

No. 126383

**IN THE SUPREME COURT OF
ILLINOIS**

People of the State of Illinois,
Plaintiff-Appellant,

v.

John Cline,
Defendant-Appellee.

Appeal from the Appellate Court
of Illinois, First Judicial District
No. 1-17-2631

Date of Opinion: March 2, 2020
Supplemental Opinion: July 13, 2020

There heard on Appeal from the
Circuit Court of Cook County,
Illinois, No. 15-CR-18158

The Hon. Vincent M. Gaughan,
Presiding Trial Judge

**BRIEF *AMICI CURIAE* OF THE INNOCENCE PROJECT
AND PROFESSOR BRANDON GARRETT**

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STATEMENT OF INTEREST OF AMICUS CURIAE¹

The Innocence Project is a nonprofit organization whose principal mission is to provide pro bono legal and investigative services to indigent prisoners. The Innocence Project works to identify and investigate cases of wrongful convictions, and to obtain the release of wrongly convicted persons from prison. To date, the efforts of the Innocence Project and similarly motivated organizations have led to the exoneration of hundreds of individuals throughout the country.

Professor Brandon Garrett is the L. Neil Williams Professor of Law and Director of the Center for Science and Justice at Duke Law School—where he has taught since 2018. Garrett is the Founder and Director of the Wilson Center for Science and Justice at Duke. He was previously the Justice Thurgood Marshall Distinguished Professor of Law and White Burkett Miller Professor of Law and Public Affairs at the University of Virginia School of Law. His research and teaching interests include criminal procedure, wrongful convictions, habeas corpus, corporate crime, scientific evidence, civil rights, and constitutional law. One overriding concern of his work is to safeguard the accuracy and integrity of the criminal system, including through the use of reliable scientific and expert evidence.

Garrett’s work, including six books, has been widely cited by courts—including the U.S. Supreme Court, lower federal courts, state supreme courts, and courts in other countries. Garrett also frequently speaks about criminal justice matters before legislative

¹ The signatories are listed in the Appendix to this brief. The views expressed herein reflect those of the Innocence Project and Professor Brandon L. Garrett, but not those of any academic or other institution to which he belongs, such as the Duke University. No person or entity—other than amici curiae, their members, or their counsel—directly or indirectly wrote this brief or contributed money for its preparation.

and policymaking bodies, groups of practicing lawyers, law enforcement, and to local and national media. Garrett’s book “Convicting the Innocent: Where Criminal Prosecutions Go Wrong,” published by Harvard University Press in 2011, comprehensively details the sources of error in the first 250 DNA exonerations in the United States.² Garrett is also a Principal Investigator and member of the leadership team for the Center for Statistics and Applications in Forensics (CSAFE)—a collaboration among several university scholars conducting research on how to collect more accurate forensic evidence and more reliably convey that forensic evidence in court. CSAFE is supported by a cooperative agreement with the National Institute of Standards and Technology (NIST)—a federal agency whose mission is to advance measurement science, standards, and technology.

The Innocence Project also researches the causes of wrongful convictions and advocates—both in individual cases and through legislative and administrative initiatives—for changes in the law (and law-enforcement procedures) that would reduce the risk of wrongful conviction. Significantly, the Innocence Project’s research demonstrates how unreliable or exaggerated forensic evidence poses a threat to the truth-seeking function of criminal trials. Indeed, nearly half of the individuals exonerated by post-conviction DNA testing were convicted based, at least in part, on expert forensic evidence that turned out to be wrong. *See* Innocence Project, *Overturing Wrongful Convictions Involving Misapplied Forensics*, available at <https://www.innocenceproject.org/overturing-wrongful-convictions-involving-flawed->

² The data concerning false confessions in DNA exoneration cases, including underlying materials from the interrogations, such as police reports and interrogation transcripts, are available on an online resource website. *See* Convicting the Innocent, www.convictingtheinnocent.com (last visited Oct. 6, 2021).

[forensics/](#) (last visited Oct. 6, 2021). As a result, to increase the integrity of convictions and to reduce the risk of an innocent person being found guilty, the Innocence Project urges courts to act as robust gatekeepers and ensure that expert forensic evidence is admitted at trial only when it has strong scientific support *and* has been reliably applied in a particular case.

The conviction at issue on this appeal was appropriately overturned due to insufficient evidence of guilt. *Amici* submit this brief to draw this Court’s attention both to the grossly unreliable analysis that was carried out in this case in particular, and, perhaps more importantly, to the shoddy methods employed by the Chicago Police Department’s Latent Print Unit—which point to a systemic problem within the Unit that amici are deeply concerned about.

