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Can Fingerprints Lie?: Re-Weighing Fingerprint Evidence in Criminal Jury Trials

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Can Fingerprints Lie?: Re-weighing Fingerprint Evidence In Criminal Jury Trials

By Tamara F. Lawson*

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I. Introduction

“[F]ingerprints never lie,” was the statement of Iain McKie, a retired Scottish police officer, a thirty year veteran in law enforcement, and the father of Detective Shirley McKie. But when his daughter’s fingerprint was unexplainably linked to a murder scene, and she was arrested and charged with perjury, Mr. McKie, for the first time, questioned the reliability of fingerprint evidence. He went on to say in an interview in 2002: “I love my daughter very much. But when they said the print was Shirley’s I have to admit I assumed the worst. My entire career I had heard that fingerprints never lie.”¹ If it is the understanding of a seasoned law enforcement officer that fingerprints could *never* be wrong, how do average jurors perceive the reliability of fingerprint evidence?²

If truth be told, “everyone”³ believes that fingerprint evidence is reliable, even infallible, evidence. In the average layman’s understanding of criminal law, fingerprint identification evidence is equated with guilt, while the lack of fingerprint identification evidence infers a weakness in the prosecution’s case.⁴ The media portrays fingerprint evidence as

1. Michael Specter, *Do Fingerprints Lie?; The Golden Standard of Forensic Evidence Is Now Being Challenged*, THE NEW YORKER, May 27, 2002, at 96.

2. DAVID L. FAIGMAN ET AL., MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY §27-1.0, at 347 (2d ed. 2002)(“[M]ost, if not all, claims made by or on behalf of fingerprint examiners enjoy widespread and unquestioning belief among the lay public, including the bench and the bar.”).

3. “Everyone” refers to lay knowledge and common interpretation. It is important because it plays into jury bias, irrespective of any potential testimony or limiting instruction given to the jury. If it is commonly understood that fingerprints are inherently reliable and the best evidence of identity, the jury will nonetheless be biased in favor of the prosecution and likely to nullify or ignore defense challenges to this form of evidence.

4. *But see* FAIGMAN, *supra* note 2, §27-2.2.4, at 384. Although the presence of a positive

incontrovertible and reliable. Television shows such as *Law & Order*, *The Practice*, *CSI*, *NYPD Blue*, and movies endorse the reliability of fingerprint evidence. Every jailhouse lawyer would agree that if the accused's fingerprint is found on the murder weapon, the outcome will most likely be a "slam dunk" for the prosecution. It would not even be a close case. If the fingerprints match, what else is there to talk about?

That is the common understanding of fingerprint identification evidence among law enforcement experts, police and prosecutors, and laypeople. In fact, Professor Saks notes that until recently "virtually every technique offered to courts by forensic scientists for the purpose of linking suspects to crimes, including fingerprints, was accepted – not only without question, but without challenge."⁵ In the everyday practice of criminal law it is not an overstatement to define the acceptance of fingerprint evidence as universal.

As author of this Article, I believe it is relevant to disclose my practical experience in criminal law and exposure to fingerprint identification evidence. I was a state prosecutor in Clark County, Las Vegas, Nevada for six years, 1996-2002. In that capacity, I observed fingerprint identification evidence being used in a variety of ways by law enforcement and the prosecution. During my time as a prosecutor, however, I was never involved with a case nor ever heard about a case in my jurisdiction in which the fingerprint evidence was challenged. From my practical experience and scholarly research of the topic, the reliability of fingerprint identification evidence routinely goes unquestioned at all levels of the criminal process and by both sides of the litigation, prosecution and defense.

Although the criminal justice system relies on fingerprint identification evidence at various phases of the process, this Article focuses on the use of fingerprints in jury trials,⁶ specifically the opinion testimony of the latent print examiners who analyze the latent fingerprints found at crime scenes and opine whether those prints match the accused. It is only through the expert opinion testimony of a latent print examiner that

fingerprint identification may be strong inculpatory evidence for the prosecution's case, the lack of fingerprint evidence has little evidentiary value. "The absence of fingerprints does not indicate that a person did not touch the item or surface with their exposed fingers. Whether or not fingerprints are left depends on the condition of the surface, the condition of the fingers, and the dynamics of touching." *Id.*

5. Michael J. Saks, Book Review, 43 *JURIMJ* 141 (2002).

6. Although it is important to ensure the accuracy of fingerprint identification evidence at all stages of the process, jury trial is the accused's primary opportunity to challenge or refute the evidence against him. Since his ability to preclude the prosecution's latent print expert witness from testifying or, alternatively, to present his own counter-expert witness is most acute at trial, the real battle occurs during the trial phase.

fingerprint identification evidence is presented to the jury. For example, a fingerprint examiner's opinion that a latent fingerprint⁷ found on the murder weapon "matches"⁸ the accused is commonly understood to be conclusive evidence of guilt. Yet, does anyone ask about the accuracy rate of the examiner? Or even the average accuracy rate of his profession? Has fingerprint evidence ever been wrong?⁹

Although seldom detected, fingerprint identification evidence *has* been wrong.¹⁰ As a point of departure, this Article will present the shocking

7. Latent fingerprints are fingerprints that are invisible under normal viewing conditions but are made visible by fingerprint powder or other chemical processes. Appendix I, at 38-39.

8. *United States v. Llera Plaza (Plaza I)*, 179 F. Supp. 2d at 497 ("A fingerprint examiner's job consists of comparing latent and rolled fingerprints to determine if the person who left the latent prints can be identified."). A common comparison method used is the ACE-V fingerprint examination process employed by the Federal Bureau of Investigations (USA), Scottish Criminal Record Office (Scotland), and New Scotland Yard (UK). ACE-V is "an acronym for the four articulated steps in fingerprint examination: Analysis, Comparison, Evaluation, and Verification." FAIGMAN, *supra* note 2, §27-2.4 Appendix I, at 397.

9. There are two ways in which the fingerprint evidence could be wrong: 1) forgery or planting of fingerprints or 2) misidentification by the latent print examiner. Although forgery is technically possible, according to the experts, fingerprint forgery requires an unusual amount of specific knowledge and skill. Thus, although forgery or planting prints has occurred, as a practical matter it is extremely rare. FAIGMAN, *supra* note 2, §27-2.3.5, at 392; *See generally* Pat A. Wertheim, *Detection of Forged or Fabricated Latent Prints*, 44 J. FORENSIC IDENT. 652 (1994); Pat A. Wertheim, *Integrity Assurance: Policies and Procedures to Prevent Fabrication of Latent Print Evidence*, 48 J. FORENSIC IDENT. 431 (1998). This Article, however, focuses exclusively on the possible misidentification of latent fingerprints and the evidentiary debate regarding the scientific validity of the methodology and standards employed by latent fingerprint experts.

10. *See* Justine Redman, *Man Wrongly Linked to Madrid Bombing Sues*, CNN.com, International, October 5, 2004 available at <http://edition.cnn.com/2004/LAW/0/04/Mayfield.lawsuit/index.html> ("Brandon Mayfield, a lawyer in Portland, Oregon, wrongly detained in connection with the investigation of March's deadly train bombings in Madrid, Spain, files suit Monday against the Justice Department and FBI."); Jennifer Mnookin, *The Achilles' Heel of Fingerprints*, The Washington Post, May 29, 2004 at A27 ("Three highly skilled FBI fingerprint experts matched a partial print found on a bag in Madrid that contained explosive detonators. U.S. officials called it 'absolutely incontrovertible' and a 'bingo match.' [Based on the fingerprint identification evidence] Mayfield was promptly taken into custody as a material witness. [Later] the FBI admitted that it goofed; the print actually belongs to [a different person], Ouhname Daoud, an Algerian." Mayfield's case is notable not only because of the initially erroneous analysis but also because the FBI identified 15 points of similarity to support their conclusion that the fingerprints matched. Additionally, the Spanish authorities found 8 points of similarity in the prints. "While many American examiners no longer exclusively count points [of similarity], experts have declared positive fingerprint matched in court after finding even fewer than eight points."). *See also* CBS Broadcasting, Inc., *60 Minutes, Fingerprints: Infallible Evidence*, available at <http://www.cbsnews.com/stories/2003/07/16/60minutes/main563607.shtml> (*60 Minutes* report on the fingerprint misidentification and wrongful conviction of Richard Jackson). Mr. Jackson was convicted of murder, in Upper Darby, Pennsylvania. He was sentenced and served two years in prison before fingerprint misidentification and examiner error was confirmed. After many appeals and because of Mr. Jackson's sheer persistence and perseverance regarding his innocence, the state prosecutor re-submitted the fingerprint evidence (which had originally been tested by local police officers) to the FBI for re-testing. The FBI discovered the error, which led to Jackson's release from prison and exoneration of the charges. *See also* Simon Cole, *Fingerprints Not Infallible*, NAT'L L.J., February 23, 2004, at 22. In February 2004, in Massachusetts, Stephan Cowans' shooting conviction, which was based largely on fingerprint identification, was overturned because of DNA testing that

