

CRIMINAL PROCEDURE V. SCIENTIFIC PROGRESS: THE CHALLENGING PATH TO POST-CONVICTION RELIEF IN CASES THAT ARISE DURING PERIODS OF SHIFTS IN SCIENCE

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In a recent article, we explored in depth the percolation delays in the law that follow shifts in science, and especially the significant consequences of those delays in the forensic science realm. While relevant scientific communities may have already come to repudiate certain forensic science techniques, that knowledge can take a period of years, even decades, to trickle down into the relevant legal communities. These delays cause errors in courts to continue—even monumental errors of wrongful convictions in criminal cases. How to challenge and undo those errors once they are exposed is a thorny question that we previously set aside. We now seek to complete the circle by exploring the remedies available to defendants whose cases arose during the all-important period of percolation. Difficulties arise in post-conviction litigation because of the very nature of the error being challenged: the errors occurred in a cusp period of change, and whether they could or should have been discovered and addressed previously is a difficult supposition that courts require litigants to address. This article first describes the many legal claims that defendants might make in court on collateral appeals, including some we previously thought inapplicable in the shifted-science realm. Although this article discusses legal remedies in detail, we also note that true systemic reform and relief cannot come from the courts alone. Therefore, the article also addresses what other governmental actors can do to effect meaningful reform overall, and efficient relief for individual defendants—noting the commendable efforts already underway in various parts of the country by

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† We wish to thank Prof. David A. Moran and Justice Bridget M. McCormack for starting us down this path. We are also grateful to the many members of the Innocence Network who have offered ideas over the years that inspire much of what we discuss here—especially Chris Fabricant, whose work on litigation strategies in the realm of science-based wrongful convictions laid some of the foundation upon which we build here. We are also very grateful to our students, whose hard work and remarkable talents have enabled us to litigate the cases that inform our academic work. Finally, we dedicate this piece to our many clients, whose resolve and patience know no bounds.

prosecutor offices, executive commissions, law enforcement agencies, and legislative bodies.

INTRODUCTION.....	281
I. A PRIMER ON PERCOLATION.....	282
A. <i>People v. Andrew Babick</i> —An Uncanny Illustration of the Percolation Problem	282
B. The Enigma of Post-Conviction Remedies	285
II. LEGAL REMEDIES	287
A. The <i>Daubert</i> Approach	288
1. The Core of <i>Daubert</i>	288
2. Traditional Difficulties with <i>Daubert</i>	290
3. Winning with <i>Daubert</i> on the Front End.....	291
4. Winning with <i>Daubert</i> on the Back End	294
B. Newly Discovered Evidence Warranting Relief.....	299
1. Defining and Litigating New Evidence	299
2. New Evidence Versus Ineffective Assistance	301
C. Due Process Claims	305
1. Fundamental Fairness Under <i>Chambers</i> , <i>Ege</i> , and <i>Lee</i>	306
2. False or Misleading Evidence, and Suppression of Evidence	312
i. Basics of <i>Napue</i> and <i>Alcorta</i>	312
ii. The <i>Brady</i> Possibility	313
iii. Into the Weeds of <i>Napue/Alcorta</i> : Lessons from <i>Henderson</i>	315
D. Ineffective Assistance of Counsel	319
1. <i>Strickland</i> Alone.....	319
2. The <i>Cronic</i> Corollary	321
E. Substantive Claims of Actual Innocence	323
III. NON-JUDICIAL REMEDIES AND SYSTEMIC REFORM	327
A. The FBI's Proactive Approach in Hair Analysis Cases.....	329
B. State Forensic Science Review Commissions	333
C. Prosecution Integrity Units	338
D. The Proactive Powers of Courts	342
CONCLUSION.....	345

INTRODUCTION

[H]istory and science know no finality. Nor should the law, especially when a possibly innocent defendant remains convicted of a crime that science could prove he may not have committed.¹

This article is a follow-up to our prior piece detailing what we call the “percolation problem” as it played out in four separate forensic science realms.² While relevant scientific communities may have already come to repudiate certain forensic science techniques, that knowledge can take a period of years, even decades, to percolate down into the relevant legal communities, causing errors in court to continue—even monumental errors of wrongful convictions in criminal cases. Our aim here is to discuss the uniquely difficult issue of remedies for defendants whose cases arise from the time period when the forensic science discipline in question was undergoing major changes—when the old ways persisted, yet the new ways also existed.

This article is divided into three main parts. The first part is a primer on the percolation problem. We keep that discussion brief, and refer the reader to our prior article for a more complete analysis.³ The second part discusses litigation approaches, outlining several paths that a defendant may pursue in post-conviction collateral appeals. This includes claims based in the gatekeeping role of courts under *Daubert*,⁴ ineffective assistance of counsel claims under *Strickland*⁵ and (sometimes separately) under *Cronic*,⁶ due process claims under *Chambers*,⁷ *Napue*,⁸ *Alcorta*,⁹ and *Brady*,¹⁰ pure new-evidence claims, and freestanding claims of actual innocence.

The final part of the article discusses several less-frequented paths to possible relief that either do not involve litigation at all, or simply serve as a way to improve a defendant’s odds in traditional post-conviction litigation. These are more systemic solutions to the problem of wrongful convictions based on shifted science, and we devote a large part of this article to them because it has become clear in recent years that case-by-case litigation in

1. ALAN DERSHOWITZ, *TAKING THE STAND: MY LIFE IN THE LAW* 262–63 (2013).

2. Caitlin Plummer & Imran Syed, “*Shifted Science*” Revisited: *Percolation Delays and the Persistence of Wrongful Convictions Based on Outdated Science*, 64 CLEV. ST. L. REV. 483, 486 (2016).

3. *Id.*

4. *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 597 (1993).

5. *Strickland v. Washington*, 466 U.S. 668, 684 (1984).

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

7. *Chambers v. Mississippi*, 410 U.S. 284, 289–90 (1973).

8. *Napue v. Illinois*, 360 U.S. 264, 265 (1959).

9. *Alcorta v. Texas*, 355 U.S. 28, 31 (1957).

10. *Brady v. Maryland*, 373 U.S. 83, 85–86 (1963).

individual jurisdictions is too unreliable an avenue to ensure fair outcomes and meaningful reform in the area of shifted science. Indeed, Judge Harry Edwards, chairman of the National Academy of Sciences Committee that released a comprehensive and path-breaking report on the state of forensic science in 2009,¹¹ recently stated: “Judicial review, by itself, will not cure the infirmities of the forensic community.”¹² Our discussion on broader systemic reforms therefore includes forensic science reform and review commissions, proactive actions taken by law enforcement agencies like the FBI, conviction integrity units within prosecutor offices, and of course, legislative reforms.

We aim to provide a comprehensive and thorough discussion covering different ways of seeking relief in a shifted-science case, where traditional routes of litigation can be very difficult to pursue. Shifts in science are often not discovered until many years after conviction and yet the law very much values finality. But before launching into that remedies discussion, a primer on the percolation problem is in order.

I. A PRIMER ON PERCOLATION¹³

A. *People v. Andrew Babick—An Uncanny Illustration of the Percolation Problem*

The case that illustrates the percolation problem better than any other we have encountered is the arson and felony murder conviction of Andrew Babick¹⁴ in November 1996 in Battle Creek, Michigan.¹⁵ A fire had consumed a drug house that Babick visited earlier the same night, killing two children.¹⁶ While no one had seen Babick set the fire¹⁷ or seen him with

11. Nat’l Acad. of Sci., *Strengthening Forensic Science In The United States: A Path Forward* (2009) [hereinafter *NAS Report*].

12. Radley Balko, *The Path Forward on Bite Mark Matching – and the Rearview Mirror*, WASH. POST (Feb. 20, 2015) [hereinafter Balko, *Rearview Mirror*], https://www.washingtonpost.com/news/the-watch/wp/2015/02/20/the-path-forward-on-bite-mark-matching-and-the-rearview-mirror/?utm_term=.45128f554c8f.

13. Citations in this greatly simplified discussion of the percolation problem are largely borrowed from our prior article discussing this issue in more detail. Plummer & Syed, *supra* note 2. We again favor citations to trial transcripts (on file with the authors) over secondary sources, except for the most general facts of the case.

14. The authors litigated Mr. Babick’s collateral appeal, and secured him a new trial in 2014. *Michigan Innocence Clinic Secures New Trial in Arson-Murder Case*, UNIV. OF MICH. LAW SCH. NEWS (Nov. 7, 2014), <https://www.law.umich.edu/newsandinfo/features/Pages/Michigan-Innocence-Clinic-Secures-New-Trial-in-Arson-Murder-Case.aspx>. All case documents are on file with the authors.

15. *People v. Babick*, No. 207638, 1999 WL 33437948, at *1, *5 (Mich. Ct. App. Aug. 13, 1999) (per curiam).

16. *Babick v. Berghuis*, 620 F.3d 571, 574 (6th Cir. 2010).

any accelerants,¹⁸ and all of Babick's clothing tested negative for accelerants,¹⁹ the State argued that Babick broke into the house, poured gasoline throughout it, and intentionally ignited the fire.²⁰

The State's case turned largely on expert testimony emerging from two different branches of forensic fire science. First, two fire investigators, Wayne Etue and Joan Tuttle, testified that present within the burnt house were certain physical markers pathognomonic for arson—meaning those physical markers (including pour patterns on the ground, melting of aluminum, significant low-level burning, etc.) are only present in fires where accelerants are used.²¹ Second, an accelerant-detection canine handler, Jeff Austin, testified that his dog had made several alerts at the fire scene. The dog's alerts proved that gasoline had been used in the fire, Austin claimed, even though all laboratory tests on the debris from the house were negative for accelerants.²²

The State convinced the jury of arson based on those two lines of evidence, leaving only the question of who the arsonist was. Even the defense conceded that the fire was arson, and tried to show that other people besides Babick had the means, motive, and opportunity to set the deadly fire.²³ Nevertheless, the jury convicted Babick,²⁴ and in December 1996, he was sentenced to life in prison without the possibility of parole.²⁵

Even as Babick's trial was ongoing, however, the relevant scientific communities questioned and repudiated the two lines of scientific evidence

17. Trial Tr. 6 at 5–34, *People v. Babick* (1997) (No. 96-2562FC) (prosecution's closing argument summarizing case against Babick, which includes no mention of anyone seeing him set the fire).

18. *See Babick*, 620 F.3d at 584 (quoting county prosecutor's letter, admitting "there is no evidence that connects Mr. Babick to accelerants") (emphasis omitted).

19. Trial Tr. 5 at 61–63, 67–69, *People v. Babick* (1997) (No. 96-2562FC) (chemist affirming that all clothing and shoes taken from Babick tested negative for accelerants in the lab. One pair of shoes indicated a possible positive, but the chemist indicated that was due to contamination in her lab).

20. Trial Tr. 6, *supra* note 17, at 8, 17–20.

21. Trial Tr. 1 at 208–219, *People v. Babick* (1997) (No. 96-2562FC); Trial Tr. 2 at 8–13, 52–59, 62–64, *People v. Babick* (1997) (No. 96-2562FC). *See also Babick*, 620 F.3d at 576 (discussing the prosecution's expert testimony evidence used to prove arson); *Id.* at 581–82 (Merritt, J., dissenting) (discussing the types of evidence used by the prosecution's expert); *Babick v. Berghuis*, No. 1:03-CV-20, 2008 WL 282166, at **25–26 (W.D. Mich. Jan. 29, 2008) (describing the testimony offered at trial to prove arson).

22. *See* Trial Tr. 4 at 85–89, *People v. Babick* (1997) (No. 96-2562FC) (questioning the canine handler); *Babick*, 620 F.3d at 580–81 (Merritt, J., dissenting) (noting that all lab tests failed to detect any accelerants).

23. *Babick*, 2008 WL 282166, at *8 ("[T]he record does not support the conclusion that [Babick]'s trial counsel pursued a theory of accident at trial. Instead, the record indicates that counsel pursued only the theory that her client was not the perpetrator . . .").

24. Trial Tr. 7 at 9–12, *People v. Babick* (1997) (No. 96-2562FC).

25. Trial Tr. Sentencing at 18, *People v. Babick* (1997) (No. 96-2562FC).

that the State relied on to convict Babick.²⁶ Babick's case arose in 1995 and was litigated in late 1996. By this point, the shifts in science essential to Babick's defense were already underway.²⁷ Had information been perfectly distributed, his defense attorney would have seen there was no case against Babick, and would have been able to present her own experts to severely undermine the prosecution's theory.

However, information is never distributed perfectly.²⁸ Even though the National Fire Protection Association had issued its landmark treatise *NFPA 921: Guide for Fire & Explosions Investigations* in 1992,²⁹ debunking the very sort of testimony Etue and Tuttle gave in Babick's case,³⁰ the NFPA 921 shift in fire science had yet to be realized in the local courts where Babick's case was tried.³¹ At Babick's trial, it was clear that neither party was aware of NFPA 921:³² the prosecutor assumed, and was largely unchallenged in assuming,³³ that the fire was arson because of the physical markers left behind. All that remained was to show who the arsonist was.³⁴

The State argued that gasoline had been poured in at least three locations within the house, based on its experts' conclusions.³⁵ The defense did not fight back, and indeed could not have fought back. Babick's defense counsel, though learned in arson cases, had been taught only the old ways of doing things, and had no idea that a shift in the science had occurred, or

26. See Plummer & Syed, *supra* note 2, at 491 (noting the changing understanding of fire behavior since the early 1990s).

27. *Id.* at 496.

28. *Id.* at 495.

29. JOHN J. LENTINI, SCIENTIFIC PROTOCOLS FOR FIRE INVESTIGATION 13 (2d ed. 2013).

30. *Id.* at 15, 482, 498, 501.

31. Aff. of David M. Smith at 15–16, *People v. Babick* (1997) (No. 96-2562FC) (“Much of the expert testimony at Mr. Babick’s trial, which occurred in 1996, was based on the previously mentioned misconceptions involving fire indicators. . . . [A]ll indications are that [the State’s experts] were truly unaware of NFPA 921 . . .”).

32. *Id.* at 11 (“After analyzing materials from the Babick case, it is clear to me that the State’s investigators in this case were still operating under a pre-NFPA 921 mindset. They appear unaware that NFPA 921 even existed, and it is abundantly clear that they made no effort to abide by it. Indeed, having done an electronic search of the documents, I note that there is not a single mention of NFPA 921 in the trial transcripts of this case, or in the reports of the State’s fire investigators.”).

33. See *supra* note 23 (explaining that Babick’s counsel did not pursue the theory of accident at trial).

34. Trial Tr. 6, *supra* note 17, at 17 (prosecutor arguing “[i]f he didn’t start it himself, he bumped into whoever did as he was leaving the front porch of that house”). See also *Babick v. Berghuis*, No. 1:03-CV-20, 2008 WL 282166, at *8 (W.D. Mich. Jan. 29, 2008) (explaining that Babick’s counsel only pursued the theory that he was not the perpetrator).

35. Trial Tr. 6, *supra* note 17, at 19 (“[W]e know that he poured [accelerant] We know all of that from three different independent and expert sources. We know it from the observed testimony of Detective Etue, a trained fire investigator. We know it from the testimony of Joan Tuttle, a trained fire investigator. We know from the testimony of Jeff Austin about his dog Samantha.”).

that it had significant implications for her client.³⁶ The percolation challenge could not be clearer: although NFPA 921 had defined a better way four years prior to Babick's trial, that better way was yet to be widely understood. In fact, the Michigan State Police—responsible for the arson training seminars at which many of the state's law enforcement and legal professionals learned about arson—were memorable dissenters from NFPA 921.³⁷

The scientific shift in canine accelerant alerts had also begun by the time of Babick's 1996 trial. Starting in 1994, the International Association of Arson Investigators repudiated the use of unconfirmed canine alerts (i.e., those alerts that are not subsequently confirmed by lab testing), as substantive evidence of the presence of accelerants.³⁸ The NFPA had released its Tentative Interim Amendment to NFPA 921, also repudiating such use of unconfirmed canine alerts, by the time of opening arguments in Babick's case, albeit only about two weeks before.³⁹ Additionally, the case of *People v. Acri*⁴⁰—a pioneering opinion from the Illinois Court of Appeals that recognized, for the first time, the newly emerging dispute over the scientific validity of the traditional acceptance of unconfirmed canine accelerant alerts—was released in January of 1996, eight months before Babick's trial.

That Babick's defense did not know about the shift in fire science or canine alerts is clear, and largely for that reason he was convicted at trial. To prevail on appeal, the important question becomes: *could* and *should* the defense have known about the shifts in science at the time of trial?

B. The Enigma of Post-Conviction Remedies

Post-conviction criminal procedure stresses that claims be litigated at the earliest possible stage of litigation; any withholding of claims, either real or perceived, for later use is not only frowned upon, but likely will

36. Evid. Hr'g Tr. at 5–8, 13–15, *People v. Babick* (1997) (No. 96-2562FC) (trial counsel indicating that she had attended arson investigation trainings held by the Michigan State Police and had prior experience prosecuting arson cases, but even with her experience, she had never learned of NFPA 921, and further stating: “[I]t would have been a miracle to have found out about N.F.P.A. 921. It would have changed absolutely everything in this case.”).

37. Aff. of David M. Smith, *supra* note 31, at 14.

38. LENTINI, *supra* note 29, at 523.

39. Aff. of Craig A. Balliet at 9, *People v. Babick* (1997) (No. 96-2562FC) (noting Tentative Interim Amendment to 1995 Edition of NFPA 921 went into effect on October 21, 1996). See Trial Tr. 1, *supra* note 21, at 1 (noting the opening arguments occurred on November 5, 1996).

40. *People v. Acri*, 662 N.E.2d 115, 117 (Ill. App. Ct. 1996).

leave those claims procedurally defaulted and their merits unsalvageable.⁴¹ The rules of post-conviction criminal procedure are strict and perhaps with good reason. But the results in such exceptional cases that we discuss here can be devastating.

A defendant like Babick, for example, is caught in the middle of an unenviable claim game. It is clear that his attorney at trial *did not* know about the scientific shift that was so material to his defense, but it is also theoretically possible that she *could have found out* about it. So is the shift “new evidence” upon which the defendant can base a motion for a new trial after conviction? According to some interpretations of the “new evidence” standard for post-conviction relief motions, the answer is a resounding *no*: counsel could conceivably have found out about the shift in science, so the failure to litigate that shift at trial is a failure to exercise reasonable diligence to present all relevant defenses at trial.⁴² Failing the diligence requirement means there can be no relief on the basis of “new evidence.”

With the “new evidence” avenue foreclosed, a defendant might turn to ineffective assistance of counsel, arguing: if the information was available for counsel to discover at the time of trial, then her failure to do so is constitutionally deficient performance, which prejudiced the defendant at trial and thus relief is warranted. As logical as that may sound, the U.S. Supreme Court has made clear that a defense attorney cannot be responsible for tracking down all conceivable knowledge available on a subject.⁴³ A court could find that while a trial counsel is required to perform her duties with reasonable diligence, it would take more than reasonable diligence to

41. *See, e.g.*, *People v. Rao*, 815 N.W.2d 105, 111 (Mich. 2012) (“It is the obligation of the parties to undertake all reasonable efforts to marshal *all* the relevant evidence for that trial. Evidence will not ordinarily be allowed in installments.”); *State v. Tester*, 2007 VT 4, ¶ 16, 181 Vt. 506, 512, 923 A.2d 622, 627 (“For purposes of a new trial motion based on newly discovered evidence, the evidence must ‘be truly new and not undiscovered merely through a lack of diligence.’”); *Bouknight v. United States*, 867 A.2d 245, 256 (D.C. Cir. 2005) (denying relief on newly discovered evidence because defendant failed to show reasonable diligence for prior failure to discover and present the evidence in question); *State v. Arnold*, 879 P.2d 1272, 1277 (Or. 1994) (en banc) (explaining that to obtain relief on newly discovered evidence claim, defendant must show that he exercised reasonable diligence in attempting to obtain the evidence previously).

42. *See, e.g.*, *Skakel v. State*, 991 A.2d 414, 449 (Conn. 2010) (“Whether trial counsel has fulfilled his or her duty to conduct a reasonable investigation forms the linchpin issue in a petition for a new trial made on the basis of newly discovered evidence.”).

43. *See, e.g.*, *Harrington v. Richter*, 562 U.S. 86, 107 (2011) (holding that counsel’s failure to consult blood evidence experts was not deficient performance because: “From the perspective of Richter’s defense counsel when he was preparing Richter’s defense, there were any number of hypothetical experts—specialists in psychiatry, psychology, ballistics, fingerprints, tire treads, physiology, or numerous other disciplines and subdisciplines—whose insight might possibly have been useful. . . . Counsel was entitled to formulate a strategy that was reasonable at the time and to balance limited resources in accord with effective trial tactics and strategies.”).

discover things like the beginnings of a shift in consensus on canine alerts—which were largely unknown to practitioners even within the relevant scientific field at the time of Babick’s trial—and it would be too much to expect trial counsel to somehow gain such knowledge.⁴⁴

The argument for why the shift is not new evidence seems reasonable. The argument for why trial counsel could not have been expected to perceive and litigate the shift at trial also seems reasonable. This gale of reasonableness leaves behind significant carnage: a defendant like Babick may well be considered indisputably innocent by today’s standards, but have no apparent legal avenue for relief. Such absurdity is to be avoided of course, and thus we jump wholesale into a consideration of possible remedies.

II. LEGAL REMEDIES

It is revolting to have no better reason for a rule of law than that so it was laid down in the time of Henry IV.⁴⁵

As we have acknowledged before, finding a path to relief from a conviction based on shifted science, even in a straightforward case, is a difficult task.⁴⁶ From “anachronistic rules of finality”⁴⁷ to the “widespread . . . discomfort among lawyers and judges confronted by a scientific . . . issue,”⁴⁸ the deck is stacked against a defendant, who must learn the science, prepare for litigation, and ultimately convince a court that the scientific evidence underlying the conviction is not actually what it was once purported to be.

However, the need to address the bind that shifted science defendants often find themselves in is at least beginning to be acknowledged. In recent years, courts across the country have started acknowledging that a certain field of forensic science can be inadequate or unreliable today, even if it was regarded as infallible in the past.⁴⁹ A federal magistrate, recently

44. This line of analysis is reasonable, of course, but often unfortunate nonetheless because it serves to tighten the bind on defendants who may well be innocent. A good example is the United States Supreme Court’s recent opinion in *Maryland v. Kulbicki*, 136 S. Ct. 2 (2015), discussed in more detail below.

45. O.W. Holmes, *The Path of the Law*, 10 HARV. L. REV. 457, 469 (1897).

46. Caitlin Plummer & Imran Syed, “*Shifted Science*” and *Post-Conviction Relief*, 8 STAN. J. C.R. & C.L. 259, 279 (2012).

47. DERSHOWITZ, *supra* note 1, at 274.

48. *Jackson v. Pollion*, 733 F.3d 786, 787 (7th Cir. 2013).

