was deficient and that the deficiency prejudiced the defense.[11] The defendant must demonstrate both prongs; so, reviewing courts are permitted to skip right to the prejudice prong and find against a defendant on prejudice grounds, even if defense counsel was deficient.[12] In fact, the *Strickland* Court actually encouraged reviewing courts to bypass the deficiency prong if the prejudice prong is dispositive:

> [A] court need not determine whether counsel's performance was deficient before examining the prejudice suffered by the defendant as a result of the alleged deficiencies. The object of an ineffectiveness claim is not to grade counsel's performance. If it is easier to dispose of an ineffectiveness claim on the ground of lack of sufficient

11. *Id.*
12. *Id.* at 697.

> prejudice, which we expect will often be so, that course should be followed. Courts should strive to ensure that ineffectiveness claims not become so burdensome to defense counsel that the entire criminal justice system suffers as a result.[13]

By only engaging in a prejudice analysis and bypassing the deficiency question, as courts are wont to do under *Strickland*,[14] reviewing courts neglect their duty to ensure the integrity of convictions based on forensic science evidence and to ensure the constitutional guarantee of effective assistance of counsel in such cases.

---

13. *Id.*

14. For example, concurring in the judgment in *Harrington v. Richter*, Justice Ginsburg agreed that by "failing even to consult blood experts in preparation for the murder trial," trial counsel did not function as the "counsel" envisioned by the Sixth Amendment. 562 U.S. 86, 113 (2011) (Ginsburg, J., concurring). Nevertheless, Justice Ginsburg did not believe the "strong force of the prosecution's case" was reduced sufficiently to warrant relief. *Id.* at 113–14 (Ginsburg, J., concurring). *See also, e.g.*, Ellis v. Raemisch, 872 F.3d 1064, 1090 (10th Cir. 2017) ("[W]e have yet another reason for concluding that Mr. Ellis has failed to establish prejudice related to Mr. Stayton's decision (assumed to be erroneous) for failing to consult and/or call as an expert witness Dr. Long."); Friedlander v. United States, 570 F. App'x 883, 887 (11th Cir. 2014) ("Because we conclude that Dr. Friedlander has failed to satisfy the prejudice prong of *Strickland* with respect to the ineffective assistance of counsel claims contained in the certificate of appealability, we affirm the denial of his motion to vacate."); Schlesinger v. United States, 898 F. Supp. 2d 489, 499 (E.D.N.Y. 2012) ("[A] Court need not examine a petitioner's claims under both prongs of the *Strickland* analysis if those claims are plainly deficient under either one. In this case, the petitioner's claims of ineffective assistance of counsel fail in the absence of demonstrable prejudice."); Duronio v. United States, No. 10-1574 (JLL), 2012 WL 78201, at *3 (D. N.J. Jan. 10, 2012) ("With this framework in mind, the Court now turns to Petitioner's arguments and will first address whether Petitioner set forth facts to support the arguments that he suffered prejudice as a result of Mr. Adams's alleged deficiencies."); Redmon v. Johnson, No. S16H1197, 2018 WL 415714, at *3 (Ga. Jan. 16, 2018) (per curiam) (noting that where a habeas court incorrectly rules that counsel was not deficient, if the appellate court finds no prejudice, "an appeal would result in affirming the habeas court's judgment"); Hodges v. State, 213 So.3d 863, 874 (Fla. 2017) ("In light of the totality of the evidence, we affirm the trial court's denial of relief on the ground that there is no reasonable probability that more thorough preparation by trial counsel through consultation with experts would have made any difference to the outcome of the trial."); Lupoe v. State, 794 S.E.2d 67, 77 (Ga. 2016) ("[A]ssuming, without deciding, that a timely special demurrer would have had merit and that trial counsel performed deficiently rather than strategically in failing to file one, Lupoe has not shown prejudice."); People v. Snell, No. 2-08-0949, 2011 WL 10088352, at *12 (Ill. App. Ct. Jan. 21, 2011) ("Defendant's argument that expert testimony regarding shaken baby syndrome should have been subjected to a *Frye* hearing lacks merit, and defendant, therefore, cannot establish prejudice.").

Today, almost thirty-four years later, the *Strickland* standard still governs. Yet the *Strickland* Court articulated the standard before the advent of forensic DNA testing, before the emergence of electronically stored information as evidence in a criminal case, and years before disciplines long believed reliable—such as fingerprint, hair, toolmark, bitemark, and fire analysis, and even Shaken Baby Syndrome—were exposed as fraught with error.[15] In a groundbreaking report issued in 2009, the National Research Council of the National Academies found that "no forensic method other than nuclear DNA analysis has been rigorously shown to have the capacity to consistently and with a high degree of certainty support conclusions about 'individualization' (more commonly known as 'matching' of an unknown item of evidence to a specific known source)."[16] Since *Strickland*, the law governing the admissibility of forensic evidence has evolved,[17] but *Strickland* has not.