facts of Detective Shirley McKie's case, in which the fingerprint analysis was wrong. Detective McKie was forced to single-handedly prove her own innocence by demonstrating fingerprint misidentification.¹¹ Even more troubling is the revelation of the forensic community's unwillingness to acknowledge its own errors. It is common in most jurisdictions, that fingerprint identification evidence is assumed to be scientifically valid and free from errors. Judges routinely admit the expert opinion testimony of latent print examiners without a pause.

Some defense attorneys like Robert Epstein, a federal public defender in Philadelphia, are no longer taking fingerprint examiners at face value and are instead challenging the basis of their conclusions.¹² Defense attorneys are arguing for a rigorous application of the *Daubert-Kumho* standard¹³ and exposing a lack of scientific validity behind the methodology used by forensic examiners who test fingerprints. These

exonerated him. Mr. Cowans spent more than six years in prison and of the 141 individuals exonerated by DNA evidence is the first to have been wrongly convicted based on fingerprint evidence.

We are left with the question of whether fingerprint evidence is totally shoddy. The answer is: of course not. DNA exonerations have exposed a lot more bad serology and bad microscopic hair comparison than bad fingerprint evidence. In fact, post-conviction DNA testing has exposed more bad DNA evidence than bad fingerprint evidence. *Id.*

See also Jennifer L. Mnookin, *A Blow to the Credibility of Fingerprint Evidence*, THE BOSTON GLOBE, February 2, 2004, at A14 ("DNA tests on clothing left near the crime scene and on a saliva specimen from the glass did not match Cowan's DNA. The prosecution still insisted it had the right guy - after all, his fingerprint was on the glass. But when that fingerprint was reanalyzed by experts, it turned out not to match Cowans after all."). See discussion *infra* Section III. (A specific case in Scotland exposes the fallibility of fingerprint identification evidence.); see also *News Wrap*, LAS VEGAS REV. J. September 18, 2002 available at http://www.lvrj.com/lvrj_home/2002/Sep-18-Wed-2002/news/19657743.html. (Kathleen Hatfield's fingerprints were misidentified and she was wrongly thought to have been murdered in Las Vegas. Kathleen, a resident of Santa Rosa, CA, is in reality alive and well. "Las Vegas police had mistakenly matched the [her] fingerprints . . . with those of a decomposed woman's body found in June in the desert east of Las Vegas." According to Lt. Tom Monahan of the Metropolitan Police Department Homicide Section, "[t]here's no question. A mistake was made."). See also Michael Coit, *Santa Rosa Woman Identified As Vegas Slaying Victim Turns Up Alive*, THE PRESS DEMOCRAT, September 13, 2002, at A1.

11. See *infra* Section III. The sad and frightening reality of Detective McKie's injustice is that the "ordinary accused," meaning someone who is not a law enforcement officer, would never be able to right the wrong of this type of forensic error - a sobering thought that haunts all members of the legal community who strive to seek justice and ensure fairness in the jury trial process.

12. Robert Epstein was the first defense attorney to file a challenge to fingerprint identification evidence. See *United States v. Mitchell*, 199 F. Supp. 2d 262 (E.D. Pa. 2002)(defense motion denied), *aff'd*, *United States v. Mitchell*, 365 F.3d 215 (3d Cir. 2004). *Mitchell* was the companion case that preceded *Plaza I*, wherein Epstein filed a similar challenge to the use of fingerprint identification evidence on behalf of the defendant Plaza. See *United States v. Llera Plaza (Plaza I)*, 179 F. Supp. 2d 492 (E.D. Pa. Jan. 7, 2002). The defense motion in *Plaza I* was ultimately denied by the court's decision in *Plaza II*. Cf. *United States v. Llera Plaza (Plaza II)*, 188 F. Supp. 2d 549 (E.D. Pa. Mar. 13, 2002) (vacating and superseding the prior decision upon reconsideration).

13. See discussion *infra* Section IV (explaining *Daubert-Kumho* standard).

attorneys are demanding proof that the opinions of expert fingerprint examiners are as reliable as the forensic community purports them to be.

In other words, is it *ipse dixit*¹⁴? Or is there scientific validity to the supposition that fingerprints do not lie? Currently, the assumption that latent fingerprint evidence is one hundred percent accurate in determining an individual's identity is a fact that neither science nor law can prove with any certainty because the question has never been posed¹⁵ or empirically studied.¹⁶ Because of this lack of certainty regarding the accuracy of the evidence, the defense bar seeks to exclude fingerprint identification evidence as entirely unreliable. The concept may sound outlandish, but there is substance to this evidentiary challenge.

The ultimate merit of the defense's argument lies, however, in its advocacy for a meticulous application of the *Daubert-Kumho* standard to fingerprint identification evidence rather than in its request for complete exclusion of fingerprint evidence. This Article rejects the blanket assertion that fingerprint analysis is merely an "unfounded creation of law enforcement fingerprint examiners,"¹⁷ but instead seeks to critically analyze the use of fingerprint identification evidence in jury trials by both the prosecution and defense. It therefore explores the difficult question:

14. See *General Electric Company v. Joiner*, 522 U.S. 136, 146 (1997) ("But nothing in either *Daubert* or in the Federal Rules of Evidence requires a district court to admit opinion evidence which is connected to existing data only by *ipse dixit* of the expert."). *Ipse dixit* is a Latin phrase defined as an assertion made but not proven. MERRIAM WEBSTER ONLINE, available at <http://www.merriam-webster.com>.

15. FAIGMAN, *supra* note 2, §27-1.0, at 348 ("Many of the most basic claims of fingerprint identification have never been tested empirically, and the field's most thoughtful research and scholarship have concluded that, in the strong form in which they are usually presented, those claims in fact are unprovable.").

16. *Id.* at §27.1.2.11[1], 44 [Pocket Part]. In *Plaza I*, "while there were 'numerous writings that discuss the fingerprint identification techniques employed by fingerprint examiners', none of them tested the technique's dependability. Reviewing all of the proponent's submissions, the court noted that, 'the government had little success in identifying scientific testing that tended to establish the reliability of fingerprint identifications.'" See *id.* at §27-1.0, 347. "[S]urprisingly little conventional science exists to support the claims of the fingerprint examination community." Even the National Institute of Justice's Fingerprint Advisory Panel, comprised of "latent print examiners, researchers, and senior administrators from Federal, State, and private forensic science laboratories," has acknowledged the lack of scientific study supporting the opinions of fingerprint identification experts and has "reached a consensus that the field needs . . . [b]asic research to determine the scientific validity of *individuality in friction ridge examination*, [that is, fingerprint identification]." See generally JEREMY TRAVIS, NATIONAL INSTITUTE OF JUSTICE, FORENSIC FRICTION RIDGE (FINGERPRINT) EXAMINATION VALIDATION STUDIES (March 2000) available at <http://www.latent-prints.com/NIJ.htm>.

