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“Good” Science Gone Bad: How the Criminal Justice System Can Redress the Impact of Flawed Forensics

JESSICA D. GABEL* AND MARGARET D. WILKINSON**

INTRODUCTION

“DNA Exonerates Man in Prison For 26 Years,”¹ “DNA Frees Innocent Man,”² and “Wrongly Convicted Man Now Free Thanks to DNA Evidence.”³ These headlines celebrate justice done, and highlight forensic science’s ability to rectify wrongs. There is no question that scientific developments, particularly in the area of DNA, have advanced how criminal cases are investigated, prosecuted, and presented in court. Overlooked in the wake of such acclaim, however, is the fact that forensic science is far from infallible. While advances in DNA testing have provided a more exacting tool with which to explore guilt and innocence, scientific developments that call previously accepted forensic techniques into question often escape attention. Headlines such as “More Arson Convictions Challenged by Science,”⁴ “Bullet-Matching Science Debunked,”⁵ “Hair Evidence in Jogger Case Discredited,”⁶ and “Are Innocent Imprisoned? Fingerprint Errors Found,”⁷ underscore problems

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with forensic science that are largely ignored and unchecked.

Forensic science is a vital component of the criminal justice system. Undoubtedly, thousands of guilty defendants have been convicted with the help of forensic evidence. Nonetheless, at the time of this writing, the Innocence Project estimates that forensic evidence with little to no probative value caused or contributed to a wrongful conviction in at least 80 of the 217 DNA exoneration cases the Project has identified. Many forensic techniques, such as hair and fiber analysis, toolmark comparisons, and fingerprint analysis, rely upon a simple “match game,” whereby a forensic analyst compares a known sample to a questioned sample and makes the highly subjective determination that the two samples originated from the same source. Although lacking a true scientific foundation, this Sesame Street Science plays a prominent role in many cases because of the easy availability of trace evidence, which is easy to leave and easy to find at a crime scene. Other forensic fields, including comparative bullet lead analysis (CBLA) and arson investigation, rely on assumptions that are “under-researched and oversold.”

In theory, scientific expert testimony must meet certain standards of reliability before being admitted in court. In federal court and some state courts, the Daubert standard governs the admissibility of such testimony. Under Daubert, a judge acts as a “gatekeeper” and may admit scientific evidence as long as it is both “relevant” and “reliable.” Other state courts have continued to follow the earlier Frye standard, under which scientific evidence “must be sufficiently established to have gained general acceptance in the particular field in which it belongs” to be admissible. Despite these “rigors” of admissibility, courts have

9. The Innocence Project is a national litigation and public policy organization dedicated to exonerating wrongly convicted people through the use of DNA testing and reforming the criminal justice system. The Innocence Project, Mission Statement, http://www.innocenceproject.org/about/Mission-Statement.php (last visited Apr. 20, 2008).
11. A term that we coined after seeing a Sesame Street episode that played a match game titled “One of these things is not like the others.” See, e.g., YouTube.com, Sesame Street—One of These Things—Circles, http://www.youtube.com/watch?v=FCIGhtoivlg&feature=related (last visited Apr. 20, 2008).
14. Id. at 597.
15. See Frye v. United States, 293 F. 1013, 1014 (D.C. Cir. 1923); People v. Geier, 161 P.3d 104,
routinely accepted much of the so-called science underlying forensic testing with little, if any, inquiry.  

A revolution may be imminent, however. In 2005, the FBI discontinued its CBLA program, finding that "neither scientists nor bullet manufacturers are able to definitively attest to the significance of an association made between bullets in the course of a bullet lead examination." The FBI Laboratory performed CBLA examinations for decades, and the resulting evidence was used to convict many defendants. A cloud of doubt now hangs over cases involving CBLA, and the discrediting of other widely used forensic techniques seems likely to follow.

What can the criminal justice system do when "good" science goes bad? This article provides an answer to that question in three parts. First, this article looks at the inability of certain fields of forensic science to produce reliable results. Second, it discusses problems with the current methods of challenging convictions based on unreliable science. Finally, it proposes a new framework to better enable prisoners to seek review of such convictions. What this article does not do is propose ways to prevent wrongful convictions in the future. We recognize that many issues, including the standards governing the admissibility of forensic evidence and internal problems in forensic laboratories, will need to be addressed in order to protect innocent defendants from being convicted in the first instance. We propose a way to confront faulty forensics retrospectively, by providing an avenue to relief for the many current prisoners who were convicted based on misleading scientific evidence.

I. FAULTY FORENSICS: WHERE SCIENCE MEETS GUESSWORK

The cases are many, but the differences are few. Whether it was a

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142 (Cal. 2007).
19. In recent years, studies of certain forensic fields have demonstrated a lack of scientific foundation in the testing methods, identified serious flaws, and questioned the continued use of such techniques. See INNOCENCE PROJECT ARSON REVIEW COMM., REPORT ON THE PEER REVIEW OF THE EXPERT TESTIMONY IN THE CASES OF TEXAS V. WILLINGHAM AND TEXAS V. WILLING 40 (2006), available at http://www.innocenceproject.org/docs/ArsonReviewReport.pdf (“The significant lack of understanding of the behavior of fire . . . can and does result in significant misinterpretations of fire evidence, unreliable determinations, and serious miscarriages of justice with respect to the crime of arson.”); NAT’L RESEARCH COUNCIL, BALLISTIC IMAGING (Daniel L. Cork et al. eds., 2008) (“The validity of the fundamental assumptions of uniqueness and reproducibility of firearms-related toolmarks has not yet been fully demonstrated.”).
bullet from the smoking gun or a fingerprint left on the glass, the evidence (and the alleged science behind it) produced wrongful convictions. Critics have attempted to shed light on the weaknesses in forensic science, but a policy of willful blindness prevails. The examples below are only a fraction of the larger problem, but should serve as a reminder that innocence cannot be ignored.

A. UNLOADED SCIENCE: COMPARATIVE BULLET LEAD ANALYSIS

In essence, the validity of CBLA evidence rests on one premise: if the chemical composition of two bullets is identical, then the bullets came from the same box. The first step of CBLA is to test a bullet recovered at a crime scene for trace amounts of the various metals used to make lead bullets. The results of that test are then compared to the chemical composition of bullets associated with a suspect. The assumption underlying CBLA was that bullets made from the same batch of lead would have the same chemical composition, allowing an analyst to conclude that a bullet was likely to come from only a particular box of ammunition that was manufactured on a given date. However, as research eventually established, there is no defensible basis for such a conclusion.

The FBI first used CBLA after the assassination of John F. Kennedy, as a means of matching bullet fragments to Lee Harvey Oswald’s gun. CBLA provided a convenient means of tying bullets to suspects when the gun used to shoot a bullet was unavailable, foreclosing the use of traditional ballistics testing. As a result, over the next forty years, CBLA was used in many criminal investigations and offered as “scientific evidence” in several trials. CBLA testimony offered by FBI experts ranged from the relatively reserved (that two bullets were “analytically indistinguishable”) to the absurd (that two bullets “had been made by the same manufacturer on the same day and at the same hour”). Courts regularly admitted CBLA evidence along all parts of this spectrum, and allowed experts to present such evidence as scientifically reliable.

21. Id. at 61.
22. Id.
27. Hansen, supra note 20, at 61-62.
Eventually, a collection of critical literature, poor press, and successful challenges to CBLA's admissibility in court brought potential problems with CBLA to light.\textsuperscript{29} The hullabaloo spurred the FBI to fund a study into the reliability of trace metal analyses for the purpose of "matching" suspect bullets to crime scene bullets. In 2004, the National Research Council (NRC) of the National Academy of Sciences released its report ("NRC Report"), which concluded that "variations in the manufacturing process rendered the FBI's testimony about the science 'unreliable and potentially misleading,'" and that CBLA testimony "should be considered 'misleading under the federal rules of evidence.'\textsuperscript{30} As a result, the FBI abandoned CBLA in 2005.\textsuperscript{31} After the NRC Report, some prisoners have been successful in overturning convictions based on CBLA. For example, in April 2006, the Court of Appeals of Maryland ordered a new trial for Gemar Clemons, who was convicted of murder and robbery based on CBLA evidence.\textsuperscript{32} The court found that CBLA evidence "is not generally accepted within the scientific community as valid and reliable" and should not have been admitted at trial.\textsuperscript{33}

Since the FBI Laboratory was the only forensic laboratory that conducted CBLA routinely, the FBI's decision to stop performing CBLA has effectively halted the technique's use in criminal cases.\textsuperscript{34} Although

\begin{footnotesize}
\begin{enumerate}
\item[30.] Solomon, \textit{supra} note 18.
\item[31.] \textit{Id.} Oddly, the NRC Report was not the first to flag the possibility of errors in CBLA. In 1991, an FBI study ultimately determined that CBLA was "a 'useful forensic tool' that produced 'accurate' and 'reproducible' matches," but noted two problem areas: first, that bullets packaged fifteen months apart—a span with a built in presumption of separate batches of lead—had an identical composition; second, the 1991 study found that bullets from a single box contained different lead composition. \textit{Id.}