In other contexts, however, the IAC inquiry operates differently. The Supreme Court has recognized that prejudice should be presumed,[18] or the prejudice standard lowered,[19] when addressing certain types of ineffectiveness claims. In *Powell v. Alabama*, the Court found that the defendant was denied effective assistance of counsel after his counsel was rushed to trial without time to prepare a defense in a publicized case, which deprived the defendant of "the right of counsel in any substantial sense."[20] Under those circumstances, "[n]either [counsel] nor the court could say what a prompt and thorough-going investigation might disclose as to the

15. PRESIDENT'S COUNCIL OF ADVISORS ON SCI. AND TECH., FORENSIC SCIENCE IN CRIMINAL COURTS: ENSURING SCIENTIFIC VALIDITY OF FEATURE-COMPARISON METHODS 23 (2016) [hereinafter PCAST Report].

16. NAT'L RESEARCH COUNCIL OF THE NAT'L ACADS., STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES: A PATH FORWARD 87 (2009) [hereinafter NAS Report]. A subsequent report in 2016 concluded that "many forensic feature-comparison methods have historically been *assumed* rather than *established* to be foundationally valid based on appropriate empirical evidence." PCAST Report, *supra* note 15, at 122 (emphasis in original).

17. *See, e.g.*, Kumho Tire Co. v. Carmichael, 526 U.S. 137, 141–42 (1999) (extending *Daubert*); Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 589–90 (1993) (altering the *Frye* test).

18. Powell v. Alabama, 287 U.S. 45, 58, 73 (1932).

19. Cuyler v. Sullivan, 446 U.S. 335, 349–50 (1980).

20. *Powell*, 287 U.S. at 58.

facts."[21] Accordingly, prejudice was presumed, and the conviction was reversed.[22]

Later, in *Cuyler v. Sullivan*, the Supreme Court held that to establish a Sixth Amendment violation based on the claim that the defendant's attorney was laboring under an actual conflict of interest, the defendant must show that the lawyer's performance was adversely affected.[23] "Thus, a defendant who shows that a conflict of interest actually affected the adequacy of his representation need not demonstrate prejudice in order to obtain relief."[24] In so holding, the *Cuyler* Court referred to *Glasser v. United States*,[25] where the Supreme Court observed that, "[t]o determine the precise degree of prejudice sustained . . . is at once difficult and unnecessary. The right to have the assistance of counsel is too fundamental and absolute to allow courts to indulge in nice calculations as to the amount of prejudice arising from its denial."[26]

Then, in *United States v. Cronic*,[27] decided the same day as *Strickland*, the Supreme Court reiterated that meaningful adversarial testing is an integral part of the constitutional right to effective assistance of counsel:

> The right to the effective assistance of counsel is thus the right of the accused to require the prosecution's case to survive *the crucible of meaningful adversarial testing*. When a true adversarial criminal trial has been conducted—even if defense counsel may have made demonstrable errors—the kind of testing envisioned by the Sixth Amendment has occurred. But if the process loses its character as a confrontation between adversaries, the

21. *Id.*
22. *Id.* at 73.
23. *Cuyler*, 446 U.S. at 348.
24. *Id.* at 349–50.
25. *Id.* at 348–49.
26. Glasser v. United States, 315 U.S. 60, 75–76 (1942).
27. United States v. Cronic, 466 U.S. 648, 656 (1984).

constitutional guarantee is violated.[28]

Thus, in the Sixth Amendment right-to-counsel context, the showing required to establish a violation can vary with the circumstances. When forensic evidence is at stake, the inquiry should be altered as well. The inability to make an informed prejudice determination is a theme that runs through *Powell*, *Cuyler*, and *Glasser*, especially where there was a breakdown in the ability of a defense attorney to effectively engage in a meaningful adversarial testing of the government's case.[29] That these cases were decided before *Strickland* does not alter the principle for which they stand, namely, that where prejudice is difficult or impossible to determine, the test for determining ineffective assistance of counsel should be different. Where a defense attorney is deficient in failing to subject incriminatory forensic science evidence to meaningful adversarial testing, prejudice is likewise too difficult, if not impossible, of an inquiry for courts to undertake.

When incriminating forensic science is used against a defendant at trial the IAC inquiry should be different from that announced in *Strickland*, especially given the rapidly growing importance of such evidence within the criminal legal system and the complexities inherent in the various forensic disciplines.[30] Upon a finding that counsel has been deficient in meaningfully combating incriminating forensic science evidence, the reviewing court should reverse the conviction without further inquiry into prejudice.