I. INTRODUCTION

Our justice system depends on the proper application of forensic science methods to ensure fair trials. To mitigate the chance of grave error, trial and appellate courts play an increasingly crucial role in ensuring that only valid, reliable expert testimony is admitted as evidence. As a result, courts have an obligation to exclude unscientific forensic testimony lest it undermine the integrity of the proceedings and, more broadly, the justice system as a whole. Unfortunately, judges may struggle to carry out those crucial obligations when a jurisdiction’s own crime laboratory conducts its work using flawed methods and wholly-unsound crime laboratory procedures.

The latent print evidence introduced at trial in John Cline’s case is a paradigmatic example of how the sloppy, ad-hoc approach to casework by the Chicago Police Department’s Latent Print Unit (“the Unit”) poses a threat to the fair administration of

justice. The appellate court that reviewed Mr. Cline's case recognized as much, emphasizing gross departures from accepted practice in finding insufficient evidence to convict. Mr. Cline was convicted of a residential burglary based a single, partial fingerprint found on a box of headphones. The fingerprint was examined by an uncertified practitioner who could not explain or document their work, did not describe the fingerprint as having been verified, did not follow standard procedures or demonstrate any familiarity with them, and worked for a lab that lacks basic standards or protocols for conducting fingerprint exams, quality assurance, or courtroom testimony. No person should be convicted based on forensic work conducted in such a flawed fashion.

Wrongful convictions have occurred in cases just like this one. Indeed, entire labs have been audited and closed³ when they lack basic standards and safeguards—ones that have long been wholly lacking at the Chicago Police Department's Bureau of Scientific Services. Importantly, we do not address the issue of either the reliability or the admissibility of latent fingerprint methods in general. Any technique, however, is only as reliable as its *application*. The potential for error exists in any forensic method; reliable analysis depends on the application of the method by particular analysts, at particular labs, and in particular cases.

In this case, the application of methods to the facts, in order to reach a conclusion supposedly connecting the defendant to the offense, was wholly lacking. The facts were lacking; it was a single partial print. Although the methods used were vague and ill-described, from what we do know, they were also wholly inadequate and lacking. The

³ For an overview, see Brandon L. Garrett, *Autopsy of a Crime Lab: Exposing the Flaws in Forensics* (2020).

analyst could not even provide a modicum of an explanation of how the fingerprints were compared, how long they were compared for, and what features the comparison was based on. Therefore, the analyst could not provide any objective reason to support their unscientific and aggressively-phrased conclusion.

Even more troubling is the fact that this was not an isolated shoddy analysis in a single case. The Unit, which is not accredited, has long lacked sound procedures, ignoring basic standards in the latent fingerprint field and failing to adopt a long list of basic protections to ensure against basic error, bias, contamination of results, alternation of results, and misleading conclusions in reports. Every step of the accepted methods used in fingerprint work was affected by these Unit-wide failings, and the testimony of the examiner in Mr. Cline's trial is symptomatic of not just one examiner's wholly unsound work, but the unsound work product of an outlier Unit. Put simply, the Unit's practices *invite* wrongful conviction.

Fingerprint comparison work involves subjective decisions and is susceptible to grave errors; wrongful convictions have occurred in cases in which fingerprint evidence is misleadingly presented to jurors and courts. The dangers of error are far greater when the shoddy methods used—by both an entire crime lab and by a particular expert—disregard national and international standards in the discipline. Even more troubling is the fact that there was merely a single partial print in this case. As the Federal Bureau of Investigations (FBI) recognizes, enhanced quality controls and error-protections are crucial in cases in which there is a single latent fingerprint, due to the increased risk of error in such situations. Those protections were implemented after the 2004 high-profile error that led to the wrongful arrest of Brandon Mayfield. No such protections were in place here, where the

Unit either ignored or was ignorant of even the basics of fingerprint comparison methodology. A flawed fingerprint analysis, of a single partial print on a single piece of evidence, is simply not a sufficient basis to convict a person given the burden of proof in a criminal case.

II. THE EXAMINER IN THIS CASE GAVE TROUBLING TESTIMONY DESCRIBING USE OF FLAWED METHODS TO COMPARE A SINGLE PARTIAL PRINT

In 2016, John Cline was convicted of residential burglary and sentenced to eight years in prison. While searching the victim's apartment, the police observed latent fingerprints on a headphone case, the contents of which had been stolen. Daniel Dennewitz, a Chicago Police Department (CPD) evidence technician who had only been in the position for just over a year, lifted and analyzed the prints.