49. “The impact of this tidal shift in our understanding of fire science over the past two decades has been profound, and profoundly affects the reliability of past fire science evidence. These extraordinary developments in fire science have not only undermined the validity of the past science and

granting relief in a shifted science arson case in Pennsylvania, said it best of all: “To achieve justice, the law must serve as the vehicle through which imperfect institutions strive for greater justice through a more perfect understanding of the truth. Therefore, as our understanding of scientific truth grows and changes, the law must follow the truth in order to secure justice.”⁵⁰

Even the United States Supreme Court has had qualms about this issue, noting that “[s]erious deficiencies have been found in the forensic evidence used in criminal trials. One commentator asserts that ‘[t]he legal community now concedes, with varying degrees of urgency, that our system produces erroneous convictions based on discredited forensics.’”⁵¹

Nevertheless, finding paths within our system of criminal procedure to address convictions rooted in science that might have already been discredited at the time of trial (but not known to have been discredited) remains a daunting challenge. This is not a well-traveled road for most judges, and there are many traps along the way, but ultimately there is a path through the marshes for every case.

A. *The Daubert Approach*

1. The Core of *Daubert*

Perhaps the most accessible sword for defendants facing prosecution based on shifting science is *Daubert v. Merrell Dow Pharmaceuticals*,⁵² the U.S. Supreme Court’s most recent solution for keeping questionable science out of the courtroom. Previously, when writing about shifts in science that occur long after the conviction, we dismissed *Daubert* as a possible path to relief, noting that it could not address shifted science.⁵³ However, the problem we are describing here is different. Instead of a shift in science that happened long after a conviction, we are now considering

art in this field; they have also revealed that what was once regarded as the science in this field was not only simply wrong, it was in some instances affirmatively misleading.” *Lee v. Tennis*, No. 4:08–CV–1972, 2014 WL 3894306, at *3 (M.D. Pa. June 13, 2014), *Lee v. Tennis*, No. 4:08–CV–1972, 2014 WL 3900230 (M.D. Pa. Aug. 8, 2014), *aff’d*, *Lee v. Houtzdale SCI*, 798 F.3d 159 (3rd Cir. 2015). *See also* *Del Prete v. Thompson*, 10 F. Supp. 3d 907, 957–58 n.10 (N.D. Ill. 2014) (noting that the hypothesis of Shaken Baby Syndrome (SBS), used to convict the defendant of murder, is arguably “more an article of faith than a proposition of science”); *Ragland v. Commonwealth*, 191 S.W.3d 569, 580 (Ky. 2006) (noting that comparative bullet lead analysis may no longer be considered a reliable technique).

50. *Tennis*, 2014 WL 3894306, at *19.

51. *Melendez-Diaz v. Massachusetts*, 557 U.S. 305, 319 (2009) (alteration in original) (quoting Pamela Metzger, *Cheating the Constitution*, 59 VAND. L. REV. 475, 491 (2006)).

52. *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 597 (1993).

53. Plummer & Syed, *supra* note 46, at 282.

shifts that had already started occurring at the time of trial. In such a pursuit, *Daubert* can be an essential tool.

In *Daubert*, the U.S. Supreme Court codified a standard for admissibility of scientific evidence that embraces more than just “general acceptance” of the methodology in question—which had long been the prevailing standard, stemming from the 1923 case of *Frye v. United States*.⁵⁴ Instead of general acceptance alone, the Supreme Court shifted the analysis to the question of reliability, deeming that to be the key consideration in determining admissibility.⁵⁵ In weighing reliability, the Supreme Court directed lower courts toward a list of four considerations, which are neither exclusive nor binding in every case:⁵⁶ prior testing or testability of the technique in question, peer review and publication, error rates, and (still) general acceptance.⁵⁷

Although *Daubert* was an evidentiary decision, not a constitutional one, and its holding is binding only on the federal courts,⁵⁸ at least 36 states have adopted the standard laid out in *Daubert*.⁵⁹ Thus, *Daubert* can be a crucial tool for defendants in the vast majority of jurisdictions who are facing prosecution on shifted, or more accurately, *shifting* science, such as the four fields of forensic science we presented in a prior publication.⁶⁰

54. *Frye v. United States*, 293 F. 1013, 1014 (D.C. Cir. 1923); see *Daubert*, 509 U.S. at 585 (noting that “the ‘general acceptance’ test has been the dominant standard for determining the admissibility of novel scientific evidence at trial” for at least 70 years, as of 1993).

55. See *Daubert*, 509 U.S. at 590 (“In short, a requirement that an expert’s testimony pertain to ‘scientific knowledge’ establishes a standard of evidentiary reliability.”); *Id.* at 597 (“To summarize: ‘General acceptance’ is not a necessary precondition to the admissibility of scientific evidence . . . [but] the trial judge [is assigned] the task of ensuring that an expert’s testimony both rests on a reliable foundation and is relevant to the task at hand.”).

56. *Id.* at 593 (“Many factors will bear on the inquiry, and we do not presume to set out a definitive checklist or test. But some general observations are appropriate.”).

57. *Id.* at 593–94.

58. James W. Hunt, *Admissibility of Expert Testimony in State Courts*, AIRCRAFT BUILDERS COUNCIL, INC. (2010), <http://www.fitzhunt.com/sites/default/files/news/Admissibility%20of%20Expert%20Testimony%20in%20State%20Courts-Hunt.pdf> (“Because the *Daubert* decision was based on the language of FRE 702, rather than constitutional grounds, states were not required to adopt its standard for the admissibility of expert testimony.”).

59. Practising Law Institute, EXPERT WITNESS ANSWER BOOK, Chap. 6: *Admissibility of Expert Testimony in State Courts* at 70 (2016) (noting that 36 states follow the *Daubert* standard). Furthermore, an additional three states appear to apply *Daubert* in practice, even if not by explicit acknowledgement. See *id.* at 80–83 (indicating that California, Nevada and Virginia all borrow the basics of *Daubert*).

60. Plummer & Syed, *supra* note 2, at 486.

2. Traditional Difficulties with *Daubert*

Although it creates exacting standards of reliability as a sword for defendants, *Daubert* has generally proven blunt for several reasons.⁶¹

First, many jurisdictions have reserved the more demanding *Daubert* standard for civil cases, while continuing to apply less discerning standards, such as *Frye*, to criminal cases.⁶² Applying less discerning standards may seem to vindicate the defendant's right to present a defense by lowering the threshold that the defense's experts must meet, but the truth is not so benevolent. For example, the authors of the NAS report, which brought attention to the current crisis in the state of forensic science in our country, noted that "trial judges rarely exclude or restrict expert testimony offered by prosecutors" and "prosecutors usually have an advantage over most defendants in offering expert testimony in criminal cases."⁶³ And indeed, the rare court that does attempt to permit a lower bar for criminal defendants seeking admissibility of expert testimony has generally been promptly repudiated,⁶⁴ despite scholarly articles suggesting the wisdom of such an approach.⁶⁵

Another reason *Daubert* has not benefited defendants to this point is related to the first reason discussed above. Courts are loath to suppress expert testimony, especially when it is the defense seeking suppression of

61. Terry-Dawn Hewitt & Wayne J. McKenna, A Perfect Storm Brewing for Fire Investigators in Court (2012) (unpublished manuscript) (on file with University of Denver Sturm College of Law).

62. See EXPERT WITNESS ANSWER BOOK, *supra* note 59, at 79–82 (indicating that Missouri, New Jersey and Washington seemingly continue to make this distinction today).

63. NAS Report, *supra* note 11, at 11.

64. For example, in *United States v. Scheffer*, the U.S. Court of Appeals for the Armed Forces was called on to decide whether Military Rule of Evidence 707, which deemed polygraph examinations to be *per se* inadmissible, was unconstitutional where it barred a defendant from seeking admission of polygraph evidence that supported his defense. 44 M.J. 442, 444 (C.A.A.F. 1996), *rev'd*, 523 U.S. 303 (1998). Noting that the polygraph evidence in question at least had the potential to meet the *Daubert* admissibility threshold, the Armed Forces Court of Appeals declared a *per se* rule prohibiting polygraphs to be unconstitutional, considering a defendant's Sixth Amendment right to present a defense. *Id.* The Court explicitly distinguished cases where the prosecution had been barred from presenting polygraph evidence, thereby presumably accepting that a defendant's rights under the constitution necessitate a lower admissibility bar. *Id.* at 447. However, the U.S. Supreme Court reversed, holding that a lower admissibility bar was neither implicated or proper because: "A defendant's right to present relevant evidence is not unlimited, but rather is subject to reasonable restrictions." *United States v. Scheffer*, 523 U.S. 303, 308 (1998).

65. See, e.g., Richard D. Friedman, *Squeezing Daubert Out of the Picture*, 33 SETON HALL L. REV. 1047, 1052 (2003) ("So far as expert evidence offered by an accused is concerned . . . [t]he test should be very lenient Such an approach not only makes sense as a matter of measuring the expected costs of error, but it also serves a valuable symbolic function, demonstrating that an accused who has been convicted has not been denied any plausible opportunity to leave the jury with a reasonable doubt as to his guilt.").

the prosecution's expert testimony,⁶⁶ so they have resorted to the many available excuses for opening *Daubert's* gates even where they should remain closed. For example, while courts across the country have generally suppressed voiceprint analysis under *Daubert* when the defendant proposed to use it,⁶⁷ the Alaska Supreme Court held voiceprint analysis admissible under *Daubert* in a case where the prosecution sought to admit it.⁶⁸ That decision has been criticized for its superficiality and arbitrariness.⁶⁹ Moreover, in their haste to deny *Daubert* challenges raised by defendants, courts have sometimes fallen back on pre-*Daubert* opinions accepting the admissibility of a certain form of scientific testimony: "It is always open for courts to follow some earlier case decision that has analogous facts to the case at bar, instead of wrestling with thorny reliability or qualification issues as measured by *Daubert* factors."⁷⁰ The general practice of following precedent is second nature to most judges, of course. It is hard to break that habit, and thus prevails the instinctual line of analysis that labels something as correct just because a prior court said so.⁷¹ It is a challenge to convince courts to evaluate the issue anew in light of *Daubert*.⁷² Yet, the importance of convincing the court that *Daubert* is truly a watershed moment—requiring that prior paradigms about the admissibility of certain types of evidence be revisited—cannot be overstated.

3. Winning with *Daubert* on the Front End

When appropriately made, these challenges can succeed. The Pima County (Arizona) Circuit Court Case of *State v. Gibson*⁷³ provides an

66. D. Michael Risinger, *Navigating Expert Reliability: Are Criminal Standards of Certainty Being Left on the Dock?*, 64 ALB. L. REV. 99, 99 (2000).

67. DAVID L. FAIGMAN ET AL., MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY § 36.2 (2015).

68. *Id.*

69. *Id.* ("[T]he Alaska Supreme Court conducted a limited and superficial review of the research on which such a decision must depend, doing little more than quoting the trial court's conclusory assertions [That case] joins that list of cases that overlooked the major . . . scientific review of the question before them [Its] review of the scientific claims, and [its] review of the adequacy of the trial court's gatekeeping [are] remarkably meager.")

70. Hewitt & McKenna, *supra* note 61, at 44.

71. See, e.g., Radley Balko, *It Literally Started With a Witch Hunt: A History of Bite Mark Evidence*, WASH. POST (Feb. 17, 2015) [hereinafter Balko, *Witch Hunt*], https://www.washingtonpost.com/news/the-watch/wp/2015/02/17/it-literally-started-with-a-witch-hunt-a-history-of-bite-mark-evidence/?utm_term=.5636ded89e7f ("Most of the time when doing one of these analyses, the only thing a judge will ask is, 'Have other courts allowed this?'" says Michael Saks, a law professor at Arizona State University who has written extensively on the intersection of law and science. 'If the answer is yes, then they'll figure out a way to let it in.'")

72. *Id.*

73. *State v. Gibson*, No. CR20104390-001 (Ariz. Super. Ct. Jul. 25, 2013).

interesting example. Evaluating the admissibility of fire expert testimony offered by the prosecution, the court was convinced to engage in a searching inquiry as directed by *Daubert*.⁷⁴ Right off the bat, the court eschewed any allegiance to old, pre-*Daubert* cases that admitted similar evidence, observing: “In light of [*Daubert*, its jurisprudential progeny, and Arizona’s amendment of its court rules to incorporate that line of precedent], the changes in this jurisdiction for determining the manner of assessing admissible expert testimony are striking.”⁷⁵

Next, although the court found the State’s proffered experts to be eminently qualified, it recognized that its inquiry could no longer end there, and instead it must consider the reliability of the experts’ methods and results.⁷⁶ Meticulously working through the experts’ opinions, *Gibson* aptly demonstrates the virility of *Daubert* when properly applied to unreliable scientific testimony that may have tradition and practice on its side.⁷⁷ Hard as it was to do, the court ultimately deemed inadmissible the evidence of both prosecution experts, noting:

Ultimately and reluctantly, the Court is persuaded that the deficits of the conclusions reached by either expert are significant enough in terms of reliability and crucial enough in terms of relevance to bar their presentation to the jury. The Court is keenly aware of the consequences of its ruling, the impact of which may ultimately jeopardize prosecution of this matter. However, these omissions are so fundamental, confounding and distressing that the Court is left with little choice but to grant Defendant’s motion to preclude admissibility of such experts’ opinions, despite acknowledging that it would have been far simpler to have allowed presentment of such viewpoints to the jury, particularly when considering such matters under the old [pre-*Daubert*] standard.⁷⁸

Gibson is a singular opinion: it is pioneering, but not quite an anomaly. It represents what some observers expect will be a wave of judicial scrutiny of flawed fire expert testimony in light of *Daubert*, the NAS Report and growing awareness of NFPA 921.⁷⁹

74. *Id.* at 1.

75. *Id.* at 3.

76. *Id.* at 6.

77. *Id.* at 7–15.

78. *Id.* at 16.

79. Hewitt & McKenna, *supra* note 61, at 53.

In recent years, similar scrutiny has grown in other forensic fields as well.⁸⁰ *Daubert* is often part of the conversation, even if it goes unmentioned. For example, we previously described the work of William Tobin in debunking the paradigm of comparative bullet lead analysis, a technique the FBI used for more than 40 years to match bullets found in the suspect's possession to those found at the crime scene.⁸¹ Tobin's work brought about the shift in CBLA science, at the end of which even the FBI itself admitted that the technique was flawed and agreed to stop using it.⁸² What we did not previously note is that *Ragland v. Commonwealth*, the landmark case where the Kentucky Supreme Court deemed comparative bullet lead analysis to be too unscientific a technique to be used in court⁸³ (and set a standard for other courts to follow) is actually an instance where the defendant won, on the front end, by raising a *Daubert* challenge on the underlying evidence in the trial court.⁸⁴

Although the trial court in *Ragland* admitted the CBLA testimony and the defendant was convicted,⁸⁵ the fact that his trial attorney had raised a proper challenge and held a *Daubert* hearing in trial court allowed *Ragland* to litigate the issue again on direct appeal.⁸⁶ And the Supreme Court of Kentucky was convinced.⁸⁷ The court engaged in an in-depth analysis of the CBLA technique and its shortcomings and found the trial court's limited *Daubert* inquiry to be inadequate.⁸⁸ Indeed, it was so obvious to the Kentucky Supreme Court that the CBLA testimony should have been suppressed that it deemed a remand for another evidentiary hearing

80. See, e.g., *Del Prete v. Thompson*, 10 F. Supp. 3d 907, 957–58 n.10 (N.D. Ill. 2014) (questioning scientific validity of the hypothesis of SBS); *United States v. Johnsted*, 30 F. Supp. 3d 814, 821–22 (W.D. Wis. 2013) (excluding handwriting analysis under *Daubert*); Dahlia Lithwick, *Pseudoscience in the Witness Box: The FBI Faked an Entire Field of Forensic Science*, SLATE (Apr. 22, 2015, 5:09 PM), http://www.slate.com/articles/news_and_politics/jurisprudence/2015/04/fbi_s_flawed_forensics_expert_testimony_hair_analysis_bite_marks_fingerprints.html (noting that the FBI has admitted significant flaws in testimony given by its hair analysts over the course of decades).

81. See Plummer & Syed, *supra* note 2, at 502 (recalling that Tobin was a former FBI metallurgist and critical of the CBLA technique).

82. FBI Nat'l Press Office, *FBI Laboratory Announces Discontinuation of Bullet Lead Examinations*, FBI (Sep. 1, 2005), <https://www.fbi.gov/news/pressrel/press-releases/fbi-laboratory-announces-discontinuation-of-bullet-lead-examinations>.

83. *Ragland*, 191 S.W.3d at 580.

84. *Id.* at 574.

85. *Id.* at 577 (noting that after the *Daubert* hearing, the trial court overruled the defense's motion to exclude the CBLA evidence).

86. *Id.* at 580.

87. *Id.* at 581.

88. *Id.* at 580 (“The trial court erroneously confined its *Daubert* analysis to the ICP methodology of CBLA and failed to consider the scientific reliability of the conclusions drawn by [the expert in this case] *ipse dixit* from the CBLA results.”).

unnecessary, noting: “If the FBI Laboratory that produced the CBLA evidence now considers such evidence to be of insufficient reliability to justify continuing to produce it, a finding by the trial court that the evidence is both scientifically reliable and relevant would be clearly erroneous”⁸⁹ Accordingly, the court reversed Ragland’s conviction without remanding to the trial court for an evidentiary hearing.⁹⁰

As long as there is awareness of the scientific revolution brought on by *Daubert*, the NAS Report, and field-specific treatises like NFPA 921, *Daubert* could become a significant weapon in the arsenal of a defendant looking to fight off at trial or on direct appeal a conviction based on scientific techniques that have been (or contemporaneously are being) discredited. One would hope that a defendant in the bind that Andrew Babick was in in 1996 would have far more of a fighting chance today in litigating a defense on the cusp of a scientific shift.

4. Winning with *Daubert* on the Back End

Because *Daubert* challenges on the front end tend to be resource intensive and often require uncanny foresight, the sad truth is that most defendants simply won’t make them, even when there exists a basis to do so.⁹¹ Consider the words of Jose Baez, the defense attorney who mounted a memorable, and ultimately successful, defense of Casey Anthony, a Florida mother charged with the murder of her daughter, in what was one of the most forensic-science intensive cases in recent memory:⁹²

Question: Do you normally have the resources to challenge forensic evidence when it comes into court?

Baez: 95 to 99%, no.

Question: You don’t have the money to hire your own experts?

Baez: Hardly ever.

89. *Id.* at 580.

90. *Id.* at 591.

91. Hewitt & McKenna, *supra* note 61, at 43–44 (explaining why *Daubert* challenges are raised far more frequently in civil cases than in criminal cases: “Just imagine the limits of resources available to a public defender of an impoverished defendant in a criminal case when compared to what is available to a private law firm defending a well-insured, wealthy corporation, in a civil product liability action”).

92. *Frontline: The Real CSI*, at 35:05 (PBS/PRO PUBLICA Apr. 17, 2012), <http://www.pbs.org/wgbh/frontline/film/real-csi/> (“In the Casey Anthony case, 37 expert witnesses testified in over a dozen forensic disciplines.”).

Question: So Casey Anthony was an anomaly?

Baez: She was.

Question: Because?

Baez: Well, she had photographs of her and her child, and a network paid us \$200,000 so we could mount a proper defense.⁹³

As it turns out, all is not lost for the average defendant who may find himself defending against a forensic-science based prosecution, but who cannot truly challenge the science up front due to a lack of resources. The road is more difficult, of course, but an overlap of *Strickland* and *Daubert* offers some hope on appeal in many cases where trial courts admitted questionable testimony without being scrutinized under *Daubert*'s weighty gaze.

The Sixth Amendment to the United States Constitution guarantees criminal defendants, at trial and direct appeal, the right to the effective assistance of counsel.⁹⁴ To establish ineffectiveness, a defendant must demonstrate that counsel's performance fell below an objective standard of reasonableness and that the deficient representation prejudiced the defendant—meaning there is a “reasonable probability” that the defendant would have been acquitted absent counsel's errors.⁹⁵

This standard allows two possible types of claims relevant to our discussion here: (a) ineffective assistance of counsel for failure to discover and present an alternative to the science presented by the State; and (b) ineffective assistance of counsel for failure to object to and/or prevent the prosecution's experts from testifying at all by moving to exclude their testimony under *Daubert*. The former will be discussed in the next section (which discusses the dichotomy of ineffective assistance and new evidence claims), but we deal with the latter here. Even if trial counsel presented his own expert at trial, the taint of the prosecution's flawed expert testimony

93. *Id.* at 35:24. Nevertheless, it is important to clarify here that a *Daubert* challenge can be made by the defense even without hiring defense experts. The burden is on the party seeking admission (the State) to prove the validity of its expert evidence; this was true even before the *Daubert* decision. *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 592 n.10 (1993) (citing *Bourjaily v. United States*, 483 U.S. 171, 175–76 (1987)). Thus, the defense can mount a challenge based solely on treatises and case law—though the chances of success will be lower without defense experts, especially in shifting science cases, where there may not yet be a wealth of treatises or case law to use in the challenge.

94. *Strickland v. Washington*, 466 U.S. 668, 684 (1984); *Evitts v. Lucey*, 469 U.S. 387, 395–97 (1985).

95. *Strickland*, 466 U.S. at 694.

being presented to the jury at all is an area ripe for challenge, either on direct appeal or on collateral appeal.

First, if trial counsel failed to challenge a certain scientific line of evidence at trial or move for a *Daubert* hearing to exclude the evidence from ever being presented to a jury, an appellate attorney can make a meaningful challenge on direct appeal.⁹⁶ The proper framing of the claim would be ineffective assistance of trial counsel for failure to object to, and/or move to exclude, the evidence. The mere fact that defense counsel presented his own expert is not necessarily enough to defeat this claim because the presentation of the flawed testimony to the jury can unconstitutionally prejudice the defendant, even if counsel presents his own expert.⁹⁷

Rarely is there a case where appellate counsel on *direct* appeal can scrutinize the science of a case and discover significant shifts in science that trial counsel should have, but did not, discover.⁹⁸ Still, with the increased scrutiny on forensic science that has followed in the wake of the 2009 NAS Report,⁹⁹ this possibility should not be dismissed. Simply put, defendants and appellate attorneys would be well-advised to focus on the validity of the science presented at trial, because—given the monumental barriers defendants must overcome on collateral appeal—later litigation of such issues, if they were discernable on direct appeal, will not be easy.¹⁰⁰

96. See, e.g., *People v. Douglas*, 852 N.W.2d 587, 602 (Mich. 2014) (finding ineffective assistance of counsel in part because: “Despite the plainly inadmissible nature of the testimony from [the prosecution experts], defense counsel did not object”).

97. See, e.g., *Ege v. Yukins*, 485 F.3d 364, 375 (6th Cir. 2007) (explaining that the admission of an unreliable expert opinion may violate a defendant’s right to a fundamentally fair trial, even where rebuttal experts are presented by the defense at trial). In *Ege*, a bite mark expert had given highly prejudicial and erroneous testimony at trial on behalf of the prosecution. *Id.* at 377. While defendant had presented two rebuttal witnesses to refute this damaging testimony, “the injurious effect of [the prosecution expert’s flawed] testimony was not in any way diffused by the [defense] experts . . .” *Id.* But see *United States v. Berry*, 624 F.3d 1031, 1040 (9th Cir. 2010) (“The criticisms of [comparative bullet lead analysis] that Berry relies on indicate that it is precisely the kind of evidence that the adversary system is designed to test. Vigorous cross-examination would have exposed its flaws to the jury.”).

98. One such rare example is *People v. Ackley*, 870 N.W.2d 858, 860 (Mich. 2015), where the Court held, on direct appeal, that trial counsel was ineffective for failing to challenge and at least attempt to discredit the prosecution’s SBS theory at trial.