---

28. *Id.* at 656–57 (emphasis added).

29. *See generally* Cuyler v. Sullivan, 446 U.S. 335 (1980); *Glasser*, 315 U.S. at 60; Powell v. Alabama, 287 U.S. 45 (1932).

30. This idea has been acknowledged and foretold elsewhere. For example, "The Supreme Court may ultimately determine that when counsel fails to request a *Daubert* hearing or query forensic evidence pre-trial, this dereliction is equally as damaging as failing to cross-examine experts at trial." Valena Beety, *Changing the Culture of Disclosure and Forensics*, 73 WASH. & LEE L. REV. ONLINE 580, 584 (2017). "The determination that counsel is effective, or not, is tied to 'reasonableness under prevailing professional norms,' and those norms are changing." *Id.*

II. The Deficiency Prong Is Important

Courts, in determining whether defense counsel was deficient, often look to the applicable practice guidelines and ethical standards.[31] In *Wiggins v. Smith*, the Supreme Court noted that the standards articulated by the American Bar Association (ABA) are "standards to which we long have referred as 'guides to determining what is reasonable.'"[32] Then, in *Rompilla v. Beard*,[33] the Supreme Court quoted directly from the applicable ABA standards as a guide for what is reasonable performance by an attorney:

> It is the duty of the lawyer to conduct a prompt investigation of the circumstances of the case and to *explore all avenues leading to facts relevant to the merits of the case* and the penalty in the event of conviction. . . . The duty to investigate exists regardless of the accused's admissions or statements to the lawyer of facts constituting guilt or the accused's stated desire to plead guilty.[34]

Applying that standard to a case involving forensic science evidence, then, defense counsel must inform themselves about and understand the forensic evidence in their cases sufficiently to enable an effective challenge.

The ABA Model Rules of Professional Conduct, meanwhile, require "competent representation," defined as "the legal knowledge, skill, thoroughness and preparation reasonably necessary for representation."[35] Therefore, an attorney must acquire knowledge of and skill in the relevant forensic science prior to a trial (or prior to counseling a client to plead guilty) in order to provide competent

31. *See, e.g.*, Wiggins v. Smith, 539 U.S. 510, 524 (2003); Williams v. Taylor, 529 U.S. 362, 396 (2000).

32. *Wiggins*, 539 U.S. at 524 (quoting *Strickland*, 466 U.S. 668, 688 (1984)); *see also Williams*, 529 U.S. at 396 (referencing the ABA Standards for Criminal Justice and accompanying commentary).

33. Rompilla v. Beard, 545 U.S. 374, 387 (2005).

34. *Id.* (quoting STANDARDS FOR CRIMINAL JUSTICE 4-4.1 (AM. BAR ASS'N 1993)) (emphasis added).

35. MODEL RULES OF PROF'L CONDUCT r. 1.1. (AM. BAR ASS'N 2015).

representation.[36] "In determining whether a lawyer employs the requisite knowledge and skill in a particular matter, relevant factors include . . . whether it is feasible to refer the matter to, or associate or consult with, a lawyer of established competence in the field in question."[37] This guideline explicitly provides another option to an attorney who is too daunted by the notion of learning science to do so himself or herself: associate with an attorney with the requisite knowledge and experience to test the evidence in a meaningfully adversarial way.[38]

As former federal judge Nancy Gertner implored, "Counsel have to learn that advocacy in cases involving forensic evidence requires familiarity with the kind of issues the National Academy of Sciences (NAS) Report raised. And further, courts need to make it clear that such familiarity may be one of the benchmarks in evaluating when assistance of counsel is constitutionally ineffective."[39] This imperative highlights the reasons why courts should be compelled to review the alleged deficiency of attorneys in any cases involving forensic science—doing so solidifies with the force of the law what is mandated of lawyers and reminds both attorneys and judges of the benchmarks against which to review attorney performance in the future.[40] Indeed, "Sixth Amendment right-to-counsel rulings may increasingly cement the obligation of the defense to seek discovery on forensics and to retain experts who can independently examine the analysis conducted and opine on its reliability."[41]

---

36. *See id.*

37. *Id.* at cmt. 1.

38. *Id.*

39. Nancy Gertner, *Commentary on the Need for a Research Culture in the Forensic Sciences*, 58 U.C.L.A. L. REV. 789, 792 (2011). Judge Gertner issued a standing order in her courtroom, which provided that the admissibility of trace evidence "ought not to be presumed; that it has to be carefully examined in each case, and tested in the light of the NAS concerns, the concerns of *Daubert*/*Kumho*, and Rule 702 of the Federal Rules of Evidence." Procedural Order: Trace Evidence at 3, No. 1:08-cr-10104-NG (D. Mass. Mar. 8, 2010).