Of course, this study did nothing to undercut the FBI's testament that the bullet manufacturing process produced unique (and identifiable) batches of lead.
\item[32.] Clemons v. State, 896 A.2d 1059, 1070, 1079 (Md. 2006).
\item[33.] \textit{Id.} at 1070. Clemons was arrested and charged with possession of an unregistered handgun and possession of ammunition after an accident involving a car in which he was a passenger. \textit{Id.} at 1062. The gun was consistent with the weapon used to murder a man two days earlier, and a witness to that shooting picked Clemons out of a photographic array. \textit{Id.} Over the defense's objection, the prosecution offered the testimony of Charles A. Peters, an FBI forensic chemist, as an expert on CBLA. \textit{Id.} at 1064-65. Peters testified that CBLA was capable of determining that two bullets "were manufactured or . . . were likely manufactured in the same pot of lead at a bullet manufacturer," and that the bullets at issue in the case were "analytically indistinguishable" and were consistent with having come from the same source. \textit{Id.} at 1065, 1067-68. A jury convicted Clemons, and he was sentenced to forty-two years in prison. \textit{Id.} at 1070. The Court of Appeals of Maryland found that CBLA did not meet Maryland's Frye-Reed test that governs the admissibility of scientific evidence. \textit{Id.} at 1078. The court relied on several scientific studies questioning the value of CBLA, including the National Research Council's report commissioned by the FBI. \textit{Id.} at 1075-78. While Clemons's conviction "was not entirely dependent upon" CBLA evidence, the court declared itself "unable to declare a belief, beyond a reasonable doubt, that the error in no way influenced the verdict," and ordered a new trial. \textit{Id.} at 1079 (citation omitted).
\item[34.] \textit{Id.} at 1078.
\end{enumerate}
\end{footnotesize}
exact numbers are not clear, the FBI estimated in 2005 that it conducted bullet lead examinations in approximately 2,500 cases submitted by federal, state, local, and foreign law enforcement agencies, and that courts in about 20% of those cases actually introduced the bullet lead analysis at trial.\(^3\) At the time, however, the FBI did not address how, or if, it would handle the many cases where CBLA evidence helped to convict defendants.

In late 2007, the Washington Post and the CBS program, 60 Minutes, published and televised a scathing investigative series that criticized not only CBLA, but also the FBI’s delayed termination of the program its apparent disinterest in facilitating a review of cases in which CBLA played a role.\(^3\) Since the reports were published and aired on national television, the FBI has committed itself to identifying all cases in which bullet-lead matches contributed to a conviction, because “[it’s] the right thing to do.”\(^3\) This corrective action apparently will include a nationwide review of all CBLA-related testimony and notification to prosecutors so that the courts and defendants can be alerted.\(^3\) The FBI lab also plans to create a system to monitor the accuracy of its scientific testimony.\(^3\) It remains to be seen whether the FBI’s planned measures will be successful in identifying those defendants convicted on the basis of CBLA evidence. Regardless, wrongful convictions based on CBLA will stand unless prisoners have an effective way of challenging them.

B. Hair-Raising Science: Microscopic Hair Examination

Microscopic hair analysis has been employed since the nineteenth century,\(^4\) and techniques used today differ little from those in use at the beginning of the twentieth century.\(^4\) Microscopic hair analysis consists of comparing the microscopic characteristics of hairs recovered at a crime

\(^{35}\) FBI Press Release, supra note 17.

\(^{36}\) Solomon, supra note 18.

\(^{37}\) Id. At the time of this writing, the Authors contacted the FBI to inquire about the status of the case review. Calls for information and/or comment were not returned. There seems to be a systemic policy of inaction. According to the Washington Post, the FBI initially believed that the public release of the 2004 National Academy of Sciences report and the subsequent termination of CBLA generated enough publicity to provide defendants and their attorneys plenty of opportunities to lodge appeals. Id. A lawsuit brought in 2006 by Frederick Whitehurst, a former FBI agent who worked in an FBI laboratory, and his Forensic Justice Project has attempted to gain access to a list of the bullet lead cases under the Freedom of Information Act. See Forensic Justice Project v. Federal Bureau of Investigation, No. 1:2006-cv-01001 (D.D.C. filed May 31, 2006). Little progress has been made in that case.

\(^{38}\) Solomon, supra note 18.

\(^{39}\) Id.

\(^{40}\) Barry Scheck et al., Actual Innocence: When Justice Goes Wrong and How to Make it Right 208 (New American Library 2003).

scene with suspect hairs. Analysts seek to associate color, texture, pigment, and other identifiers. In theory, if a match is obtained, such evidence provides the missing link between the defendant and the crime.

Throughout its history, microscopic hair comparison has been a forensic technique that has little relevance outside of a criminal investigation. As a result, it, as well as many other forensic fields based on match identification, receives little attention from the scientific world at large. This limited exposure to anything resembling peer review, proficiency testing, and error ratings would be enough to render the technique unreliable in most scientific fields. Indeed, a match between hairs is not based on any scientific test or experiment. Rather, a match is the product of simple "eyeballing." Hair microscopy is not accompanied by empirical data that exhibits any population frequencies of hair consistencies. Neither statistics nor experiments have demonstrated an unqualified uniqueness to human hair. In fact, hair from the same person may vary greatly whereas hair from two unrelated individuals may be very similar. Thus, the nature of hair microscopy makes it vulnerable to high error rates and uneven application.

Nevertheless, the use of hair analysis in the most intense and delicate of settings—the determination of guilt or innocence—persists. Many courts still admit such evidence as a matter of form without a Daubert-like hearing. In 2005, a California appellate court held that no Kelly/Frye hearing, the state equivalent of a Daubert hearing, was

42. Id. at 229.
44. Stafford Smith & Goodman, supra note 41, at 233.
45. Id.
47. See Thornton & Peterson, supra note 43, at 48.
48. See id. at 49.
50. See id. In McGrew v. State, 682 N.E.2d 1289, 1289 (Ind. 1997), the Indiana Supreme Court overturned a lower appellate court decision that had found microscopic hair analysis to be unreliable. The trial judge did not engage in a Daubert analysis of the hair evidence, a failure that led the intermediate appellate court to exclude the evidence. See id. at 1289–90. The Indiana Supreme Court reversed and determined that the trial court "exercised appropriate discretion as to the reliability of the proffered hair comparison analysis." Id. at 1292. The Indiana Supreme Court noted that "[i]nherent in any reliability analysis is the understanding that, as the scientific principles become more advanced and complex, the foundation required to establish reliability will necessarily become more advanced and complex as well." Id. No complex foundation was required, however, and the court condoned skipping that pesky Daubert analysis because "the evidence at issue was more a matter of the observations of persons with specialized knowledge than a matter of scientific principles." Id. (internal quotation marks omitted). If such evidence is merely a matter of observation, then it would appear that any child past preschool could be trained to make specialized matches.
required for the admission of hair microscopy evidence.\textsuperscript{51} The court noted that

"the potential rate of error of the technique is very low. . . . It is true that hair comparisons, as do all other sciences, depend on the judgment and experience of the examiner; but hair examiners are scientists and not simply technicians. That is why they can reliably make the necessary value judgments that come from their scientific education, training, and experience."\textsuperscript{52}

Other courts have followed a similar model of routine, unchecked admission of such evidence, glossing over the lack of real science to support the validity of hair microscopy. In fact, many courts take judicial notice of microscopic hair analysis and transfer the burden of proving the unreliability of such evidence to a defendant.\textsuperscript{53}

Hair analysis has unquestionably produced wrongful convictions. A study of the first 200 prisoners exonerated by DNA evidence found that forty-three (nearly 22\%) had been wrongly convicted largely on the strength of hair follicles found at the crime scenes.\textsuperscript{54} For example, in December 2003, Oklahoma freed Calvin Scott after DNA testing proved that he was not the perpetrator of a rape for which he served twenty years.\textsuperscript{55} Hair analysis had played a crucial role in his conviction.\textsuperscript{56} Because evidence continues to mount that hair analysis is unreliable, it is crucial

\textsuperscript{51} Renteria, 2005 Cal. App. Unpub. LEXIS 11995, at *187. The court went on to quote other cases and explain its reasoning that "the principles and procedures underlying hair and fiber evidence are overwhelmingly accepted and reliable," because "'[f]orensic examinations of human hairs have been performed for years.'" Id. at *187-88 (quoting Houck et al., Locard Exchange: The Science of Forensic Hair Comparisons and the Admissibility of Hair Comparison Evidence: Frye and Daubert Considered, Modern Microscopy J., Mar. 2, 2004, at 9, available at http://www.modernmicroscopy.com/main.asp?article=36).