99. Plummer & Syed, *supra* note 46, at 264.

100. Not all states permit litigation of ineffective assistance of counsel claims on direct appeal. E.g., *State v. Clements*, 431 A.2d 67, 69 (Me. 1981) (“We have consistently and repeatedly refused to review claims of ineffective assistance of counsel on direct appeal . . .”) (emphasis omitted). The analysis here pertains directly to those states that do allow such claims, and for those states that do not, the analysis applies with equal force to the first collateral proceeding in which the defendant can raise an ineffective assistance of counsel claim. See *Martinez v. Ryan*, 132 S. Ct. 1309, 1315 (2012) (holding that, although there may not be a constitutional right to counsel on collateral appeal, a version of the

Nevertheless, in most instances—whether because the science had yet to show perceptible signs of a shift,¹⁰¹ or because appellate counsel was simply too overburdened to dig into the issue¹⁰²—claims of ineffective assistance of trial counsel for failing to object to and/or attempt to exclude the prosecution’s experts will not be litigated on direct appeal. Yet, it is a claim that can be revived on collateral appeal, albeit only through a delicate dance of lawyering. The path would be a claim of ineffective assistance of appellate counsel for failure to litigate on direct appeal the ineffective assistance of trial counsel (in failing to object to and/or move to dismiss under *Daubert* the prosecution’s experts at trial). It is a mouthful to say and surely a handful to write, but when explained carefully and presented just right, the claim has potential.

The key case to consider in this area is *United States v. Hebshie*,¹⁰³ a 2006 federal prosecution for arson arising out of Massachusetts. Written by a federal judge who was far ahead of the field in recognizing how the flawed assumptions about the infallibility of science harm our criminal justice system,¹⁰⁴ *Hebshie* is a veritable playbook for defendants appealing scientific evidence that was not challenged at trial. In that case, the defendant succeeded because the court found that, even though defense counsel attempted to do *something*, he failed to provide effective assistance by failing to challenge the admissibility of the state’s science in the first place:

Defense counsel consulted with and presented an expert and cross-examined witnesses about some of the inconsistencies in their case What counsel *did not do* is to move for a *Daubert* hearing prior to trial on any expert issue. They *did not* seek

right to the effective assistance of appellate counsel exists on collateral appeal in instances where state procedures specifically reserve litigation of certain claims for collateral appeal).

101. See, e.g., *Wyatt v. State*, 71 So. 3d 86, 103 (Fla. 2011) (explaining that counsel was not ineffective for failing to challenge CBLA evidence at trial because the “comprehensive research uncovering the flaws in CBLA did not exist until well after Wyatt’s trial.”).

102. See *supra* note 91 and accompanying text (explaining the implications of the limited resources of most public defenders).

103. *United States v. Hebshie*, 754 F. Supp. 2d 89 (D. Mass. 2010).

104. Judge Nancy Gertner, the jurist who authored the *Hebshie* opinion, has taught a course at Harvard Law School on forensic science and the law, and has been an active voice in publications in this arena. *Course Catalog: Law and Forensic Science*, HARV. L. SCH., <http://hls.harvard.edu/academics/curriculum/catalog/index.html?o=66175> (last visited Dec. 4, 2016); Nancy Gertner, *The National Academy of Science Report: A Challenge to the Courts*, CRIM. JUST. (2012), http://www.americanbar.org/content/dam/aba/publications/criminal_justice_magazine/sp12_report.authcheckdam.pdf; Nancy Gertner, *Commentary on the Need for a Research Culture in the Forensic Sciences*, 58 UCLA L. REV. 789 (2011).

exclusion of any of the proposed expert testimony which was the core of the arson case, or move for its limitation. *They did not* argue that the expert testimony failed to meet the minimal threshold for reliability of scientific evidence in NFPA 921 and should not have been admitted at all. *They did not* alert the Court to the ways in which the government's investigation undermined their very ability to present a defense.¹⁰⁵

Hebshie establishes that trial counsel can be ineffective despite making efforts to fight the State's science once it is admitted, recognizing that the very admission of the junk science is the mistake that doomed the defendant.¹⁰⁶ It is a habeas opinion that provides a blueprint for litigating such an ineffective assistance claim on collateral appeal. There is, however, one caveat: the federal system does not generally permit defendants to raise claims of ineffective assistance on direct appeal.¹⁰⁷ Habeas effectively serves as a federal defendant's appeal of right on this issue, given that it is the first opportunity he would have to litigate the issue. Nevertheless, the power and persuasiveness of the reasoning of *Hebshie* is useful even in states where a defendant previously would have had the opportunity to raise the ineffective assistance of trial counsel issue on direct appeal. While the procedural route grows more intricate, requiring the use of an ineffective assistance of appellate counsel claim as a gateway to the underlying claim of ineffective assistance of trial counsel, it is a viable path nonetheless—one that the authors used to secure a 2014 exoneration in an arson case.¹⁰⁸

105. *Hebshie*, 754 F. Supp. 2d at 112.

106. *Id.* at 113 (noting "Just because the testimony has been admitted sends the jury the message that the opinions are entitled to some weight. See N.J. Schweitzer & Michael J. Saks, *The Gatekeeper Effect*, 15 Psychol. Pub. Pol'y & L. 1, 12 (2009) ("Jurors assume that judges review scientific evidence before it is presented to them, and that any evidence used in a trial must be above some threshold of quality. Because of these assumptions, jurors seem to be less critical of scientific evidence used in trials and are more persuaded by it.")).

107. *Commonwealth v. Grant*, 813 A.2d 726, 735 (Pa. 2002) ("[A]s a general rule, the federal courts defer review of ineffectiveness claims until collateral review.").

108. See Maurice Possley, *Victor Caminata*, NAT'L REGISTRY OF EXONERATIONS, <http://www.law.umich.edu/special/exoneration/Pages/casedetail.aspx?caseid=4235> (last updated Apr. 16, 2014) [hereinafter Possley, *Victor Caminata*] (stating defendant filed a motion for new trial based on the failure of trial counsel to make a convincing case that the State's expert evidence on arson was unreliable as well as the lawyer's failure to discover and present powerful evidence). Among the claims raised in the collateral appeal for *Caminata* were: (1) trial counsel was ineffective for failing to raise a *Daubert* challenge to the prosecution experts, and 2) appellate counsel was ineffective for failing to raise the ineffectiveness of trial counsel concerning the prosecution experts' unreliable arson testimony. Mem. in Supp. of Mot. for Relief from J. at 20–21, *People v. Caminata* (2012) (No. 08-008941-FH). The court ordered an evidentiary hearing on the claims presented, but on the morning that the hearing was set to begin, the prosecution conceded that a new trial was warranted. *Caminata* was ultimately

To recap, *Daubert* can be a significant weapon for the defense before, during, and even after the trial. As awareness of shifts in science, the NAS Report, and exonerations such as *Hebshie* grows, courts will hopefully begin to turn their attention to the gatekeeping function *Daubert* confers upon them, even if they have neglected it in criminal cases, and especially in defense motions in criminal cases, thus far.

B. Newly Discovered Evidence Warranting Relief

1. Defining and Litigating New Evidence

If a shift in science emerges truly after a defendant's trial, that shift must constitute new evidence warranting relief from judgment—as long as the science that shifted was material to the conviction.¹⁰⁹ Generally, such claims would be litigated under the prevailing “new evidence warranting a new trial” standard in any given state, and such standards usually require that the evidence, not merely its materiality, is new; that it is not cumulative; that it could not have been previously discovered with reasonable diligence; and that it reasonably could make a difference if presented upon retrial.¹¹⁰

That new science is, itself, new evidence should be an obvious premise, but some could argue that the physical evidence underlying the new scientific conclusions is still the same, and therefore, the new scientific conclusions are not truly new evidence.¹¹¹ However, the Sixth Circuit, when

exonerated a few months later when charges were dismissed entirely. See Possley, *Victor Caminata*, *supra*.

109. Plummer & Syed, *supra* note 46, at 287–89.

110. See, e.g., *State v. Tester*, 2007 VT 4, ¶ 14, 181 Vt. 506, 511, 923 A.2d 622, 626 (stating the test for granting a new trial based on the discovery of new evidence); *State v. Clark*, 125 P.3d 1099, 1105–06 (Mont. 2005) (restating the *Berry* test and removing the requirement that new evidence needs to be supported by an affidavit); *People v. Cress*, 664 N.W.2d 174, 182 (Mich. 2003) (explicitly stating each of the four requirements for granting a new trial); *State v. Arnold*, 879 P.2d 1272, 1276 (Or. 1994) (en banc) (outlining six requirements for “newly discovered evidence”); *State v. Munson*, 285 N.W.2d 703, 706 (Neb. 1979) (detailing the requirements that newly discovered evidence must meet to warrant a new trial).

111. See, e.g., *Ward v. State*, 108 A.3d 507, 516 (Md. Ct. Spec. App. 2015) (noting that State argued, and trial court agreed, “that new scientific analyses do not qualify as newly discovered evidence”). An especially egregious example of such reasoning is *People v. Vinson*, No. 303593, 2012 WL 3046236, at *5–6 (Mich. Ct. App. July 26, 2012) (per curiam). Defendant Karl Vinson argued that discovery of his true secretor status (he is a secretor), and discovery that the State expert's testimony at trial indicating that he was a non-secretor was undeniably false, was new evidence warranting relief. *Id.* at *2. This is because, as a secretor, his blood antigens would have to have been present in the physical evidence found at the scene if he was the perpetrator, and no such antigens were present. *Id.* (At trial, the State had argued around this by stating that Vinson was a non-secretor, and therefore, his blood antigens would not be found in his bodily secretions anyway. *Id.* Nevertheless, the court denied relief

confronted with the question of whether new scientific opinions about the same old physical evidence are truly new evidence, issued a holding worth remembering: when the testimony in question is that of an expert witness, “it is his opinion itself, rather than the underlying basis for it, which is the evidence presented. Therefore, if [the expert’s opinion has changed], the evidence itself has changed, and can most certainly be characterized as new.”¹¹² In sum, the old evidence was the old *opinion*, so the new opinion is certainly new evidence.

Other than questioning whether the proposed new science is truly new evidence, courts may also dismiss new evidence claims by purporting that enough knowledge existed at the time of trial for the defense to have challenged the science—even in cases where that is simply not true. One glaring example comes from the Ninth Circuit’s opinion in *United States v. Berry*.¹¹³ The defendant was tried in 1997, and one of the lines of evidence used against him was comparative bullet lead analysis—a technique that purports to compositionally match crime scene bullets to bullets found in the defendant’s possession, thereby essentially putting the defendant at the crime scene.¹¹⁴ The technique has been resoundingly repudiated, even by the FBI, whose own lab did the testing.¹¹⁵ In denying Berry’s 2010 claim of newly discovered evidence warranting relief, which argued that CBLA science had shifted considerably since trial and revealed that the government had used fundamentally flawed evidence against Berry, the Ninth Circuit wrote: “These are undoubtedly significant criticisms of [CBLA] evidence. Berry, however, has not explained why he was prevented from presenting such criticisms to the jury, either through vigorous cross-examination or by calling his own expert witness.”¹¹⁶

In so stating, the Ninth Circuit completely missed the point: the shift in science had simply not occurred in 1997, the time of Berry’s trial. Indeed, it

because the underlying evidence, Vinson’s true secretor status, never changed, even if testimony about it did change. *Id.* at *5 (“At the time of the original trial, Vinson was aware of the prosecution’s evidence that ostensibly established he was a nonsecretor and thus could not be ruled out as the perpetrator. Vinson asserts that he is only now aware that the earlier testing was inaccurate and that he is actually a secretor. But we construe Vinson’s claim as actually being one for newly available evidence rather than newly discovered evidence. As Vinson himself points out, his actual status as a secretor has not changed over time.” (citations omitted)).

112. *Souter v. Jones*, 395 F.3d 577, 592 (6th Cir. 2005) (citation omitted).

113. *United States v. Berry*, 624 F.3d 1031, 1031 (9th Cir. 2010).

114. *See Plummer & Syed, supra* note 2, at 502 (explaining that CBLA experts often purported to conclude that the bullets at the crime scene and those found at the suspect’s home came from the same box).

115. *Id.* at 505.

116. *Berry*, 624 F.3d at 1041.

did not begin until at least 1998,¹¹⁷ and would not have been material until 2004, when the National Research Council issued a comprehensive report repudiating CBLA.¹¹⁸ Simply put, if Berry's defense attorney had questioned CBLA evidence at trial, it would have been a lost cause because there was no basis to do so.¹¹⁹ The evidence he presented on post-conviction was certainly new, in the sense that such a challenge could not have been mounted at trial. The Ninth Circuit's opposing conclusion is confounding. The only reasonable explanation is that, in its haste to deny relief, the court did not actually look into when and how the shift in CBLA science came about, and when the defense could reasonably have discovered the shift.

2. New Evidence Versus Ineffective Assistance

Having to prove that new evidence is truly new is a common theme in post-conviction litigation, and it plays significantly in this next section of the discussion as well. There exists a *defendant's dilemma* with regard to claims of new evidence warranting relief and ineffective assistance of counsel for failure to discover and present an alternative to the State's scientific theory of guilt. While these two claims (new evidence and ineffective assistance) are two of the most common and important legal hooks for appellate relief, they can sometimes lock horns and ostensibly negate each other.

There truly is not much to be said for this dilemma, other than that it is nonsensical and should not be accepted by the courts. A new evidence claim generally requires a showing that the defense could not (using reasonable diligence) have discovered at trial the evidence it seeks to

117. *60 Minutes: Evidence of Injustice: FBI's Bullet Lead Analysis Used Flawed Science to Convict Hundreds of Defendants*, at 3:02–3:28 (CBS NEWS Nov. 16, 2007), <http://www.cbsnews.com/news/evidence-of-injustice/> (noting that the CBLA paradigm “went unchallenged for 40 years, until [FBI metallurgist William] Tobin retired in 1998 and decided to do his own study—discovering that the basic premise had never actually been scientifically tested”).

118. NAT'L RESEARCH COUNCIL, FORENSIC ANALYSIS: WEIGHING BULLET LEAD EVIDENCE 109 (2004).

119. *See, e.g., Maryland v. Kulbicki*, 136 S. Ct. 2, 3 (2015) (per curiam) (noting that in the 1995 CBLA conviction, “Kulbicki's defense attorneys [cannot be] constitutionally required to predict the demise of CBLA,” and reversing the Maryland Court of Appeals decision, which had granted relief based on ineffective assistance of counsel because *one study* existed that defense counsel could have used to impeach the State's CBLA expert at trial); *Wyatt v. State*, 71 So. 3d 86, 103 (Fla. 2011) (counsel could not have been expected to mount a successful challenge to CBLA at trial because “comprehensive research uncovering the flaws in CBLA did not exist until well after Wyatt's trial”); *Earhart v. Johnson*, 132 F.3d 1062, 1068 (5th Cir. 1998) (denying relief on ineffective assistance of counsel claim in a case where trial took place before 1998 because even if he decided to challenge the evidence, counsel's challenge could not have succeeded).

present as new on appeal.¹²⁰ An ineffective assistance of counsel claim based on counsel's failure to litigate a certain line of evidence requires showing that counsel performed deficiently by missing in his investigation of the case an issue that an *objectively reasonable* attorney would have discovered.¹²¹

The two claims are in fact two answers to the same question: could the evidence in question have been reasonably discovered at trial? If the answer is yes, then an ineffective assistance claim is the correct path. If the answer is no, then new evidence is the way to go. There simply cannot be a third path.¹²²

120. See *supra* note 110 (explaining the standard for a new evidence claim).

121. See *Strickland v. Washington*, 466 U.S. 668, 690–91 (1984) (finding that “actual ineffectiveness” of defense counsel must be “viewed as of the time of counsel’s conduct” and compared with “reasonable professional judgment”). Of course, both claims require a second showing in addition to diligence/discoverability, that being prejudice or materiality. See also, e.g., *People v. Cress*, 664 N.W.2d 174, 182 (Mich. 2003) (noting the requirement that defendant show reasonable probability of a different outcome); *Strickland*, 466 U.S. at 694 (stating that a defendant must show reasonable probability of a different outcome). And certainly there can be no denying that the materiality requirement is crucial and must be met to warrant relief in any case: if the science that shifted played a minor role at trial, and if there was significant other credible evidence, a shift in science might be deemed immaterial. See, e.g., *In re Personal Restraint of Trapp*, No. 65393–08–I, 2011 WL 5966266, at *7 (Wash. App. Nov. 28, 2011) (per curiam) (denying relief based on shift in CBLA science because the shift would not change the result at trial). That point is so obvious that this section does not even engage it, and focuses instead on the first part of the inquiry—whether the evidence is truly new or could have been discovered by defense counsel at trial with reasonable diligence—which is more nuanced an inquiry. Before leaving this topic, however, we do have one caution: courts must do a fair evaluation and discern whether the new evidence truly is immaterial, instead of just summarily deeming it as such and stating the defendant would have been convicted regardless. The Florida Supreme Court’s opinion in *Hildwin v. State* dealt with this issue perfectly:

The State cannot now distance itself from the evidence and theory it relied upon at trial by arguing that it could have still convicted Hildwin without any of the now-discredited scientific evidence. While that might be possible, we cannot turn a blind eye to the fact that a significant pillar of the State’s case, as presented to the jury, has collapsed and that this same evidence actually supports the defense theory that Hildwin presented at trial.

Hildwin v. State, 141 So. 3d 1178, 1181 (Fla. 2014).

122. To be fair, there *could* be a third path; we just mean to say it does not apply here. The third path would be if an attorney was in fact aware of certain evidence, but reasonably chose not to pursue that route as part of a trial strategy. The trial strategy argument is an important one, but it simply does not apply in the situation we are discussing, where it will be obvious that an attorney did not in fact discover and purposely withhold the evidence now being presented as new. Indeed, in litigating such claims, defendants would do well to approach trial counsel and confirm that there was no strategic reason to hold back the evidence now being presented as new. Often attorneys will strongly agree, and explicitly repudiate any purported trial strategy argument. E.g., *Wilhoit v. State*, 816 P.2d 545, 546 (Okla. Crim. App. 1991) (“Trial counsel even stated in an affidavit that there was no strategic reason for his not pursuing the bite-mark evidence nor for not using a bite-mark expert.”). This occurred at the 2014 evidentiary hearing in the Andrew Babick case. Evid. Hr’g Tr., *supra* note 36, at 32–33 (counsel noting that she let the State’s arson theory go unchallenged, not strategically, but “[b]ecause I had no option. There was no other option than to say it was arson based on the fire science at the time”). Should

The challenge sometimes arises because of the way the dilemma is presented: either side of the coin can be made to appear eminently reasonable. Trial counsel may have done a very thorough investigation, and yet did not discover the evidence in question, making it hard to criticize her efforts. However, it might be categorically proved that the scientific evidence that the defendant now seeks to present certainly did exist at the time of his trial. When presented in such a manner, neither the ineffective assistance nor new evidence argument seems to quite make the case.

But the key to keep in mind is that, the two options are in fact the *only* two possibilities (because *trial strategy* does not apply), and it is the sum of the possibilities that must add up to 100, *not either possibility on its own*. Yes, it would be simple and clear if one possibility was obviously the right one (90 versus 10, for example), but even where both appear reasonable (a 55-45 split for example), a close analysis reveals that one is the correct, and winning, claim for post-conviction relief.

There is, very rarely, a true 50-50 case, where both new evidence and ineffective assistance of counsel appear to accomplish 50% and no more. *Babick* was in fact such a case. While it was wholly obvious that Babick had been convicted on junk science, and trial counsel made unequivocally clear that she had no strategic reason for failing to combat the State's science,¹²³ the dilemma appeared hopeless. Trial counsel had expended immense effort investigating the case, strongly believed in her client's innocence, and was in fact an experienced litigator of arson cases.¹²⁴ Still she failed to discover the scientific developments that would have obliterated the State's theory of guilt and proved her client innocent. And yet, all sides agreed that this evidence was out there to be found, the relevant treatises having been published before Babick's trial.

In Babick's case the post-conviction court (the same judge who had presided over the trial) did as courts should do in such situations: it gave this apparent 50–50 dilemma as little attention as any hyper-technical academic anomaly deserves in our justice system. Having concluded that

an attorney nevertheless claim to have had a strategic reason to hold back some evidence, in the sorted or shifted science case we describe, the decision to purposely hold back an alternative to the State's science will be obvious deficient performance, because no reasonable attorney would make such a decision. *See, e.g., Richey v. Bradshaw*, 498 F.3d 344, 363 (6th Cir. 2007) (“[W]e can discern no strategic reason why counsel would have so readily ceded this terrain to the prosecution.”); *Sims v. Livesay*, 970 F.2d 1575, 1580–81 (6th Cir. 1992) (“We discern no strategy in [counsel's] failure to investigate [the evidence], only negligence.”); *Wilhoit*, 816 P.2d at 546 (“The omission of this evidence cannot be considered a strategic defense tactic.”).

123. *See Evid. Hr'g Tr., supra* note 36, at 32–33 (counsel noting that she let the State's arson theory go unchallenged, not strategically, but “[b]ecause I had no option. There was no other option than to say it was arson based on the fire science at the time.”).

124. *Id.* at 5–21.

the state of the science in 2014 would deem Babick's conviction upon retrial improbable, the court granted a new trial.¹²⁵ Given that the ineffective assistance and new evidence arguments appeared almost equally right, the court simply picked one (new evidence) and granted relief on that basis. In doing so, the *Babick* court followed a recent directive from the Michigan Supreme Court, which apparently concluded that there can be no "no-man's land" of diligence in between ineffective assistance and new evidence claims, and if the substantive evidence of the case warrants relief, courts should just grant it, regardless of which specific theory of relief it chooses.¹²⁶

The approach taken by the Massachusetts Supreme Court in a recent appeal from a criminal conviction based on Shaken Baby Syndrome (SBS)¹²⁷ is similar and especially laudable. Confronted with the close question of whether trial counsel should have discovered the helpful scientific evidence previously, or whether it is truly new and was not previously discoverable, the Massachusetts Supreme Court simply concluded that, if the substance of the evidence makes a difference, the legal technicalities should not be a stumbling block:

We conclude that our touchstone must be to do justice, and that requires us to order a new trial where there is a substantial risk of a miscarriage of justice because a defendant was deprived of a substantial defense, regardless whether the source of the deprivation is counsel's performance alone, or the inability to make use of relevant new research findings alone, or the confluence of the two.¹²⁸

While some other courts have agreed with the approach taken by the Michigan and Massachusetts Supreme Courts regarding the *Strickland*/new evidence dichotomy,¹²⁹ there is no shortage of courts far less willing to

125. Op. and Order Granting Relief from J. at 12, *People v. Babick*, (1997) (No. 1996-2562 FC).

126. *People v. Trakhtenberg*, 826 N.W.2d 136, 145 n.10 (Mich. Ct. App. 2012) ("[T]o the extent that defendant cannot show that he was entitled to a new trial in light of newly discovered evidence under [Michigan's new evidence standard], because he or defense counsel could, 'using reasonable diligence, have discovered and produced the evidence at trial,' defense counsel was further ineffective for not having employed such reasonable diligence." (citing *Cress*, 664 N.W.2d 174 (Mich. 2003))).

127. *Commonwealth v. Epps*, 53 N.E.3d 1247, 1266-67 (Mass. 2016).

128. *Id.* at 1266.