The examiner testified that one of the four latent prints lifted from the headphone case "came from the same source" as the print of Cline's "right middle finger."⁴ He explained that he focused on one particular latent print, out of four that had been lifted, because it had "sufficient amount of detail" to "form an opinion."⁵ He did not mention any objective criteria for this assessment of sufficiency. He testified that his conclusion was based on nine points of comparison that he marked between that latent print and the right middle fingerprint of Cline.⁶ Again, the examiner did not explain why nine points of comparison was sufficient to reach his conclusion.

⁴ Trial Transcript at Q-39, *People v. Cline*, No. 15 CR 18158 (IL Ct. App. 2020)

⁵ *Id.* at Q-38

⁶ *Id.* at Q-40

The examiner explained that the identification procedure he used involved comparing the prints “side by side using different levels of detail.”⁷ He explained that analyzing the prints under “level two detail” allowed him to “identify the uniqueness in the actual ridge pads” and to “know if the fingerprint came from the same source or not.”⁸

During cross-examination, Dennewitz acknowledged that he was making his comparisons based on a “partial” latent print, the right side of which was missing.⁹ He testified that he had to “assume,” based on what he saw on the partial print, that the right side of the latent print would be a match for the right side of Mr. Cline’s print.¹⁰ He explained that this was his “opinion” and did not provide the procedure according to which he was able to make this assumption.¹¹ Although he employed no safeguards to mitigate error or bias and had only a partial latent print, the examiner did not allow for the possibility of error. He did not mention error rates associated with latent print analysis, and repeatedly made unequivocal conclusions that the two prints “came from the same source” and repeatedly claimed the “uniqueness” of fingerprints, or that “no two fingerprints are going to be the same,” as one of “two foundations of friction ridge science.”¹² While describing the process by which he reached his conclusions, the examiner did not mention a verification step, or a review by a second examiner. The verification step, wherein the same prints are analyzed by a second examiner who does not know the conclusion reached by the previous examiner, is a key component of the standard analytical procedure for

⁷ *Id.* at Q-35

⁸ *Id.* at Q-35-Q-36

⁹ *Id.* at Q-48

¹⁰ *Id.*

¹¹ *Id.*

¹² *Id.* at Q-33

matching prints, known as ACE-V, and helps prevent errors that arise out of the subjective nature of the procedure. Indeed, whatever steps were followed by Dennewitz, in his testimony, he never mentioned the ACE-V process at all. As we describe below, this flawed work and testimony should never have provided the sole basis for a conviction. Indeed, this evidence so departed from national and international standards for latent print analysis that it should not have even been admitted in the first place.

III. COURTS HAVE AN OBLIGATION TO ENSURE AGAINST WRONGFUL CONVICTIONS BASED ON UNRELIABLE EVIDENCE

Throughout the country, innocent people have been wrongfully accused or convicted of crimes that they did not commit based on the misapplication of forensic science, which not only leads to the imprisonment of innocent individuals but also allows the guilty to remain free and potentially commit additional serious crimes. As the National Research Council noted in a 2009 report:

[I]n some cases, substantive information and testimony based on faulty forensic science analyses may have contributed to wrongful convictions of innocent people. This fact has demonstrated the potential danger of giving undue weight to evidence and testimony derived from imperfect testing and analysis. Moreover, imprecise or exaggerated expert testimony has sometimes contributed to the admission of erroneous or misleading evidence.

National Research Council, Committee on Identifying the Needs of the Forensic Sciences Community, *Strengthening Forensic Science in the United States: A Path Forward* (August 2009) (hereinafter “NAS Report”). This can occur even for well-validated techniques like DNA testing, and it has occurred in large numbers of cases involving traditional pattern-comparison forensic disciplines. Brandon Garrett & Peter J. Neufeld,

Invalid Forensic Science Testimony and Wrongful Convictions, 95 Va. L. Rev. 1, 66 (2009) (collecting cases); see also President’s Council of Advisors on Science and Technology, *Forensic Science in Criminal Courts: Ensuring Validity of Feature-Comparison Methods* (September 20, 2016) (hereinafter “PCAST Report”); Garrett, *Autopsy of a Crime Lab*, *supra* note 3, at 30 (reviewing 370 DNA exonerations, 250 of which had forensic evidence in their cases, and finding that “well over half of these exonerees were freed by DNA testing, but they were wrongly convicted in the first place based on flawed forensics.”).