\textsuperscript{52} Renteria, 2005 Cal. App. Unpub. LEXIS 11995, at *187 (citing Houck et al., supra note 51.).

\textsuperscript{53} See e.g., Johnson v. Commonwealth, 12 S.W.3d 258, 262-63 (Ky. 1999) (listing cases where hair microscopy was judicially noticed; requiring defendant to "introduce any evidence to prove the unreliability of hair analysis by microscopic comparison"; and finding that the prosecution had no "obligation to introduce affirmative evidence to prove its reliability, but could rely entirely on the judicially noticed fact" of the reliability of microscopic hair analysis).

\textsuperscript{54} Garrett, supra note 10, at 81.

\textsuperscript{55} The Innocence Project, Know the Cases: Calvin Lee Scott, http://www.innocenceproject.org/Content/258.php (last visited Apr. 20, 2008).

\textsuperscript{56} See id.; see also Ron Humphrey, Coming to Grips with Innocence, http://www.pfm.org/article.asp?ID=1389 (last visited Apr. 20, 2008). The rape victim was unable to identify her attacker. The Innocence Project, supra note 55; Humphrey, supra. More than four months after the attack, police received an anonymous tip that Scott, who was in jail for a shoplifting conviction, was responsible. See The Innocence Project, supra note 55; Humphrey, supra. Scott voluntarily provided hair samples to police. The Innocence Project, supra note 55. While prosecutors offered Scott several plea bargains, he steadfastly maintained his innocence. Humphrey, supra. At trial, a state criminologist testified that Scott's hairs were consistent with hair found at the scene of the crime, and he was convicted and sentenced to twenty-five years in prison. See The Innocence Project, supra note 55; Humphrey, supra. After Scott had served twenty years, he obtained DNA testing of physical evidence that established that another man, already in prison for another rape, had committed the crime. See The Innocence Project, supra note 55; Humphrey, supra.
that defendants have a mechanism by which to challenge convictions based on hair analysis.

C. SMUDGED SCIENCE: FINGERPRINT EXAMINATION

Fingerprint identification involves a comparison of questioned friction skin ridge impressions from fingers (or palms) left at a crime scene to known fingerprints. If an examiner determines that there are enough common points between the two prints, the conclusion is that the questioned print definitively belongs to the suspect.\(^5\) Such an absolute identification rests on a premise ingrained in our minds since childhood, and prevalent for more than a century: no two fingerprints are alike. In fact, there are three basic assumptions on which fingerprint identification depends:

1. . . . [N]o two fingers have ever been found to possess identical ridge characteristics.

2. A fingerprint will remain unchanged during a person's lifetime.

3. Fingerprints will have general ridge characteristics that permit them to be systematically classified and examined with great efficiency and efficacy.\(^5\)

Since fingerprint evidence has been venerated for so long, its admissibility is simply a given. There is no actual evidence, however, that an individual's fingerprints are unique to all others in the world.\(^5\) Instead, like hair analysis, fingerprint analysis is another exercise in an examiner's subjective attempt to connect the dots. Logic might dictate that fingerprint evidence must fall short of admissibility, but its longstanding acceptance (the cornerstone of admissibility under Frye) reveals otherwise.\(^6\)

In recent years, lawyers have launched significant challenges to fingerprint identification.\(^6\) In 2004, there was a great deal of publicity about the fingerprint analysis error that put Brandon Mayfield in jail as a suspect in the Madrid train bombings.\(^6\) In January of 2004—only months

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\(^5\) Terrence F. Kiely, Forensic Evidence: Science and the Criminal Law 349 (2d ed. 2006).

\(^5\) See United States v. Havvard, 117 F. Supp. 2d 848, 852 (S.D. Ind. 2000) ("In roughly 100 years since fingerprints have been used for identification purposes, no one has managed to falsify the claim of uniqueness by showing that fingers of two persons had identical fingerprints.").


before the Mayfield incident—Stephan Cowans was released after serving more than six years of a thirty- to forty-five-year sentence for shooting and wounding a police officer.\(^6\) Cowans had been convicted solely on fingerprint and eyewitness evidence, but post-conviction DNA testing showed that Cowans was not the perpetrator.\(^4\) The Boston Police Department then admitted that the fingerprint evidence was erroneous, making Cowans the first person convicted by fingerprint evidence and exonerated by DNA evidence.\(^6\)

In 2006, criminologist Simon A. Cole released an extensive study that exposed not only the existence of fingerprint errors, but also the harsh reality that as many as one thousand incorrect fingerprint “matches” could be made each year in the United States.\(^6\) The Cole study is the first to examine the twenty-two known cases of fingerprint

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\(^{6}\) Id.

\(^{6}\) Id. As detailed in a Popular Mechanics exposé, during a police chase on foot, officer Gregory Gallagher chased a suspicious man down an alley and over a fence. On the other side of the fence, Gallagher and the suspect struggled, and the suspect took control of the officer's handgun and opened fire. One round hit Gallagher in the leg. The assailant then fled the scene, eventually finding his way into a house where he demanded a glass of water from the occupants. Fingerprint experts matched the print left on the glass of water to Stephan Cowans, a Boston local with a warrant out on him for larceny. Gallagher and another witness identified Cowans. Coupled with two analysts from Boston's fingerprint lab who testified that the fingerprints undeniably belonged to Cowan, the conviction was foolproof. In 2004, analysis of DNA left on the glass, and on a baseball cap and sweatshirt discarded by the suspect, proved Cowans was innocent. As a result, the Boston police commissioner closed the fingerprint lab for almost two years. Id.; see also Jonathan Saltzman & Mac Daniel, Man Freed in 1997 Shooting of Officer: Judge Gives Ruling After Fingerprint Revelation, BOSTON GLOBE, Jan. 24, 2004, at A1.

mistakes. The cases, which date from 1920, are devastating to the contention that fingerprint identification is “infallible.” While twenty-two errors in a century of fingerprint evidence may seem like a small number, it is important to remember that, as Cole points out, these errors are just the “proverbial iceberg of actual cases of fingerprint misattribution.” The errors in these cases have only come to light because they were discovered by chance and revealed publicly. It is impossible to say how many other cases exist in which erroneous fingerprint matches have contributed to wrongful convictions.

Notwithstanding the zero-error rate marketed by print examiners, the Cole study notes that proficiency tests conducted since 1983 show an aggregate error rate of 0.8%. Although this figure may appear trivial, labs process fingerprints in thousands of cases each year. For example in 2002, the year of the Cole study, United States crime laboratories processed 238,135 requests for latent print analysis. An error rate of 0.8% translates to 1,905 fingerprint mistakes in that year alone. Such a statistic is unacceptable.

In the face of this error rate, fingerprint examiners assert that the checks incorporated into the system of print analysis should safeguard against a wrongful identification (and, hence, a wrongful conviction). These ostensible safeguards include: (1) having additional examiners verify print identifications; (2) certifying only competent examiners; (3) requiring a high number of matching points in the ridges before declaring the print a match; and (4) allowing a defendant to have independent experts examine the prints. As evidenced by the Cole study, however, each of these safeguards has failed. In fact, in four of the Cole study cases (including Cowans and Mayfield), independent experts corroborated the disputed prints, finding matches where there were none. This so-called

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67. Id. at 991.
68. Id.
69. Id. at 1030. This aggregate includes the anomalous year of 1995 when the error rate soared to
4.4%. Id.
70. Id. at 1034.
71. Id. at 1022–25.
72. The word “high” in this calculus is a bit of a misnomer. In comparing ridge characteristics, any
given fingerprint has approximately 150 available points for comparison. See Kiely, supra note 58, at
348. All print impressions are, in effect, only partial impressions of the actual print, since they do not
exhibit all 150 points. As a foundation for an impression to be deemed a “match” to the print, courts in
the United States generally require six to eight points, while other nations require fourteen or more.
Id. In the Cole study, twelve of the twenty-two cases he examined had known numbers of comparison
points. Of those twelve cases, six had at least sixteen points for comparison, and all twelve cases had at
least eleven points of comparison. Sixteen is thought to be a “very exacting standard.” Cole, supra
note 66, at 1024–25.
74. Id. at 1025.
science must not be as "infallible" as advertised.\textsuperscript{75}

Despite the recent questions that have arisen about fingerprint identification, it is regular practice for a fingerprint technician to testify that the error rate is zero.\textsuperscript{6} This begs the question, how would the technician know that the error rate is zero? Indeed, before the Mayfield debacle, examiners were loath to adopt any sort of blind analysis to test proficiency and error rates.\textsuperscript{7}

Simon Cole is correct: neither a fingerprint examiner nor the criminal justice system can distinguish "between correct latent print attributions and misattributions."\textsuperscript{78} A mistaken match—an "imposter"—looks the same as the true match, and fingerprint analysis simply cannot differentiate between the two.\textsuperscript{79} No two fingerprints are exactly alike, as to each and every point of the possible 150 points. However, multiple people may have a certain number of ridge characteristics in common, and thus the axiom that "no two fingerprints are alike" is defied in practice. Until this principle—that different fingerprints can appear the same—can be clearly articulated in court, fingerprint evidence should be removed as a cornerstone of forensic science. Justice requires "a methodically reliable analysis,"\textsuperscript{76} and despite the reluctance of courts to acknowledge fault in this age-old forensic device the fact remains that there are innocent people whose convictions were sealed with a print.\textsuperscript{77}

\textsuperscript{75} The tide, however, may be changing. In late 2007, a Baltimore judge in a death penalty case ruled that an analysis linking the defendant's fingerprints to prints found on a stolen car was inadmissible because the error rate in fingerprint comparison is unknown. Stephen Kiehl, Defender Spotlights Faulty Forensics, BALTIMORE SUN, NOV. 5, 2007, at 1A, available at http://www.baltimore sun.com/news/local/baltimore_county/bal-te.md.kento5nov05.o.7o80554.story?page=1.