129. *See, e.g.*, *Wilhoit v. State*, 816 P.2d 545, 546 (Okla. Crim. App. 1991) (denying new evidence claim, but granting relief based on ineffective assistance of counsel); *State v. Nash*, 58 A.3d 705, 719-20, 725 (N.J. 2013) (denying ineffective assistance claim because trial counsel exercised reasonable diligence, and granting relief on grounds of newly discovered evidence instead).

eschew the hyper-technical route to denying relief.¹³⁰ Whether a creative third claim is necessary to deal with the 50–50 case is an unfortunate question to have to consider, but perhaps necessary in some jurisdictions. Some of the other claims discussed below might fit the bill.

C. Due Process Claims

As the remedies discussion so far ought to have made clear, relief in this narrow area of criminal litigation often turns on a weighing of subtleties so minor, the process is all but arbitrary. Whether a *Daubert*, *Strickland*, or new evidence claim succeeds will depend on the precise framing of the claim, the jurisdiction, and indeed, even the specific actors involved. Of course, to some extent, such factors make the difference in all sorts of litigation. However, given the stakes involved here—the liberty of potentially innocent people, and the credibility of our system of sorting guilt from innocence—the concern rises beyond one of routine error correction and implicates the very guarantee our Constitution makes of due process under the law.

That the Due Process Clause would have a role to play in determining the validity of a conviction, and the credibility of the process that led to it, should not surprise anyone. However, the Due Process Clause has traditionally been understood to guarantee procedures, not outcomes.¹³¹ And while that sort of legal formalism may have been justifiable for

130. See, e.g., *Williams v. Comm’r of Corr.*, 917 A.2d 555, 562 (Conn. App. Ct. 2007) (denying both ineffective assistance and new evidence claims and noting that while diligence plays a similar role in the ineffective assistance and new evidence standards, “they are legally distinct and . . . the disposition of one does not preclude the other under the doctrine of collateral estoppel”); *Id.* at 563 (citing federal cases that imply a gap exists between the two claims); *Jones v. State*, 591 So. 2d 911, 913, 916 (Fla. 1991) (noting that “much of the evidence . . . may not qualify as newly discovered because if not already known it could have been obtained with the exercise of reasonable diligence,” but still denying ineffective assistance of counsel claim); *Woodward v. State*, No. A14–0614, 2015 WL 1128095, at *3 (Minn. Ct. App. Mar. 16, 2015) (denying new evidence claim because “Woodward has not demonstrated that the [proposed new] evidence . . . could not have been [previously] ascertained by the exercise of due diligence by him or his counsel . . .” and noting that defendant essentially admits that prior discoverability was possible by arguing ineffective assistance in the alternative, but then also denying ineffective assistance claim).

131. Peter Strauss, *Due Process*, CORNELL U.L. SCH. LEGAL INFO. INST., https://www.law.cornell.edu/wex/due_process (last visited Dec. 5, 2016) (“The words ‘due process’ suggest a concern with procedure, and that is how the Due Process Clause is usually understood . . . [T]he clause reflects the Magna Carta of Great Britain, King John’s thirteenth century promise to his noblemen that he would act only in accordance with law (‘legality’) and that all would receive the ordinary processes (procedures) of law”).

centuries, it has become much less so in our modern era, where outcomes can be proved, not simply suspected, to be erroneous.¹³²

The advent of DNA technology and the DNA exoneration revolution have rightly called into question the wisdom of complete adherence to the traditional values of finality, efficiency and repose.¹³³ It is much harder to sit idly by and say that a court provided due process to a defendant who can prove with 99.9% certainty that he was wrongfully convicted. The blunt truth is that due process was traditionally about procedures simply because it had to be; that was all the law could conceivably guarantee. In the vast majority of cases, the courts could not reliably prove false results, even when they seemed unfair. Thus, the law's blissfully ignorant position of guaranteeing procedures and not results was able to persist.

But the gold standard of DNA proof changed the calculus considerably, and unsurprisingly courts have begun to reconsider the question of whether an erroneous result may, in some cases, constitute a due process violation, even if the procedures at trial were acceptable.¹³⁴ The cases cited in the following discussion on various remedies rooted in due process are proof of such progress, though certainly there is a long way yet to go.

1. Fundamental Fairness Under *Chambers*, *Ege*, and *Lee*

Our discussion of due process violations in criminal convictions begins with the fundamental fairness doctrine of *Chambers v. Mississippi*.¹³⁵ In that case, the U.S. Supreme Court held that an evidentiary rule that excluded a third-party's confession to the crime deprived the defendant of

132. *Glossip v. Gross*, 135 S. Ct. 2726, 2759 (2015) (Breyer, J., dissenting) ("Unlike 40 years ago, we now have plausible *evidence* of unreliability [of criminal convictions] that (perhaps due to DNA evidence) is stronger than the evidence we had before."). In the same case, even while excoriating Justice Breyer's abolitionist stance, Justice Scalia admitted that recent evidence cited by Justice Breyer shows "*convictions* [but not punishments] are unreliable." *Id.* at 2747 (Scalia, J., concurring).

133. *Id.* at 2755–56, 2759, 2776 (Breyer, J., dissenting). *See also* Dist. Attorney's Office for Third Judicial Dist. v. *Osborne*, 557 U.S. 52, 72–73 (2009) ("The elected governments of the States are actively confronting the challenges DNA technology poses to our criminal justice systems and our traditional notions of finality, as well as the opportunities it affords.").

134. Furthermore, it is probably worth questioning how clear the line between procedure and result is anyway, in the sort of shifted science cases we are discussing. For example, Babick's due process challenge, though we framed it in result-oriented terms (his actual innocence), can just as readily be said to be an indictment on the procedures at his trial, which must have been flawed because they permitted the use of evidence we now know, *and should have known even at trial*, to be flat-out wrong. Therefore, an alternate framing of Babick's due process argument could argue that it is in fact the procedures at his trial that violated his due process. The violation simply could not be established until much later, when the scientific flaws in the State's case were finally exposed.

135. *Chambers v. Mississippi*, 410 U.S. 284, 302 (1973).

his due process.¹³⁶ Noting that the exercise of any constitutional right “must comply with established rules of procedure and evidence designed to assure both fairness and reliability,” the Court nevertheless held that defendant’s right to due process was violated in that case because the State’s procedures that excluded the third party confession from evidence “applied mechanistically to defeat the ends of justice,” and “deprived Chambers of a fair trial.”¹³⁷

Chambers’s fundamental fairness doctrine was applied to a science-based prosecution by the Sixth Circuit in *Ege v. Yukins*.¹³⁸ In that case, the Sixth Circuit granted habeas relief to a defendant upon finding that the trial court had erroneously admitted egregiously flawed expert testimony regarding bite marks.¹³⁹ Although lower courts had denied relief because they deemed the remainder of the evidence against Ege to be overwhelming, and because Ege had her own expert at trial, the Sixth Circuit noted that trial errors cannot “‘defeat the ends of justice’ or otherwise deprive a defendant of her right to a fair trial,” and thus habeas relief was warranted.¹⁴⁰

Chambers and *Ege* are both about trial errors that should have been discovered at the time of trial. They could apply to a case like *Babick*, where it theoretically could be argued that the significant flaws in the State’s evidence should have been discovered at trial. However, other cases that arise on the cusp of a scientific shift are less straightforward. Consider, for example, the case of an arson defendant convicted on the same evidence used against Babick, but convicted in 1990 instead of 1995. Although one could argue the shift in science could have been discovered at trial,¹⁴¹ given that NFPA 921 was not released until 1992, that’s probably a losing argument.

In neither *Chambers* nor *Ege* was there any scientific evidence or any evidentiary standards that shifted between trial and the decision overturning

136. *Id.* at 302.

137. *Id.* at 302–03.

138. *Ege v. Yukins*, 485 F.3d 364, 375 (6th Cir. 2007).

139. *Id.* at 378.

140. *Id.* at 375. Notably, Ege was indeed subsequently convicted again at a new trial, owing to the significant other evidence against her. *People v. Ege*, No. 284096, 2009 WL 2605410, at *9 (Mich. Ct. App. Aug. 25, 2009) (per curiam). Nevertheless, that a defendant ultimately may be guilty is scant justification for railroading her with junk science. As Judge Learned Hand wrote a century ago, and hardly anyone could reasonably deny today, “[t]he Constitution protects the guilty along with the innocent . . .” *United States v. Casino*, 286 F. 976, 978 (S.D.N.Y. 1923) (going on to note, “the petitioner, however guilty in fact, was the subject of an illegal search, and is entitled to a return of the property seized.”).

141. LENTINI, *supra* note 29, at 13 (indicating that the NFPA was aware of the flaws in fire science, and created a committee to address them, as early as 1985).

the conviction (or at least, no such shift played any part in the courts' analysis). Both cases stand for the proposition that certain trial errors rise beyond mere evidentiary disputes and serve to "defeat the ends of justice" and deprive a defendant of a fair trial.¹⁴² The cases held that those errors violate a defendant's right to due process of law.¹⁴³ However, it could be debated whether those cases really apply to many of the cases that arise on the cusp of a shift in science. In the 1990 arson case, for example, errors made at trial could not have been recognized as errors at the time of trial; there simply would have been no basis in science to argue that admission of certain scientific evidence was improper.¹⁴⁴

If due process was simply about the validity of trial procedures at the time of trial, then *Chambers* would be inapplicable to all shifted science defendants, except those who could show that the shift in science they now challenge could and should have been challenged at the time of trial. And given the previously discussed difficulties involved in the questions of who knew what about the science and when—and what they should/could have known about the science and when—such a showing would be difficult for most defendants to make. However, recent opinions by the Third Circuit, and subsequently on remand by a federal district court in Pennsylvania, eschewed such quibbles over academic triviality in favor of a just outcome.¹⁴⁵ Those opinions serve as great examples for courts evaluating shifted science cases, and for defendants and defense attorneys seeking to craft meaningful shifted science due process claims.

Evaluating an arson/murder conviction from 1990—in which the defendant, Han Tak Lee, claimed to be innocent and wrongfully convicted based on junk science prior to the advent of NFPA 921—the Third Circuit spoke in jarringly sweeping terms about the possibility that a conviction on the basis of now-discredited science would violate Lee's due process, *even though* no one could realistically have known at trial that the science was flawed.¹⁴⁶

First, the court noted that Lee claimed two due process violations: (1) "Lee's due process rights were violated because his convictions were based on inaccurate and unreliable evidence, . . ." and (2) "Lee is incarcerated in violation of due process because newly developed scientific evidence

142. *Chambers*, 410 U.S. at 302 (1973); *Ege*, 485 F.3d at 375.

143. *Chambers*, 410 U.S. at 302; *Ege*, 485 F.3d at 378.

144. This was true even in *Babick*, although it was prosecuted more than four years after the release of NFPA 921. *See supra* notes 31–37 and accompanying text.

145. *Lee v. Glunt*, 667 F.3d 397 (3d Cir. 2012); *Lee v. Tennis*, No. 4:08–CV–1972, 2014 WL 3894306 (M.D. Pa. June 13, 2014); *Lee v. Tennis*, No. 4:CV–08–1972, 2014 WL 3900230 (M.D. Pa. Aug. 8, 2014), *aff'd. Lee*, 798 F.3d 159.

146. *Glunt*, 667 F.3d at 407.

shows that he is probably innocent of the crimes of which he was convicted”¹⁴⁷ Both claims clearly rely on advances in fire science occurring after the time of trial to establish a due process violation. Both, arguably, would not be covered under *Chambers*’s fundamental fairness doctrine. Nevertheless, the Third Circuit stated that “[t]o succeed, Lee must show that the admission of the fire expert testimony ‘undermined the fundamental fairness of the entire trial,’ because ‘the probative value of [the fire expert] evidence, though relevant, is greatly outweighed by the prejudice to the accused from its admission.’”¹⁴⁸ Although the record did not allow the Third Circuit to make a final decision in the case, the court remanded the case back to the district court for an evidentiary hearing, and in so doing, stated simply: “If Lee’s expert’s independent analysis of the fire scene evidence—applying principles from new developments in fire science—shows that the fire expert testimony at Lee’s trial was fundamentally unreliable, then Lee will be entitled to federal habeas relief on his due process claim.”¹⁴⁹

Thus, the Third Circuit made clear that Lee’s due process could be deemed violated and habeas relief could be granted today, even if the violations could not have been perceived at the time of trial and are only established through subsequent shifts in the science.¹⁵⁰ We previously noted that this stance was unusual and could potentially mean that “*Han Tak Lee* is a truly groundbreaking decision.”¹⁵¹ Upon remand, the district court conducted a full factual evaluation of the merits of Lee’s due process claims, and made even clearer that *Lee* is a truly groundbreaking case.¹⁵² Engaging in a jarringly frank and deep discussion of scientific advances and their immense implications in science based prosecutions, Magistrate Judge Martin Carlson wrote a memorable opinion recommending that the court grant Lee habeas relief.¹⁵³ District Judge William Nealon then adopted the

147. *Id.* at 402.

148. *Id.* at 403 (alteration in original) (citation omitted). Although the Third Circuit did not directly cite to *Chambers*, its fundamental fairness analysis can be traced back to that source. *Id.* (citing *Keller v. Larkins*, 251 F.3d 408, 413 (3d Cir.2001) (citing *McCandless v. Vaughn*, 172 F.3d 255, 262 (3d Cir.1999) (citing *Darden v. Wainwright*, 477 U.S. 168, 183 (1986) (citing *Donnelly v. DeChristoforo*, 416 U.S. 637, 643 (1974) (citing *Chambers*, 410 U.S. 284))))).

149. *Glunt*, 667 F.3d at 407–08.

150. *Id.* at 407.

151. Plummer & Syed, *supra* note 46, at 294. Interestingly, the Ninth Circuit recently signed on to the reasoning expressed in the Third Circuit’s 2012 *Lee* opinion. See *Gimenez v. Ochoa*, 821 F.3d 1136, 1145 (9th Cir. 2016) (“We join the Third Circuit in recognizing that habeas petitioners can allege a constitutional violation from the introduction of flawed expert testimony at trial if they show that the introduction of this evidence ‘undermined the fundamental fairness of the entire trial.’”).

152. *Lee v. Tennis*, No. 4:08–CV–1972, 2014 WL 3894306, at **11–13. (M.D. Pa. June 13, 2014). *Lee v. Tennis*, No. 4:CV–08–1972, 2014 WL 3900230 (M.D. Pa. Aug. 8, 2014).

153. *Lee*, 2014 WL 3894306, at *16, *19.

recommendation and granted Lee's petition for writ of habeas corpus in August 2014.¹⁵⁴ The case then returned to the Third Circuit, which affirmed the district court's decision in August 2015.¹⁵⁵ The State did not file a petition for writ of certiorari in the U.S. Supreme Court.¹⁵⁶

Judge Carlson's opinion is unique in its approach to the scientific questions involved. Unaffected by the average lawyer's or judge's reluctance to dive too deeply into questions of science, lest they lose their bearings on the processes and procedures favored by the law, Judge Carlson explores the shift in fire science with deft and candor—not afraid to convey awe about the truly immense changes that have occurred.¹⁵⁷ In doing so, he ventured into a path where thus far only legal scholars have gone, recognizing that shifts in science can change the very ground upon which a prosecution was built, and in many cases, level the foundations of the case entirely.¹⁵⁸

The theme running through Judge Carlson's opinion is that science is a force with a mind of its own; a constantly moving object that the law cannot contain, but one the law must vigilantly observe and document. In recognizing that science is often critical to legal cases, and yet constantly changing, Judge Carlson embraces change and growth as a necessary component of justice and fairness in our legal system.¹⁵⁹ Although petitions of writs of habeas corpus have in recent decades been the most draconian

154. *Lee*, 2014 WL 3900230, at *7, *aff'd*, 798 F.3d 159 (3rd Cir. 2015).

155. *Lee*, 798 F.3d at 161, 169.

156. See Maurice Possley, *Han Tak Lee*, NAT'L REGISTRY OF EXONERATIONS (Dec. 28, 2015), <https://www.law.umich.edu/special/exoneration/Pages/casedetail.aspx?caseid=4820> ("In November 2015, Monroe County District Attorney David Christine announced that he would not appeal to the U.S. Supreme Court because the chance of success was very slim. He also said there would be no retrial.")

157. "Over the past two decades, there has been a revolution in fire science. It is a revolution that has toppled old orthodoxies, and cast into doubt longstanding assumptions regarding fire scene analysis. In the past twenty years, the analytical paradigm in arson investigations has shifted in profound and dramatic ways. Indeed, as presented by Petitioner, and conceded by Respondents, the scope of change in this field of human scientific endeavor has been global, sweeping and breathtaking." *Lee*, 2014 WL 3894306, at *3.

158. "The impact of this tidal shift in our understanding of fire science over the past two decades has been profound, and profoundly affects the reliability of past fire science evidence. These extraordinary developments in fire science have not only undermined the validity of the past science and art in this field; they have also revealed that what was once regarded as the science in this field was not only simply wrong, it was in some instances affirmatively misleading." *Id.*

159. "The law is the means by which fragile, frail, imperfect persons and institutions seek greater perfection and justice through the search for the truth. But the search for the truth is not always easy, and the path to the truth is not always clear. Sometime [sic] we find that truth eludes us. Sometimes, with the benefit of insight gained over time, we learn that what was once regarded as truth is myth, and what was once accepted as science is superstition. So it is in this case." *Id.* at *1.

outlet for the law's general preference of finality and repose,¹⁶⁰ Judge Carlson notes, "an emerging consensus that, upon a proper showing by a habeas petitioner, this paradigm shift in our understanding of arson science may entitle petitioners to post-conviction relief."¹⁶¹ To Judge Carlson this is a welcome development, for he concludes his opinion by noting: "To achieve justice, the law must serve as the vehicle through which imperfect institutions strive for greater justice through a more perfect understanding of the truth. Therefore, as our understanding of scientific truth grows and changes, the law must follow the truth in order to secure justice."¹⁶²

While *Lee* is an example of a defendant succeeding in a due process challenge where the science that convicted him shifted in the intervening years, other courts have been less welcoming of the idea that shifts in science might warrant relief from judgment for defendants convicted before the shift.¹⁶³ Some of these opinions denying relief seem perfectly reasonable on the face, given that they are adjudicating claims of freestanding actual innocence,¹⁶⁴ which is an exceedingly high standard.¹⁶⁵ However, freestanding actual innocence claims are actually rooted in due process as well.¹⁶⁶ While the Third Circuit drew a line in *Lee* and said that it

160. See, e.g., *Cullen v. Pinholster*, 563 U.S. 170, 181, 185 (2011) (outlining severe limitations on the discretion of federal courts considering habeas corpus petitions); *Cavazos v. Smith*, 132 S. Ct. 2, 3–8 (2011) (per curiam) (reversing the Ninth Circuit's decision to grant the writ of habeas corpus because federal courts must not substitute their judgment for that of the state courts); *Harrington v. Richter*, 562 U.S. 86, 91–103 (2011) (outlining the strenuous requirements for habeas relief); Stephen R. Reinhardt, *The Demise of Habeas Corpus and the Rise of Qualified Immunity: The Court's Ever Increasing Limitations on the Development and Enforcement of Constitutional Rights and Some Particularly Unfortunate Consequences*, 113 MICH. L. REV. 1219, 1221 (2015) (arguing that the U.S. Supreme Court's adherence to comity and finality have made state court decisions almost unreviewable).

161. *Lee*, 2014 WL 3894306 at *15.

162. *Id.* at *19.

163. "This court also notes that [another case granting relief to a shifted science defendant] presents a potential quagmire of epic proportions: the strong likelihood of constant renewed prosecution and relitigation of criminal charges as expert opinion changes and/or evolves over time. 'The state has a strong interest in the finality of judgments . . .'" *Grant v. Warden*, No. TSRCV030004233S, 2008 WL 2447272, at *1 n.1 (Conn. Super. Ct. June 4, 2008) (denying relief on due process and other grounds). See also *People v. Snell*, No. 2-08-0949, 2011 WL 10088352, at **15–17 (Ill. App. Ct. Jan. 21, 2011) (affirming the dismissal of the defendant's post-conviction petition despite defendant's argument that science had shifted); *Ex parte Robbins*, 360 S.W.3d 446, 458, 463 (Tex. Crim. App. 2011) (denying relief in a shifted science case upon concluding that the new scientific evidence would not have unquestionably established innocence).

164. E.g., *Robbins* 360 S.W.3d at 458 (denying applicant new trial because new evidence did not "unquestionably establish [applicant's] innocence."); *Wright v. Superintendent Somerset SCI*, 601 F. App'x 115, 120–22 (3d Cir. 2015).

165. *Herrera v. Collins*, 506 U.S. 390, 417 (1993) ("[T]he threshold showing for such an assumed right would necessarily be extraordinarily high.>").

166. *Id.* at 407.

was ruling on a due process claim and not an actual innocence claim,¹⁶⁷ it is questionable how separable the two actually were in that case: the repudiation of the scientific evidence certainly did not prove *Lee* innocent, but it left behind almost no substantive evidence of guilt.¹⁶⁸

Why courts choose to grant relief in some cases and not in others likely depends on the individual facts of the case, but there can be little doubt that a court's view on what the due process clause is, and what it should be, also play a role. Because the same case will never be decided by two separate courts at the same procedural posture, there is rarely an opportunity to get competing judicial evaluations of the same due process claim under the same circumstances.

The rare opportunity for such insight came in the Texas Court of Criminal Appeals case of *Ex Parte Henderson*.¹⁶⁹ However, because *Henderson's* analysis came from a different branch of the due process tree, we address it in the next section.

2. False or Misleading Evidence, and Suppression of Evidence

i. Basics of *Napue* and *Alcorta*

Knowingly using false evidence violates the Due Process Clause of the Fourteenth Amendment.¹⁷⁰ And “[t]he same result obtains when the State, although not soliciting false evidence, allows it to go uncorrected when it appears.”¹⁷¹ Furthermore, it is not merely false evidence that violates due process, but also the use of misleading evidence.¹⁷²

Certainly, if the prosecution knew at the time of trial that the expert testimony it was presenting was flawed, a defendant would have a strong due process claim under either the *Napue* or *Alcorta* lines of precedent.¹⁷³ Such a possibility is an important one in the category of cases we discuss in this article. Because the cases we highlight are ones where science is shifting essentially right as the trial proceeds, it is very conceivable that the

167. *Lee v. Glunt*, 667 F.3d 397, 403, n.5 (3d Cir. 2012).

168. “Without this scientific proof the Commonwealth’s trial evidence rests upon thin and equivocal reeds.” *Lee v. Tennis*, No. 4:08–CV–1972, 2014 WL 3894306, at *18. (M.D. Pa. June 13, 2014) (going on to describe the vague equivocal insinuating evidence that constituted the remainder of the State’s case).

169. 384 S.W.3d 833, 833–34 (Tex. Crim. App. 2012) (per curium).

170. *Napue v. Illinois*, 360 U.S. 264, 269 (1959).

171. *Id.*

172. *Alcorta v. Texas*, 355 U.S. 28, 31 (1957) (granting relief based on due process violation because the evidence presented by the State “gave the jury [a] false impression . . .” about a material issue at trial).