40. Gertner, *supra* note 39, at 792.

41. Brandon L. Garrett, *The Crime Lab in the Age of the Genetic Panopticon*, 115 MICH. L. REV. 979, 990 (2017). As the inquiry pertains to seeking and securing necessary discovery, the *ABA Standards for Criminal Justice: DNA Evidence* (3d ed. 2007) provide an accessible guide for what should, at a minimum, be expected of counsel. Analogues can be drawn from that guide to other forensic

In the meantime, however, "a defense attorney could provide effective assistance under the constitutional standard (*Strickland*) and yet be incompetent under the ABA Model Rule because the latter does not require a showing of prejudice."[42] This should not, and need not, be the case when forensic science evidence is involved, and Judge Gertner recognized as much.[43] "While the constitutional ineffective assistance of counsel standard under *Strickland v. Washington* is notoriously low, the standard with respect to scientific evidence should be different."[44] The deficient performance prong is vital for courts to address when incriminating forensic science evidence is at issue. If that prong is not satisfied, the deficiency alone should suffice to constitutionally entitle a defendant whose liberty is at stake to a new trial—at which the forensic science is subject to meaningful adversarial testing.

III. Abandoning the Prejudice Prong

A. Judges Aren't Scientists

Determining prejudice where defense counsel failed to meaningfully test incriminating forensic evidence is a fanciful endeavor. Judges are not scientists. A study conducted in 2001 concluded with resounding clarity that judges, as a whole, are not institutionally equipped to make probative determinations regarding forensic science.[45] A survey of 400 judges revealed that 48% believed that their education was insufficient to adequately prepare them to deal with the range of scientific evidence proffered in their

disciplines.

42. Paul C. Gianelli et al., *Forensic Experts and Ineffective Assistance of Counsel*, 48 CRIM. L. BULL. 1, 2 (2012).

43. Gertner, *supra* note 39, at 792.

44. *Id.* at 792–93; *see also* Neufeld, *supra* note 4, at S110 ("[T]he principal failing of *Daubert* is its misplaced reliance on a robust adversarial system to expose bad science. In reality the playing field is not level, and the system is anything but robust.").

45. *See* Sophia I. Gatowski et al., *Asking the Gatekeepers: A National Survey of Judges on Judging Expert Evidence in a Post*-Daubert *World*, 25 L. & HUM. BEHAV. 433, 442 (2001).

courtrooms.[46] Perhaps even more telling, however, was the following finding:

> Although the majority of judge–respondents reported falsifiability to be useful when determining the merits of proffered scientific evidence, the results clearly indicate that most judges did not fully understand the scientific meaning of this concept.
>
> From the answers that were provided, the researchers could only infer a true understanding of the scientific meaning of falsifiability in 6% (*n* = 23 of 400) of the judge's responses.[47]

When asked to elaborate on the meaning of "falsifiability," judicial answers included, "I would want to know if the evidence was falsified," and "I would look at the results and determine if they are false."[48] In fact, the concept of falsifiability has nothing to do with the evidence or test results in a given case, but rather it asks a threshold question of whether a given scientific *theory* is refutable or testable.[49]

Meanwhile, only 4% of the judges who indicated that error rate was a useful criterion for determining admissibility of proffered scientific evidence had a true understanding of the concept of "error rate."[50] Yet error rate was one of the factors *Daubert* explicitly

46. *Id.*
47. *Id.* at 444.
48. *Id.* at 445.
49. *See, e.g.*, KARL POPPER, CONJECTURES AND REFUTATIONS: THE GROWTH OF SCIENTIFIC KNOWLEDGE 48 (5th ed. 1989) ("[T]he criterion of the scientific status of a theory is its falsifiability, or refutability, or testability."). This explanation can be found in *Daubert* itself. *See* Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 593 (1993) ("Ordinarily, a key question to be answered in determining whether a theory or technique is scientific knowledge that will assist the trier of fact will be whether it can be (and has been) tested.").
50. Gatowski et al., *supra* note 45, at 447.

instructed judges to consider in making admissibility determinations.[51]

The study concluded that:

> [A]lthough the judges confidently and overwhelmingly responded that the *Daubert* criteria were useful decision-making guides, the majority did not seem to recognize or acknowledge their lack of understanding about how to apply some of the guidelines as part of the admissibility decision-making process.
>
> This is an important finding. Judges' difficulty operationalizing the *Daubert* criteria, especially falsifiability and error rate, suggests limitations in the judiciary's understanding of science.[52]

These findings are hardly surprising; judges, after all, are non-scientists who are expected to efficiently handle diverse and demanding caseloads. But if trial judges do not know science, what makes a reviewing judge any more knowledgeable? And if a reviewing judge does not know science any better, then how can such a judge weigh the incriminating forensic science evidence against an ineffective science-based challenge to arrive at a reliable probative determination as to prejudice? Moreover, because the inquiry is within the context of an IAC claim, judges may be attempting to make this prejudice determination from a deficiently-developed record.