\textsuperscript{76} Cole, supra note 66, at 990.

\textsuperscript{77} Id. at 994. Blind testing is where the examiner is shielded from case information and does not know that the questioned print is meant to match the crime scene print. In some blind tests, the examiner is given a set of prints from which to find a match, if any. See, e.g., Michele Triplett's Fingerprint Dictionary, http://www.fprints.nwlean.net/d.htm (follow "B" hyperlink; scroll down to "Blind Testing" entry) (last visited Apr. 20, 2008). A double blind test would be the best approach, but it is even less doubtful that the examiner and fingerprint lab employ a method of double blind testing and verification. Double blind testing is a scientific method whereby the examiner does not know that he or she is part of the test. See id. (follow "D" hyperlink; scroll down to "Double Blind Testing" entry). It tests the reliability and reproducibility of a conclusion. Double blind verification adds another layer where the same information is given to other examiners to independently analyze the prints without the influence of the first examiner's conclusions. Id. Without a true scientific method to determine error rates—or to prove the accepted lack thereof—fingerprint identification remains a pseudoscience.

\textsuperscript{78} Cole, supra note 66, at 1057.

\textsuperscript{79} Id.


\textsuperscript{81} Id. (excluding fingerprint evidence that lacked, among other things, blind testing and documented methodology). Although some courts have considered challenges to fingerprint evidence, few actually excluded it. Perhaps the best example is the Llera Plaza case. United States v. Llera Plaza, 181 F. Supp. 2d 414 (E.D. Pa. 2002). In Llera Plaza, Judge Pollak initially ruled that the government would be able to present expert fingerprint testimony that: (1) described how any latent and rolled
Unfortunately, current postconviction procedures are ill-equipped to cope with these cases.

II. THE CURRENT MODEL: FRACTURED AND INEFFECTIVE APPROACHES TO INNOCENCE

The preceding section discussed how conjecture and imagination, masquerading as science, failed innocent people. Of the first 200 DNA exoneration cases, 113 involved introduction of faulty forensic evidence. It is impossible to know how many other innocent people have been convicted based on the same faulty forensic evidence where DNA is not available to exonerate them. Moreover, the preceding overview only identified a handful of problematic forensic fields. There are other forensic specialties (toolmarks, arson investigation, and handwriting to name a few) that are equally grounded in untested and unreliable “science.”

While DNA has become the new arbiter of guilt and innocence, it has also negatively affected prisoners who cannot take advantage of such compelling evidence. States have enacted statutes that provide for post-conviction DNA testing in cases of alleged innocence. Lost in the shuffle, however, is DNA’s other implication: that many fields of forensic science, despite widespread acceptance, frequently yield incorrect results. This section discusses the current framework for how a factually innocent person can challenge faulty forensics if DNA evidence is not available. As this section makes clear, the current postconviction framework (absent exculpatory DNA evidence) is ineffective to handle cases involving unreliable science.

A. AVAILABLE METHODS OF SEEKING DIRECT AND COLLATERAL REVIEW OF CONVICTIONS

1. Direct Review

A motion for a new trial is the primary form of direct review by which prisoners can seek to overturn their convictions on the basis of newly discovered evidence. All federal and state jurisdictions provide a mechanism by which prisoners can move for a new trial. The rules of most jurisdictions explicitly recognize newly discovered evidence as a

prints at issue in this case were obtained; (2) identified such fingerprints and any necessary magnifications for the jury; and (3) pointed out any observed similarities and differences between a particular latent print and a particular rolled print. Id. Judge Pollak, however, restricted the government from presenting testimony that a latent print matched the rolled print of a particular person. Id. Only two months later (and after much fanfare and press), Judge Pollak retreated from his initial ruling and allowed in the match testimony. See United States v. Llera Plaza, 188 F. Supp. 2d 549, 576 (E.D. Pa. 2002).

82. Garrett, supra note 10, at 81.
basis for such a motion.\textsuperscript{83}

In most jurisdictions, prisoners have only three years or less from a particular event—usually the verdict or finding of guilty, entry of judgment, or sentencing\textsuperscript{84}—to request a new trial based on new evidence (though many jurisdictions extend this time limit if newly discovered evidence is the basis for the motion\textsuperscript{85}). The time limits vary widely among jurisdictions, ranging from three years in federal court, the District of Columbia, and four states,\textsuperscript{86} to a month or less in fifteen states.\textsuperscript{87} In four other states, a prisoner may potentially bring a new trial motion on the basis of newly discovered evidence at any time, subject to the court’s discretion.\textsuperscript{88} Only eight states allow a prisoner to seek a new trial at any time.\textsuperscript{89}

\begin{itemize}
\item \textsuperscript{84} See, e.g., \textit{Ark. R. Crim. Proc.} 33.3(b) (entry of judgment); \textit{Ohio R. Crim. Proc.} 33(b) (verdict); \textit{Tenn. R. Crim. Proc.} 33(b) (sentencing).
\item \textsuperscript{85} See, e.g., \textit{Alaska R. Crim. Proc.} 33 (increasing time from five days to 80 days); \textit{Del. R. Crim. Proc.} 61(f)(4) (increasing time from fifteen days to sixty days); \textit{Md. R. Pract. & Proc. 4-331} (increasing time from ten days to one year); \textit{N.M. R. Crim. Proc.} 5-614 (increasing time from ten days to two years); \textit{W.V. R. Crim. Proc.} 33 (removing ten day limit).
\item \textsuperscript{87} \textit{Ala. Code} § 15-17-5(a) (2007) (thirty days); \textit{Ark. R. Crim. Proc.} 33.3(b) (thirty days); \textit{Fla. R. Crim. Proc.} 3.590(a) (ten days); \textit{Haw. R. Penal Proc.} 33 (ten days); 725 \textit{Ill. Comp. Stat.} 5/116-1(b) (2008) (thirty days); \textit{Ind. R. Crim. Proc.} 16(A) (thirty days); \textit{Minn. R. Crim. Proc.} 26.04 subdiv. 1-1(3) (fifteen days); \textit{Miss. Unif. R. Cir. & County Ct. Proc.} 10.05 (ten days); \textit{Mo. R. Crim. Proc.} 29.11 (fifteen to twenty-five days); \textit{Mont. Code Ann.} § 46-16-702(2) (2007) (thirty days); \textit{S.D. Codified Laws} § 23A-29-1 (2007) (ten days); \textit{Tenn. R. Crim. Proc.} 33(b) (thirty days); \textit{Tex. R. App. Proc.} 21.4(a) (thirty days); \textit{Utah R. Crim. Proc.} 24(c) (ten days); \textit{Va. Sup. Ct. R. 3A:15(b) (twenty-one days for motion to set aside verdict); \textit{Wis. Stat.} § 809.30(2)(b) (2006) (twenty days). In Hawaii and Utah, a court may extend the ten-day limit indefinitely, but may only do so within that ten day period. See \textit{Haw. R. Penal Proc.} 33; \textit{Utah R. Crim. Proc.} 24(c). In California, a motion for a new trial must be made before judgment is entered. \textit{Cal. Penal Code} § 1182 (West 2007).
\item \textsuperscript{88} \textit{Ga. Code Ann.} §§ 5-5-40(a), 5-5-41(a) (2007) (motion for new trial must be made within thirty days of judgment “except in extraordinary cases”); \textit{Ky. R. Crim. Proc.} 10.06 (motion for new trial based on newly discovered evidence must be made within one year of judgment “or at a later time if the court for good cause so permits”); \textit{Ohio R. Crim. Proc.} 33(B) (motion for new trial based on newly discovered evidence must be made within 120 days of judgment unless “it is made to appear by clear and convincing proof that the prisoner was unavoidably prevented from the discovery of the evidence upon which he [or she] must rely”); \textit{Or. R. Civ. Proc.} 64(F) (motion for new trial must be made within ten days of judgment “or such further time as the court may allow”).
\item \textsuperscript{89} \textit{Colo. R. Crim. Proc.} 33(c) (motion for new trial based on newly discovered evidence must be filed “as soon after entry of judgment as the facts supporting it become known to the defendant”); \textit{Mass. R. Crim. Proc.} 30(b) (no time limit for new trial motions); \textit{N.J. R. Crim. Proc.} 3-20-2 (no time limit for new trial motions based on newly discovered evidence); \textit{N.Y. Crim. Proc. Law} § 440.10.1
In addition to the often limited amount of time available to seek a new trial based on newly discovered evidence, a prisoner may only make such a motion if several other requirements are met. For example, the evidence must not have been discoverable by "reasonable diligence" prior to the time of trial.\(^9\) In addition, newly discovered evidence may only be sufficient to require a new trial if a prisoner can show that the evidence, if available at the time of trial, would have changed the verdict.\(^{10}\) Many jurisdictions do not allow new trials based on new evidence where that evidence would be used only for impeachment or is cumulative of other evidence introduced at trial.\(^{11}\) As a result, the requirements a prisoner must meet to get a new trial all but ensure that an innocent person in many jurisdictions will not be able to do so under direct review procedures.