173. *Napue*, 360 U.S. at 269.

prosecution may learn of scientific shifts even if the defense does not. This would be especially true if the prosecution is the only side to consult an expert, which is often the case.¹⁷⁴

Exactly where the violation occurs, and exactly what the prosecutor's duty is when she learns of shifts in science, are difficult questions. But certainly if she is told by her expert that the theory the State seeks to posit has been overwhelmingly repudiated by the relevant scientific community, the prosecutor's continued use of the repudiated theory is likely to make for a strong *Napue* or *Alcorta* claim.¹⁷⁵

ii. The *Brady* Possibility

Indeed, if the prosecutor is made aware of treatises or other sources that directly contradict the theory she is presenting, and could provide exculpatory arguments for the defense, there is a strong argument that she should disclose that information to the defense. The failure to do so might well be a *Brady* violation, which is in truth a third line of due process violations that possibly apply here.¹⁷⁶ *Brady* duties are said to encompass the entire prosecutorial team (including the police), not just the individual prosecutor who tries the case,¹⁷⁷ so there is even an argument to be made—especially in cases where the prosecution's expert is part of law enforcement—that a *Brady* violation occurs even if only the expert knew about potentially helpful shifts in science that were not disclosed to the defense at trial.

The U.S. Supreme Court recently commented that it has never extended the *Brady* doctrine beyond trial/direct appeal.¹⁷⁸ Nevertheless,

174. See, e.g., Paul C. Giannelli, *Independent Crime Laboratories: The Problem Of Motivational And Cognitive Bias*, 2010 UTAH L. REV. 247, 261 (“[P]rosecutors use crime laboratories far more than defense attorneys do . . .”); *supra* note 93 and accompanying text.

175. *Napue*, 360 U.S. at 269.

176. *Brady* violations require showing that the “evidence at issue [was] favorable to the accused, either because it is exculpatory, or because it is impeaching; [it was] suppressed by the State, either willfully or inadvertently; and prejudice . . . ensued.” *Strickler v. Greene*, 527 U.S. 263, 281–82 (1999). Although the standard seems to imply that there would be no violation if the evidence was available to be independently obtained by the defense, Courts have recognized that there cannot be a diligence duty on defendants in the *Brady* realm. See, e.g., *United States v. Tavera*, 719 F.3d 705, 711–12 (6th Cir. 2013) (per curiam) (explaining multiple advantages prosecutors possess over defendants and the necessity of prosecutors bearing the diligence duty to facilitate due process); *People v. Chenault*, 845 N.W.2d 731, 738 (Mich. 2014) (citing *Banks v. Dretke*, 540 U.S. 668, 695–96 (2004)).

177. *Kyles v. Whitley*, 514 U.S. 419, 437 (1995).

178. See, e.g., *Dist. Attorney's Office for Third Judicial Dist. v. Osborne*, 557 U.S. 52, 68 (2011) (criticizing the Ninth Circuit's assumption that there was clearly established Supreme Court authority construing *Brady* as an ongoing post-conviction duty).

Osborne addressed the issue in dicta only,¹⁷⁹ and there is no shortage of authority—even from the U.S. Supreme Court—implying an ongoing post-conviction legal duty of disclosure for prosecutors.¹⁸⁰ Thus, one may still argue, even after *Osborne*, that *Brady* duties might exist at post-conviction, even if the U.S. Supreme Court has yet to explicitly say so. And the argument may well succeed, depending on the jurisdiction. Whether the U.S. Supreme Court would ultimately approve is an irrelevant question for most litigants, whose cases will never make it to that Court.

Even where the shift in science is not definitive enough to truly meet the *Brady* standard—a distinct possibility in the sort of cusp cases on which we focus—if the prosecutor is aware that the evidence/theory the State is presenting is only one side of the story, then it is difficult to see why that would not be an *Alcorta* violation at least.¹⁸¹ In an area like SBS and Abusive Head Trauma (AHT) prosecutions,¹⁸² for example, even the strongest proponents of the SBS hypothesis would not deny that there is a strong competing narrative.¹⁸³ Under the *Alcorta* analysis, there can be no doubt that a jury is left with a *false impression* when only one side of the story is presented.¹⁸⁴

179. *Id.* (noting that “*Osborne* does not claim that *Brady* controls this case, and with good reason” (citation omitted)).

180. See, e.g., Daniel S. Medwed, *The Prosecutor as Minister of Justice: Preaching to the Unconverted from the Post-Conviction Pulpit*, 84 WASH. L. REV. 35, 54 (2009) (“[L]anguage from case law—admittedly often in the form of dicta—intimates that a prosecutor’s *Brady* obligations continue into the post-conviction sphere” (citing *Pennsylvania v. Ritchie*, 480 U.S. 39, 60 (1987) (“[T]he duty to disclose [exculpatory material] is ongoing” (alteration in original))); *Imbler v. Pachtman*, 424 U.S. 409, 427 n.25 (1976) (observing that prosecutors shall notify authorities of information that “casts doubt upon the correctness of the conviction”); *Smith v. Roberts*, 115 F.3d 818, 820 (10th Cir. 1997) (“We also agree, and the State concedes, that the duty to disclose is ongoing and extends to all stages of the judicial process.”); *State v. Bennett*, 81 P.3d 1, 9 (Nev. 2003) (indicating that the duty to disclose exculpatory evidence extends to post-conviction proceedings).

181. *Alcorta v. Texas*, 355 U.S. 28, 31 (1957).

182. These terms describe a hypothesis that states certain symptoms in children are pathognomonic for child abuse—meaning that if a child exhibits those symptoms, he or she has most likely been abused. Prosecutors have for many years used various tributaries of that hypothesis to prosecute parents and caregivers in cases of child injury or death. The hypothesis has come under heavy fire in recent years, as it has been demonstrated that the same symptoms can, in fact, be caused by accidents, birth conditions, etc. Plummer & Syed, *supra* note 2, at 511.

183. In a case from Michigan, the expert in question, himself a proponent of the SBS narrative, nevertheless admitted that “there was a marked difference of opinion within the medical community about diagnosing injuries that result from falling short distances, on the one hand, and shaken baby syndrome (SBS) or, as it is sometimes termed, abusive head trauma (AHT), on the other hand. [He] asserted that this divide is ‘like a religion’ because each expert has deeply held beliefs about when each diagnosis is supported” *People v. Ackley*, 870 N.W.2d 858, 860 (Mich. 2015).

184. *Alcorta*, 355 U.S. at 31.

As another example, recently, the field of bite-mark comparison has been under heavy fire.¹⁸⁵ Although bite-mark matching as a *science* seems to fail just about every blind test, including one concocted by its strongest proponents,¹⁸⁶ there are prosecutors who remain staunch advocates of using bite-mark matching in court.¹⁸⁷ One would hope that bite-mark matching has been repudiated enough for the defense to be aware of it and mount a challenge at trial. However, if the defense is unaware and fails to mount a challenge, it seems clear that a prosecutor who is aware of a strong scientific opposition to the use of bite-mark evidence in court would be obligated to disclose the opposing view to the defense.¹⁸⁸

iii. Into the Weeds of *Napue/Alcorta*: Lessons from *Henderson*

Aside from the duty to disclose known favorable/material evidence, we return for a moment to a prosecutor's duty not to use false or misleading evidence at all. Take again the example of bite marks, where the science itself has been resoundingly repudiated, yet prosecutors continue to use bite-mark evidence, and trial courts continue to admit it.¹⁸⁹ So where is the line for prosecutors between effective advocacy and violations of *Napue* or

185. See, e.g., Radley Balko, *How the Flawed 'Science' of Bite Mark Analysis Has Sent Innocent People to Prison*, WASH. POST (Feb. 13, 2015) [hereinafter Balko, *Flawed Science*], https://www.washingtonpost.com/news/the-watch/wp/2015/02/13/how-the-flawed-science-of-bite-mark-analysis-has-sent-innocent-people-to-jail/?utm_term=.68533ab44960 (explaining that wrongful convictions based on bite mark analysis have generated heavy criticism).

186. Radley Balko, *A Bite Mark Matching Advocacy Group Just Conducted a Study that Discredits Bite Mark Evidence*, WASH. POST (Apr. 8, 2015) [hereinafter Balko, *Advocacy Group*], https://www.washingtonpost.com/news/the-watch/wp/2015/04/08/a-bite-mark-matching-advocacy-group-just-conducted-a-study-that-discredits-bite-mark-evidence/?utm_term=.0c4de608ec39.

187. Radley Balko, *Attack of the Bite Mark Matchers*, WASH. POST (Feb. 18, 2015) [hereinafter Balko, *Attack*], https://www.washingtonpost.com/news/the-watch/wp/2015/02/18/attack-of-the-bite-mark-matchers-2/?utm_term=.7416fc852815 (speaking of Melissa Mourgues, an assistant district attorney in Manhattan).

188. One might argue that in such a case the defense attorney's failure to discover for himself the science to rebut the prosecution's bite mark evidence deems his performance deficient. We might even agree, as a later section indicates. Be that as it may, however, we fail to see why the defense attorney's duty to investigate, and the prosecutor's duty to disclose, cannot coexist, and make for overlapping legal claims in the appropriate case. Both duties play crucial, but different, roles in our justice system. See, e.g., *People v. Chenault*, 845 N.W.2d 731, 738 (Mich. 2014) (concluding that a diligence rule in the *Brady* context would in effect be a rule that enforces diligence upon defense counsel, but that is not the purpose of the *Brady* rule). And of course, if defense counsel was in fact aware of the underlying evidence, no *Brady* violation results, and the question becomes purely one of ineffective assistance. *Id.* at 738 n.7.

189. See, e.g., Balko, *Advocacy Group*, *supra* note 186 (“[T]o date, every court to rule on the admissibility of bite mark analysis has allowed it to be used as evidence. This, despite an ever increasing number of wrongful convictions, wrongful arrests, and lack of scientific research to support the field, and a new body of research suggesting that its core assumptions are false.”).

Alcorta? The tipping point can be hard to discern. We would hope that no prosecutor in the country would ever use evidence he *knows* to be false. While this undoubtedly does happen on occasion, we set aside the sociopathic extreme and discuss two harder questions: (1) what if the evidence is downright false, but the prosecutor was not aware of it? and (2) what if the evidence was not quite false, but arguably misleading?

Ex Parte Henderson provides great insight on both points. The court in *Henderson* granted a new trial to a defendant who had been convicted of murder on a SBS theory, prior to the shift in science in the relevant field.¹⁹⁰ The *per curium* opinion granted a new trial in deference to the trial court's finding that new scientific advances since the time of trial would make for a reasonable probability of a different outcome upon retrial.¹⁹¹ However, the eight presiding judges (one was recused) issued five separate concurrences and dissents.¹⁹² In those opinions, it is possible to get rare insight into where the cause of shifted science defendants stands today in the eyes of relevant courts.

To the first question, *Henderson* notes that, in the state of Texas, a due process violation has occurred when the prosecutor uses false evidence regardless of whether he or she was aware that the evidence was false or not.¹⁹³ The Second¹⁹⁴ and Ninth Circuits have also taken this position, with the latter holding:

A conviction based in part on false evidence, even false evidence presented in good faith, hardly comports with fundamental fairness. Thus, even if the government unwittingly presents false evidence, a defendant is entitled to a new trial "if there is a reasonable probability that [without the evidence] the result of the proceeding would have been different."¹⁹⁵

This position, which both the Second and Ninth Circuits, and the State of Texas, came to embrace through a series of non-science cases,¹⁹⁶ may

190. *Ex parte Henderson*, 384 S.W.3d 833, 834 (Tex. Crim. App. 2012) (per curium).

191. *Id.* at 833–34.

192. *Id.* at 834.

193. *Id.* at 835 n.8, (Price, J., concurring) (citing *Ex parte Chavez*, 371 S.W.3d 200, 206 (Tex. Crim. App. 2012)).

194. *Sanders v. Sullivan*, 863 F.2d 218, 224 (2d Cir. 1988).

195. *United States v. Young*, 17 F.3d 1201, 1203–04 (9th Cir. 1994) (alteration in original) (citation omitted).

196. *See, e.g., Ex parte Ghahremani*, 332 S.W.3d 470, 478 (Tex. Crim. App. 2011) (stating that applicants can prevail on due process claims even if State unknowingly used false testimony); *Ex parte Chabot*, 300 S.W.3d 768, 770 (Tex. Crim. App. 2009) (involving perjured witness testimony unknowingly presented by prosecution at trial); *Young*, 17 F.3d at 1203–04 (stating that a defendant may

well prove vital in shifted science cases that arise on the cusp of a shift. Where completely baseless junk science is used to convict a defendant, the fact that it is later exposed as fraud could lead to a successful due process claim, even if the prosecutor was not aware that the evidence was false. While the federal constitutional standard under U.S. Supreme Court precedent is still *Napue*, and therefore would require knowing use of false evidence, there are hints that the U.S. Supreme Court itself may soon follow the path taken by the Second and Ninth Circuits and the Texas Court of Criminal Appeals, if it is properly presented in a compelling case.¹⁹⁷

The several concurrences and dissents in *Henderson* also touch on the second important question: what if the prosecutor did not quite *know* that the evidence was false? Where do we draw the line between adversarial advocacy and misconduct? Given that the court issued its opinion in the context of a SBS conviction, and the science is still very much in debate in that field, the *knowingly false* analysis was of little use to the *Henderson* majority.¹⁹⁸ Instead, the judges conceded that the science changed after *Henderson*'s conviction, and the analysis centered on whether due process is violated if evidence is proven fundamentally unreliable long after trial, even if it was considered reliable at trial.¹⁹⁹ All of the judges, even the three

be entitled to a new trial even if the State unknowingly presented false evidence); *Killian v. Poole*, 282 F.3d 1204, 1209 (9th Cir. 2002) (stating that it is unimportant whether the State knew the evidence was false or not), *cert. denied*, 537 U.S. 1179 (2003); *Maxwell v. Roe*, 628 F.3d 486, 506 (9th Cir. 2010) (explaining that convicting defendant with false testimony of a jailhouse informant, even if presented in good faith, goes against fundamental fairness), *cert. denied*, 132 S. Ct. 611 (2012); *Sullivan*, 863 F.2d at 224 (rejecting the idea that the State's lack of bad faith in presenting false evidence could prevent a defendant from succeeding on a due process challenge.).

197. *Killian* and *Maxwell* are especially important examples in this discussion. Both are habeas corpus cases arising after the Anti-Terrorism and Effective Death Penalty Act of 1996, meaning that the Court could only grant relief if the claims in question were based on clearly established U.S. Supreme Court precedent. That fact is important when one considers that the State sought certiorari in both *Killian* and *Maxwell* and the U.S. Supreme Court denied certiorari in both instances. *Poole v. Killian*, 537 U.S. 1179 (2003); *Cash v. Maxwell*, 132 S. Ct. 611 (2012). In *Maxwell*, certiorari was denied over a fierce dissent by Justice Scalia, who railed: “[T]he Ninth Circuit also stretched the Constitution, holding that the use of . . . false testimony violated the Fourteenth Amendment’s Due Process Clause, whether or not the prosecution knew of its falsity. We have never held that, and are unlikely ever to do so. This extension of due process by the Ninth Circuit should not be left standing.” *Maxwell*, 132 S. Ct. at 615 (Scalia, J., dissenting) (emphasis removed) (citation omitted). But the Supreme Court did leave the Ninth Circuit’s extension standing, much like it had done in *Killian*, perhaps signaling that the rest of the Court does not share Justice Scalia’s opposition to “[t]his extension of due process.” *Id.*

198. *Henderson*, 384 S.W.3d at 835.

199. Concurring in the *Henderson* opinion, Judge Price stated

“I do believe that [Henderson] has established that her conviction violated her right to due process. She has proven to my satisfaction that her conviction was based in critical part upon an opinion from the medical examiner that he has now disowned because it has been shown by subsequent scientific developments to be highly questionable.”

in dissent, agreed that due process might be violated where the science that was material to a criminal conviction is discredited later on.²⁰⁰

All in all, due process claims—whether they be based in *Chambers*, *Brady*, *Napue*, *Alcorta*, or the extensions of those claims at play in *Henderson*, *Lee*, *Poole* and *Maxwell*—have a significant role to play in shifted science cases. Indeed, a recent opinion from the Ninth Circuit made clear the necessity of such due process claims in shifted science cases:

[C]ourts have long considered arguments that the introduction of faulty evidence violates a petitioner’s due process right to a fundamentally fair trial—even if that evidence does not specifically qualify as “false testimony.” Nothing compels a different rule for a challenge brought in a successive petition to expert testimony about discredited forensic principles or other junk science. **Indeed, recognizing such a claim is essential in an age where forensics that were once considered unassailable are subject to serious doubt.** And it’s particularly important to permit claims of constitutional error grounded in faulty science in a second or successive petition. After all, flawed analytical methods may not be debunked until well after the expiration of a petitioner’s one-year deadline to file a habeas petition under AEDPA.²⁰¹

Though the average court will likely struggle with the idea that due process could be violated even though no one could have recognized the violation at the time of trial, there is no denying that this claim is a live one

Id. (Price, J., concurring). Also concurring, Judge Cochran said “[d]ue process was not violated at the time of trial, but nevertheless, the scientific testimony that supported a finding of ‘homicide’ in the original trial has been retracted But until the Supreme Court (or this Court) holds that a conviction later found to be based upon unreliable scientific evidence violates the Due Process Clause, I will [defer to the district judge’s findings of fact about whether a new trial is warranted].” *Id.* at 844–45 (Cochran, J., concurring) (citations omitted). Also concurring, Judge Alcalá stated,

“Today, I join Judge Cochran’s concurring opinion because this case falls squarely within her assertion that executing a defendant whose conviction is premised on now-discredited scientific theories violates due process, even though those scientific theories were once considered valid and true at the time they were applied.”

Id. at 852 (Alcalá, J., concurring). The dissent by Judge Hervey stated that “intervening scientific developments might result in unreliable expert testimony, and the admission of this unreliable evidence might rise to the level of a due process violation. But this case does not present us with such a scenario.” *Id.* at 861 (Hervey, J., dissenting).

200. See *supra* note 199. See also *Henderson* 384 S.W.3d at 860 (three dissenting judges agreeing that a shift in science may make for a due process claim, but arguing that relief is not automatic, and “an additional analytical step is required”).

201. *Gimenez v. Ochoa*, 821 F.3d 1136, 1143–44 (9th Cir. 2016) (emphasis added) (citations omitted).

in shifted science cases. Indeed, the Texas Court of Criminal Appeals, certainly not known for its bleeding heart,²⁰² was unanimous on this point in *Henderson*, one of the few thorough and explicit analyses of the issue in question.

D. Ineffective Assistance of Counsel

1. Strickland Alone

If there is any argument that counsel could reasonably have learned about a shift in science during the time of trial and/or direct appeal, his failure to make diligent efforts to apprise himself of the scientific shift and litigate the issue accordingly can be considered ineffective assistance of counsel under the *Strickland* standard.²⁰³ However, such claims can be very hard to make in the shifted science realm because, even if the science has shifted today, it may not have shifted until long after trial and appeal—and, even if it had shifted at the time of trial or appeal, it may not be reasonable to expect the average trial attorney to have learned of that shift.

Several CBLA cases spell out the difficulty. In *United States v. Berry*,²⁰⁴ Berry's new evidence claim failed because the Ninth Circuit held there that was no reason he could not have challenged the CBLA evidence at trial.²⁰⁵ As noted above, there actually was a reason: the shift in science had not yet occurred at the time of Berry's trial,²⁰⁶ but let us set that aside for a moment. Accepting the Ninth Circuit's reasoning would seem to lead to the conclusion that an ineffective assistance of counsel claim could have worked for Berry. Perhaps it could have (he did not raise the claim), but it is unlikely because other defendants in Berry's position have tried that route and failed.

For example, James Earhart was convicted in 1988 of capital murder in Texas.²⁰⁷ Significant CBLA evidence was used against him, a point the Fifth Circuit conceded in its opinion on Earhart's petition for writ of habeas

202. See Judge: 'We Close at 5', ABC NEWS, (Oct. 12, 2007), <http://abcnews.go.com/WN/story?id=3724883&page=1> (recounting the plight of Michael Richard, who was executed after the Texas Court of Criminal Appeals refused his last second petition for a stay of execution because it would have required the court to stay open 20 minutes past its usual closing time).

203. *People v. Ackley*, 870 N.W.2d 858, 862 (Mich. 2015); *Commonwealth v. Millien*, 50 N.E.3d 808, 824 (Mass. 2016).

204. *United States v. Berry*, 624 F.3d 1031, 1041 (9th Cir. 2010)

205. *Id.*

206. See *supra* notes 117, 118 and accompanying text.

207. David Carson, *Execution Report: James Earhart*, TEX. EXECUTION INFO. CTR. 2 (Jan. 31, 2008), <http://www.txexecutions.org/reports/184-James-Earhart.htm?page=2>.

corpus.²⁰⁸ Given the centrality of the CBLA evidence, the Fifth Circuit agreed that trial counsel should have sought to scrutinize and counter the State's CBLA evidence.²⁰⁹ Nevertheless, the Fifth Circuit denied relief under *Strickland's* prejudice prong (requiring a reasonable probability of a different outcome, but for counsel's errors).²¹⁰ The court held that prejudice was not shown because Earhart "had failed to show or even allege that an expert could be found whose testimony would have altered the outcome of the state court trial."²¹¹ Of course, such a showing would be impossible for Earhart to make, given that the shift in CBLA science did not happen until more than ten years after his trial.²¹² In another case, *United States v. Davis*, the Eighth Circuit came to the same conclusion for a trial that took place in 1996, again before the shift in CBLA science.²¹³ And recently, the U.S. Supreme Court reached the same conclusion in *Kulbicki*, even taking the opportunity to criticize the Maryland Court of Appeals for granting relief based on ineffective assistance to a CBLA defendant whose trial occurred in 1995.²¹⁴

The combined effect of cases like *Berry*, *Earhart*, *Davis*, and *Kulbicki* is difficult to accept. *Berry* could not make a successful new evidence claim because trial counsel allegedly could have discovered flaws in the science and questioned the State's experts at trial.²¹⁵ Nevertheless, ineffective assistance of counsel claims also failed for similarly situated defendants in *Earhart*, *Davis* and *Kulbicki* because the science had not really shifted, and counsel would have had no scientific experts to use to counter the State's case, even if they had the premonition to try to contest the science.²¹⁶

When presented with such an apparent dilemma in a case where the now-discredited scientific evidence was truly essential to the case, one would hope the court would do as the Massachusetts Supreme Court did in *Epps*: place justice above technicalities and grant relief.²¹⁷ But the CBLA cases mentioned here don't inspire confidence. For that reason, we now consider a second possible angle of litigating an ineffective assistance of

208. *Earhart v. Johnson*, 132 F.3d 1062, 1067 (5th Cir. 1998) (noting "the significant role the bullet evidence played in the prosecution's case . . .").

209. *Id.*

210. *Id.*; *Strickland v. Washington*, 466 U.S. 668, 694–95 (1984).

211. *Earhart*, 132 F.3d at 1067.

212. *Plummer & Syed*, *supra* note 2, at 509.

213. 406 F.3d 505, 511 (8th Cir. 2005).

214. *Maryland v. Kulbicki*, 136 S. Ct. 2, 4 (2015) (per curium).

215. *United States v. Berry*, 624 F.3d 1031, 1041 (9th Cir. 2010).

216. *Earhart*, 132 F.3d at 1068; *Davis*, 406 F.3d at 509; *Kulbicki*, 136 S. Ct. at 4.

217. *Commonwealth v. Epps*, 53 N.E.3d 1247, 1266–68 (Mass. 2016).

counsel claim that might be a way to salvage relief for defendants in *Berry*, *Davis*, *Kulbicki*, or *Earhart*'s positions.