Further complicating the inquiry is the "CSI Effect," that is, "the idea that certain television programs . . . along with high-profile cases involving DNA tests, fiber analysis, and fingerprinting databases,

51. *Daubert*, 509 U.S. at 594. Indeed, error and uncertainty are complicated yet crucial concepts to understand in order to ensure the accuracy of forensic evidence. *See generally* Ted Vosk, *Uncertain Justice Measurement: Uncertainty and the Discovery of Truth in the Courtroom*, 54 JUDGES' J. 8, 8–11, 39 (2015).

52. Gatowski et al., *supra* note 45, at 452–53.

ha[ve] led members of the public to believe that forensic evidence [is] both widely available and almost infallible."[53] Although the extent to which this effect has a bearing on a given case may be debatable,[54] its presence hovers over all trials involving forensic evidence: from attorney voir dire to jury deliberation to judicial decision-making. This additional intangible factor is inaccessible to a reviewing judge's prejudice inquiry.

B. Unjust Results

A reviewing court should not be the institution entrusted to make the critical prejudice inquiry when there has been a deficient challenge to forensic science; reviewing judges are ill-suited to that task when incriminating forensic science evidence is at issue. Consider again the CSI effect briefly mentioned above. Conservatively interpreted, the CSI effect suggests that jurors will have preconceived notions, one way or the other, when confronted with forensic science evidence.[55] Some may treat it as infallible, others may be suspicious. But what we do know for certain is that people are wrongfully convicted because of the misapplication of forensic science.[56] If jurors wrongfully convict people based on faulty forensic science (which they do), and if judges do not understand how forensic science—faulty or not, adequately tested or not—affects juries (which they do not), then why are judges relied on to determine how (hypothetically) accurate and (hypothetically)

53. ADAM BENFORADO, UNFAIR: THE NEW SCIENCE OF CRIMINAL INJUSTICE 149 (2015).

54. *See, e.g.*, Kimberlianne Podlas, *The CSI Effect: Exposing the Media Myth*, 16 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 429, 465 (2006) ("If anything, the data hints that, if there is any effect of CSI, it is to exalt the infallibility of forensic evidence, favor the prosecution, or pre-dispose jurors toward findings of guilt."); Donald E. Shelton et al., *A Study of Juror Expectations and Demands Concerning Scientific Evidence: Does the "CSI Effect" Exist?*, 9 VAND. J. ENT. & TECH. L. 331, 359–61 (2006) (finding that in cases charging rape or sexual misconduct, as well as in circumstantial evidence cases, jurors were more inclined to require scientific evidence to convict).

55. Shelton, *supra* note 54, at 359–61.

56. According to data maintained by the Innocence Project, "[m]isapplication of forensic science is the second most common contributing factor to wrongful convictions . . . ." *Misapplication of Forensic Science*, INNOCENCE PROJECT, https://www.innocenceproject.org/causes/misapplication-forensic-science/ [https://perma.cc/4FJQ-QXUU] (last visited July 8, 2018).

adequately-tested forensic science evidence would or would not affect the outcome of a case?

Practical experience demonstrates that the requirement of a prejudice inquiry under these circumstances produces unjust results.[57] One study revealed that of cases involving exonerations following trials at which erroneous forensic evidence was presented, "[d]efense counsel rarely made any objections to the invalid forensic science testimony in these trials and rarely effectively cross-examined forensic analysts who provided invalid science testimony."[58] These were exonerations, *not* IAC reversals. After all, "It is typical in litigation of ineffective assistance of counsel claims, for courts to find that any failures by counsel did not prejudice the defense, including by citing to seemingly 'overwhelming' evidence of guilt."[59]

A stark example of the reluctance of courts to find prejudice, notwithstanding deficient performance, is found in *Hinton v. Alabama*.[60] There, the Supreme Court, in a per curiam opinion, found that the "trial attorney's failure to request additional funding in order to replace an expert he knew to be inadequate because he mistakenly believed that he had received all he could get under Alabama law constituted deficient performance."[61] Mr. Hinton had been sentenced to death after being convicted largely on the basis of firearms and toolmark evidence; the defense expert had only one eye, and thus had difficulty using the forensic microscope during his examination.[62] However, this deficient performance alone was not enough to get Mr. Hinton off of death row.[63] Rather, the Court remanded the case to

57. *See* Brandon L. Garrett, *Constitutional Regulation of Forensic Evidence*, 73 WASH. & LEE L. REV. 1147, 1175 (2016).