A. The Importance of Preventing Errors Based on Fingerprint Evidence

The body of scientific evidence concerning the reliability of fingerprint evidence has considerably advanced even in the past decade. The scientific community has found that fingerprint evidence has foundational validity, but that meaningful error rates exist, despite previous claims by practitioners of “zero error rates.” Error rates exist because fingerprinting is a subjective technique: it relies on the judgment and experience of an individual examiner. Latent fingerprinting evidence is only as good as the examiner analyzing the evidence and the examiner’s application of the technique in a particular case.¹³ The idea that error rates exist in latent fingerprinting is far from new. Proficiency studies in fingerprinting have been conducted since the 1970s. In particular, commercial proficiency tests in the mid-1990s attracted widespread attention because of the large number of participants that made errors on the tests.¹⁴ Although those tests are widely

¹³ See PCAST Report, at 9–11 (2016); Am. Ass’n for the Advancement of Sci., *Latent Fingerprint Examination: A Quality and Gap Analysis* (2017) (hereinafter “AAAS Report”).

¹⁴ Brandon L. Garrett and Gregory Mitchell, *The Proficiency of Experts*, 166 U. Penn. L. Rev. 901 (2018) (describing results of 1990s latent fingerprint proficiency tests).

understood to be quite easy¹⁵ and are not designed to assess error rates in general, the widespread errors made salient that errors do occur, at a time during which latent fingerprint examiners claimed infallibility, and that the technique had an error rate of “zero.”¹⁶

The field began to change its practices in the wake of the high-profile error in the Brandon Mayfield case, in which a Portland, Oregon lawyer was falsely accused of playing a role in the Madrid terrorist bombing based on erroneous fingerprint matches made by multiple analysts. An FBI expert had called it a “100 percent” certain match, but the conclusions of that expert and their colleagues were all wrong, as Spanish authorities discovered.¹⁷ That case, as Dean of the UCLA School of Law Jennifer Mnookin has put it: “was sufficiently public, serious, and embarrassing that it led to a substantial inquiry into its causes; more generally, it made the fingerprint community—and the legal community— recognize that fingerprint errors were not simply a matter of incompetence or an issue of purely academic concern.”¹⁸ In response to the error, the Department of Justice made a series of recommendations—none of which were followed in this case—

¹⁵ Brendan Max, Joseph Cavise, and Richard E. Gutierrez, *Assessing Latent Print Proficiency Tests: Lofty Aims, Straightforward Samples, and the Implications of Nonexpert Performance*, 69 J. For. Id. 281 (2019).

¹⁶ See Jonathan J. Koehler, *Fingerprint Error Rates and Proficiency Tests: What They Are and Why They Matter*, 59 HASTINGS L.J. 1077, 1077 (2008); Simon A. Cole, *More Than Zero: Accounting for Error in Latent Fingerprint Identification*, 95 J. CRIM. L. & CRIMINOLOGY 985, 1043, 1048 (2005); see also, e.g., *United States v. Havvard*, 117 F. Supp. 2d 848, 854 (S.D. Ind. 2000), *aff'd*, 260 F.3d 597 (7th Cir. 2001).

¹⁷ PCAST Report at 28.

¹⁸ Jennifer L. Mnookin, *The Courts, the NAS, and the Future of Forensic Science*, 75 Brook. L. Rev. 1209, 1228 (2010).

that would improve the handling of latent fingerprint analysis and be particularly important for cases involving, like Mayfield's and Cline's, a solitary latent print.¹⁹

The National Academy of Sciences issued landmark findings on forensic disciplines in a 2009 Committee report.²⁰ Those findings included statements explaining that, while fingerprint comparisons have served as a valuable tool in the past, the methods used in the field—namely, the ACE-V method, for Analysis, Comparison, Evaluation, and Verification—are “not specific enough to qualify as a validated method for this type of analysis.”²¹ The report found that merely following the steps of that “broadly stated framework” “does not imply that one is proceeding in a scientific manner or producing reliable results.”²² It highlighted that “sufficient documentation is needed to reconstruct the analysis” that examiners engage in.²³ In addition, it asserted that error rates exist, and none of the variables that fingerprint examiners rely upon have been “characterized, quantified, or compared.”²⁴ Absent any statistical data, fingerprint examiners are relying on “common sense” or “intuitive knowledge,” but not validated information or research.²⁵

The PCAST Report concluded that, while “foundationally valid,” latent fingerprint analysis should never be presented in court without evidence of its error rates and of the proficiency or reliability of not just the method, but the particular examiner using the method.²⁶ The PCAST Report noted that error rate studies have now been conducted on

¹⁹ Office of the Inspector Gen., *U.S. Dep't of Justice, A Review of the FBI's Handling of the Brandon Mayfield Case: Unclassified Executive Summary* 9, 270-71 (2006).