2. The *Cronic* Corollary

While *Strickland* is the commonly known standard for ineffective assistance of counsel, it is not the only one. In a companion case to *Strickland*, *United States v. Cronic*,²¹⁸ the U.S. Supreme Court denied relief to Harrison Cronic, but in so doing, it acknowledged a limited exception to *Strickland*'s two-pronged requirement.²¹⁹

The Court did not decide Cronic's case under the traditional deficient performance and resulting prejudice standard that has become familiar to appellate criminal litigators everywhere. Instead, *Cronic* considered instances where counsel's deficiency rose to such a level that there had been a breakdown in the adversarial process, and thus prejudice was to be presumed.²²⁰ Given that James Earhart's CBLA claim failed under the prejudice prong—and he was subsequently executed—yet everyone agrees that the CBLA evidence against him was pure junk science (and even the Fifth Circuit agreed that evidence was central to the case), the possibility of a *Cronic* presumed-prejudice standard for ineffective assistance of counsel claims is worth exploring in the shifted science context.²²¹

In *Cronic*, the Supreme Court noted: “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.”²²² If there has been no such “meaningful adversarial testing,” then prejudice is to be presumed.²²³ The bar *Cronic* sets is very high: one that Cronic himself was unable to meet.²²⁴ The examples the Court gives where prejudice is to be presumed are invariably significant ones, with the first one being the complete denial of counsel.²²⁵ However, the Court's second example is more interesting in our context. Even if counsel is provided: “if counsel entirely fails to subject the prosecution's case to meaningful

218. 466 U.S. 648 (1984).

219. *Id.* at 659 n.26, 666 n.41.

220. *Id.* at 657 n.20, 662.

221. The difference between the two standards is not merely academic. There are cases where relief would be granted if evaluated under the *Cronic* standard, but denied if evaluated under *Strickland*. See, e.g., *Harvey v. Warden, Union Corr. Inst.*, 629 F.3d 1228, 1236 (11th Cir. 2011) (noting that the Florida Supreme Court initially granted relief under *Cronic* standard, but when compelled to reevaluate the case under the *Strickland* standard, the same court denied relief).

222. *Cronic*, 466 U.S. at 656.

223. *Id.* at 659.

224. *Id.* at 666.

225. *Id.* at 659.

adversarial testing, then there has been a denial of Sixth Amendment rights that makes the adversary process itself presumptively unreliable. No specific showing of prejudice [is] required”²²⁶

That holding could have significant implications in the shifted science context. It would likely only work in a case where the discredited evidence constituted the majority of the prosecution’s case, but there *are* such cases. And in such a case, where the science now discredited was the main line of inculpatory evidence, if counsel failed to challenge the science, there has arguably been a denial of “meaningful adversarial testing” of the prosecution’s case. Therefore, relief would be warranted because, as *Cronic* says, such “meaningful adversarial testing” is the whole point of the Sixth Amendment right to counsel.²²⁷

In *Cronic*, the Supreme Court essentially reserved the presumption of prejudice for situations where no attorney, no matter how *competent*, could reasonably be expected to provide effective assistance.²²⁸ The situations where such a showing can be made will be rare.²²⁹ But in a case where a defendant is convicted largely on scientific testimony that is virtually unchallengeable at trial, yet later comes to be entirely repudiated, such a situation sure seems to be one where no attorney, no matter how competent, could have subjected the State’s case to “*meaningful* adversarial challenge.”

Case law on this front is, of course, very limited. Few defendants have succeeded in making *Cronic* claims, though some have.²³⁰ And rarely has a defendant raised a *Cronic* claim in the shifted science realm, because generally, either traditional *Strickland* ineffective assistance or pure new evidence claims can be litigated instead.²³¹ However, the unique class of

226. *Id.*

227. *Id.* at 656.

228. *Id.* at 659–60 (describing situations where “the likelihood that any lawyer, even a fully competent one, could provide effective assistance is so small that a presumption of prejudice is appropriate without inquiry into the actual conduct of the trial.”)

229. See *Bell v. Cone*, 535 U.S. 685, 696–97 (2002) (reaffirming the narrowness of the *Cronic* corollary to *Strickland*, noting that *Cronic* applies when “counsel *entirely* fails to subject the prosecution’s case to meaningful adversarial testing”) (quoting *Cronic*, 466 U.S. at 659).

230. See, e.g., *Harvey v. Warden, Union Corr. Inst.*, 629 F.3d 1228, 1236 (11th Cir. 2011) (stating that Florida Supreme Court initially granted relief under the *Cronic* standard, before reversing course under *Strickland*); *Leonard v. Michigan*, 287 F. Supp. 2d 765, 776, 790 (W.D. Mich. 2003) (noting that “[c]ounsel’s ineffective representation is perhaps best characterized by my conclusion that he completely failed to subject the State’s DNA evidence to any ‘meaningful adversarial testing’”), *report and recommendation adopted*, 256 F. Supp. 2d 723, 731 (W.D. Mich. 2003) (citing the *Cronic* standard, granting relief based on ineffective assistance of counsel claim, but ultimately also finding *Strickland* satisfied).

231. There are cases, however, where *Cronic*’s controlling language is used, even if the standard officially being litigated is the two-pronged approach from *Strickland*. See, e.g., *People v. Ackley*, 870 N.W.2d 858, 860 (Mich. 2015) (granting new trial due to the defense “lawyer’s failure to meaningfully

cases we describe is bound to include that rare case that fails under *Strickland* but succeeds under *Cronic*.

E. Substantive Claims of Actual Innocence

The idea that a process resulting in the conviction of an innocent defendant could be “otherwise” constitutional reminds me of the apocryphal question put to Mary Todd Lincoln after Abraham Lincoln’s assassination in Ford Theater: “Other than that, Mrs. Lincoln, how did you like the play?” If a defendant is factually innocent, there is no “other than that.”²³²

We hesitate to even address the possibility of litigating freestanding claims of actual innocence. First, keeping junk science out of courtrooms is about ensuring fairness, which means protecting the rights of all defendants, not just those who can overwhelmingly *prove* their innocence. Second, such claims are always a last resort, and notoriously difficult to win. It serves no litigator well (and perhaps no academic either) to expend too much time or too many resources contemplating freestanding claims of actual innocence. Even in the special class of cases we discuss here, there are almost always other cognizable legal claims that present stronger and more reliable paths to relief. Nevertheless, we have litigated claims of actual innocence in our own casework and certainly believe in the underlying premise: the Constitution cannot tolerate the continued incarceration, let alone the execution, of a person who is, by today’s best scientific conclusions, actually innocent of the crime for which he was convicted.

A freestanding actual innocence claim²³³ under the federal Constitution emerges from the U.S. Supreme Court case of *Herrera v. Collins*.²³⁴ Of course, anyone who reads *Herrera* will be left with the unmistakable impression that the Court was doing all it could to discount the possibility

challenge the prosecution’s expert testimony”); *Driscoll v. Delo*, 71 F.3d 701, 709 (8th Cir. 1995) (finding deficient performance in part due to “defense counsel’s [failure] to . . . subject the state’s theories to the rigors of adversarial testing”). Such cases are not precedent for *Cronic*-based claims, but may nonetheless be used to demonstrate the continuing gravity of *Cronic*’s controlling language.

232. DERSHOWITZ, *supra* note 1, at 269.

233. We do not address another branch of the actual innocence standard, the so-called gateway actual innocence claims arising under *Schlup v. Delo*, 513 U.S. 298 (1995). This is because gateway claims are, obviously, not substantive claims on their own, but rather provide a procedural exception to litigating defaulted constitutional claims. *Id.* at 315. *Schlup* is an important standard, has proved useful to many innocent defendants (*e.g.*, *Del Prete v. Thompson*, 10 F. Supp. 3d 907 (N.D. Ill. 2014); *Souter v. Jones*, 395 F.3d 577 (6th Cir. 2005)), and will no doubt play an important role for many shifted science defendants litigating constitutional claims. However, we have no more to say about it here.

234. *Herrera v. Collins*, 506 U.S. 390, 398 (1993).

of freestanding²³⁵ claims of actual innocence. Nevertheless, it could not bring itself to slam the door completely, and from the small crack that remained open has emerged a wealth of jurisprudence that could prove useful in litigating especially difficult shifted science cases.

In *Herrera*, the Court assumed without deciding that “a truly persuasive demonstration of ‘actual innocence’ made after trial would render the execution of a defendant unconstitutional,” but noted that “the threshold showing for such an assumed right would necessarily be extraordinarily high.”²³⁶ However, at least five members of the Court in *Herrera* would have explicitly held that a freestanding claim of actual innocence is cognizable, at least under certain circumstances.²³⁷ And the justices hinted that if a freestanding actual innocence claim was cognizable in death penalty cases, it might be equally so in non-capital cases.²³⁸

Several federal circuit courts of appeal and state courts of last resort have recognized the cognizability of freestanding claims of actual innocence. The Ninth Circuit and the Texas Court of Criminal Appeals have been the most outspoken on this front, recognizing freestanding actual innocence claims equally in capital and non-capital contexts.²³⁹ Other federal courts, including the District of Columbia Circuit and the First

235. We use the word *freestanding* because that is what is generally used to describe such actual innocence claims. They are however, not freestanding at all, but rather are rooted in the Eighth and Fourteenth Amendments to the U.S. Constitution, as *Herrera* noted. *Id.* at 398.

236. *Id.* at 417.

237. *See id.* at 435–36 (Blackmun, J., joined by Souter and Stevens, JJ., dissenting) (arguing that actual innocence is a cognizable claim under the Eighth and Fourteenth Amendments); *Id.* at 419, 427 (O’Connor, J., joined by Kennedy, J., concurring) (concluding that execution of an innocent person would be unconstitutional). Some lower courts (like the Texas Court of Criminal Appeals and the Missouri Supreme Court) have also counted Justice White as a vote to recognize the cognizability of freestanding actual innocence claims, which would mean six members of the *Herrera* Court would have recognized the existence of such claims. *E.g.*, *State ex rel. Holmes v. Court of Appeals*, 885 S.W.2d 389, 397 (Tex. Crim. App. 1994) (en banc) (interpreting *Herrera* to say that six members of the Supreme Court believed that executing an innocent person would violate due process); *State ex rel. Amrine v. Roper*, 102 S.W.3d 541, 546 n.3 (Mo. 2003) (noting that the execution of an innocent defendant would be unconstitutional).

238. “Petitioner asserts that the Eighth and Fourteenth Amendments to the United States Constitution prohibit the execution of a person who is innocent of the crime for which he was convicted. This proposition has an elemental appeal, as would the similar proposition that the Constitution prohibits the imprisonment of one who is innocent of the crime for which he was convicted. After all, the central purpose of any system of criminal justice is to convict the guilty and free the innocent.” *Herrera*, 506 U.S. at 398.

239. *Jones v. Taylor*, 763 F.3d 1242, 1246 (9th Cir. 2014) (noting that the Ninth Circuit assumes that freestanding actual innocence claims are viable in non-capital cases); *Ex parte Elizondo*, 947 S.W.2d 202, 205 (Tex. Crim. App. 1996) (en banc) (“It follows that claims of actual innocence are cognizable by this Court in a postconviction habeas corpus proceeding whether the punishment assessed is death or confinement.”), *superseded by statute*, TEX. CODE CRIM. PROC. ANN. art. 37.071(2)(b) (West 2013).

Circuit also appear open to the concept of freestanding actual innocence claims, though perhaps in a more limited context.²⁴⁰ Several other federal circuits have competing precedent,²⁴¹ while others have consistently rejected the idea of freestanding actual innocence claims.²⁴²

Aside from Texas, which clearly recognized freestanding actual innocence under the federal constitution,²⁴³ several states have come to recognize freestanding claims of actual innocence by taking note of *Herrera* and also their own state constitutions. These include California,²⁴⁴

240. *Ibrahim v. United States*, 661 F.3d 1141, 1143 (D.C. Cir. 2011) (observing that “[t]here are theoretically two recognized types of constitutional claims for which newly discovered evidence of actual innocence has been found relevant [including] ‘stand-alone’ innocence claims associated with *Herrera*”); *United States v. Sampson*, 486 F.3d 13, 27–28 (1st Cir. 2007) (“We understand *Herrera* to leave open the possibility that, in a particular instance of newly discovered, highly persuasive evidence of innocence . . . a federal court might be able to [grant relief] under the Constitution to prohibit execution.”).

241. Third Circuit: *Compare* *Albrecht v. Horn*, 485 F.3d 103, 122 (3d Cir. 2007) (“[W]e must decide whether Albrecht’s claims are cognizable in federal habeas under the ‘extraordinarily high’ threshold implied in *Herrera*’s freestanding innocence claim”), *with* *Sistrunk v. Rozum*, 674 F.3d 181, 187 n.2 (3d Cir. 2012) (“Neither this Court nor the Supreme Court has ever held that a freestanding claim of innocence merits habeas relief.”).

Seventh Circuit: *Compare* *Milone v. Camp*, 22 F.3d 693, 699–700 (7th Cir. 1994) (noting that the Supreme Court “appears to be willing to hold that it is unconstitutional to execute a ‘legally and factually innocent person’”; *with* *Kizer v. Parke*, No. 97-3305, 1998 WL 93961, at *2 (7th Cir. Mar. 12, 1998) (“As the Supreme Court clearly stated, ‘[c]laims of actual innocence based on newly discovered evidence have never been held to state a ground for federal habeas relief absent an independent constitutional violation occurring in the underlying state criminal proceeding.’ (alteration in original)) (quoting *Herrera*, 506 U.S. at 400).

Eighth Circuit: *Compare* *Nooner v. Hobbs*, 689 F.3d 921, 932 n.7 (8th Cir. 2012) (“The Supreme Court has suggested that a stand-alone claim of actual innocence may be cognizable.”); *with* *Mansfield v. Dormire*, 202 F.3d 1018, 1023–24 (8th Cir. 2000) (“To the extent that Mansfield contends he is actually innocent of this crime, we add that a claim of ‘actual innocence’ is not itself a constitutional claim”).

242. *United States v. Quinones*, 313 F.3d 49, 52 (2d Cir. 2002) (“[T]he Supreme Court expressly held in [*Herrera*] that . . . there is no fundamental right to a continued opportunity for exoneration throughout the course of one’s natural life.”); *Coleman v. Thaler*, 716 F.3d 895, 908 (5th Cir. 2013) (“‘Claims of actual innocence . . . have never been held to state a ground for . . . relief absent an independent constitutional violation’ In *Herrera v. Collins*, the Supreme Court assumed, *arguendo*, ‘that in a capital case a truly persuasive demonstration of “actual innocence” made after trial would . . . warrant habeas relief’ But we have rejected that assumption.”) (footnotes omitted) (citations omitted); *LaFevers v. Gibson*, 238 F.3d 1263, 1265 n.4 (10th Cir. 2001) (“[A]n assertion of actual innocence . . . does not, standing alone, support the granting of the writ of habeas corpus.”); *Jordan v. Sec’y, Dep’t of Corr.*, 485 F.3d 1351, 1356 (11th Cir. 2007) (“For what it is worth, our precedent forbids granting habeas relief based upon a claim of actual innocence”).

243. Indeed, beyond simply recognizing the hypothetical right, the Texas Court of Criminal Appeals recently applied the *Elizondo* standard to actually grant relief to a defendant based on a freestanding claim of actual innocence in a shifted science case. *Ex Parte Cacy*, NO. WR-85,420-01, 2016 WL 6525721 (Tex. Crim. App. Nov. 2, 2016) (per curium).

244. *In re Clark*, 855 P.2d 729, 760 (Cal. 1993) (en banc).

Connecticut,²⁴⁵ Illinois,²⁴⁶ Missouri,²⁴⁷ New Mexico,²⁴⁸ and New York.²⁴⁹ In all of these jurisdictions, defendants who can show that the scientific evidence that convicted them is now largely repudiated, but for some reason they have no cognizable legal claims, could possibly make successful freestanding actual innocence claims.

Even in states that have not officially recognized claims of freestanding actual innocence, there are potentially other similar avenues defendants might pursue. In Michigan, for example, a statute grants judges the authority to grant a new trial “for any cause for which by law a new trial may be granted, *or when it appears to the court that justice has not been done . . .*”²⁵⁰ This arguably grants broad powers to trial courts to grant new trials even when no particular legal claim seems to fully apply.

Similarly, in Wisconsin, courts have granted new trials to defendants “in the interests of justice,” or under their own inherent powers, even where other cognizable legal claims do not warrant relief. For example, in *State v. Louis*,²⁵¹ defendant Quentin Lewis had been convicted of first-degree murder in the death of his daughter on a SBS theory.²⁵² He sought a new trial based on three claims: newly discovered evidence, ineffective assistance of counsel, and “in the interests of justice.”²⁵³ Although the science underlying the SBS diagnosis has changed significantly, and the trial court recognized as much, it nevertheless found it impossible to grant relief under either the ineffective assistance of counsel or new evidence standards.²⁵⁴ In most cases, the defendant would be out of luck at that point, but Wisconsin’s “interests of justice” avenue gave the trial court another route. The trial court recognized that, regardless of the procedural technicalities that made the new evidence and ineffective assistance claims fail, relief was warranted in the interest of justice, because the science underlying the conviction had changed significantly.²⁵⁵ The appellate court affirmed, holding that the trial court properly exercised its authority to grant a new trial “in the interests of justice.”²⁵⁶

245. *Miller v. Comm’r of Corr.*, 700 A.2d 1108, 1130 (Conn. 1997).

246. *People v. Washington*, 665 N.E.2d 1330, 1336–37 (Ill. 1996).

247. *State ex rel. Amrine v. Roper*, 102 S.W.3d 541, 546–47 n.3 (Mo. 2003).

248. *Montoya v. Ulibarri*, 163 P.3d 476, 483–84 (N.M. 2007).

249. *People v. Cole*, 765 N.Y.S.3d 477, 486 (N.Y. Sup. Ct. 2003).

250. MICH. COMP. LAWS § 770.1 (1981) (emphasis added).

251. *State v. Louis*, No. 2009AP2502–CR, 2011 WL 867677, at *1 (Wis. Ct. App. Mar. 15, 2011).

252. *Id.*

253. *Id.*

254. *Id.* at **2–3.

255. *Id.*

256. *Id.* at *5.

In another Wisconsin case, the state supreme court granted relief to Ralph Armstrong in a complex murder case featuring various strands of forensic evidence.²⁵⁷ Simply, the court held: “We conclude this is an exceptional case, and invoke our inherent powers and reverse the circuit court’s order denying Armstrong’s request for a new trial and remand this case with directions to grant Armstrong a new trial.”²⁵⁸ In so holding, the court made clear that, under its inherent authority, it was permitted to grant new trials even where the materiality standard of a traditional new evidence test might not be met, further eschewing procedural technicality in favor of accuracy and justice.²⁵⁹

There is, then, more substance to freestanding actual innocence claims (be they under the federal constitution, the state constitution, or by statute) than is generally assumed. While we maintain that every shifted science case, no matter how difficult, can be litigated through traditionally cognizable legal claims, litigants would be wise to include actual innocence claims as a fallback option wherever possible.

III. NON-JUDICIAL REMEDIES AND SYSTEMIC REFORM

[T]he scientific community has declared that bite mark matching isn’t reliable and has no scientific foundation for its underlying premises, and that until and unless further testing indicates otherwise, it shouldn’t be used in the courtroom. And so far, the criminal justice system has said it doesn’t care.²⁶⁰

Having dealt with what courts can do in litigation, and what litigants can do to push courts the right way in litigation, we now turn to what courts and other government bodies can do outside of individual cases and controversies to effect relief for defendants convicted on shifted science during a time of percolation. Such broad reforms are a crucial part of the discussion, because, as the quote above demonstrates, and as even the chair of the committee that produced the NAS Report recognizes, “[j]udicial review, by itself, will not cure the infirmities of the forensic community.”²⁶¹ Courts, legislatures, and executive agencies can have important roles in easing post-conviction access to evidence and forensic review, and in

257. *State v. Armstrong*, 700 N.W.2d 98, 100 (Wis. 2005).

258. *Id.* at 120.

259. *Id.* at 120 n.26 (“Under the statutory discretionary reversal power, when the real controversy has not been fully tried, the court is not required to find a substantial probability of a different result on retrial.”).

260. Balko, *Flawed Science*, *supra* note 185.

261. Balko, *Rearview Mirror*, *supra* note 12.

clearly defining or (where necessary and appropriate) creating avenues of relief for the special class of problematic convictions this article discusses. We will address concretely in the upcoming sections just what various government agencies might be expected to do, while reviewing the lessons of what has already been done.

To begin, the federal government has, for at least a decade, taken an increased role in forensic science reform. “[I]n 2005 Congress directed that funding be provided to the National Academy of Sciences to undertake what would become a groundbreaking study on forensic sciences”²⁶² That action led to the formation of the committee behind the NAS report, and the groundbreaking report itself was released in 2009.²⁶³ The report was a major step forward in exposing the shortcomings of just about every forensic science discipline imaginable, from bite marks and hair comparisons, to fire investigation and fingerprinting.²⁶⁴ The report inspired further review and scholarship in the field of forensic science and helped bring about the conversation regarding forensic reform that has now spilled into law review articles,²⁶⁵ television programs,²⁶⁶ and leading newspapers.²⁶⁷

Most importantly, the 2009 NAS Report on the forensic sciences was just the beginning of governmental involvement in forensic science reform. “Several initiatives have been started because of the report. First, in 2009, the Subcommittee on Forensic Science was established . . . [and] [t]o achieve its goals, the Subcommittee established five Inter-agency Working Groups (IWGs).”²⁶⁸ In 2013, the federal government took another significant step forward by establishing the National Commission on Forensic Science, “a collaborative effort of the US Department of Justice

262. Hewitt & McKenna, *supra* note 61, at 13–14.

263. *Id.*

264. Joëlle Anne Moreno, *C.S.I. Bulls#!t: The National Academy of Sciences, Melendez-Diaz v. Massachusetts, and Future Challenges to Forensic Science and Forensic Experts*, 2010 UTAH L. REV. 327, 348 (2010).

265. See, e.g., *Symposium, Lessons from the Lab: Implications of the 2009 National Academy of Sciences Report on the Future of Forensic Science*, 2010 UTAH L. REV. 221 (2010) (featuring articles about the current problems with forensic science as it relates to criminal law); Kenneth E. Melson, *Embracing the Path Forward: The Journey to Justice Continues*, 36 NEW ENG. J. CRIM. & CIV. CONFINEMENT 197, 213–19, 220–28 (2010) (discussing criticisms and recommendations of different groups regarding the NAS report); Paul C. Giannelli, *Daubert and Forensic Science: The Pitfalls of Law Enforcement Control of Scientific Research*, 2011 U. ILL. L. REV. 53, 55–57 (2011) (discussing the NAS Report in detail); Moreno, *supra* note 264, at 327 (discussing the need for the legal community to address the failures highlighted in the NAS report).

266. *Frontline*, *supra* note 92.

267. See, e.g., Balko, *supra* notes 12, 71, 185, 186, 187 (reporting on the issues of bite mark matching and forensic reform).