58. Brandon L. Garrett & Peter J. Neufeld, *Invalid Forensic Science Testimony and Wrongful Convictions*, 95 VA. L. REV. 1, 89 (2009).

59. Garrett, s*upra* note 57, at 1175.

60. *See generally* Hinton v. Alabama, 134 S. Ct. 1081 (2014).

61. *Id.* at 1088. The Court balked at finding too much deficiency, noting that "the inadequate assistance of counsel we find in this case does not consist of the hiring of an expert who, though qualified, was not qualified enough." *Id.* at 1089.

62. *Id.* at 1085–86.

63. Alan Blinder, *Alabama Man on Death Row for Three Decades Is Freed As State's Case Erodes*,

determine whether the deficient performance prejudiced the defense.[64] Mr. Hinton was later exonerated, but *not* because any court found prejudice.[65] Rather, the case was dismissed by a trial judge after prosecutors conceded that no match could be made between the recovered bullets and the gun.[66] No court-conducted prejudice inquiry ever resulted in a judicial determination that Mr. Hinton's deficient representation prejudiced him—an innocent man convicted and sentenced to death because of inadequate adversarial testing of otherwise incriminating forensic evidence.

Would Mr. Hinton have been exonerated had a proper prejudice inquiry been made? Not necessarily, which gets to the crux of the matter. Consistent with *Strickland*, a reviewing court could find that there was no "reasonable probability"[67] that the outcome would have been different if another, albeit more qualified, expert had been used. That is precisely what the Supreme Court foretold in its *Hinton* decision: "We do not today launch federal courts into examination of the relative qualifications of experts hired and experts that might have been hired."[68] To be fair, that statement was made in the context of a deficiency analysis.[69] But once asserted, it carries equal—if not more—force in a subsequent prejudice determination. If courts are instructed not to second guess whether a lawyer was deficient for hiring an inadequate expert, then *a fortiori* such a decision could not be prejudicial under *Strickland*. Yet in *Hinton*, it clearly was.

N.Y. TIMES (Apr. 3, 2015), https://www.nytimes.com/2015/04/04/us/anthony-ray-hinton-alabama-prison-freed-murder.html [https://perma.cc/BYK2-YSA5].

64. *Hinton*, 134 S. Ct. at 1090.

65. Blinder, *supra* note 63.

66. *See generally Anthony Hinton Exonerated After 30 Years on Death Row*, EQUAL JUST. INITIATIVE, https://eji.org/anthony-ray-hinton-exonerated-from-alabama-death-row [https://perma.cc/TZL3-T448] (last visited July 8, 2018).

67. Strickland v. Washington, 466 U.S. 668, 694 (1984).

68. *Hinton*, 134 S. Ct. at 1089.

69. *Id.*

IV. Presuming Prejudice

Once a reviewing court deems defense counsel constitutionally deficient for failing to subject incriminating forensic science evidence to meaningful adversarial testing,[70] prejudice should be presumed and a new trial ordered. Forensic evidence has become an indispensable field for criminal defense practitioners to tackle. "Criminal cases will arise where the only reasonable and available defense strategy requires consultation with experts or introduction of expert evidence, whether [at] pretrial, at trial, or both."[71] This is especially so in the most serious of criminal cases—homicides, sex offenses, armed felonies—that carry the harshest of punishments—life in prison, life without parole, or even death. In such cases, "defense lawyers must be aware that prosecutors may put fairly unreliable forensic evidence on the stand, and at trial courts have traditionally permitted even invalid or overstated forensics."[72] Unreliable forensic science evidence has been uniquely successful at convicting the innocent.[73] Where the requisite adversarial testing of such evidence is absent, confidence in the outcome is undermined.[74]

Consider the case mentioned at the outset.[75] The *Frye* motion having been perfunctorily denied, the inculpatory results of the FST program will soon be admitted at trial. Counsel then faces a variety of choices, the following of which are neither exhaustive nor mutually exclusive: concede the reliability of the results and argue that the presence of DNA is not incriminating (because of innocent presence or secondary transfer, for instance); present evidence and argue that the admissibility ruling notwithstanding, the underlying validity of the software is not sufficiently established to be trusted; or argue that the results are just wrong, because in this instance the software or the analyst simply made a mistake. Defense counsel

70. *See* United States v. Cronic, 466 U.S. 648, 656–57 (1984).
71. Harrington v. Richter, 562 U.S. 86, 106 (2011).
72. Garrett, *supra* note 57, at 1168.
73. *See Misapplication of Forensic Science*, *supra* note 56 and accompanying text.
74. *See* Strickland v. Washington, 466 U.S. 668, 694 (1984).
75. *See supra* note 1 and accompanying text.

might pursue these theories via cross-examination, the presentation of a defense expert, or both.