²⁰ See NAS Report.

²¹ *Id.* at 142.

²² *Id.*

²³ *Id.* at 5–13.

²⁴ *Id.*

²⁵ *Id.* at 5–13–14.

²⁶ PCAST Report at 6.

latent fingerprint analysis; in particular, two black box studies—or studies that independently test experts for errors using realistic materials—that were fairly methodologically sound found nontrivial error rates: The false-positive error rate “could be as high as 1 error in 306 cases,” based on an FBI study; or a rate of “1 error in 18 cases,” based on a study by the Miami-Dade police laboratory.²⁷

The AAAS Report added that fingerprint examiners should avoid statements that contribute to the “misconceptions” shared by members of the public due to “decades of overstatement by latent print examiners.”²⁸ Specifically, they asserted that terms like “match,” “identification,” “individualization,” and other synonyms should not be used by examiners, nor should they make any conclusions that “claim or imply” that only a “single person” could be the source of a print.²⁹ Instead, echoing the findings included in the NAS Report and PCAST Report, the AAAS Report concluded that latent-fingerprint examiners should at most state that they observe similarity between a latent print and a known print, and that a donor cannot be excluded as the source.³⁰

B. The Weight that Jurors Place on Fingerprint Evidence

It is particularly important that fingerprint evidence be presented correctly, because jurors place great weight on testimony by an examiner that a fingerprint is a “match” to a defendant, as mock jury studies have found.³¹ The persuasiveness of seemingly objective

²⁷ *Id.* at 9–10.

²⁸ *People v. Prante*, 2021 IL App (5th) 200074.

²⁸ *Jackson v. Virginia*, 443 U.S. 307 (1979).

²⁹ *Id.*

³⁰ *Id.*

³¹ *Id.*

³¹ *Id.* Brandon L. Garrett and Gregory Mitchell, *How Jurors Evaluate Fingerprint Evidence: The Relative Importance of Match Language, Method Information, and Error Acknowledgement*, 10 J. Emp. Leg. Stud. 484, 497 (2013) (reporting in first

and truthful scientific evidence cannot be ignored or understated.³² Where that weight is wholly misplaced and is the only basis for a conviction, that conviction should be reversed, under the Due Process Clause, and decisions following *Jackson v. Virginia*, where no reasonable juror could convict based on sufficient evidence.³³

Thus, as the Illinois Supreme Court has explained, setting out the *Jackson* standard, “[w]here a criminal conviction is challenged based on insufficient evidence, a reviewing court, considering all of the evidence in the light most favorable to the prosecution, must determine whether any rational trier of fact could have found beyond a reasonable doubt the essential elements of the crime.”³⁴ This standard of review “gives full play to the responsibility of the trier of fact fairly to resolve conflicts in the testimony, to weigh the evidence, and to draw reasonable inferences from basic facts to ultimate facts.” Thus, “a reviewing court will not substitute its judgment for that of the trier of fact on issues involving the weight of the evidence or the credibility of the witnesses.”³⁵ However, “these determinations by the trier of fact are entitled to deference, they are not conclusive. Rather,

survey that “[a]mong U.S.-only respondents, 97 percent (581/598) indicated a belief in fingerprint uniqueness” and reporting in second survey that 94.5 percent (651/689) responded affirmatively); Brandon L. Garrett & Gregory Mitchell, *Forensics and Fallibility: Comparing the Views of Lawyers and Jurors*, 119 W. Va. L. Rev. 621, 637 (2016) (“Almost all of the lay respondents thought that fingerprint evidence was very reliable or reliable ... and consistent with the results of our earlier study, almost 95 percent of respondents believed that fingerprints are unique and do not match anyone else's prints.”).

³² *People v. Prante*, 2021 IL App (5th) 200074.

³³ *Jackson v. Virginia*, 443 U.S. 307 (1979).