17. Robert Epstein, *Fingerprints Meet Daubert: The Myth of Fingerprint "Science" Is Revealed*, 75 S. Cal. L. Rev. 605, 607 (2002). Epstein overstates the problem with fingerprint identification evidence and offers only the drastic solution of exclusion, which unfairly prejudices the interest of the state. In other words, in an effort to eliminate the unfair bias against the defendant, Epstein merely shifts the unfairness to the prosecution by advocating for blanket exclusion of fingerprint analysis. Complete exclusion of fingerprint identification evidence further undermines the public confidence in the criminal justice system and the jury trial process. See discussion *infra* Section IV. E.

whether latent fingerprint identification experts are reliable and whether the methodology used by forensic science satisfies the current evidentiary standards. Specifically, it queries whether it is appropriate to allow latent fingerprint expert witnesses to testify regarding their findings which are purported to *conclusively* link an accused to a crime. Finally, the Article examines in what ways and under what circumstances the defense should be allowed to refute this evidence before the jury, assuming the trial judge allows the fingerprint expert to testify.¹⁸

Part II of this Article explains in more detail what a fingerprint is and how it is used in criminal litigation. Part III provides a real life example of how fingerprint misidentification might go undetected. Part III also exposes the reality that, even when this type of forensic error is discovered, it is difficult to prove and nearly impossible to get law enforcement to admit. Part IV dissects the *Daubert-Kumho* evidentiary standard for expert witnesses and articulates the main arguments currently being used to challenge the expert opinion testimony of latent fingerprint examiners who proffer fingerprint identification evidence. It illuminates the significant issues that must be considered by the “gatekeeper” when determining whether to admit or exclude an expert’s opinion. Part IV further explains why no federal courts have yet excluded fingerprint identification evidence as unreliable.

Mindful that the ultimate goal of a jury trial is to preserve fairness and due process while simultaneously seeking justice, i.e., a search for the truth, this Article comments on the manner and method in which a party should be allowed to attack evidence and present countervailing theories that support each side’s respective version of the facts. In light of this specific objective, Part V seeks to resolve the adversarial debate between prosecutors and defenders regarding the use of fingerprint identification evidence in criminal jury trials.

18. *Id.* at 606, n.7. The reality is that “it is quite rare for a trial judge to preclude the prosecution’s fingerprint expert from testifying regarding the identity of the latent prints found at the crime scene.” See also *Legal Challenges to Fingerprints*, at http://onin.com/fp/daubert_links.html (last updated May 7, 2004) for a list of recent cases wherein the issue of fingerprint evidence exclusion was litigated. See generally *United States v. Llera Plaza (Plaza I)*, 179 F. Supp. 2d 492 (E.D. Pa. Jan. 7, 2002), *vacated and superceded upon reconsideration by United States v. Llera Plaza (Plaza II)*, 188 F. Supp. 2d 549 (E.D. Pa. Mar. 13, 2002); *United States v. Parks* (C.D. Cal. Dec. 10, 1991) (No. CR-91-358-JSL) (limiting the ability of the prosecution’s latent fingerprint expert’s testimony.) Neither decision is binding authority for the exclusion of fingerprint identification evidence.

II. What Is Fingerprint Evidence and How Is It Used in Criminal Litigation

A. Known vs. Latent Fingerprints

When thinking about fingerprint evidence, one image that may come to mind is a suspect's hand being dipped into ink and pressed onto paper to record the unique ridges of his or her fingertips.¹⁹ Although many fingerprints are collected in this manner, the above image explains only one type of fingerprint evidence that is used in criminal law. Fingerprint evidence encompasses a more complex set of issues far beyond the standard jailhouse booking information.²⁰ One must first consider the various ways in which the criminal justice system utilizes fingerprint evidence in order to fully understand the defense bar's challenge to the use of fingerprint identification evidence at trial.

19. Although the traditional ink and roll method is still used in many jurisdictions, a more modern method involves using "Livescan," an inkless optical scanner. See SIMON A. COLE, SUSPECT IDENTITIES: A HISTORY OF FINGERPRINTING AND CRIMINAL IDENTIFICATION 76 (2001).

20. The origin of fingerprint identification was to keep track of criminals and prevent them from evading capture or punishment when using aliases. The uniqueness and permanence of fingerprints makes it impossible for criminals to disguise their identities. Remember that the successful part of the *Mitchell* experiment was the ability to accurately identify suspects when comparing their full set of rolled prints to the database of other full set rolled prints. This type of identification is still an important function in the criminal justice system, particularly for extradition and sentencing purposes. When an individual is arrested, it is crucial to identify whether the individual is "wanted" and to quickly and accurately know the individual's prior and pending criminal history. A reliable and consistent identification system is imperative in order to avoid chaos. See *Plaza II*, 188 F. Supp. 2d at 554 (citing generally COLIN BEAVAN, FINGERPRINTS (2001)):

Historical Note (not drawn from testimony): 'Galton points' take their name from Francis Galton. . . . Starting in the late 1880s, Galton undertook to appropriate much of, and then build upon, the pioneering fingerprint identification efforts of (1) another Englishman, William Herschel, serving in the Indian civil service, and (2) Henry Faulds, a Scottish physician serving as a medical missionary in Japan. Galton's efforts were brought into mainstream of criminal investigation by Edward Henry, the Inspector General of Police in Bengal, who, in 1901, was called back to England as Assistant Commissioner (later, Commissioner) of Scotland Yard and promptly established the Yard's Fingerprint Branch. Galton and Henry have customarily been celebrated as the principal progenitors of fingerprint identification, with Herschel given an approving nod – while the foundational work of Faulds has, until very recently, been largely ignored.

It is generally accepted²¹ that fingerprints themselves are unique and permanent identifiers.²² There are no two people who have the same fingerprints, not even twins.²³ The center of the current legal debate, however, is not the physiology of fingerprints, i.e., the uniqueness or permanence of the mark, nor is the criminal defense bar challenging the comparisons conducted on full sets of known fingerprints.²⁴ Instead, the issue is whether fingerprint examiners can accurately and conclusively determine the identity of an incriminating latent print found at a crime scene.²⁵ This section will distinguish between fingerprint evidence used

21. Cf. FAIGMAN, *supra* note 2, §27.1.211[1][Pocket Part], at 42. Professor Faigman questions whether there is a “high degree of indisputability” in the uniqueness of fingerprints and criticizes Judge Pollak for taking judicial notice of this fact in *Plaza I*. See *United States v. Mitchell*, 365 F.3d at 252 (Consistent with Professor Faigman’s aforementioned criticism of Judge Pollak’s decision to take judicial notice of the uniqueness of fingerprints, in 2004 the Third Circuit Court of Appeals, analyzing the same *Daubert* hearing transcript that was used in *Plaza I*, held that it was error for the trial court to take judicial notice of the uniqueness of fingerprints. However, the error was found to be harmless.) See also Cole, *supra* note 20, at 176. Cole points out that even founders of fingerprint identification analysis had doubts about the uniqueness of fingerprints. “[Henry Faulds] was extremely skeptical of the use of latent fingerprints . . . for forensic identification.” *Id.* “Even Francis Galton . . . felt more comfortable with anthropometry. . . [over fingerprinting]” *Id.* at 92. See also HAROLD CUMMINS & CHARLES MIDLO, *FINGER PRINTS, PALMS AND SOLES: AN INTRODUCTION TO DERMATOGLYPHICS*, 154 (1943) (“ . . . it is impossible to offer decisive proof that no two finger[prints] bear identical patterns . . .”).

22. *Plaza I*, 179 F. Supp. 2d at 502 (accepting the research and testimony of Dr. Babler as “an adequate basis . . . to take judicial notice of the permanency of fingerprints.”). Dr. Babler testified to the following conclusion regarding friction ridges during the *Mitchell* case’s *Daubert* hearing: “There are many different factors, many, many different factors that influenced the development . . . of its secondary characteristics, the minutiae, the actual shape of the ridge itself. All these are so numerous and so individual that . . . I cannot conclude anything but that each and every friction ridge and their arrangements are individual and specific.” *Id.* at 496. Cf. *United States v. Mitchell*, 365 F.3d at 252 (The appeals court acknowledged the existence of a reasonable dispute regarding whether fingerprints are permanent and unique. Based on this dispute, the appeals court ruled it was inappropriate for “the trial court in *Mitchell* to take judicial notice of the uniqueness of fingerprints.”) *Id.*

23. Specter, *supra* note 1, at 99. “No two people – not even identical twins – have ever been shown to share fingerprints. The friction ridges that cover the skin on your hands and feet are formed by the seventeenth week in the womb; at birth they have become so deep that nothing can alter them, not even surgery.” *Id.*