Where counsel does none of that before the jury, or does so little as to render deficient assistance, how can a court possibly be situated to reliably determine that an effective attorney would not have achieved a different outcome?[76] Undertaking this inquiry requires answering a host of questions reviewing courts are ill-suited to address. In the case involving FST, for example, how would the jury have responded to an attack on the foundational validity of the software?[77] Or, an attack on the validity as applied?[78] What if the defense attorney had exposed the prosecution as having fallen into the trap of the "Prosecutor's Fallacy,"[79] or explained the "Swamping Effect"?[80] Under these circumstances, a reviewing court cannot reliably or realistically opine on what an adequate adversarial attack on the forensic evidence "might disclose as to the facts."[81]

Maybe the attorney attempted some cross-examination; does that make the reviewing court's job easier? Some scientists think not. "If cross-examination is to be the only way to discover misleading or

76. Regardless of the extent to which evidence is presented in post-trial proceedings in an attempt to create a record demonstrating prejudice, the courts, to determine prejudice, must still engage in guesswork built upon speculation. Pre-trial and mid-trial rulings determine the admissibility of evidence, which affects which witnesses are or are not called, which affects the arguments that are made, all of which bear upon the ultimate outcome, with counsel refining and reconsidering strategy all along. Moreover, there are valuable reasons to engage in a deficiency analysis when reviewing *all* forensic science IAC cases, as discussed in section III, *supra*.

77. "Foundational validity" is the "*scientific* standard corresponding to the legal standard of evidence being based on 'reliable principles and methods.'" PCAST Report, *supra* note 15, at 43.

78. "Validity as applied" is the "*scientific* standard corresponding to the legal standard of an expert having 'reliably applied the principles and methods.'" PCAST Report, *supra* note 15, at 43.

79. *See generally* William C. Thompson & Edward L. Schumann, *Interpretation of Statistical Evidence in Criminal Trials: The Prosecutor's Fallacy and the Defense Attorney's Fallacy*, 11 L. & HUM. BEHAV. 167, 171–72 (1987). The "Prosecutor's Fallacy" occurs when a prosecuting attorney, in the presentation of evidence or argument, "transposes the conditional" and argues that the probability that a given DNA profile came from someone other than the defendant is equivalent to the likelihood ratio produced by the DNA analysis. PETER GILL, MISLEADING DNA EVIDENCE: REASONS FOR MISCARRIAGES OF JUSTICE 18 (2014).

80. The "Swamping Effect" occurs when the fact-finder disproportionately discounts exculpatory non-scientific evidence due to a very high—sometimes into the billions or more—likelihood ratio connecting DNA (or other scientific) evidence to the defendant. Gill, *supra* note 79, at 105.

81. Powell v. Alabama, 287 U.S. 45, 58 (1932).

inadequate testimony by forensic scientists, then too much is being expected from it."[82]

> Another commentator rejects, almost out of hand, the argument that "the searing test of a rigorous cross-examination" is a sufficient safeguard in this context. He writes: "All that one can say to such an argument is that the lawyers who make it should know better, and, if they do know better, as they must if they are experienced trial lawyers, they should have more conscience than to perpetuate such a myth."[83]

Some judges agree as well.[84] "[E]xperience has shown that, at least in criminal trials, the suggestion that the 'adversarial system' represents an adequate means of demonstrating the unreliability of forensic evidence is mostly fanciful."[85] As Judge Gertner, a former trial-level federal judge who presided over trials that included expert testimony, observed, "The best cross-examiner, with the best skills in the usual driving-under-the-influence case, may not be up to par when complex forensic evidence is involved."[86]

If even an experienced defense attorney's cross-examination may not be sufficient to effectively demonstrate the invalidity of proffered forensic evidence, reliance on the role of cross-examination to ferret out unreliable science—particularly *ineffective* cross-examination and what a reviewing judge speculates a more effective cross may or may not have accomplished—is misplaced. Faced with this reality, courts are not equipped to make reliable prejudice determinations

82. Paul C. Giannelli, *Defense Experts and the Myth of Cross-Examination*, 30 CRIM. JUST. 46, 47 (2016) (quoting Douglas M. Lucas, *The Ethical Responsibilities of the Forensic Scientist: Exploring the Limits*, 34 J. FORENSIC SCI. 719, 724 (1989)).