³⁴ *People v. Murray*, 155 N.E.3d 412, 419 (IL 2019) (citing *Jackson v. Virginia*, 443 U.S. 307, 318-19 (1979); *People v. Brown*, 1 N.E.3d 888 (IL 2013); *People v. Cooper*, 743 N.E.2d 32 (IL 2000)).

³⁵ *Id.*

a criminal conviction will be reversed where the evidence is so unreasonable, improbable, or unsatisfactory as to justify a reasonable doubt of the defendant's guilt.³⁶

That weight is not justified, as discussed in the next Part, when wholly flawed and unsound work is done to examine a latent fingerprint and compare it to a defendant's print.

IV. THE FINGERPRINT EXAMINER TESTIMONY IN THIS CASE DEMONSTRATES WHOLLY INADEQUATE, UNRELIABLE, AND UNSOUND EVIDENCE AND UNIT-WIDE PRACTICES

A. Subjectivity of ACE-V Method and the Importance of Verification

The ACE-V method, for Analysis, Comparison, Evaluation, and Verification—is not, as the NAS Report emphasized, “specific enough to qualify as a validated method for this type of analysis.”³⁷ Merely following the steps of that “broadly stated framework” “does not imply that one is proceeding in a scientific manner or producing reliable results.”³⁸ As Dean Mnookin has put it:

It is as if one were to describe the methodology for fixing a car by the acronym DACT—Diagnose, Acquire, Conduct, and Test. We could describe the DACT car-repair methodology as follows: (1) diagnose the car's problem, (2) acquire the necessary parts for the repair, (3) conduct the repair, and (4) test to verify that the repair fixed the problem. Whether or not such a car-repair methodology actually works, or how well it works, would depend entirely on the content given to these very broad categories in specific instances.³⁹

The examiner in this case, however, did not even conduct work that minimally followed that ACE-V method commonly used in the latent fingerprint profession; he did not follow the steps of that “broadly stated framework.” In particular, the examiner did not receive a “Verification” from a colleague. As Dean Mnookin has put it, “ACE-V's relationship to

³⁶ *Id.*

³⁷ *Id.* at 142.

³⁸ *Id.*

³⁹ *See* Mnookin, *supra*, at 1219-20.

the scientific method is tenuous at best: as a methodology, it amounts, more or less, to having two different examiners look carefully at a set of fingerprints.”⁴⁰ In this case, that key feature of the method was ignored; only one examiner looked at the fingerprints (and no documentation exists to tell us how carefully).

A verification is particularly crucial as a check on an examiner’s judgment and work product in a case with a single partial fingerprint. For that reason, the Federal Bureau of Investigation initiated a policy, after the Mayfield error, of ensuring that in any case with a single latent print, the verification would be conducted *blind*.⁴¹ That means that the second examiner does not see the first examiner’s work and does not know what conclusion the first examiner reached. In that way, the work is a more independent check against error.

B. Lack of Documentation

The NAS Report highlighted that “sufficient documentation is needed to reconstruct the analysis” that examiners engage in.⁴² There was no such documentation in this case. No prints were marked (nor were they marked following appropriate methods, as discussed further below). This was a single partial print. While the examiner claimed to have made a decision based on “probably about twenty” markings, only nine were displayed in a trial exhibit. The trial testimony was evasive on this point:

A: So I have nine numbers -- it's a nine. I would say there's probably about 20.

Q: Okay. But at least nine you were mark and point out?

A: Yes.

⁴⁰ *Id.* at 1219.

⁴¹ See Robert B. Stacey, *A Report on the Erroneous Fingerprint Individualization in the Madrid Train Bombing Case*, 54 J. Forensic Id. 706, 715 (2004).

⁴² *Id.* at 5–13.

Trial Transcript at R.172.

C. Error Rates Vary by Examiner

This examiner, Daniel Dennewitz, was a police officer for almost sixteen years before being assigned to the Unit. He had been a fingerprint examiner for “just over a year or so” when he worked on this case. Trial Transcript at R.161. He agreed that his work was based on his “experience, training, and education.” *Id.* at 173. As described next, what we do not know is how reliable this person’s work was at the time (or before or since).