268. Hewitt & McKenna, *supra* note 61, at 15–16.

(USDOJ) and the National Institute of Standards and Technology (NIST).²⁶⁹ The commission announced its members, 30 experts selected from a diverse array of fields and backgrounds, and commenced its work in January of 2014.²⁷⁰ What long-term solutions the Commission helps effectuate remains to be seen, but the purported mandate is to “improve the practice of forensic science by developing guidance concerning the intersections between forensic science and the criminal justice system” and to “work to develop policy recommendations for the U.S. Attorney General, including uniform codes for professional responsibility and requirements for formal training and certification.”²⁷¹

Although it is still in the committee formation and policy proposals phase, the importance of the federal government’s work on forensic science reform cannot be overstated. Such efforts are crucial for systemic, meaningful reform: “Even if you believe the current promises from the forensics communities that things are better now, if you don’t change the structural failures that allowed bad science to convict innocent people in the first place, it’s almost certain to happen again.”²⁷²

The time is right for defendants convicted on shifted science to finally obtain direct paths to relief through new legislation and administrative action by executive agencies, as well as proactive actions from law enforcement and prosecutor offices. And many systemic reforms worth emulating are already underway.

A. The FBI’s Proactive Approach in Hair Analysis Cases

Arthur Morgan is serving a sentence of life in prison without the possibility of parole.²⁷³ He has been doing so since 1987,²⁷⁴ when a Calhoun County, Michigan jury convicted him of felony murder for robbing and killing 69-year-old Vera Arms in her own home.²⁷⁵ The key

269. *Id.* at 17.

270. *Id.*

271. *Id.* at 18 (quoting *U.S. Departments of Justice and Commerce Name Experts to First-ever National Commission on Forensic Science*, U.S. DEP’T OF JUST. (Jan. 10, 2014), <https://www.justice.gov/opa/pr/us-departments-justice-and-commerce-name-experts-first-ever-national-commission-forensic>).

272. Balko, *Rearview Mirror*, *supra* note 12.

273. Mich. Dep’t of Corr., *Biographical Information: Arthur Milton Morgan*, MICHIGAN.GOV, <http://mdocweb.state.mi.us/OTIS2/otis2profile.aspx?mdocNumber=132543> (last visited Dec. 7, 2016).

274. *Id.*

275. Trace Christenson, *DNA Test Sought in 1986 Murder Case*, BATTLE CREEK ENQUIRER (July 10, 2015, 2:35 PM) [hereinafter Christenson, *DNA Test*], <http://www.battlecreekenquirer.com/story/news/crime/2015/07/10/dna-test-sought-murder-case/29972269/>.

piece of evidence against Morgan was the testimony of an FBI hair analyst who noted that hairs collected at the crime scene, clutched in the victim's own hand, in fact, were microscopically consistent with Morgan's.²⁷⁶ This was the only evidence that directly tied Morgan to the crime scene.²⁷⁷ There was no additional physical evidence, no eyewitnesses, and Morgan consistently maintained his innocence.²⁷⁸

After courts affirmed the conviction²⁷⁹ and nearly 30 years passed, Morgan and his vehement claims of innocence were long forgotten. That is, until the FBI did a systematic review of its hair analysis cases in the 2000s, and found that its analysts had given testimony regarding hair matches that was simply not scientifically justifiable.²⁸⁰ To be clear, the FBI's review was long overdue, and did not actually take flight until pressure mounted from several stories done by The Washington Post.²⁸¹ But nevertheless, the Bureau did do a systematic review going back decades.²⁸² In so doing, it admitted a monumental mistake, and set the path for correcting errors courts are simply unable to correct.²⁸³

At least five men in the District of Columbia alone have been exonerated by DNA testing of hair evidence, after being initially convicted

276. *Id.*

277. Trace Christenson, *Judge Agrees to Hair Test in 30-year-old Murder Case*, BATTLE CREEK ENQUIRER, (Aug. 10, 2015 4:14 PM) [hereinafter Christenson, *Judge Agrees*], <http://www.battlecreekenquirer.com/story/news/crime/2015/08/10/judge-agrees-hair-test-year-old-murder-case/31425615/>.

278. *Id.*

279. Christenson, *DNA Test*, *supra* note 275.

280. Spencer S. Hsu, *FBI Admits Flaws in Hair Analysis over Decades*, WASH. POST (Apr. 18, 2015) [hereinafter Hsu, *Hair Analysis*], http://www.washingtonpost.com/local/crime/fbi-overstated-forensic-hair-matches-in-nearly-all-criminal-trials-for-decades/2015/04/18/39c8d8c6-e515-11e4-b510-962fcfab310_story.html.

281. *Id.* ("Federal authorities launched the investigation in 2012 after The Washington Post reported that flawed forensic hair matches might have led to the convictions of hundreds of potentially innocent people since at least the 1970s . . ."); Spencer S. Hsu, *Convicted Defendants Left Uninformed of Forensic Flaws found by Justice Dept.*, WASH. POST (Apr. 16, 2012) [hereinafter Hsu, *Forensic Flaws*], https://www.washingtonpost.com/local/crime/convicted-defendants-left-uninformed-of-forensic-flaws-found-by-justice-dept/2012/04/16/gIQAWTcgMT_story.html ("Justice Department officials have known for years that flawed forensic work might have led to the convictions of potentially innocent people, but prosecutors failed to notify defendants or their attorneys even in many cases they knew were troubled.").

282. Hsu, *Hair Analysis*, *supra* note 280.

283. *Id.* ("University of Virginia law professor Brandon L. Garrett said the results reveal a 'mass disaster' inside the criminal justice system, one that it has been unable to self-correct because courts rely on outdated precedents admitting scientifically invalid testimony at trial and, under the legal doctrine of finality, make it difficult for convicts to challenge old evidence. 'The tools don't exist to handle systematic errors in our criminal justice system,' Garrett said. 'The FBI deserves every recognition for doing something really remarkable here. The problem is there may be few judges, prosecutors or defense lawyers who are able or willing to do anything about it.'").

based on flawed FBI hair comparison testimony.²⁸⁴ The review of the FBI's hair analysis cases has been D.C.-centric to this point, owing to the strong advocacy done on this front by the District of Columbia Public Defender Service.²⁸⁵ But “[s]urely the District of Columbia is not the only place where such flawed evidence was used to convict the innocent”²⁸⁶ More recently, the FBI has broadened its review and sought to notify prosecutors and defense attorneys across the country in cases where its analysts gave hair testimony that has now been repudiated.²⁸⁷ Arthur Morgan's was one such case, and the judge ordered DNA testing of the hairs, after the FBI's admitted mistakes were brought to her attention.²⁸⁸

Regardless of whether the DNA testing confirms or repudiates Morgan's conviction, the justice system certainly benefits from such attempts to undo the taint of now-discredited science. Therefore, the FBI's efforts in the hair analysis cases are commendable and worth emulating. Certainly, the agency delayed longer than it should have,²⁸⁹ and it might be argued that the flawed testimony on hair analysis was inexcusable in the first place.²⁹⁰ Still, the steps the agency took are certainly significant.

However, we must emphasize the words “worth emulating”: Even sticking to hair analysis alone, the FBI's analysts were not the only players in the field. State agencies also had hair analysts, often trained by the FBI, who gave testimony in criminal cases across the country throughout the past three or four decades.²⁹¹ The FBI's review does not reach those state

284. Spencer S. Hsu, *D.C. Man Imprisoned by Flawed FBI Forensic Evidence Exonerated*, WASH. POST (May 23, 2015) [hereinafter Hsu, *D.C. Man*], https://www.washingtonpost.com/local/crime/dc-man-imprisoned-by-flawed-fbi-forensic-evidence-exonerated/2015/05/23/ed382f70-00c6-11e5-8b6c-0dccc21e223d_story.html.

285. Hsu, *Hair Analysis*, *supra* note 280.

286. Hsu, *Forensic Flaws*, *supra* note 281 (quoting Avis E. Buchanan, director of the D.C. Public Defender Service).

287. Hsu, *Hair Analysis*, *supra* note 280 (“Defendants and federal and state prosecutors in 46 states and the District are being notified to determine whether there are grounds for appeals.”).

288. Christenson, *Judge Agrees*, *supra* note 277.

289. Hsu, *Forensic Flaws*, *supra* note 281.

290. *NAS Report*, *supra* note 11, at 160 (“No scientifically accepted statistics exist about the frequency with which particular characteristics of hair are distributed in the population. There appear to be no uniform standards on the number of features on which hairs must agree before an examiner may declare a ‘match.’”).

291. Seth Augenstein writes about the FBI's training of state personnel:

“Anywhere from 500 to 1,000 local analysts were trained in the method over two-week training course, [Innocence Project communications director Paul] Cates said. However, the FBI has told the Innocence Project and the National Association of Criminal Defense Lawyers that they are having difficulty finding attendee lists for those training seminars in hair and fibers, Cates said.”

law enforcement agencies.²⁹² It is up to the agencies themselves to conduct their own review, and take the same proactive actions that the FBI did.²⁹³

And even beyond hair evidence alone, the FBI's example is one worth following for other agencies in other forensic disciplines as well. One easy example comes from the fire science realm, where the shift in science is overwhelming and undeniable. Thus, state fire marshals should conduct internal reviews of every fire case where their analysts could possibly have given false or misleading testimony material to a conviction. The Texas State Fire Marshal has already taken this step,²⁹⁴ but it is one of the select few that has. The Michigan State Police and State Fire Marshal office, for example, dissented from scientific advances being implemented in the field for nearly a decade,²⁹⁵ and have yet to take any proactive steps to systematically review their past fire investigations or notify defendants who may have been convicted on the basis of unreliable arson testimony given by their investigators. This is despite several notable exonerations in Michigan arson cases where Michigan State Police fire experts gave expert testimony at trial.²⁹⁶

Seth Augenstein, *Four States Auditing Cases Involving Flawed FBI Hair Analysis*, FORENSIC MAG. (Apr. 27, 2015, 2:34 PM), <http://www.forensicmag.com/articles/2015/04/four-states-auditing-cases-involving-flawed-fbi-hair-analysis>.

292. *Id.* (“The universe of potentially affected cases is in fact much larger There is no way to estimate the number of affected cases that involved state and local crime lab hair examiners”) (quoting Cates).

293. *Id.* (noting that at least four states, North Carolina, New York, Massachusetts, and Texas, have begun their own systematic reviews of cases in which local hair analysts may have given flawed testimony). *See also* Erin Murphy, *New Iowa Government Office to Investigate Possible Wrongful Convictions*, THE GAZETTE (Oct. 26, 2015, 1:15 PM), <http://www.thegazette.com/subject/news/public-safety/new-iowa-government-office-to-investigate-possible-wrongful-convictions-20151026> (noting a similar process underway in Iowa).

294. *See Texas to Embark on Statewide Arson Review?*, INNOCENCE PROJECT (Jan. 9, 2012), <http://www.innocenceproject.org/texas-to-embark-on-statewide-arson-inquiry/> (reporting that the Texas Fire Marshall joined forces with the Innocence Project of Texas “to determine whether the state has wrongfully convicted people for arson-murders based on outdated science”).

295. Aff. of David M. Smith, *supra* note 31, at 14 (“As a member of the NFPA 921 technical committee [in 1999], I received and reviewed countless comments from members of the Michigan State Police and Fire Marshal’s Bureau. Most involved a request to simply withdraw or cancel the document since it was contrary to the methods they used and taught. Other comments from the Michigan State Fire Marshal and the Michigan State Police challenged supposed ‘misconceptions’ in NFPA 921, but failed to provide any documentation or testing to support their objections.”).

296. *See* Maurice Possley, *Frederick Mardlin*, NAT’L REGISTRY OF EXONERATIONS (Feb. 25, 2013), <http://www.law.umich.edu/special/exoneration/Pages/casedetail.aspx?caseid=4108> (noting the involvement of Michigan State Police fire investigators). *See also* Maurice Possley, *David Lee Gavitt*, NAT’L REGISTRY OF EXONERATIONS, <http://www.law.umich.edu/special/exoneration/Pages/casedetail.aspx?caseid=3911> (last updated September 6, 2016) [hereinafter Possley, *Gavitt*] (noting involvement of Michigan State Police fire investigators); John Agar, *After Four Years in Prison for Arson, Exonerated Michigan Man Sues Sheriff’s Deputies, State Police*, MLIVE.COM (April 16, 2014, 6:23 AM),

Science has meaningfully shifted in many forensic fields, and if the law enforcement agencies that initially espoused the junk science that led to a conviction would themselves go back and review and correct their mistakes, justice will certainly be done in cases where mere courtroom litigation would fail. However, because we realize that few agencies will be so forthcoming in admitting mistakes as the FBI was in its hair analysis cases, we turn now to the role of other governmental actors who could compel systematic review and reanalysis of questionable cases.

B. State Forensic Science Review Commissions

Cameron Todd Willingham was executed by the State of Texas on February 17, 2004.²⁹⁷ Willingham had been convicted in 1992 of setting a fire that killed his three young daughters on December 23, 1991.²⁹⁸ The evidence against Willingham was based largely on the expert testimony of fire investigators²⁹⁹ who gave accounts that are no longer scientifically justifiable.³⁰⁰ Today, there can be little argument that Willingham was convicted on egregious junk science.³⁰¹

The revolution in fire science, which would come to repudiate the precise type of evidence that was used against Willingham, had started in earnest by 1992, the year Willingham was convicted and NFPA 921 was

http://www.mlive.com/news/grand-rapids/index.ssf/2014/04/after_four_years_in_prison_for.html (noting Michigan State Police's involvement in the wrongful arson conviction of Victor Caminata); Aff. of David M. Smith, *supra* note 31, at 7 (noting the involvement of Michigan State Police expert in the Andrew Babick case). See also Katie Vloet, *Michigan Innocence Clinic Wins Release in Alleged Arson Case*, U. OF MICH. L. SCH. NEWS (Oct. 17, 2013), https://www.law.umich.edu/newsandinfo/features/Pages/innocenceclinic_spencer_101613.aspx (noting Michigan State Police's involvement in the arson conviction of Fred Spencer).

297. Maurice Possley, *Fresh Doubts over a Texas Execution*, WASH. POST (Aug. 3, 2014), <http://www.washingtonpost.com/sf/national/2014/08/03/fresh-doubts-over-a-texas-execution>.

298. *Id.*

299. David Grann, *Trial by Fire: Did Texas Execute an Innocent Man?*, THE NEW YORKER (Sept. 7, 2009), <http://www.newyorker.com/magazine/2009/09/07/trial-by-fire> (“The crux of the state’s case . . . remained the scientific evidence gathered by Vasquez . . . detailed what he called more than ‘twenty indicators’ of arson.”).

300. *Id.* (“[T]he Innocence Project commissioned [John] Lentini and three other top fire investigators to conduct an independent review of the arson evidence in the Willingham case. The panel concluded that ‘each and every one’ of the indicators of arson had been ‘scientifically proven to be invalid.’”).

301. *Id.* There was some evidence presented against Willingham aside from the fire science: the testimony of jailhouse informant Johnny Webb and the unflattering accounts of Willingham’s personality and behavior given by neighbors and acquaintances. However, much of that other evidence has also since been repudiated. Possley, *supra* note 297 (documenting Webb’s recantation). And regardless, no legitimate capital murder case could be built on based on just the “other” evidence against Willingham—absent the fire science that supplemented it.

first released.³⁰² While that document probably could not have been reasonably available to Willingham's defense counsel at his August 1992 trial,³⁰³ more than a decade passed between Willingham's conviction and his February 2004 execution, and plenty of knowledge about the shift in fire science had percolated into the legal profession by then.³⁰⁴ Indeed, the shift in science was known well enough that Willingham's post-conviction counsel sought to retain the services of an independent fire expert as the execution approached.³⁰⁵

Dr. Gerald Hurst, perhaps the greatest fire scientist of all time,³⁰⁶ turned out to be the man consulted by Willingham's post-conviction counsel. Hired mere weeks before the scheduled execution, Hurst worked feverishly to draft his report, having concluded that "there was no evidence of arson, and that a man who had already lost his three children and spent twelve years in jail was about to be executed based on 'junk science.'"³⁰⁷ Hurst's report was sent to the Texas Board of Pardons and Paroles as part of a last-minute application for clemency.³⁰⁸ The board issued a denial, and Gov. Rick Perry denied the request for a 30-day stay of execution.³⁰⁹ Willingham was killed in February of 2004.³¹⁰

Leaders within the relevant scientific community have stated that the Willingham execution was a watershed moment in the revolution in fire science; it was the first time that laypeople outside of the scientific and legal communities learned of the flaws in fire science that had led to

302. LENTINI, *supra* note 29, at 13.

303. The first edition of NFPA 921 was officially released on January 17, 1992. Daniel L. Churchward, *National Fire Protection Association, NFPA 921, Guide for Fire and Explosion Investigations: An Update and a Perspective on the 2004 Edition*, in FIRE AND CASUALTY 1, 5 (2003) (ebook). Knowledge of its percolation would obviously not have immediately spread enough to be accessible to Willingham's defense, in the pre-internet age especially. Indeed, Willingham's attorneys strongly believed the State's experts and in their client's guilt. Grann, *supra* note 299 (quoting the defense attorney: "Willingham's lawyers . . . had little doubt that he had committed the murders . . . 'All the evidence showed that he was one hundred per cent guilty'").

304. Grann, *supra* note 299 ("By 2000, after the courts had rejected [their initial objections], arson investigators increasingly recognized the scientific method . . .").

305. *Id.*

306. *Id.* (noting Hurst's Ph.D in chemistry from Cambridge University and extensive study of the chemistry of fire and explosions). See also INCENDIARY: THE WILLINGHAM CASE (Steve Mims & Joe Bailey Jr. 2011) at 34:43 [hereinafter INCENDIARY] (John Lentini stating "Gerald Hurst is one of the most brilliant people on the planet.").

307. Grann, *supra* note 299 (also noting "Hurst wrote his report in such a rush that he didn't pause to fix the typos").

308. *Id.*

309. *Id.*

310. *Id.*

potentially hundreds of wrongful convictions over the course of decades.³¹¹ In Texas, Willingham's case became one of the first major projects of the new Texas Forensic Science Commission (TFSC), which was created in 2005.³¹² The TFSC's directive is to

investigate complaints involving forensic disciplines that are not subject to accreditation under Texas law, with the exception of autopsies. The Commission may also affirmatively initiate an investigation of a forensic analysis for educational purposes without receiving a complaint if the Commission determines by majority vote that the investigation would advance the integrity and reliability of forensic science in Texas.³¹³

The TFSC did investigate the forensics of the Willingham case (along with the case of Gerald Willis, also convicted of arson, though exonerated and released in 2004) at the behest of the Innocence Project.³¹⁴ Indeed, the TFSC commissioned Dr. Craig Beyler, a leading fire scientist, to evaluate the expert testimony in the Willingham and Willis cases and to issue a report.³¹⁵ Dr. Beyler's report emerged in August 2009, and it made clear that the fire science presented against both Willingham and Willis would violate the tenets of NFPA 921, and

that investigators in the Willingham case had no scientific basis for claiming that the fire was arson, ignored evidence that contradicted their theory, had no comprehension of flashover and fire dynamics, relied on discredited folklore, and failed to eliminate potential accidental or alternative causes of the fire. He

311. See, e.g., *Aff. of David M. Smith*, *supra* note 31, at 15 (noting that the Willingham case exposed old fire investigation myths to the general public).

312. The Willingham/Willis report was the first one ever issued by the TFSC. REP. OF THE TEX. FORENSIC SCI. COMM'N: WILLINGHAM/WILLIS INVESTIGATION 8–9 (2011) [hereinafter Report of TFSC], <http://www.fsc.state.tx.us/documents/FINAL.pdf> (“On August 13, 2008, the Innocence Project (‘IP’) filed a formal complaint with the FSC alleging professional negligence and/or misconduct in the course of the arson investigations and testimony given at the trials of Cameron Todd Willingham in 1991 and Ernest Ray Willis in 1987, including the responsibility of the SFMO to re-evaluate opinions in light of new scientific standards.”). See *Complaint Status/Disposition Reports*, TEX. FORENSIC SCI. COMM'N, <http://www.fsc.texas.gov/cases> (last visited Dec. 7, 2016) (listing the Willis Willingham Final Report and Addendum as the first report in the database).

313. *About Us*, TEX. FORENSIC SCI. COMM'N, <http://www.fsc.texas.gov/about> (last visited Dec. 2, 2016).

314. Report of TFSC, *supra* note 312, at 8–9.

315. Grann, *supra* note 299 (“The first cases that are being reviewed by the commission are those of Willingham and Willis. In mid-August, the noted fire scientist Craig Beyler, who was hired by the commission, completed his investigation.”); INCENDIARY, *supra* note 306, at 42:20 (Gerald Hurst describing Beyler as “among the very very top . . . fire scientist[s] in the country.”).

said that [the State's expert's] approach seemed to deny "rational reasoning" and was more "characteristic of mystics or psychics."³¹⁶

As a result of Dr. Beyler's report, the TFSC in April 2011 issued 17 recommendations for improving fire investigations in the State of Texas.³¹⁷ The Commission's recommendations were a scathing indictment of the sort of testimony and procedures that had led to nearly 20 years of wrongful imprisonment for Ernest Willis and served as the basis of Cameron Todd Willingham's death sentence. However, political wrangling led to an overhaul in the TFSC, essentially robbing it of the authority to evaluate any case dating back prior to 2005.³¹⁸ In October 2011, the TFSC was therefore forced to issue an addendum "stating that it would not be issuing any findings respecting the allegations of negligence or misconduct of the fire officials involved in . . ." either the Willingham or Willis cases.³¹⁹

To its credit, the Texas State Fire Marshal embraced the recommendations for reform in fire investigation nevertheless, noting that it "considers the [T]FSC's 17 recommendations to be appropriate and fair," and that it "is committed to ensuring the best possible forensics are used in fire investigations in Texas."³²⁰ Today, the Texas Fire Marshal works in concert with the Innocence Project of Texas to conduct a systematic review of arson convictions in that state.³²¹ According to the Innocence Project of Texas, more than a thousand cases have been identified for review.³²² Thirty-three cases have been flagged for in-depth investigation to this point.³²³

The work of the TFSC, though certainly not perfect, has been a credit to the State of Texas, showing a commitment to correct flaws in its system going forward, and even evaluate and attempt to correct previous errors (though the Willingham case itself appears to remain off-limits). As the Texas Innocence Project has noted: "Not enough positive words can be said about the work of the Forensic Science Commission and the State Fire Marshal's Office throughout this process. Their commitment to justice and

316. Grann, *supra* note 299 (also describing Beyler's report as "scathing.").

317. Report of TFSC, *supra* note 312, at 39–52.

318. Hewitt & McKenna, *supra* note 61, at 26.

319. *Id.* at 27.

320. *Id.* (alteration in original) (citation omitted).

321. *IPNX Initiatives to Improve Accuracy and Integrity in the Texas Criminal Justice System*, INNOCENCE PROJECT OF TEX., <http://www.ipoftexas.org/our-work/initiatives/> (last visited Dec. 5, 2016).

322. *Id.*

323. *Id.*

improving the state of forensic science and arson investigations in Texas is unparalleled.³²⁴

Recently, the TFSC followed up on its efforts on the arson front by also instituting a review of hair microscopy cases³²⁵ and cases involving bite mark evidence³²⁶—two significantly discredited forensic sciences where achieving justice through traditional courtroom litigation has been slow and difficult.³²⁷

The efforts of the TFSC have had additional positive effects in terms of issues taken up and laws passed by the Texas legislature. Largely because of the reports the TFSC issued,

[f]or two sessions in a row, Texas lawmakers have enacted laws aimed at rooting out junk science from criminal courtrooms. New laws have made it possible for people to challenge their convictions if they could prove junk science or outmoded theories were used to secure a guilty verdict. Lawmakers also have widened the spectrum of forensic disciplines that the commission has authority over.³²⁸

A long way from the political wrangling that censored its findings in the Willingham investigation,³²⁹ the TFSC has set an example of systemic reform to be followed by states across the country. A few other states have followed suit,³³⁰ and we would hope more will, given how much is learned

324. *Statewide Arson Review*, INNOCENCE PROJECT OF TEX., <http://web.archive.org/web/20140212150424/http://www.ipoftexas.org/statewide-arson-review> (last visited Dec. 5, 2016).