83. Paul C. Giannelli & Sarah Antonucci, *Forensic Experts and Ineffective Assistance of Counsel*, 48 CRIM. L. BULL. 1, 4 (2012) (quoting Barton Ingraham, *The Ethics of Testimony: Conflicting Views on the Role of the Criminologist as Expert Witness*, *in* EXPERT WITNESS 178, 183 (Patrick R. Anderson & L. Thomas Winfree, Jr. eds., 1987)).

84. Edwards & Mnookin, *supra* note 5.

85. *Id.*

86. Gertner, *supra* note 39, at 793.

when reviewing claims that a defense attorney was deficient in combating incriminating forensic science evidence. Prejudice review simply becomes a matter of "garbage in, garbage out." That is, untested, unreliable forensic evidence comes in at trial; the reviewing court justifies the conviction because the defendant has not satisfied the stringent *Strickland* prejudice standard; and that same untested unreliable forensic evidence remains in place to sustain the conviction.

The concern, made clear by wrongful convictions caused by faulty forensics, is that *some* doubt about the integrity of the forensic evidence or the reliability of the incriminating science typically is *not* sufficient for courts to find prejudice in the IAC context.[87] Reviewing courts conclude either that: (1) the non-scientific evidence proves the defendant is guilty (resulting in no IAC prejudice) or (2) the science proves the defendant is innocent (resulting in an exoneration). Anything short of (2) is enough, under *Strickland*, to justify sustaining the conviction. But those two polar opposites should not comprise the breadth of review that criminal convictions receive when based on forensic science evidence, particularly where the defense challenge to such evidence has been deemed deficient.[88] Rather, applying the presumption of innocence, burden of proof, and standard of proof at play in criminal prosecutions, the defense may rightfully prevail in a criminal case by raising doubts about whether the forensic science evidence is foundationally valid, was validly applied, or should otherwise be trusted. Without accounting for the unique role that forensic science evidence plays in the criminal legal system—its power to convict unjustly, its ability to exonerate rightly, and the foreignness of its underlying scientific principles (or lack thereof) to the non-scientist judicial officers presiding—the prejudice inquiry in the forensic evidence context does not do its job. As a

87. *See* Garrett, s*upra* note 57, at 1175.

88. *See, e.g.*, In re Winship, 397 U.S. 358, 372 (1970) (Harlan, J., concurring) ("I view the requirement of proof beyond a reasonable doubt in a criminal case as bottomed on a fundamental value determination of our society that it is far worse to convict an innocent man than to let a guilty man go free.").

result, courts should presume prejudice where defense counsel is deficient in meaningfully confronting incriminating forensic science.

CONCLUSION

"The Sixth Amendment stands as a constant admonition that if the constitutional safeguards it provides be lost, justice will not still be done."[89] "The right to have the assistance of counsel is too fundamental and absolute to allow courts to indulge in nice calculations as to the amount of prejudice arising from its denial."[90] Calling on non-scientist judges to try to make reliable hypothetical prejudice calculations about the impact of forensic science is a fool's errand. Such inquiry should be abandoned in the context of IAC claims for failure to adequately test incriminating forensic science evidence.

There need be no fear that the floodgates will open to presuming prejudice in the context of other IAC claims. Forensic science evidence is unique for at least three reasons. First, it simultaneously has been the cause of wrongful convictions and exonerations of the innocent for almost three decades.[91] Thus, forensic evidence merits heightened scrutiny when it contributes to a criminal conviction. Second, judges are not scientists; they should not be relied upon to make reliable judgments about the impact a sophisticated scientific method may or may not have had on the outcome of a trial. Third, as the NAS Report and President's Council of Advisors on Science and Technology Report make clear, forensic disciplines long deemed valid have been and continue to be exposed as fraught with error.

Forensic science evidence plays a vital role within the criminal legal system, a system that is staffed predominantly by people who

89. Gideon v. Wainwright, 372 U.S. 335, 343 (1963) (quoting Johnson v. Zerbst, 304 U.S. 458, 462 (1938)) (internal quotation marks omitted).

90. Glasser v. United States, 315 U.S. 60, 76 (1942).

91. *DNA Exonerations in the United States*, INNOCENCE PROJECT, https://www.innocenceproject.org/dna-exonerations-in-the-united-states/ [https://perma.cc/8APD-RBXB] (last visited Feb. 12, 2018). At least 353 people have been exonerated in the United States thanks to DNA evidence. *Id.*

are not scientists. To ensure the Sixth Amendment guarantee to effective assistance of counsel is satisfied in all cases, courts should require that defense attorneys effectively subject incriminating forensic science evidence to the "crucible of meaningful adversarial testing."[92] If an attorney is deficient in that regard, prejudice should be presumed. Short of that the Sixth Amendment is violated, and the integrity of a criminal conviction remains in doubt.

92. United States v. Cronic, 466 U.S. 648, 656 (1984).