2. Collateral Review

a. State Postconviction Procedures

Every state has at least one postconviction remedy by which a prisoner can challenge the validity of his or her conviction after direct approaches have failed. These postconviction remedies may or may not be available to a prisoner who claims that newly discovered evidence establishes his or her innocence. In some states, a free-standing, or "bare" claim of innocence, which is a claim of innocence that is not accompanied by a constitutional claim,\(^{92}\) cannot be the basis for postconviction relief.\(^{93}\) Even where such a claim is cognizable, the standards a prisoner must meet to establish entitlement to relief can be

(McKinney 2005) (no time limit for motions to vacate judgment); N.C. GEN. STAT. § 15A-1415(c) (2007) (new trial motion based on newly discovered evidence must be filed "within a reasonable time of its discovery"); 234 PA. CODE § 720(C) (2007) (new trial motion based on newly discovered evidence must be filed "promptly after such discovery"); S.C. R. CRIM. PROC. 29 (new trial motion based on newly discovered evidence must be filed "within a reasonable period of time after discovery of the evidence"); W.V. R. CRIM. PROC. 33 (no time limit for new trial motions based on newly discovered evidence).

\(^90\) See, e.g., ALA. CODE § 15-17-5(a)(5) (2007); CAL. PENAL CODE § 1181(8) (West 2007); IDAHO CODE ANN. § 19-2406(7) (2007); MD. RULE 4-331(c); NEB. REV. STAT. § 29-2101(5) (2007); N.Y. CRIM. PROC. LAW § 440.10.1(i)(g) (McKinney 2005); OHIO R. CRIM. PROC. 33(A)(6); S.D. CODIFIED LAWS § 15-6-59(a)(4) (2007); WASH. SUPER. CT. CRIM. R. 7.8(b)(2).

\(^91\) See, e.g., LA. CODE CRIM. PROC. ANN. art. 851(3) (2007); MISS. UNIF. R. CIR. & COUNTY CT. PROC. 10.05 3; N.Y. CRIM. PROC. LAW § 440.10.1(i)(g) (McKinney 2005).

\(^92\) See, e.g., Hicks v. State, 913 A.2d 1189, 1193-94 (Del. 2006); Hester v. State, 647 S.E.2d 60, 63 (Ga. 2007); Stephenson v. State, 864 N.E.2d 1022, 1048 (Ind. 2007); Pippitt v. State, 737 N.W.2d 221, 226 (Minn. 2007); State v. Tester, 923 A.2d 622, 626 (Vt. 2007).


quite strict and nearly impossible to meet.95

Each jurisdiction has particular procedural requirements that a prisoner must satisfy to bring a petition for postconviction relief. In several jurisdictions, there is no time limit on when a prisoner may apply for such relief.96 In most others, however, a court may waive the time limit only if the prisoner: (a) has a claim based on new evidence that, with "due diligence" could not have been discovered in time to be presented at trial.97 (b) has filed a claim within a certain time after discovery of the evidence,98 (c) has a claim of actual innocence,99 and/or (d) can show that barring the petition on procedural grounds would be unjust.100 Generally, second or successive petitions for postconviction relief are not allowed.101 Nonetheless, a prisoner may be able to bring a successive petition if he or she could not have raised the claim in a previous petition.102

The various hurdles placed in postconviction procedures work against the wrongly convicted. Their entitlement to counsel suffers from similar disabilities. In several states, the appointment of counsel is up to the discretion of the court or the state public defender.103 Even where a prisoner has the right to counsel in a postconviction proceeding, the appointment of counsel usually does not occur until after the petition is filed. Without counsel, prisoners must either resort to proceeding pro se, or forego postconviction remedies altogether. The lack of counsel diminishes—if not extinguishes—an innocent person's ability to challenge his or her conviction.

95. For example, several jurisdictions require a prisoner to make a showing of actual innocence. See, e.g., 725 ILL. COMP. STAT. § 5/122-1(2) (2008) (requiring that petitioner be sentenced to death and evidence "establish[] a substantial basis to believe that the defendant is actually innocent" in order to establish entitlement to relief based on newly discovered evidence); In re Weber, 523 P.2d 229, 243 (Cal. 1974) (requiring newly discovered evidence must "point[] unerringly to innocence," to warrant habeas relief).

96. See, e.g., HAW. R. PENAL PROC. 40(a)(1); MASS. R. CRIM. PROC. 30(a); N.M. STAT. ANN. § 31-11-6(a) (2007); N.Y. CRIM. PROC. LAW § 440.10.1(1) (McKinney 2005).

97. See, e.g., FLA. R. CRIM. PROC. 3.850(b)(1); 42 PA. CONS. STAT. ANN. § 9545(b)(1)(ii) (2007); see also N.J. R. 3:22-4 (excusing time limit for claims that "could not reasonably have been raised" in a prior petition); Or. Rev. Stat. § 138.510(3) (2005) (same).

98. See, e.g., GA. CODE ANN. § 9-14-51(b) (2007); MONT. CODE ANN. § 46-21-102(2) (2005) (requiring petition based on newly discovered evidence be filed within a year of when evidence was or could have been discovered); S.C. CODE ANN. § 12-74.45(c) (2007) (same).


101. See, e.g., IDAHO CODE ANN. § 19-4908 (2007); ME. REV. STAT. ANN. tit. 15, § 2128(3) (2007);

102. See, e.g., COLO. R. CRIM. PROC. 35(c)(3)(VI); GA. CODE ANN. § 9-14-51 (2007); 22 OKLA. STAT. tit. 15, § 1086 (2007); TEX. CODE CRIM. PROC. ANN. art. 11.07, §§ 4(a)(1), (c), art. 11.071, § 5(a) (Vernon 2007).

103. See, e.g., IND. R. POST-CON. REM. 1 § 9(a) (public defender); MASS. R. CRIM. PROC. 30(c)(5) (judge).
b. Federal Postconviction Procedures

The disjointed patchwork of postconviction procedures is not unique to state law. The federal system also establishes similar indefinite and unreasonable requirements. State prisoners who have exhausted state postconviction remedies and whose claims are not procedurally barred may seek habeas relief from the federal courts under 28 U.S.C. § 2254. However, as in many states, federal courts do not recognize a freestanding claim of actual innocence as a basis for relief. In Herrera v. Collins, the United States Supreme Court affirmed that without an accompanying claim of a constitutional violation, a bare claim of innocence based on newly discovered evidence does not warrant federal habeas relief for a state prisoner. The Herrera majority assumed for the sake of argument that a state prisoner sentenced to death may be entitled to federal habeas relief where the prisoner makes "a truly persuasive demonstration of actual innocence" and there is no way to pursue the claim under state law. While the Supreme Court has subsequently declined to decide whether the exception suggested in Herrera does in fact exist, most circuits have recognized it in post-Herrera cases. Because the exception would apply in such a narrow set of hypothetical circumstances, however, federal habeas relief is effectively unavailable to prisoners convicted under state law who seek to advance bare claims of innocence.