24. Full sets of rolled or known ten-prints are maintained in law enforcement computer databases. The FBI maintains its database, called IAFIS, Integrated Automated Fingerprint Identification System, in Clarksburg, West Virginia. The Clarksburg location is the “world’s largest collection of fingerprints; on an average day, forty thousand are fed into the system.” A computer algorithm compares the prints in seconds. The accuracy rate is 99.97%. Specter, *supra* note 1, at 99; See FAIGMAN, *supra* note 2, §27 Appendix I, at 397. “AFIS: These computerized databases allow retrieval fingerprint records that show electronic codes similar to a crime scene print. The system selects candidates [i.e. suspects] for subsequent manual comparisons by fingerprint experts.” *Id.*

25. Identifying latent prints is a more difficult and complex task than identifying full sets of known or rolled prints. See discussion *infra* Section IV.C.2 (The *Mitchell* experiment exposes the different accuracy rates between the identification of known prints and the identification of latent prints. When comparing known prints, the results were good and no error detected; however, when latent prints were compared, the errors were remarkable. However all errors observed in the *Mitchell*

solely for identity and fingerprint evidence used to solve crimes and implicate the perpetrators of crimes. The criminal justice system utilizes fingerprint evidence for both purposes. The recent evidentiary challenges, however, seek to exclude fingerprint evidence that incriminates as opposed to evidence that merely identifies.²⁶

Fingerprints that are obtained by individuals inking their fingers and purposefully rolling each fingertip from edge to edge onto paper are called, “rolled” or “inked” prints because of the manner in which they are collected.²⁷ These prints are generally complete sets of fingerprints such that the entire fingertip is recorded, and typically all ten fingers and both palms. These fingerprints are also referred to as “known fingerprints” because the identity of the maker is known when the evidence is collected.²⁸

experiment were false negatives, not false positives.)

26. *United States v. Crisp*, 324 F.3d 261 (4th Cir. 2003); *United States v. Navarro-Fletes*, 49 Fed. Appx. 732 (9th Cir. 2002); *United States v. Hernandez*, 299 F.3d 984 (8th Cir. 2002); *United States v. Ambriz-Vasquez*, 34 Fed. Appx. 356 (9th Cir. 2002); *United States v. Turner*, 285 F.3d 909 (3d Cir. 2002); *United States v. Martinez-Garduno*, 31 Fed. Appx. 475 (9th Cir. 2002); *United States v. Williams*, 29 Fed. Appx. 486 (9th Cir. 2002); *United States v. Rogers*, 26 Fed. Appx. 171 (4th Cir. 2001); *United States v. Havvard*, 260 F.3d 597 (7th Cir. 2001); *United States v. Merritt*, Cause No. IP01-0081-CR-01-T/F, 2002 WL 1821821 (S.D. Ind. June 26, 2002); *United States v. Nadurath*, No. 4:02-CR-32-A, 2002 WL 1000929 (N.D. Tex. May 14, 2002); *United States v. Mitchell*, 199 F. Supp. 2d 262 (E.D. Pa. 2002), *aff'd*, *United States v. Mitchell*, 365 F.3d 215 (3d Cir. 2004); *United States v. Cruz-Rivera*, Crim. No. 00-98-01 (CCC), 2002 WL 662128 (D.P.R. Mar. 27, 2002); *United States v. Salim*, 189 F. Supp. 2d 93 (D. Kan. 2002); *United States v. Cline*, 188 F. Supp. 2d 1287 (D. Kan. 2002); *United States v. Reaux*, Crim. Action No. 01-071 Section “R” (2), 2001 WL 883221 (E.D. La. July 31, 2001); *United States v. Joseph*, Crim. Action No. 99-238 Section “N,” 2001 WL 515213 (E.D. La. May 14, 2001); *United States v. Martinez-Cintrón*, 136 F. Supp. 2d 17 (D.P.R. 2001); *United States v. Havvard*, 117 F. Supp. 2d 848 (S.D. Ind. 2000); *United States v. Cooper*, 91 F. Supp. 2d 79 (D.D.C. 2000). *See also* Legal The Fingerprint Society, *Challenges to Fingerprints* (Oct. 26, 2003), at http://www.onin.com/fp/daubert_links.html (a periodically updated list of all the *Daubert* hearings challenging fingerprints since the *Mitchell* case until Oct. 2003, including links to unpublished opinions and orders).

27. Rolled or known prints are “fingerprint records of individuals . . . [that] have been prepared by carefully inking a person’s fingers with printing ink and rolling the fingers onto a standard ‘10-print’ card.” FAIGMAN, *supra* note 2, at §27-2.1.2[1]. Full sets of rolled or known prints are commonly referred to as a ten-print card and are labeled with the known identity of the maker. *See* COLE, *supra* note 20, at 76.

28. Prints taken by the police or jailor during arrest is not the only time fingerprint evidence is collected. Rolled, inked, or known prints (terms used interchangeably in law enforcement and criminal law scholarship) are commonly collected from various people for a variety of reasons. The original purpose for collecting fingerprint evidence was to keep track of the true identity of criminals for jailing and sentencing purposes, a use that still has utility today. In addition to inmate identification, however, full sets of fingerprints are also routinely collected for non-criminal purposes. For example, many licensed attorneys submit fingerprint cards to their state bar. Also, doctors, realtors, law enforcement and military personnel, as well as all bonded employees must submit fingerprint cards as part of their employment. Fingerprint evidence contained in the national database, thus, includes the identity of many individuals who have never been associated with, accused of, or convicted of a crime. *See generally Plaza I*, 179 F. Supp. 2d 492 (E.D. Pa. Jan. 7, 2002), *vacated and superceded upon reconsideration by Plaza II*, 188 F. Supp. 2d 549 (E.D. Pa. Mar. 13, 2002).

The second type of fingerprint that is important to criminal law is the latent fingerprint. It is the analysis of the latent print compared to the known print that leads police to identify criminal suspects. A latent fingerprint is “a fingerprint that is invisible under normal viewing conditions. Latent fingerprints are rendered visible by fingerprint developing methods.”²⁹ Commonly, latent fingerprints are developed by using fingerprint powder to make the latent print visible, but other optical or chemical methods can be used. Crime scene investigators use fingerprint powder, which adheres to “perspiration, oils or other extraneous matter that has been transferred from the fingers to the surface.”³⁰ Once the latent print is made visible, tape is used to lift the latent print from its original surface onto a “lift card.” These lift cards are examined by fingerprint identification experts who compare the friction ridge detail in the latent print to the details in the known print. The typical poor quality of latent prints lifted at crime scenes is, however, in part what makes the analysis of them controversial.³¹

[L]atent prints are usually incomplete — the average size of a latent print is 21.7% the average size of a rolled print, and are often distorted. Distortion is due to the manner in which the finger comes into contact with the surface, the nature of the surface on which the print is left, and the property of the material and/or medium that is used to “lift” the latent print. . . . Rolled fingerprints, [also called known prints], by contrast, are obtained from known persons and are taken under controlled circumstances. The average size of a rolled fingerprint is one square inch.³²

Both types of fingerprint evidence, known prints and latent prints, are

29. FAIGMAN, *supra* note 2, at §27-2.4 Appendix I; *See also Plaza I*, 179 F. Supp. 2d at 497 (citing U.S. DEP’T JUSTICE, FED’L BUR. INVESTIGATION, *The Science of Fingerprints: Classification and Uses* 170, wherein the FBI describes latent prints in a training manual as follows:

[T]he ridges of the fingers and palms are in intermittent contact with other parts of the body, such as the hair and face, and with various objects, which may leave a film of grease or moisture on the ridges [of one’s fingers.] In touching an object, the film of moisture and /or grease may be transferred to the object, thus leaving an outline of the ridges of the fingers or palm thereon. This print is called a latent impression, the word “latent” meaning hidden, that is, the print many times is not readily visible.

30. FAIGMAN, *supra* note 2, §27-2.4 Appendix I, at 398.

31. Opponents of the use of fingerprint identification evidence urge that there is no proof of the accuracy of latent print analysis made from such small, partial, and imperfect samples; therefore, defense attorneys argue that latent print experts should not be allowed to testify regarding their conclusive findings of identity to the jury. Epstein, *supra* note 17, at 657.