Fingerprint work, as noted, can result in errors. The NAS Report emphasized error rates exist, and none of the variables that fingerprint examiners rely upon have been “characterized, quantified, or compared.”⁴³ The PCAST Report was issued in 2016 after two studies did aim to quantify error rates in latent fingerprint comparisons. However, they found non-trivial error rates, and emphasized that, for a technique that depends on subjective judgments, the skill, training, and experience of a particular examiner deeply matters. After all, “examiners decide for themselves, based on their training and experience, how much similarity is sufficient to declare a match.”⁴⁴

One needs to know how reliable a particular examiner is: how proficient that person is. Unfortunately, that data is typically lacking, as it was in this case. Although Dennewitz explained that he took annual proficiency tests, CPD examiners are only given commercial annual proficiency tests—which are not blind, given under realistic or controlled testing conditions, and widely understood to be extremely easy. Trial Transcript at R.162. These tests tell us nothing about how reliable a particular examiner is. Thus, as Dean Mnookin

⁴³ *Id.*

⁴⁴ *See Mnookin, supra*, at 1221.

summarizes, “Although fingerprint examiners may, at times, undergo proficiency tests, these exams have for the most part been extremely easy, far easier than the kinds of challenges that can be faced in actual casework.”⁴⁵ Indeed, with virtually no experience and training, several Cook County public defenders took and passed the same proficiency test taken by CPD examiners.⁴⁶

D. Failure to Mitigate Bias

Without formal safeguards in place, examiners that are in contact with law enforcement (and this Unit is located within a police department) can be biased in their work, resulting in grave errors. The examiner who conducted the work and testified in Mr. Cline’s case described no procedures that might have guarded against that type of bias. Biasing information would be particularly concerning in a case with just a single partial print.

Dean Mnookin notes another concern after the Mayfield case (which, again, involved a single partial print): unless protections are put into place, an examiner may be told information which can distort their work. The role that cognitive bias plays in forensics is now well-known and labs, including the FBI Laboratory, have conducted trainings and adopted procedures to ward against the biasing impact of information that is irrelevant to the pattern-comparison task at hand.⁴⁷ We do not know whether the examiner

⁴⁵ *Id.* at 1227.

⁴⁶ See *Max et al, supra, see also* Jordan Smith, *Fingerprint Analysis is High Stakes Work – But it Doesn’t Take Much to Qualify as an Expert*, *The Intercept*, Nov. 29, 2019, available at <https://theintercept.com/2019/11/29/fingerprint-examination-proficiency-test-forensic-science/>.

⁴⁷ See U. S. Department of Justice, Office of the Inspector General, *A Review of the FBI’s Progress in Responding to the Recommendations in the Office of the Inspector General Report on the Fingerprint Misidentification in the Brandon Mayfield Case*, June 2011, 5, (hereinafter “OIG Report”)

here received communications from law enforcement that may have biased the work, but we do know that no protections were in place. As Dean Mnookin explains:

The concern about the danger and power of biasing information is not simply theoretical. In a clever experiment, cognitive psychologist Dr. Itiel Dror used the Mayfield case to show the possibility of contextual bias effects on fingerprint examiners' interpretations. A small handful of fingerprint examiners were each given a pair of prints, a latent print and a potential source print, and told that they were the prints from the Mayfield case. Each examiner was asked to evaluate whether or not the prints matched, using only the information contained in the print.

In fact, however, unbeknownst to the examiners, the prints were not the Mayfield prints. Each examiner was actually given a set of prints that he or she personally had previously testified in court were a 100% certain, positive, error-free individualization. But now, when provided with this biasing contextual information suggesting that the prints were those involved in the Mayfield scandal, 60% of the examiners (three of the five examiners tested) reached the opposite conclusion, determining that the two prints in front of them did not in fact match. A fourth examiner judged the prints to be inconclusive. Only one of the five examiners reached a conclusion consistent with his or her original judgment that the prints matched.⁴⁸

E. Overstated Conclusion Language

The examiner in this case described a fingerprint coming from the “same source.” He testified that: “the two prints come from the same source.” Trial Transcript at R.173. Additionally, he failed to acknowledge the possibility of error. As Dean Mnookin has explained:

This notion of an error rate of zero is exceedingly unscientific. It borders on the meaningless, and is a far cry from how scientists typically think about error rates. Nothing is truly perfect—no human endeavor has an error rate of zero. Moreover, the distinction between the error rate of the technique and the error rate of the humans who use it is, frankly, nonsensical with regard to fingerprint identification. The human beings engaging in ACE-V are the technique. The appropriate question

⁴⁸ See Mnookin, *supra*, at 1231-32. U. S. Department of Justice, *A Review of the FBI's Progress in Responding to the Recommendations in the Office of the Inspector General Report on the Fingerprint Misidentification in the Brandon Mayfield Case*, at 5.