Federal prisoners who have unsuccessfully challenged their convictions on direct appeal may petition for habeas relief under 28 U.S.C. § 2255. While the Supreme Court has not ruled on the issue, two circuits have extended Herrera’s rationale to petitions brought under § 2255, section 2254’s counterpart for federal prisoners. Considering that the trend is for courts to extend Herrera’s rationale to section 2255 petitions, federal prisoners with bare claims of innocence likely may only

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106. Id. at 417.
108. See, e.g., United States v. Sampson, 486 F.3d 13, 27-28 (1st Cir. 2007); Albrecht v. Horn, 485 F.3d 103, 121-24 (3d Cir. 2007); Cress v. Palmer, 484 F.3d 844, 854 (6th Cir. 2007); Davis v. Terry, 465 F.3d 1245, 1251 (11th Cir. 2006) (per curiam); Cox v. Burger, 398 F.3d 1025, 1031 (8th Cir. 2005); Clayton v. Gibson, 199 F.3d 1152, 1180 (10th Cir. 1999); Carriger v. Stewart, 132 F.3d 463, 476 (9th Cir. 1997) (en banc); Milone v. Camp, 22 F.3d 693, 699-700 (7th Cir. 1993); Spencer v. Murray, 5 F.3d 758, 765-66 (4th Cir. 1993). But see United States v. Quinones, 313 F.3d 49, 68 (2d Cir. 2002) (emphasizing that Herrera did not hold such an exception exists); Dowthitt v. Johnson, 230 F.3d 733, 741 (5th Cir. 2000) (rejecting existence of such an exception).
bring those claims in a motion for a new trial.

3. Clemency

Clemency is the "historic remedy for preventing miscarriages of justice where judicial process has been exhausted." Clemency is available under federal law and the law of all fifty states. The United States Constitution vests the power to pardon in the President, and most state constitutions similarly vest the power to pardon in governors. Clemency is not without its own cast of procedural nightmares.

Most jurisdictions require a prisoner seeking clemency to have exhausted all other possible avenues of relief. In addition, several jurisdictions require that a prisoner have served a certain portion of his or her sentence before he or she is eligible to apply for clemency. If an application for clemency is denied, the prisoner may have to wait a certain amount of time before reapplying, or may be barred from reapplying at all.

While some jurisdictions permit the grant of a full pardon, including the restoration of civil rights, in other jurisdictions the commutation of a sentence is the main remedy available to prisoners. As a result, a grant of clemency will not necessarily result in a prisoner's being released immediately. In some jurisdictions, the grant of clemency may be revocable, subject to the grantee's compliance with certain conditions.

110. Herrera, 506 U.S. at 412.
112. U.S. Const. art. II, § 2, cl. 1; see, e.g., Alaska Const. art. III, § 21; Cal. Const. art. V, § 8(a); Fla. Const. art. IV, § 8(a); Ill. Const. art. V, § 12; Me. Const. art. V, § 11; N.Y. Const. art. IV, § 4; Ohio Const. art. III, § 11; Va. Const. art. V, § 12; Wis. Const. art. V, § 6. But cf., Pa. Const. art. IV, § 9(a) (allowing governor to grant clemency only upon recommendation of a Board of Pardons); S.C. Const. art. IV, § 14 (vesting only partial power to grant clemency in governor); Tex. Const. art. IV, § 11 (permitting governor to grant clemency only after a recommendation from the Board of Pardons).
118. See, e.g., Idaho Admin. Code § 450.01(c).
Consequently, clemency is available in highly specialized circumstances and even when granted may not provide adequate relief for innocent prisoners.

B. PROBLEMS WITH CURRENTLY AVAILABLE METHODS OF RELIEF

As the foregoing overview suggests, a prisoner with a free-standing claim of innocence based on the discrediting of a forensic technique faces a litany of obstacles in seeking to overturn his or her conviction. The passage of time is a particular problem: relief simply may be unavailable after a certain amount of time has passed. Even if there are available avenues for challenging a conviction, the high standards for establishing exceptions to procedural bars and entitlement to relief may effectively preclude a successful challenge.

i. Foreclosure of Claims by the Passage of Time

In several jurisdictions, the time for moving for a new trial is limited and claims of innocence based on newly discovered evidence are not cognizable in petitions for postconviction relief. For example, if three years have passed since a federal prisoner’s conviction, he or she may not move for a new trial on the basis of newly discovered evidence. In addition, under Herrera v. Collins, he or she may not seek habeas relief for a bare claim of innocence. In Louisiana, a prisoner can only move for a new trial on the basis of “new and material evidence” within a year after the verdict or judgment, and a claim of actual innocence is not a cognizable ground for postconviction relief unless the claim rests on the results of DNA testing. In other states, a prisoner with a claim of actual innocence has an even shorter window of time to bring a claim of actual innocence. For example, in Arkansas, a prisoner must move for a new trial within thirty days after sentencing, and postconviction relief is only available for claims of constitutional error, not claims based on newly discovered evidence of innocence. The overriding theme is that time does not stop for innocence.

In addition to time constraints, jurisdictions impose substantive criteria on prisoners seeking relief for claims of innocence that may
result in limiting relief to narrow circumstances. For example, in Illinois, only prisoners sentenced to death may bring claims based on newly discovered evidence, and even then only if the evidence "establishes a substantial basis to believe that the defendant is actually innocent by clear and convincing evidence." Since the time limit for bringing a new trial motion in Illinois is thirty days after the verdict, a prisoner convicted of a non-capital crime is not able to challenge his or her conviction on the basis of a claim of innocence after that time had passed.

Even if a claim of innocence on the basis of newly discovered evidence is cognizable in a petition for postconviction relief, strict procedural requirements for bringing such petitions, in combination with the time limit for bringing a motion for a new trial, may also render relief unavailable after a certain amount of time has passed. For example, while Alaska law recognizes newly discovered evidence as a basis for postconviction relief, a prisoner may only file only one motion for postconviction relief, without exception. Where a prisoner cannot bring either a motion for a new trial or a petition for postconviction relief after a certain period of time, clemency will be the only form of relief left. The granting of clemency, however, is extremely rare. A prisoner whose only chance at being exonerated is to seek clemency faces an uphill battle, both because of the political considerations that make executives reluctant to grant pardons and because of the lack of checks on an executive’s discretion to refuse relief.

When a motion for a new trial or a postconviction petition are no longer available, even an innocent prisoner has little hope of gaining freedom. On the whole, states differ dramatically in the availability and

127. Id. at 5/116-1(b).
128. ALASKA STAT. §§ 12.72.010(4), 12.72.020(a)(6) (2006). See generally id. § 12.72.020. Similarly, in Delaware, a prisoner must apply for postconviction relief within a year of final judgment, regardless of what the claimed ground for relief is. Del. R. Crim. Proc. 61(i)(1). In combination with the sixty day limit on bringing a motion for a new trial, this strict statute of limitations bars any review of a conviction after a certain amount of time has passed. Del. R. Crim. Proc. 33.
procedural aspects of postconviction relief. In practice, however, the
effect is the same: an innocent person may well be in no better position
to be released from prison than a guilty one is.

2. The Difficulty of Establishing Exceptions to Procedural Bars
   and Entitlement to Relief

   Even if a claim of innocence based on the discrediting of a forensic
technique may be a basis for postconviction relief, there is usually a high
standard for establishing entitlement to relief and exceptions to
procedural bars. It may be difficult for prisoners with such claims to
advance them through traditional postconviction remedies. One
potential pitfall is that the discrediting of a forensic technique is not a
traditional form of newly discovered evidence, so that the substantive
and procedural rules which involve a showing of newly discovered
evidence may not be easy to meet. A related problem is that the
discrediting of a forensic technique may nullify evidence used to convict
a person at trial, but does not have the potential to conclusively prove
that person’s innocence. Thus, prisoners convicted on the basis of a
discredited forensic testing technique may not be able to make a
sufficient showing of innocence. Finally, because the laws of many
jurisdictions either do not provide for a right to counsel in postconviction
proceedings or do so only after a petition is filed, many prisoners will be
in the position of filing a petition for postconviction relief without the
assistance of counsel. As a result, petitioners with meritorious claims may
not have the chance to present them adequately if at all, much less obtain
relief based upon them.

   Characterizing a recently discredited forensic technique as newly
discovered evidence raises the issue of when a technique is sufficiently
discredited to constitute new evidence. Commonwealth v. Fisher,131 a
recent opinion, illustrates this problem. In Fisher, the Pennsylvania
Supreme Court considered whether Robert Fisher’s contention that
CBLA was not a valid technique was based on “newly discovered
evidence,” and thus whether the court could excuse Fisher’s failure to
comply with postconviction timeliness requirements.132 Under
Pennsylvania law, a prisoner usually must file a postconviction petition
within one year of final judgment.133 Nevertheless, if “the facts upon
which the claim is predicated were unknown to the petitioner and could
not have been ascertained by the exercise of due diligence,” the one-year
limit is excused and the prisoner must file the petition “within 60 days
from the date the claim could have been presented.”134

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132. Id. at 869.
134. Id. § 9545(b)(2).
Fisher offered two pieces of evidence which he contended constituted "newly discovered evidence" that he could not have known about more than sixty days before filing a petition for postconviction relief: (1) an article published by the National Academies Press discussing the NRC Report on CBLA,\(^3\) and (2) an affidavit from William A. Tobin, a retired forensic metallurgist from the FBI Laboratory, opining that CBLA "was not scientifically reliable and that there is no meaningful or comprehensive scientific research or study validating the premises required to support the practice of CBLA."\(^3\) The Pennsylvania Supreme Court found that this evidence was not sufficient to support the waiver of the time limits on postconviction petitions for two reasons. First, because the article "conclude[d] that CBLA [was] a reasonably accurate" method, "although . . . the value and reliability of CBLA [could] be enhanced further" the article did not support Fisher's claim that CBLA was "imprecise and flawed."\(^3\) Second, because Tobin's resume stated that he had published articles about his position on CBLA since over two years before Fisher filed his petition, Fisher had not brought his petition within the sixty-day time limit for newly discovered evidence.\(^3\) Therefore, the court denied Fisher's petition as untimely.