32. *Plaza I*, 179 F. Supp. 2d at 498 (quoting the testimony of Meagher and Ashbaugh).

utilized in the criminal justice system. It is important to understand how they are used. Furthermore, the extent to which fingerprint evidence is employed in the different phases of the criminal litigation process may not be readily apparent to the average lay observer. Fingerprint identification evidence is not just evidence heard by the jury at trial; instead, it is utilized at many levels of the process. The primary uses include: 1) *Warrants and extradition*. Police officers and jailors use fingerprint identification evidence to confirm a suspect's identity and to facilitate arrest and transport back to the appropriate jurisdiction from which he or she has fled; 2) *Charging decisions*. Positive and negative conclusions on fingerprint identification evidence are evaluated to determine the strength of the case and the appropriate charges to file; 3) *Jury trials*. Latent fingerprint examiners, used as the prosecution's expert witnesses, opine as to whether the accused's fingerprints match the fingerprints found at the crime scene; 4) *Appeals*. In response to post-conviction relief motions wherein the defendant challenges the sufficiency of the evidence supporting the jury's verdict, the existence of fingerprint identification evidence is used to bolster the prosecution's argument that the jury's verdict was appropriate and that any other alleged error at trial should be viewed as harmless error considering the strong weight of the fingerprint identification evidence.

At certain stages of a criminal case examiners are requested to compare complete sets of known prints to one another for warrant and extradition purposes – in other words, solely to identify. This type of analysis merely proves the actual identity of the individual in custody, i.e., simply proving “who you are.” At other times, examiners are requested to compare full sets of known prints to latent prints, which are by definition partial and imperfect prints. The analysis of latent prints not only proves “who you are,” it also proves “where you have been.” That is why latent print analysis has been such a powerful tool in solving crimes; it has allowed law enforcement officers to identify suspects based upon where an alleged suspect's fingerprints are found. Latent prints found at a crime scene, for example on the murder weapon or on the victim's body, historically have been impossible to refute – mainly because the accused is unable to disprove the conclusive finding of the expert's testimony. The recent defense challenges, however, seek to exclude this type of evidence and assert that latent fingerprint experts are not qualified to give conclusive opinions regarding the identity of the maker of the latent prints.

A judge's decision to exclude or admit latent fingerprint evidence is, therefore, seminal in most criminal cases. A defendant's likelihood of success at jury trial drastically changes when the powerfully incriminating fingerprint identification evidence is excluded. Further, exclusion has

devastating consequences on the prosecution's case, whose evidence must reach the heightened standard of proof beyond a reasonable doubt. This is why the assessment of evidentiary motions challenging fingerprint identification evidence is far from trivial and is, instead, becoming an important debate within criminal courtrooms across the country.

B. Expert Opinion Testimony of Fingerprint Examiners: Evidentiary Standards and Its Use During Trial

In 1993, the United States Supreme Court addressed the need to better scrutinize all expert witnesses and the scientific and technical theories they espouse.³³ There was a concern that "junk science" or otherwise unreliable evidence was being considered by juries and, therefore, potentially tainting their verdicts. Also, there was confusion among the courts regarding the correct evidentiary rules to apply to experts. In *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,³⁴ the United States Supreme Court articulated the standard for admitting expert scientific testimony. In a radical departure from the 1923 articulation in *Frye v. United States*,³⁵ the *Daubert* court rejected the rigid *Frye* test, and instead asserted a more fluid list of factors for trial judges to use. Under *Daubert*, the trial judge's task is to investigate the validity of the science upon which an expert seeks to base his or her opinions.

In a subsequent case, *Kumho Tire Co. v. Carmichael*,³⁶ the United States Supreme Court extended the applicability of the *Daubert* factors to all expert witnesses, even to those who are not scientists.³⁷ Thus, the standards articulated in *Daubert* and *Kumho Tire*, force trial judges to question the scientific validity of the factual basis of all expert opinions.³⁸ This new approach to expert opinion testimony requires judges to be the "gatekeepers" and ultimately determine the reliability of expert opinions, and, most importantly, the science behind the opinions.³⁹ The standard set

33. See *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579 (1993).

34. 509 U.S. 579 (1993).

35. 293 F. 1013 (D.C. 1923), *superseded by statute as stated in* *Valentine v. Pioneer Chlor Alkali Co.*, 921 F. Supp. 666 (1996). *Frye* stands for the proposition that expert opinion based on scientific technique is inadmissible unless the technique is "generally accepted" as reliable in the relevant scientific community. See *Daubert*, 951 F.2d 1128, 1129-30 (9th Cir. 1991) (affirming *Frye* as the appropriate standard by which to judge expert witnesses). The *Frye* standard, however, was ultimately replaced by the *Daubert* standard articulated in *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579 (1993).

36. 526 U.S. 137 (1999).

37. *Id.* at 151.

38. *Id.*

39. *Id.*

out in *Daubert-Kumho* is, therefore, intended to enhance the precision of the trial court's determination of good and bad evidence – a test to decipher reliable from unreliable expert opinion testimony and ensure each party's ability to present a complete story of their respective cases consistent with the requirement of the Federal Rules of Evidence that only relevant and reliable evidence be admitted.⁴⁰

Procedurally, latent fingerprint identification evidence is introduced exclusively through expert witness opinion testimony. Expert witnesses help to educate jurors by explaining complex issues, thus enabling jurors to fully understand the evidence in order to determine its proper meaning and appropriate weight. Expert witnesses are, consequently, essential because they allow parties to present a more “complete story” of their case to the jury.

Due process requires that a defendant be allowed to present his defense, and intertwined within the right to defend oneself is the ability to properly explain, as well as contradict, complicated evidence to the jury.⁴¹ As part of the adversarial process, parties present relevant hard science⁴² and even social science evidence⁴³ that supports their particular theories of the case. Both parties⁴⁴ are entitled to fairly and completely present their cases, including all relevant theories; this right is, however, limited by the Federal Rules of Evidence.⁴⁵ Fingerprint identification evidence is one example of where law meets science. In the criminal law context, due process and the Federal Rules of Evidence require a certain level of

40. See generally FED. R. EVID. 401 & 402.

41. See generally U.S. CONST. amends. V & VI.

42. For example, in murder cases a medical doctor will testify as an expert witness regarding the coroner's report and give medical evidence on the cause of death of the victim.

43. For example, in some domestic violence cases, expert witnesses in battered women's syndrome testify regarding “the cycle of violence” and the battered woman's as well as the abuser's mental state. See generally Alana Bowman, *A Matter Of Justice: Overcoming Juror Bias In Prosecutions Of Batterers Through Expert Witness Testimony Of The Common Experiences Of Battered Women*, 2 S. Cal. Rev. L. & Women's Studies 219, 237 (1992).

44. Although much attention is focused on the rights of the accused and his or her right to a fair trial, the prosecution is the party that carries the burden of proof and also has a right to a fair trial, including a right to fully present its evidence. See generally U.S. CONST. amend. VI; See also *Singer v. United States*, 380 U.S. 24, 36 (1965) (holding that the prosecution has an interest in producing a just result). See also ABA STANDARDS OF CRIMINAL JUSTICE 3-1.2(c) (3d ed. 1993) (“The duty of the prosecutor is to seek justice, not merely to convict.”).

45. The evidentiary analysis contained in this Article is focused on the Federal Rules of Evidence and federal case law which interprets them, i.e., FRE Rule 702 vis-à-vis *Daubert* and *Kumho Tire*. Although many state courts follow the Federal Rules of Evidence, they are not required to, and some states have unique departures from the rules in specific areas. This Article is not intended to comment on state-specific evidence rules, particularly those states that follow the *Frye* standard for expert witnesses.

scientific validity before a fingerprint examiner's expert opinion and conclusion regarding identity is deemed properly admissible.

Expert witnesses are unique witnesses because they are permitted to testify about both fact and opinion. Opinion evidence is such a powerful tool that courts must make sure that it is not abused by either party. The Federal Rules of Evidence limit almost all other witnesses to factual testimony and preclude their personal opinions.⁴⁶ The reasoning behind the limitation of opinion evidence is the concern for reliability – opinions are inherently unreliable because they are subjective and not necessarily based upon any objective facts that can be tested, checked, or appropriately rebutted through cross-examination.