is the error rate in practice, not an in-the-clouds theoretical error rate that postulates perfect human beings and then concludes that so long as these perfect human beings make no mistakes, the error rate is zero. We could just as easily say that in theory, eyewitness identification has an error rate of zero because faces are in fact different— notwithstanding the fact that in practice, eyewitness identification errors are distressingly common.⁴⁹

F. Linear Sequential Unmasking

The examiners who contributed to the error in the Brandon Mayfield case engaged in “flip flopping,” or looking back and forth in a circular fashion between the single, partial crime scene print and Mayfield’s print. The subsequent investigation found that this circular process contributed to that high-profile error by three experienced examiners.

In Cline’s case, the single examiner conducted a similarly circular analysis, from what the record reveals; the CPD has no process to prevent that back-and-forth or circular process. Other labs across the country have adopted as an important safeguard a comparison requiring a linear procedure and have had positive results using the procedure.⁵⁰ This procedure is called Linear Sequential Unmasking (LSU).⁵¹ In Mayfield’s case the FBI concluded that the examiners changed their assessments as they looked at

⁴⁹ *Id.* at 1226-27.

⁵⁰ See Melanie S. Archer and James F. Wallman, *Context Effects in Forensic Entomology and Use of Sequential Unmasking In Casework*, 61 J. For. Sci. 1270 (2016); B. Found and J. Ganas, *The Management of Domain Irrelevant Context Information in Forensic Handwriting Examination Case-Work*, 53 Sci. & Just. 154–158 (2013).

⁵¹ See Itiel E. Dror, William C. Thompson, Christian A. Meissner, I. Kornfield, Dan Krane, Michael Saks, and Michael Risinger, *Context Management Tool- box: A Linear Sequential Unmasking (LSU) Approach for Minimizing Cognitive Bias in Forensic Decision Making*, 60 J. For. Sci. 1111 (2015).

Mayfield's print and the Madrid print. The FBI adopted the LSU approach after the Mayfield case.⁵²

In his detailed review of the inadequacies of the CPD latent print standards, finding them to be largely nonexistent, Dr. Cedric Neumann further explained why this LSU procedure is important:

Ideally, examiners are supposed to first analyze the latent print in isolation. In other words, they are supposed to detect and select features on the latent impression without having observed the control print. This is intended to guarantee that the features selected on the latent print are genuine features of that impression, and are not influenced by the features that can be observed on the control print. Unfortunately, this process is not always applied as intended.

Even if the latent print is truly analyzed in isolation, examiners have been shown to ignore the initial observations made on the latent print as soon as it is compared to the control print. Examiners attempt to *explain* why the features initially observed on the latent print are not actual features, and only use the features that exactly pair with the ones observed on the control print. This process can result in examiners over-selecting features during the analysis of the latent print, and sorting the genuine ones from the noise during the comparison of the latent and the control prints.

Similarly, examiners have been shown to *add* features on the latent print based on the features observed on the control print. This process can result in examiners under-selecting features during the analysis of the latent print (e.g., they would only select a handful of really good ones), and complete the feature set on the latent impression during its comparison with the control print.⁵³

⁵² See OIG Report, at 5, 27 (“The FBI Laboratory instructs examiners to conduct comparisons from poor quality to good quality prints, meaning that examiners generally look at the latent fingerprint first to prevent information from the known fingerprints from influencing their interpretation of the latent fingerprint.”).

⁵³ Dr. Cedric Neumann, *Letter Re: People vs. Christopher Robertson – 15CR7788*, July 14, 2016, at 12.

V. CONCLUSION

This case involved a forensic expert who wholly ignored the most basic methods used in latent fingerprint work, without verification by a colleague, presenting a subjective judgment, an unequivocal conclusion, and yet without presenting any objective basis or documentation for the conclusions reached. The single partial fingerprint was the only evidence in the case connected to the defendant. The Court of Appeals correctly concluded that admission of the evidence was in error and resulted in insufficient evidence for a reasonable jury to convict.

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CERTIFICATE OF COMPLIANCE
WITH SUPREME COURT RULE 341

I certify that this brief conforms to the requirements of Rules 341(a) and (b). The length of the brief, excluding the pages containing the Rule 341(d) cover, the Rule 341(h)(1) table of contents and statements of points and authorities, the Rule 341(c) certification of compliance, the certificate of service, and those matters to be appended to the brief under Rule 342(a) is 21 pages.

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