Fisher illustrates one potential conundrum for prisoners using currently available avenues to challenge convictions based on a claim of a forensic testing technique being discredited. On the one hand, evidence must cast sufficient doubt upon a forensic testing technique in order to support a claim. Thus, prisoners must wait for scientists to do research that discredits the technique to a satisfactory degree. On the other hand, once evidence that does sufficiently discredit the technique becomes available, a prisoner may have to bring a claim based on that evidence quickly in order to comply with applicable time limits. Consequently, the prisoner must negotiate the fine balance between waiting to gather enough evidence to demonstrate that a forensic technique is unreliable and risking the possibility that more conclusive research will be done but will not come to the prisoner's attention.

3. Postconviction Discovery and Presentation of Evidence

Another problem prisoners may face in using current procedures to challenge their convictions is obtaining the evidence necessary to establish their claims. Postconviction DNA testing statutes provide a procedure by which prisoners can obtain testing of biological evidence associated with their convictions, usually at the state's expense if the

\(^{135}\) Discussed infra Part I.A.

\(^{136}\) Fisher, 870 A.2d at 868.

\(^{137}\) Id. at 870 (internal quotation marks omitted).

\(^{138}\) Id. at 871.
prisoner is indigent. In addition, DNA testing statutes may provide for access to other relevant evidence, such as the results of previous testing. In contrast, the rules governing new trial motions and postconviction procedures are usually silent on the issue of discovery. As a result, there is no clear mechanism by which prisoners can acquire the physical evidence used in a particular forensic technique and other relevant information that may be used to prove their innocence.

Further, even if prisoners can gather the relevant evidence, they may be handcuffed by the high standards they must meet to show their innocence. In Texas, for instance, “[e]stablishing a bare claim of innocence is a Herculean task.” To establish entitlement to relief, “the applicant must show ‘by clear and convincing evidence that, despite the evidence of guilt that supports the conviction, no reasonable juror could have found the applicant guilty in light of the new evidence.’ This showing must . . . unquestionably establish [the] applicant’s innocence.” In addition, the applicant must provide “affirmative evidence” of innocence, not just raise doubt about his or her guilt.

The discrediting of a forensic technique probably cannot be considered “affirmative evidence” that “unquestionably establishes” a prisoner’s innocence. Even assuming that a forensic technique was shown to be completely unreliable, it will not provide affirmative evidence of a prisoner’s innocence. For example, if a prisoner showed that CBLA was not a legitimate technique, it would, at most, establish that a particular bullet had not necessarily come from a particular box. While this might remove a critical piece of evidence from the conviction equation, such a showing would not prove that a prisoner did not commit the crime at issue. Newly available scientific techniques like DNA testing have the potential to prove that a particular person did or did not commit a crime. In contrast, because CBLA cannot be used to match bullets to individual boxes, it cannot be used to prove that a bullet came from a box of bullets that was not in a defendant’s possession. Thus, a prisoner challenging his or her conviction in a jurisdiction that requires a strong showing of innocence probably will not be entitled to relief even if he or she conclusively shows that a forensic testing technique has insufficient probative value.

In many cases, even if a prisoner could otherwise establish exceptions to procedural bars to relief, he or she will not have the help of counsel in preparing a petition for postconviction relief. Where the

140. See, e.g., CAL. PENAL CODE § 1405(d) (2008).
142. Id. (quoting Ex parte Elizondo, 947 S.W.2d 202, 205 (Tex. Crim. App. 1996)).
discrediting of a forensic technique is the basis for a claim, it will be important to obtain scientific research in support of the technique's discreditation. Without the aid of counsel, a prisoner will be poorly positioned to marshal the evidence necessary to support a petition and avoid its summary dismissal. Texas law does not make any provision for the appointment of counsel to aid indigent, non-capital prisoners in filing a habeas petition. After filing, in order for the petition to proceed, the judge must find "controverted, previously unresolved facts which are material to the legality of the applicant's confinement." Even then, the judge has the discretion to decide whether to hold an evidentiary hearing. In light of such stringent requirements for establishing a claim of innocence, a prisoner who files a petition without the aid of counsel may not be able to highlight the new evidence establishing his or her innocence and state a claim sufficient to require further consideration.

The need for the aid of counsel is even more pronounced in jurisdictions which have detailed requirements governing the contents of postconviction petitions. For example, in Virginia, a prisoner with a claim of innocence based on newly discovered evidence may file a petition for a "writ of actual innocence." If newly discovered "nonbiological evidence" is the basis for the petition, the prisoner must allege, "categorically, and with specificity," a detailed list of eight facts. In addition, the "petition [must] contain all relevant allegations of facts that are known to the petitioner at the time of filing, [must] be accompanied by all relevant documents, affidavits and test results, and [must] enumerate and include all relevant previous records, applications, petitions, appeals and their dispositions." Compliance with these requirements is necessary in order to avoid summary dismissal.

145. *Id.* at art. 11.07 § 3(d).
146. *Id.*
148. *Id.* § 19.2-327.11(A) ("The petitioner shall allege categorically and with specificity, under oath, all of the following: (i) the crime for which the petitioner was convicted, and that such conviction was upon a plea of not guilty; (ii) that the petitioner is actually innocent of the crime for which he was convicted; (iii) an exact description of the previously unknown or unavailable evidence supporting the allegation of innocence; (iv) that such evidence was previously unknown or unavailable to the petitioner or his trial attorney of record at the time the conviction became final in the circuit court; (v) the date the previously unknown or unavailable evidence became known or available to the petitioner, and the circumstances under which it was discovered; (vi) that the previously unknown or unavailable evidence is such as could not, by the exercise of diligence, have been discovered or obtained before the expiration of 21 days following entry of the final order of conviction by the court; (vii) the previously unknown or unavailable evidence is material and when considered with all of the other evidence in the current record, will prove that no rational trier of fact could have found proof of guilt beyond a reasonable doubt; and (viii) the previously unknown or unavailable evidence is not merely cumulative, corroborative or collateral.").
149. *Id.* § 19.2-327.11(B).
150. *Id.* §§ 19.2-327.11(B), (D).
However, a petitioner is entitled to counsel only once, and only if, the petition is not summarily dismissed.\textsuperscript{151} Furthermore, it is up to the court’s discretion whether to appoint counsel before deciding whether to summarily dismiss a petition.\textsuperscript{152} Without the aid of counsel, it is much less likely that a prisoner with a claim of innocence based on a discredited forensic technique will be able to prepare a petition that complies with Virginia’s strict requirements.

As the foregoing demonstrates, current postconviction remedies are insufficient to manage the evolution or test the bounds of science in the courtroom. Absent changes to currently available methods of relief, innocent people will remain in prison, convicted by unreliable science.

III. A NEW APPROACH

Suggesting reform legislation is by no means an easy task. Before introducing it, we would like to make several points. First, we aimed the legislation solely at the postconviction phase. It is not a prophylactic tool for use before or during trial. Second, we crafted it as a device to manage the fallout from discredited science, such as the hundreds of cases that now hang in the balance due to the admission that CBLA is unreliable, by requiring that the defendant have a claim of actual innocence. Third, we wrote it so as to accommodate later determinations that another field of forensic science is no longer reliable.

We also designed the legislation in a way that does not upset current innocence and forensic science commissions. The legislation does not require courts or federal and state governments to create ad hoc commissions to evaluate the problem on a case-by-case basis. At the macro-level, such bodies are necessary in order to study and prevent future wrongful convictions and eliminate the continued use of shoddy science. However, creation of separate commissions to review a backlog of existing cases involving faulty forensics would be ineffective on the individual level. If unreliable science has been used, then there needs to be a direct way for an innocent person to challenge that science and obtain relief. Keeping an innocent person in limbo while a commission reviews what could be hundreds of cases would only contribute to the injustice. Our framework is designed to complement existing innocence and forensic science commissions, which aim to prevent wrongful convictions in the future, by providing an avenue of relief for those already convicted.\textsuperscript{153}

\textsuperscript{151} Id. § 19.2-327.11(E).
\textsuperscript{152} Id.
\textsuperscript{153} New York has been on the forefront of the movement to establish a Forensic Science Commission. See N.Y.R. CRIM. PROC. § 955-a. Such legislation will hopefully hold forensic science to the standards envisioned.
The appended proposal is an effort to correct the shortcomings of challenges to scientific evidence under current postconviction procedures. It envisions a motion and gateway to relief separate and apart from a postconviction or other collateral scheme. A prisoner will neither run afoul of nor exhaust other state remedies by taking advantage of this legislation. Central to its features are the right to counsel, the right to discovery, and requirement of reliable methodology. Our proposed legislation also dispenses with time restrictions since it appreciates the fact that science is not static: what is thought to be reliable today may not be in twenty years. Additionally, it applies to all levels of forensic evidence, even psychological and medical evidence. Science has evolved, and the way we approach innocence and wrongful convictions should evolve as well.