325. *Texas Hair Microscopy Case Review: Background and Scope of Hair Microscopy Review Team*, TEX. FORENSIC SCI. COMM'N, <http://www.fsc.texas.gov/texas-hair-microscopy-case-review> (last visited Dec. 5, 2016).

326. *Editorial: Taking Another Bite out of Junk Science in the Texas Criminal Justice System*, THE DALLAS MORNING NEWS (Aug. 17, 2015, 05:29 PM) [hereinafter *Editorial*], <http://www.dallasnews.com/opinion/editorials/2015/08/17/editorial-taking-another-bite-out-of-junk-science-in-the-texas-criminal-justice-system>.

327. See, e.g., Hsu, *Forensic Flaws*, *supra* note 281 (discussing difficulties defendants have had in obtaining relief in hair cases); Radley Balko, *How the Courts Trap People Who Were Convicted by Bad Forensics*, WASH. POST (November 17, 2014) [hereinafter Balko, *Bad Forensics*], https://www.washingtonpost.com/news/the-watch/wp/2014/11/17/how-the-courts-trap-people-who-were-convicted-by-bad-forensics/?utm_term=.8cd4182158ea (describing litigation challenges for defendants convicted on discredited bite mark evidence).

328. *Editorial*, *supra* note 326.

329. INCENDIARY, *supra* note 306, at 42:55 (describing political shakeup of the TFSC and its consequences in throttling the Willingham inquiry).

330. Hewitt & McKenna, *supra* note 61, at 13 (California and New York); *Governor Signs Legislation Creating a Division of Forensic Science*, NEWS.DELEWARE.GOV (June 24, 2014), <http://news.delaware.gov/2014/06/24/governor-signs-legislation-creating-a-division-of-forensic-science/> (noting that in Delaware, a new “Forensic Science Commission will include representatives of law

every day about the subtle errors made in forensic science, and the devastating effects they can have. The TFSC has proved to be a strong force for reform in that state, filling a role that courts simply cannot.

C. Prosecution Integrity Units

“He told me that they were going to do a test,” Mr. Woodard says, referring to a DNA test. “And if things work out he will try his best to free me. Without him, it would have never happened.”³³¹

That a prosecutor can make a big difference in righting a wrongful conviction should come as no surprise, at least to those even facially familiar with the Rules of Professional Responsibility.³³² But what former Dallas County District Attorney Craig Watkins did in *Thin Blue Line*³³³ country is nothing short of remarkable. Shortly after Watkins’s election in 2006, DNA evidence cleared a man Watkins’s office was about to prosecute for murder.³³⁴ Aware of the broader implications of that near-miss, Watkins started to work with the Innocence Project of Texas to review all requests for DNA testing, even those that had been previously

enforcement, forensic science experts, a prosecutor, a public defender and heads of the state Health and Homeland Security agencies”).

331. Jennifer S. Forsyth & Leslie Eaton, *The Exonerator: The Dallas D.A. Is Reviewing Old Cases, Freeing Prisoners—and Riling His Peers*, WALL STREET J. (Nov. 15, 2008), http://www.wsj.com/article_email/SB122669736692929339-1MyQjAxMDI4MjE2NjYxOTY3Wj.html#articleTabs%3Darticle (referring to Dallas County District Attorney Craig Watkins).

332. The rules vary slightly by jurisdiction, of course, but Model Rule 3.8 (“Special Responsibilities of a Prosecutor”) indicates:

(g) When a prosecutor knows of new, credible and material evidence creating a reasonable likelihood that a convicted defendant did not commit an offense of which the defendant was convicted, the prosecutor shall:

(1) promptly disclose that evidence to an appropriate court or authority, and

(2) if the conviction was obtained in the prosecutor’s jurisdiction,

(i) promptly disclose that evidence to the defendant unless a court authorizes delay, and

(ii) undertake further investigation, or make reasonable efforts to cause an investigation, to determine whether the defendant was convicted of an offense that the defendant did not commit.

(h) When a prosecutor knows of clear and convincing evidence establishing that a defendant in the prosecutor’s jurisdiction was convicted of an offense that the defendant did not commit, the prosecutor shall seek to remedy the conviction.

MODEL RULES OF PROF’L CONDUCT r. 3.8 (AM. BAR ASS’N 1983).

333. *THE THIN BLUE LINE* (Miramax Films 1988) (portraying systemic corruption that led to a wrongful conviction for capital murder; takes place in Dallas County).

334. Forsyth & Eaton, *supra* note 331.

denied by his predecessors.³³⁵ Soon afterward, he created an in-house conviction integrity unit to evaluate such cases.³³⁶ Under Watkins's leadership, the unit evaluated hundreds of cases, and had exonerated at least 33 people by July 2014.³³⁷

Watkins's efforts are unique not because he is the first prosecutor to dismiss charges against a previously convicted defendant, but rather because he took on the task of actively looking for cases of wrongful conviction and then working to exonerate defendants without being forced to do so by a court.³³⁸ Such an open and proactive approach from the prosecutor to seek to correct errors, even years after conviction, is certainly a game-changer. Even in straightforward cases, where the defendant merely seeks DNA testing, procedural difficulties can make it all too easy for the judicial system to slam the door on claims of innocence.³³⁹ And in the sort of cusp shifted science cases we have discussed here, a prosecutor's cooperation can be especially essential. While courts may deny relief if the prosecution draws enough procedural loops, many such cases are fairly straightforward instances of wrongful conviction if evaluated on the merits in light of the shifted science.

Indeed, nearly *all* of the procedural challenges we have outlined in this article can be overcome by an open-minded prosecutor's office that is willing to look past procedural excuses to evaluate the merits of a case. Interestingly, while nearly every actor involved in the justice system—courts, defense attorneys, police officers and juries—is limited in some way in its ability to look at the full case or take decisive action on their own—the prosecutor is different: she can do essentially anything she wants to correct any mistake, regardless of procedure or technicality.³⁴⁰ Robust

335. *Id.*

336. *Id.*

337. Yamiche Alcindor, *Man Exonerated by DNA—and He Didn't Even Request It*, USA TODAY (July 24, 2014, 9:48 PM), <http://www.usatoday.com/story/news/nation/2014/07/24/dallas-mans-exoneration-makes-national-history/13040299/>. Watkins left office at the end of 2014. Gromer Jeffers Jr., *Susan Hawk Ousts Craig Watkins in Heated Race for Dallas County DA*, THE DALLAS MORNING NEWS (Nov. 5, 2014, 4:20 PM), <http://www.dallasnews.com/news/politics/local-politics/20141105-susan-hawk-ousts-craig-watkins-in-heated-race-for-dallas-county-da.ece>.

338. Forsyth & Eaton, *supra* note 331 (“While it's true that [Watkins's predecessor] and other prosecutors sometimes end up exonerating defendants after they've been convicted, few prosecutors take it upon themselves to review old convictions. That's in large part why Mr. Watkins's approach marks a change for Dallas, criticized for decades as a convict-at-all-costs county.”).

339. *Id.* (writing that prior to Watkins and the advent of his conviction integrity unit, “[j]udges . . . could turn down [DNA testing] requests, and prosecutors often opposed them”).

340. GERHARD FALK, *THE AMERICAN CRIMINAL JUSTICE SYSTEM: HOW IT WORKS, HOW IT DOESN'T, AND HOW TO FIX IT* 34 (2010) (“[P]rosecutors have unlimited power to decide whether to prosecute or discontinue a prosecution once begun, or whether to exonerate the defendant . . .”); Angela Davis, *Federal Prosecutors Have Way Too Much Power*, N.Y. TIMES (January 14, 2015, 11:57

conviction integrity units can, therefore, make a big difference for shifted science defendants.

Watkins is not without his detractors, but there can be no denying that his conviction integrity unit has done remarkable justice for scores of people. Other prosecutor offices have started similar conviction integrity units, though few have the decisive mandate and fearlessness that Watkins's unit did. One of those few is the Conviction Integrity Unit in the Brooklyn District Attorney's office, which is even more robust than Watkins's unit in Dallas because it has exonerated people who were actually charged and convicted by the same regime (as opposed to some predecessor).³⁴¹ More jurisdictions should follow suit and create empowered conviction integrity units to secure justice in a far quicker and surer way than courtroom litigation.

Even short of conviction integrity units, there is a lot a prosecutor can do to secure justice in the individual shifted science case, should it be presented to him. For example, in 2011, Ionia County, Michigan prosecutor Ron Schafer was presented by the Michigan Innocence Clinic with a post-conviction motion the Clinic intended to file on behalf of an inmate named David Gavitt.³⁴² Gavitt had spent nearly 27 years in prison for setting the fire that killed his wife and two young daughters, but the Michigan Innocence Clinic, backed by a forceful 65-page affidavit from fire scientist John Lentini, argued that Gavitt was innocent, and had been convicted on pure junk science.³⁴³

There certainly were procedural challenges in Gavitt's case. It could have been argued that the evidence Gavitt's defense now presented could have been presented in a prior motion, which Gavitt had filed in 2009—long after the shift in fire science had become discoverable for members of the general public.³⁴⁴ And if that argument was made, it may have doomed Gavitt's case under Michigan's scheme of post-conviction relief, which

AM), <http://www.nytimes.com/roomfordebate/2012/08/19/do-prosecutors-have-too-much-power/federal-prosecutors-have-way-too-much-power> ("Prosecutors are the most powerful officials in the criminal justice system.").

341. Denis Hamill, *B'klyn Reviews Possible Wrong Convictions*, N.Y. DAILY NEWS (Mar. 25, 2013, 8:01 PM), <http://www.nydailynews.com/new-york/hamill-b-klyn-reviews-wrong-convictions-article-1.1298934>.

342. Possley, *Gavitt*, *supra* note 296.

343. *Id.*; John Tunison, *Ionia Man Convicted with Questionable Evidence of Killing Family in House Fire Set Free After 26 Years in Prison*, MLIVE.COM (June 6, 2012, 5:25 PM), http://www.mlive.com/news/grand-rapids/index.ssf/2012/06/freed_after_26_years_in_prison.html.

344. *E.g.*, Aff. of David M. Smith, *supra* note 31, at 15 (noting 2004 was a turning point).

states that defendants must show they could not have previously litigated the evidence they now present.³⁴⁵

However, prosecutor Shafer had the power to override all those technicalities, and that is precisely what he did. After evaluating the merits of the case for many months, and consulting his own experts to analyze the evidence against Gavitt, Schafer simply conceded that the standard for a new trial had been met, and stipulated to vacating the conviction and dismissing all charges.³⁴⁶ Gavitt was released and exonerated³⁴⁷ without the uncertainty and anguish of litigation up and down the courts for several years—which would have been the only path, had the prosecutor not stipulated.

Indeed, other defendants whose cases closely resemble Gavitt’s remain incarcerated today because they have had to negotiate the technicalities of post-conviction relief, and without concurrence from the prosecutor, this is a dangerous route.³⁴⁸ The Willingham and Willis cases are eye-opening examples of this problem. Although the two cases are frequently described as so similar that they are essentially “the same case[,] [j]ust change the names,”³⁴⁹ Willingham’s prosecutor believed till the very end in his guilt,³⁵⁰ whereas in Willis’s case, prosecutor Ori White speaks openly of Willis’s innocence, and has stated “[h]e did not get executed, and I thank God for that”³⁵¹ That Willingham is dead, and Willis is free is perhaps not totally unrelated to those competing sentiments.

These examples make clear a prosecutor’s immense power to instantly do justice in a case where new evidence shows that a wrongful conviction

345. MICH. CT. r. 6.502(G)(2) (1985) (noting that successive motions for relief may only be filed if based on “new evidence that was not discovered before the first such motion”); 6.508(D)(3) (relief may be granted only if a defendant is able to show good cause for failing to previously discover and present the evidence now presented).

346. People’s Resp. to Def.’s Mot. to Relief from J. at 14, *People v. Gavitt*, (2012) (No. 85-007555); Stipulation and Order, *People v. Gavitt*, (2012) (No. 85-007555).

347. Stipulation and Order, *People v. Gavitt*, (2012) (No. 85-007555).

348. See, e.g., Liliana Segura, *Playing with Fire: How Junk Science Sent Claude Garrett to Prison for Life*, THE INTERCEPT, (Feb. 24, 2015, 10:41 PM), <https://firstlook.org/theintercept/2015/02/24/junkscienceclaudegarrett/> (documenting the litigation struggle of Claude Garrett, a Tennessee man who has served over 22 years in prison for an arson/murder that resembles Gavitt’s case, and noting that the prosecutor remains “defensive” about the conviction, and continues to believe in Garrett’s guilt based on discredited evidence such as alleged pour patterns).

349. Grann, *supra* note 299 (quoting Dr. Hurst).

350. Steve Mills & Maurice Possley, *Man Executed on Disproved Forensics*, CHICAGO TRIB. (Dec. 9, 2004), <http://www.chicagotribune.com/news/nationworld/chi-0412090169dec09-story.html> (“Navarro County Judge John Jackson, who as the first assistant district attorney prosecuted Willingham, said that while the experts’ review raises some ‘issues,’ he has no doubt that Willingham was guilty. ‘Does it give me pause? No it does not. I have no reservations.’”).

351. Grann, *supra* note 299.

has occurred. Therefore, although prosecution integrity units still remain rare, they constitute some of the most meaningful systemic reform that counties and states could implement to correct errors of wrongful convictions in cases where litigation may fail.

D. The Proactive Powers of Courts

While deciding both parties' issues in a fair manner is the bulk of their job, we firmly believe that courts have a larger role to play in rooting out junk science from the courtroom, and effecting relief for those harmed by it. *Daubert*, of course, implies proactivity from the courts.³⁵² And this may at times mean more than simply deciding the issues—it may mean raising issues that the parties have not raised. After all, judges are in a position to know more about science and its infirmities than most litigants—they see a lot of cases, and may have learned lessons about forensic science from prior cases to which the parties in the instant case are not privy. This will be especially true in cases of shifting science, where the information about the shift has yet to widely percolate throughout the legal community.

Should a judge who sees unfolding before her a hapless presentation of discredited forensic science simply sit quietly and do nothing, absent an objection from the other side? New York trial court Judge Joseph Maltese faced this question in a civil liability case rooted in fire science.³⁵³ Although the jury found in the defendant's favor, Judge Maltese granted plaintiff's motion to set aside the verdict.³⁵⁴ In doing so, Judge Maltese conducted his own review of fire science and NFPA 921, even though neither side had adequately presented the issue.³⁵⁵ And upon review, the court found: "Such an invalid and clearly erroneous expert opinion, not recognized by the expert's peers, misled the jury into making an irrational decision that a suspicious fire is proof of an intentionally set fire. That conclusion is obviously not true and, consequently, this verdict cannot stand."³⁵⁶

352. See *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 593 (1993) (noting the responsibility of judges to act as gatekeepers).

353. *Ficic v. State Farm Fire & Cas. Co.*, 9 Misc. 3d 793, 799 (NY Sup. Ct. 2005).

354. *Id.* at 794.

355. *Id.* at 801 ("After reviewing [NFPA 921], this court forwarded copies of the pertinent pages of the NFPA 921 Guide to both counsel and requested that they or their experts comment on them and to submit such comments by way of a supplemental affidavit on this posttrial motion. Asking counsel to comment on materials not originally presented, but uncovered by the court's own research, is the prescribed method of allowing such information to be considered by the court.").

356. *Id.* at 802.

Judge Maltese relied on his gatekeeping authority under *Daubert*, and, even though in this case he was late to the gate, he worked proactively to effect the right outcome:

It is the role of the trial judge to preclude false expert testimony from reaching the jury. While it is certainly more efficient to do that before the expert witness testifies, on rare occasions the court must do so after such testimony by striking the testimony in order to preserve the integrity of the court system. The goal of such remedial action is to avoid rewarding those who, draped in the aura of expertise, are uninformed or reckless in their opinions or, worse yet, intentionally misled the jury away from finding the truth.³⁵⁷

Ficic is, of course, far from the norm. Recently, the incompetence of courts at proactively, or even reactively, addressing errors in forensic science have been well documented. On the hair analysis front for example, the FBI has now admitted its mistakes, and while “[t]he admissions mark a watershed in one of the country’s largest forensic scandals,” they also “[highlight] the failure of the nation’s courts for decades to keep bogus scientific information from juries”³⁵⁸ Indeed, some experts have questioned whether judges can be gatekeepers at all.³⁵⁹ Nevertheless, the *gatekeeper* role is here to stay, and the system would be greatly improved overall if more judges took upon themselves the responsibility of ensuring only credible science is used in their courtrooms, as Judge Maltese did.

And aside from trial courts playing gatekeeper, appellate courts also have great power to proactively root out junk science, should they choose to use it in that way. The Maryland Court of Appeals (that State’s highest court) did so in *Kulbicki v. State*,³⁶⁰ the criminal case involving CBLA evidence addressed earlier. In a post-conviction motion, the defendant raised claims arguing that the shift in CBLA science was evidence of a due process violation.³⁶¹ The court, however, raised a separate issue on its own during oral arguments: the possibility that trial counsel reasonably could have learned about and challenged the flaws in the State’s evidence at trial.³⁶² Convinced that reasonable counsel would have investigated further

357. *Id.*

358. Hsu, *Hair Analysis*, *supra* note 280.

359. Balko, *Rearview Mirror*, *supra* note 12.

360. *Kulbicki v. State*, 99 A.3d 730 (Md. 2014), *rev’d* *Maryland v. Kulbicki*, 136 S. Ct. 2 (2015).

361. *Kulbicki*, 99 A.3d at 733.

362. *Id.* at 734.

and been positioned to challenge the validity of the State's CBLA case at trial, the court granted relief on the basis of ineffective assistance of counsel, even though the defendant had never even briefed that issue.³⁶³

The Wisconsin courts that granted new trials based on their inherent authority in the Quentin Louis and Ralph Armstrong cases³⁶⁴ provide another example of appellate courts proactively favoring correcting unreliable science—as opposed to denying relief simply because a narrow construction of procedural pathways allows it.³⁶⁵ State appellate courts have the power to define their own authority and the procedural paths available to litigants in the first place. In Michigan, for example, the procedural path to post-conviction relief is governed by the Michigan Court Rules, which are promulgated, overseen and amended by the Michigan Supreme Court.³⁶⁶ That court could therefore do much to ensure that a defendant like David Gavitt would have a certain procedural path to having the junk science in his case considered by a post-conviction court, without having to depend on the miracle of a local prosecutor's acquiescence.

In light of all that has become known about the flaws of forensic science, and the traditional incompetence of the courts at addressing those flaws, courts should consider more seriously their inherent authority to ensure fair procedures, as well as their important gatekeeping role in the scientific evidence realm. Furthermore, courts should work more proactively to ensure fairness and justice prevail over blind allegiance to erroneous results.

363. *Id.* As it happens, the Maryland court's analysis was unpersuasive. As stated earlier, *supra* note 111, the U.S. Supreme Court reversed, noting that no ineffective assistance claim could be made because defense counsel could not have known any better at the time of trial. But that is beside the point. The Maryland Court of Appeals was correct to scrutinize obvious junk science; it simply picked the wrong standard for granting relief. Given the U.S. Supreme Court's analysis making clear that the average attorney could not have been expected to uncover the flaws of CBLA at the time of trial with reasonable diligence, *Kulbicki*, 136 S. Ct. at 4, *Kulbicki* is a case where a new evidence claim likely would have worked. But even that claim was not raised by the defendant, and would have had to be raised *sua sponte* by the court in order for relief to be granted. So it was not that the Maryland court acted improperly in raising a ground for relief of its own accord; rather it simply raised the wrong ground.

364. *See supra* notes 251–59 and accompanying text (describing the *Louis* and *Armstrong* cases).

365. *E.g., supra* note 111 (describing *People v. Vinson*, No. 303593, 2012 WL 3046236 (Mich. Ct. App. July 26, 2012)).

366. *McDougall v. Schanz*, 597 N.W.2d 148, 154 (Mich. 1999) (“It is beyond question that the authority to determine rules of practice and procedure rests exclusively with this Court. Indeed, this Court’s primacy in such matters is established in our 1963 Constitution [W]e [have] properly emphasized that ‘[t]he function of enacting and amending judicial rules or practice and procedure has been committed exclusively to this Court . . . ; a function with which the legislature may not meddle or interfere’”).

CONCLUSION

If one thing is absolutely certain, it is that no one *wants* junk science to be used to convict innocent people of crimes. Another thing is almost as certain, however: it has happened, and continues to happen.

We have discussed here many possible paths a defendant convicted on shifted science (or science that was shifting already at his trial) might consider in post-conviction litigation. However, the narrowness of each remedy and the difficulty of every avenue should be clear enough as well. For that reason, we also considered broader, non-litigation remedies, such as proactive reviews by courts, forensic science commissions, law enforcement agencies, and prosecutor offices. One thing that we have not discussed by name is legislation. But that is where this all leads.

In the State of Texas, the legislature passed a bill in 2013 that specifically broadens the avenues of relief available in court on post-conviction litigation for defendants convicted on shifted science.³⁶⁷ The bill creates a clear avenue for relief in instances where defendants previously would have had to negotiate narrow new evidence rules, and it marks a clear step forward in broadening access to courts for shifted science defendants.³⁶⁸ In Minnesota, the statute governing newly discovered evidence explicitly anticipates and accommodates claims based on shifts in science.³⁶⁹ The importance of such laws cannot be overstated: traditional rules governing new evidence often fail to account for shifts in science, and defendants sometimes have difficulty demonstrating that new science is in fact new evidence warranting relief. Legislatures can and should do away with such uncertainty. Much like every state has crafted a statutory pathway for post-conviction DNA testing,³⁷⁰ the example of Texas's broader shifted science law is worth emulating.

There is much more to be done on every front discussed in this article, and legislation is no different; reforms are in their most nascent stage, and

367. Sabra Thomas, Comment, *Addressing Wrongful Convictions: An Examination of Texas's New Junk Science Writ and Other Measures for Protecting the Innocent*, 52 HOUSTON L. REV. 1037, 1050 (2015).

368. *Id.* (quoting "award-winning criminal justice blogger Scott Henson . . .": "When legislative bodies . . . engage in *habeas* 'reform,' the change nearly always limits the writ's use rather than expand[s] it. That's why [the Texas statute] stands out as a singular accomplishment, flying in the face of legislative trends going back not just decades but centuries.").

369. *Woodward v. State*, No. A14-0614, 2015 WL 1128095, at *2 (Minn. Ct. App. Mar. 16, 2015) (quoting MINN. STAT. §590.01(1)(a) (2015) (specifically including new scientific evidence)).

370. See *Access to Post-Conviction DNA Testing*, INNOCENCE PROJECT, <http://www.innocenceproject.org/free-innocent/improve-the-law/fact-sheets/access-to-post-conviction-dna-testing> (last visited Dec. 5, 2016) (noting that all 50 states have statutes permitting post-conviction DNA testing).

the danger of flawed science thwarting justice in the courtroom is still very real. Nevertheless, the conversation that is alive now, one that has been fueled in recent years by significant exonerations, executions, and the NAS Report, is progress in itself. The scrutiny is on the science now, and we hope successful reforms and true relief are not far behind.