The purpose behind the evidentiary rules is to ensure that only *reliable* evidence is considered by the jury. Thus, in order to protect the fairness of the trial proceedings and ensure the soundness of the ultimate verdict,⁴⁷ the trial court must uniformly exclude all unreliable evidence. Examining the proffered expert's opinion under the *Daubert-Kumho* standard⁴⁸ is part of the qualifying process.

Expert witnesses testify based upon their specialized knowledge within a given field of expertise. Fingerprint identification is technical and complicated forensic evidence, and it would be meaningless without the knowledge and expertise of an expert witness to assist the jury. Latent fingerprint examiners are vital expert witnesses because they not only perform scientific analysis on the evidence, but they also explain to the jury the meaning of the analysis conducted. Nevertheless, the basis of their opinions must be supported by reliable factual data. It is the reliability of the factual basis that makes an expert's opinions more reliable than lay opinions.

In the fingerprint context, for example, the importance of the expert witness lies not in his or her testimony that a latent fingerprint was found on the murder weapon, because that print could have been left by anyone – such as the gun dealer who legitimately sold it, the innocent citizen who found it and called the police, or even the crime scene investigator who recovered it. The significant part of an expert's testimony is his or her opinion as to whether the latent fingerprint found on the

46. See FED. R. EVID. 701 (“Opinion Testimony by Lay Witnesses. If the witness is not testifying as an expert, the witness’ testimony in the form of opinions or inferences is limited to those opinions or inferences which are (a) rationally based on the perception of the witness, and (b) helpful to a clear understanding of the witness’ testimony or the determination of a fact in issue, and (c) not based on scientific, technical, or other specialized knowledge within the scope of [FRE] Rule 702.”).

47. A verdict from a jury that was allowed to consider unreliable evidence would be unavoidably tainted.

48. See *infra* Section IV.

murder weapon *matches* the accused's known fingerprints. Therefore, from the viewpoint of testing the reliability of opinion testimony, it is even more critical to ask how scientifically valid is the factual basis that leads the fingerprint examiner to conclude that there is a "match"? Without underlying scientific validity, the ultimate opinion lacks legal reliability and must be excluded.

Although some argue that excluding *any* relevant evidence diminishes the fairness of the process, not all relevant evidence is legally admissible evidence under the Federal Rules of Evidence and supporting case law. Admissibility of evidence is a two-step process that examines both the *relevance* and *reliability* of the proffer.⁴⁹ Notwithstanding this clear rule, some evidence is routinely deemed admissible without questioning as to its reliability. In this vein, fingerprints have become universally accepted as trustworthy and reliable without rigorous evidentiary analysis. In fact, judges and juries have been relying on fingerprint evidence for nearly one hundred years.⁵⁰

Expert testimony can be used in court in two ways: either as adjudicative fact⁵¹ or as framework evidence.⁵² The more persuasive of the two is adjudicative fact testimony, in which the expert is permitted to offer his or her expert opinion of how the science affects the facts – essentially an adversarial conclusion to the jury on a material fact. An example of adjudicative fact testimony is the testimony of a fingerprint examiner who is allowed to testify regarding his expert opinion that the latent prints found on the murder weapon “conclusively match” the accused's known prints. In other words, the expert is applying his specialized knowledge to the specific facts at issue in one particular case and making a conclusion about those specific facts.

49. See FED. R. EVID. 104.

50. *Plaza II*, 188 F. Supp. 2d at 554. See also Epstein, *supra* note 17, at 615-17. The first cases wherein fingerprint evidence was used occurred in 1911, 1914, and 1915. Epstein notes that these courts did not articulate a clear basis or standard for the admission of fingerprint evidence. See *People v. Jennings*, 96 N.E. 1077 (Ill. 1911); *State v. Cerciello*, 90 A. 1112 (N.J. 1914); *People v. Roach*, 109 N.E. 618 (N.Y. 1915).

51. JOHN MONAHAN & LAURENS WALKER, *SOCIAL SCIENCE IN LAW: CASES AND MATERIALS* 93 (2002). “Adjudicative facts, in other words, are facts that apply only to the particular parties before the court. They are used to determine (or ‘adjudicate’) what happened in a specific case, and not for some larger purpose, such as to argue that a law should be changed. What Davis called an adjudicative fact has been referred to by other commentators, e.g., T. MARVELL, *APPELLATE COURTS AND LAWYERS* (1978), as a ‘case fact,’ and by one court as ‘a plain, garden-variety fact.’ *Bowling v. Dept. of Ins.*, 394 So.2d 165, 174 (Fla. Dist. Ct. App. 1981)” (citing Davis, *An Approach To Problems Of Evidence In The Administrative Process*, 55 HARV. L. REV. 362, 402 (1942) (“When an agency [or court] finds facts concerning immediate parties – what the parties did, what the circumstances were, what the background conditions were – the agency [or court] is performing an adjudicative function, and the facts may conveniently be called adjudicative facts.”)).

52. Monahan & Walker, *supra* note 51, at 361-63.

After hearing the expert's conclusion, the jury is asked to decide the guilt or innocence of the accused. In a criminal jury trial in which the prosecution presents positive fingerprint identification evidence, wherein the fingerprint expert opines that the latents match the accused, the jury would have to wholly reject the expert's conclusive opinion in order to find the defendant not guilty of the charges. Since it is unlikely that jurors will reject fingerprint evidence, adjudicative fact is, consequently, the most persuasive use of expert testimony and the type prosecutors try to employ whenever possible.

In contrast, framework testimony, while helpful to explain the evidence, is not particularly adversarial or persuasive. It is much less persuasive for the expert to simply explain what fingerprints are, how a latent fingerprint is formed, and how a crime scene analyst collects latent prints. Although it is helpful to the jurors and gives them a framework from which to understand the crime scene and all the supporting evidence, it is not nearly as powerful as testimony that articulates a conclusive identification. In order to give an opinion in the form of an adjudicative fact, however, there must be a showing that the science behind the opinion is valid and meets the *Daubert-Kumho* standard.⁵³ Therefore, the true debate remains whether forensic science is science, such that the methodology used by latent fingerprint examiners is scientifically valid and legally reliable enough to admit a latent fingerprint expert's conclusive findings of identity into evidence at trial.

C. The First Notable Defense Challenge to Fingerprint Identification Evidence

In January 2002, Judge Pollak, a federal district court judge in Philadelphia, ruled that an expert fingerprint analyst's opinion was inadmissible because fingerprint identification evidence did not meet the *Daubert-Kumho* standard for reliability.⁵⁴ Judge Pollak, former Dean of Yale Law School, is an extremely well respected jurist and his ground-

53. *Plaza I* and *Plaza II* are examples of the difference between adjudicative fact and framework expert testimony. Although, in *Plaza I*, Judge Pollak ruled in favor of the defense's challenge to exclude the expert's opinion testimony, Judge Pollak never ruled that the fingerprint examiner could not testify at all, even though that is what some news headlines reported. The limitation in *Plaza I* was that the expert could only testify to framework evidence and not give an opinion regarding whether the print was a conclusive match. In order for an opinion regarding conclusive identification to be proper, the basis for the opinion must have scientific validity as defined by the *Daubert-Kumho*. However, in *Plaza II*, Judge Pollak allowed the expert fingerprint examiner to testify to adjudicative facts – i.e., the examiner's specific opinion regarding whether defendant Plaza's rolled prints matched the latent prints found at the crime scene was deemed admissible.

54. See generally *Plaza I*, 179 F. Supp. 2d 492.

breaking opinion was not only a victory for the defense bar but was also newsworthy throughout the legal community. In March 2002, on a motion to reconsider, Judge Pollak however overruled himself and allowed both the physical fingerprint evidence collected at the crime scene as well as the latent print examiner's opinion regarding the identity of the maker of those prints to be admitted into evidence at trial.⁵⁵

The value of Judge Pollak's ruling in *Plaza I* is in his application of the *Daubert-Kumho* test. Judge Pollak thoroughly applied the *Daubert* factors as they were intended by the United States Supreme Court.⁵⁶ Most significantly, Judge Pollak's analysis of the scientific validity of fingerprints turned conventional thinking on its head, as he systematically pointed out the weakness of the scientific backbone supporting a fingerprint examiner's conclusions regarding identity. Even more surprising is the fact that judges had never seriously questioned the admissibility of fingerprint evidence prior to Judge Pollak's notable opinions.⁵⁷

In his analysis, Judge Pollak approached the evidentiary challenge of fingerprints with the idea that no evidence is sacrosanct and that all evidence must be tested by the same procedural rules.⁵⁸ Accordingly, Judge Pollak applied the requisite *Daubert-Kumho* standard to fingerprint evidence with the same vigor that was applied to cancer and engineering experts in the landmark cases that created the standard.⁵⁹ *Plaza I* and *Plaza II* address the main sticking points regarding fingerprint identification evidence, which are: (1) the unquestioned reliability that has been artificially placed upon fingerprint evidence and (2) the question of whether, in fact, forensic science is science at all.