**CONCLUSION**

François, Duke of Rochefoucauld, wrote: "Innocence does not find near so much Protection as Guilt." Our criminal justice system spends a tremendous amount of energy preserving convictions. The notions of finality, retribution, and deterrence drive this mentality. When a claim of innocence is raised, the system's built-in roadblocks create an obstacle course of "unfavorable legal standards, unreceptive courts, faulty criminal investigation by law enforcement, inadequate [postconviction] representation...and a lack of resources for factual investigation." DNA statutes that provide for postconviction testing are a good starting point for redressing the harm that unreliable science has caused, because DNA has demonstrated that much of the forensic science used in today's criminal investigations falls far short of what is acceptable. Our proposed legislation suggests a place for reform, but such reform should not exist in a vacuum; DNA testing alone cannot eliminate wrongful convictions. If our criminal justice demands that guilt be proven beyond a reasonable doubt, then that same system should demand accurate and reliable science. Until we acknowledge and make an effort to correct the shortcomings of science, the conviction of innocents will continue.

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154. See infra Appendix 1. In drafting our legislation, we reviewed numerous statutes relating to postconviction DNA testing. See, e.g., 18 U.S.C. § 3600 (2000); CAL. PENAL CODE § 1404-05 (West 2007); FLA. STAT. ANN. § 3.853 (2008); IDAHO CODE ANN. § 19-4901 (2007); MINN. STAT. ANN. § 590.01 (2007); TEX. CODE CRIM. PROC. ANN. art. 64.01 (Vernon 1989); VA. CODE ANN. § 19.2-327.1 (2007).


156. Garrett, supra note 10, at 131.
APPENDIX I

PROCEDURES FOR OBTAINING POSTCONVICTION DISCOVERY AND EVIDENTIARY HEARING TO CHALLENGE UNRELIABLE SCIENTIFIC EVIDENCE; RELATED MOTION FOR NEW TRIAL

(A) PURPOSE. This rule provides procedures for obtaining postconviction discovery and an evidentiary hearing to challenge scientific evidence that has been shown to be unreliable after conviction.

(B) CONTENTS OF MOTION. The motion for postconviction discovery and evidentiary hearing must be made under oath and must include the following:

1. a statement of the facts relied upon in support of the motion, including a description of the scientific evidence that is the subject of the motion; including, if known, testing that the evidence was subject to, the present location of the evidence, and how the evidence was originally obtained;

2. a statement that the scientific evidence at issue was previously admitted in the movant's trial and was a significant factor in the movant's conviction;

3. a statement that postconviction discovery about the challenged scientific evidence likely would definitively establish that the movant is not the person who committed the crime;

4. a statement that the movant is innocent and a description of how postconviction discovery and an evidentiary hearing are relevant and necessary to his or her assertion of innocence;

5. a statement that the movant was not the perpetrator of the crime, that identity was a genuinely disputed issue in the case, and why identity was an issue;

6. a statement of any other facts relevant to the motion; and

7. a certification that a copy of the motion has been served on the prosecuting authority.

(C) PROCEDURE.

1. A proceeding under this section is commenced by filing a motion with the court in which the conviction occurred. Upon receipt of the motion, the clerk of the court shall docket it, promptly bring it to the attention of the court, and deliver a copy to the prosecuting authority. The assigned judge need not be the judge who heard the original case.

2. The court shall review the motion and deny it if it does not state a claim upon which relief may be based. If the motion is facially sufficient, the court shall order the prosecuting authority to respond to the motion within 30 days or such other time as may be ordered by the court.
(3) Upon receipt of the response of the prosecuting authority, the court shall review the response and either order discovery and set the motion for an evidentiary hearing or dismiss the motion if there are no issues of material fact that need to be resolved through a hearing.

(4) When granting or dismissing the motion, the court shall make the following findings:

(a) Whether it has been shown that the challenged scientific evidence is subject to dispute;

(b) Whether further discovery and an evidentiary hearing would produce evidence that the challenged scientific evidence is unreliable; and

(c) Whether there is a reasonable probability that the movant would have been acquitted or would have received a lesser sentence if the scientific evidence had been excluded from trial.

(5) In the event that the court orders discovery and a hearing, the movant is entitled to counsel. Upon making the appropriate finding of indigence, the court shall appoint counsel to assist the movant.

(6) If the court orders postconviction discovery and an evidentiary hearing, the cost of any required evidentiary testing related to the challenged scientific evidence shall be assessed against the movant, unless the movant is indigent. If the movant is indigent, the state shall bear the cost of such testing ordered by the court.

(7) The parties and the court will mutually agree to the process, scope, and schedule for discovery. Such discovery shall include, but is not limited to, depositions, production of documents and physical evidence, testing of physical evidence, medical evaluations, and any other discovery that the court deems necessary and appropriate. Discovery shall be governed by the applicable discovery rules of criminal procedure.

(8) If applicable, the court-ordered discovery shall be conducted by a laboratory mutually agreed upon by the prosecuting authority and the movant. If the parties cannot agree, the court shall designate the laboratory, and such laboratory or agency must be certified by the American Society of Crime Laboratory Directors or the National Forensic Science Training Center.

(9) The result of any testing ordered by the court shall be provided in writing to the court, the movant, and the prosecuting authority.

(D) EVIDENTIARY HEARING PROCEDURES.

(1) If the court determines that a hearing is necessary to assess the efficacy, reliability, or trustworthiness of the challenged scientific evidence, such hearing must include the movant's presentation, if available, of:
(a) Evidence regarding the scientific method associated with the scientific evidence, including, but not limited to, whether such evidence is based upon sufficient facts or data, is the product of reliable principles and methods, and involves reliable application of the principles and methods to the facts of the case.

(b) Evidence regarding the accuracy of the method associated with the scientific evidence.

(c) Evidence regarding any peer reviews, error rates, and proficiency tests associated with the scientific evidence.

(d) Evidence regarding the scientific evidence's general acceptance within the relevant scientific community and scientific community at large.

(e) Any other evidence regarding the efficacy, reliability, or trustworthiness of the scientific evidence that would be relevant to the court's determination.

(2) The prosecuting authority will have the opportunity to present rebuttal evidence as to the factors enumerated in subsection (D)(1)(a)–(e).

(E) Post-Hearing Procedures.

(1) Findings. If the court determines that the relief obtained under this section produced new material evidence that raises a reasonable probability that the movant is innocent, the movant may file a related motion for a new trial or resentencing, as appropriate. The court shall establish a reasonable schedule for the applicant to file such a motion and for the prosecuting authority to respond to the motion. Such motion shall be titled "Motion for New Trial Based Upon Unreliable Scientific Evidence," and may only be brought upon findings made under this statute. This subsection does not supplant the rules regarding any other motion for a new trial or for resentencing.

(2) Standard for granting motion for new trial or resentencing. The court shall grant the motion of the movant for a new trial or resentencing, as appropriate, if the new material evidence related to the challenged scientific evidence, when considered with all other evidence in the case, establishes that a new trial would result in an acquittal.

(3) Inconclusive findings. If the court determines that relief is not appropriate under this section, the court may order further discovery, if appropriate, or may deny the movant relief without prejudice.

(F) Time Limitations. The motion for postconviction discovery and evidentiary hearing may be filed or considered at any time following the date that the judgment and sentence in the case become final.

(G) Successive Motions. Nothing in this section shall prevent the movant from bringing a successive motion if further developments later
demonstrate the unreliability of the challenged scientific evidence.

(H) Rehearing. The movant may file a motion for rehearing of any order denying relief within 15 days after service of the order denying relief. The time for filing an appeal shall be tolled until an order on the motion for rehearing has been entered.

(I) Appeal. An appeal may be taken by any adversely affected party within 30 days from the date the order on the motion is rendered. All orders denying relief must include a statement that the movant has the right to appeal within 30 days after the order denying relief is rendered.

(J) Other Laws Unaffected.

(1) Nothing in this section shall preclude a challenge to scientific evidence under any other state law.

(2) Postconviction/collateral relief. Nothing in this section shall provide a basis for relief in any state or federal proceeding.