The *Daubert-Kumho* standard has altered the query that judges

55. *Plaza II*, 188 F. Supp. 2d 549 at 576.

56. *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579 (1993); *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999).

57. Post-*Daubert-Kumho*, the criminal defense bar has sought to challenge fingerprint evidence in approximately thirty-six cases. However, *Plaza I* is the first case in which the defense challenge was even partially successful. Previous federal courts, like the one in *United States v. Havvard*, 117 F. Supp. 2d 848 (S.D. Ind. 2000), held that fingerprint evidence met the *Daubert-Kumho* requirements and described fingerprint evidence as "the very archetype of reliable expert testimony. . . ." *Id.* at 855. See generally Richard Friedman et al., *Expert Testimony on Fingerprints: An Internet Exchange*, 43 JURIMETRICS J. 91 (2002); Paul Giannelli, *Fingerprints Challenged!*, 17-SPG CRIM. JUST. 33 (2002).

58. *Plaza I*, 179 F. Supp. 2d at 514.

59. In both *Daubert* and *Kumho Tire*, the expert witnesses were excluded by the court. See *Daubert v. Merrell Dow Pharms., Inc.*, 43 F.3d 1311, 1316 (9th Cir. 1995) *reh'g en banc denied*, (May 3, 1995)(Kozinski, J.) (ultimately rejecting the plaintiff's expert opinion that Bendictin causes cancer based on the lack of scientific validity of the research done on mice and the fact that the research was done for litigation); see also *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999) (affirming that the trial court properly excluded tire failure analyst's expert testimony that a particular tire failed due to manufacturing or design defect).

must make for all experts, with no exception for fingerprint identification experts. Judges must now inquire as to the forensic methodology used to test the evidence and the rate of error associated with the specific testing methods. Under the *Daubert-Kumho* standard even the venerable traditional evidence, like fingerprints, can be legitimately questioned and can conceivably fail for lack of validity.

It must be reiterated that under Judge Pollak's ultimate holding in *Plaza II* FBI-analyzed fingerprints were admitted and deemed reliable.⁶⁰ Thus, currently there is no binding precedent for the proposition that fingerprint evidence must be excluded or rejected as unreliable. Fingerprint evidence, however, no longer rests on the bedrock on which it once resided. The weakness in the "science" has been exposed⁶¹ and the criminal defense bar will continue to challenge fingerprints and other traditional forms of forensic evidence.⁶² Some evidence scholars predict that it is only a matter of time before fingerprint evidence will be excluded for lack of scientific validity.⁶³ As of the writing of this Article, no court has yet felt compelled to exclude fingerprint identification evidence from being used in criminal jury trials.⁶⁴

60. On rehearing, Judge Pollak ruled there was sufficient reliability only with respect to the FBI-analyzed prints. *Plaza II*, 188 F. Supp. 2d at 575. Moreover, on appeal the related case involving Defendant Mitchell found the admission of fingerprint evidence and the corresponding expert testimony properly admitted. See generally *United States v. Mitchell*, 365 F.3d 215 (3d Cir. 2004).

61. Not only did Judge Pollak's opinions receive national news attention, an exposé was aired on the television program *60 Minutes* regarding the issues that fingerprint evidence presents and specifically the lack of empirical testing that has been done to verify the accuracy of the methodology and the examiners.

62. See Timothy P. O'Neill, *Fingering What's Wrong With Prints*, CHICAGO DAILY LAW BULLETIN, September 16, 2002.

63. See *id.* "One [fingerprint identification] expert, David Stoney, has declared: 'There is no justification for fingerprint identification based on conventional science: no theoretical model, statistics, or an empirical validation process.' [Professor David Faigman] was quoted stating that: 'Within the next year . . . some judge somewhere in the country will write an opinion excluding fingerprinting It's inevitable. The research is just too thin to let it in.'" In order to rescue fingerprints from the doomed fate of inadmissibility, it is important that further studies be conducted to accurately assess the error rates, and that the forensic community adjust its ideology to detect and acknowledge when mistakes are truly made.

64. Instead, several federal circuit appeals courts have affirmed the admissibility of fingerprint identification evidence and latent fingerprint expert's testimony. See *United States v. Mitchell*, 365 F.3d 215 (3d Cir. 2004), *United States v. Crisp*, 324 F.3d 261 (4th Cir. 2003), *United States v. Hernandez*, 299 F.3d 984 (8th Cir. 2002), *United States v. Turner*, 285 F.3d 909 (3d Cir. 2002), *United States v. Havvard*, 260 F.3d 597 (7th Cir. 2001), *United States v. Sherwood*, 98 F.3d 402 (9th Cir. 1996).

III. The Shocking Reality of Fingerprint Error: A Murder Case from Scotland Exposes How Wrong Fingerprint Identification Evidence Can Be

Scottish Detective Shirley McKie learned from her personal experience that fingerprints can lie; or more accurately stated, fingerprint examiners can make mistakes and their expert opinions can be wrong. Detective McKie's case is an example of fingerprint examiner error occurring in the most serious of all crimes, a murder case. The case involved the murder of an elderly woman in her own home, and the allegation was that she was stabbed to death with a pair of sewing scissors by her handyman, David Asbury.

As part of the criminal investigation, crime scene analysts collected all the routine evidence: latent fingerprints, blood, hair, and fibers. Unexpectedly, however, one of the latent prints found in the victim's house, specifically on the bathroom door next to the victim's body, matched homicide Detective McKie's left thumb. Since it is routine to find police officers' fingerprints at crime scenes because of their investigation duties, finding a homicide detective's print, was, in itself, not significant in this case. Nor was the problem that Detective McKie was mistakenly implicated in a murder plot due to where her print was found; nobody ever accused Detective McKie of being involved with the murder. The problem was that Detective McKie had never been to the crime scene or inside the victim's house at all, and she was adamant that it was not her thumbprint.⁶⁵ Her continued insistence on this point upset her colleagues as well as the prosecutors who ultimately charged her with perjury, alleging that she lied at trial when she testified for the defense stating that she had never been inside the victim's house where her left thumbprint was "found."⁶⁶

65. *Frontline Scotland: Finger of Suspicion* (BBC television broadcast, Jan. 22, 2000) (transcript at <http://news.bbc.co.uk/1/hi/scotland/605129.stm>) [hereinafter *Frontline January 2000*] ("The pressure on [Detective McKie] to change her story intensified. She was visited at home by a colleague bearing gifts. [The colleague] was there [at Detective McKie's house] [for] three hours . . . not tell[ing] me to lie, but say[ing]: 'Look, Shirley, this is serious, and if you're not happy working where you are where would you like to work?', and we will just say you were basically off your head.' The visit from the colleague only made Detective McKie more determined because [her department] was not only calling her a liar but also crazy.").

66. *Id.* (Detective McKie was not only charged with the crime, but she was also arrested like any common criminal. This is how Detective McKie described it: ". . . I opened the door and there was a detective chief superintendent and two female detectives standing outside. I was being arrested for perjury, and I was just in an absolute daze. I went to the toilet. The superintendent told one of the female officers to go with me. So she followed me into the toilet [and] watched me. . . . They gave me an intimate body search . . . there was no point in that, they watched me get dressed, what did they think that I had put in there since I'd been watched getting dressed, it was just so unnecessary. But, of

Fingerprint identification evidence was seminal in the prosecution's case against handyman David Asbury. In addition to the "controversial" thumbprint of Detective McKie, the case also involved two additional inculpatory fingerprints: one print was the accused's, David Asbury's, found on an unopened Christmas gift inside the victim's house; and one print was the victim's, found on a biscuit (or cookie) tin containing £800 recovered in Asbury's bedroom.⁶⁷ Based on the money found in the tin, the prosecution developed a theory that robbery was the motive for the murder. Together, these two prints linked Asbury to the murder, and he was convicted.⁶⁸

The jury relied on the accuracy of the incriminating prints to support the conviction; however, the same Scottish Criminal Records Office (SCRO) latent print examiners that had analyzed and positively identified the key prints of Asbury and the murder victim had also misidentified Detective McKie's left thumb. Yet, it was a misidentification that the SCRO was unwilling to admit.⁶⁹ Furthermore, it was a discrepancy in the evidence that the jury was willing to ignore; or at a minimum, it did not stand in the way of the jury's unanimous verdict of guilt. This result underscores the power of fingerprint evidence upon jurors and the reinforcement of the myth that fingerprint identification evidence is infallible. Consistent with conventional wisdom at the time, these jurors

course . . . they'd been told to do it.").

67. *Frontline Scotland: False Impression* (BBC television broadcast, May, 16, 2000) (transcript available at <http://news.bbc.co.uk/1/hi/scotland/749442.stm>)[hereinafter *Frontline May 2000*] (Notwithstanding the prosecution's fingerprint evidence and robbery theory, David Asbury had an explanation. His mother Amelia Crisp told Frontline: "[The incriminating biscuit tin] was David's tin and he'd had it three years. It was in his bedroom for three years. We knew he couldn't possibly have taken the tin out of somebody else's house, so there could not possibly be anybody else's print on it. The money was [David's too]. David worked . . . and he saved money over that period of four years. . . . He'd drawn the money out the bank, he was thinking about buying a car." Further, Asbury did not dispute that the fingerprint on the Christmas gift was not his, but instead explained that he must have had it "when he stopped at [the victim's house] to use the phone when his car broke down a few days before the murder.").

68. *Frontline January 2000*, *supra* note 65. (Notwithstanding Detective McKie's testimony that discredited the accuracy of the forensic evidence, "[i]n the end the controversy over the rogue fingerprint made no difference to the outcome of the murder trial. . . . David Asbury was sentenced to life imprisonment.").

69. *Frontline May 2000*, *supra* note 67. (Even after Detective McKie was acquitted of the perjury charges based on the testimony of two American fingerprint experts, "the SCRO still refused to admit there was anything wrong with their identification. The bureau's head, Harry Bell, even wrote in a memo after McKie's trial that he was satisfied with the integrity of the fingerprint experts from the SCRO." SCRO maintained the accuracy of its positive identification of McKie's print, even though all the Scottish police officers who were at the murder scene were interviewed and none were able to confirm seeing Detective McKie in the victim's house. Frontline conducted its own independent study and "asked five leading experts to review the evidence [and] their response[s] were unequivocal – the SCRO had got[ten] it wrong.").

believed that fingerprints “don’t lie,” irrespective of Detective McKie’s testimony.⁷⁰

Additionally, as far as the Scottish prosecutors were concerned, Detective McKie had lied about not going to the victim’s house, and in so doing, questioned the reliability of the strongest piece of criminal evidence there is – fingerprint identification evidence. This was a deed, in their opinion, that could not go unpunished. Therefore, after the trial and conviction of David Asbury, Detective McKie was criminally charged with perjury. In order for Detective McKie to clear her name and defend against the perjury charge, she had to investigate and build her defense case. On her own, McKie searched for forensic experts who would examine her case. On the Internet she learned of Pat Wertheim and Allan Bayle. Pat Wertheim is an American fingerprint expert with twenty years experience. Allan Bayle is the United Kingdom’s top fingerprint expert, and at the time was a senior forensic official at New Scotland Yard with twenty-five years of experience.⁷¹

When Pat Wertheim examined the latent fingerprint evidence, it was clear to him that it did not match Detective McKie. However, he was quite stunned by the evidence as well as the prior analysis by the SCRO. He explained his surprise to BBC’s *Frontline Scotland*:

[My conclusion was] shocking really. Because here is a mark, [a latent fingerprint], that was not only identified but had been verified by three other experts in the SCRO, and allegedly verified by one other expert outside the SCRO. And to look at this and think that all these people were wrong left me extremely disoriented.⁷²

70. See discussion *infra* Section V (presenting whether jurors should be instructed to consider the possibility, however slight, that an error in fingerprint identification can occur).

71. Allan Bayle was also one of the expert fingerprint analysts who helped convict the principal Libyan suspects in the 1988 bombing of Pan Am Flight 103, over Lockerbie, Scotland. See Specter, *supra* note 1 at 96; Allan Bayle was also a key defense witness called to testify before Judge Pollak in *Plaza II*. See *United States v. Llera Plaza (Plaza II)*, 188 F. Supp. 2d 549, 554 (E.D. Pa. Mar. 13, 2002), *vacating United States v. Llera Plaza (Plaza I)*, 179 F. Supp. 2d 492 (E.D. Pa. Jan. 7, 2002).

72. *Frontline January 2000*, *supra* note 65 (Pat Wertheim went on to say in the *Frontline* interview that “any competent expert looking at these two fingerprints would have no trouble whatsoever in reaching the conclusion that the prints could not have been made by the same finger, but had to have been made by different people.”). Another American expert David Grieve analyzed the prints and also concluded that the latent print found at the murder scene did not match Detective McKie’s. Both Wertheim and Grieve testified at McKie’s perjury trial. David Grieve has also written about the competence of fingerprint examiners. See generally David Grieve, *Possession of Truth*, 46 J. FORENSIC IDENT. 521, 524 (1996) (discussing the fact that in the first proficiency test of 156 fingerprint examiners, the results revealed that one in five experts would have misidentified, i.e., “provided damning evidence against the wrong person,” and that only 44% of examiners correctly identified all the fingerprints in the test); see also Collaborative Testing Services, Inc., Forensic Testing Program:

Allan Bayle's review of the prints came to the same conclusion – the latent print did not match McKie's left thumb, and in Bayle's opinion, "it wasn't even a close call."⁷³ Bayle determined that the latent print recovered inside the victim's house was a right forefinger-print, not a left thumbprint. However, the problem remained that, in Bayle's opinion, neither the SCRO nor the prosecution could admit to the misidentification of Detective McKie's print without calling into question the key incriminating prints that supported Asbury's murder conviction.⁷⁴ Based on his findings, Bayle concluded: "I have looked at the McKie case. The mark is not identical. I have shown this mark to many experts in the UK and they have come to the same conclusions."⁷⁵ For his comments about the McKie case, Bayle has been "shunned by colleagues," "threatened with disciplinary action" by his certification board, and ultimately "driven from his job" at New Scotland Yard after twenty-five years of service.⁷⁶

Detective McKie was ultimately acquitted⁷⁷ of perjury in Scotland, after Pat Wertheim testified in her defense. The inherent problem with the fingerprint analysis on Asbury's murder case was not cured by finding Detective McKie's innocent of perjury.⁷⁸ Instead, this result only

Latent Prints Examination, Report No. 9808 (1998)(unpublished report).

73. Specter, *supra* note 1, at 96.

74. *Id.*

75. *Id.*

76. *Id.* Bayle now works as an independent consultant, *see* <http://www.expertwitness.com/form/profile.phtml?uname=BAYLE>.

77. *Frontline January 2000*, *supra* note 65. ("The High Court jury took less than one hour to reach its unanimous verdict. Shirley McKie was not guilty of perjury. The case made legal history. *Never in over 100 years of fingerprint evidence had an identification been overturned in court.*" (Emphasis added)). After the acquittal, Detective McKie's father, Iain McKie, "wrote to the Crown Office to ask if there would now be a review of all the work of the four experts in Shirley's case. The reply said there would not." *Id.*

78. Full examination of the fingerprint evidence in the McKie case revealed that the SCRO was wrong about Detective McKie's fingerprint found at the murder scene, and was also wrong about the main inculpatory print that linked David Asbury to the murder. After Detective McKie's misidentification was revealed, eventually the incriminating fingerprints that supported the murder conviction were re-examined. It was discovered that the fingerprint found on the biscuit tin in Asbury's bedroom did not match the victim. The evidence presented against David Asbury at trial was erroneous. David Asbury had always maintained his innocence and his family supported him. *See Frontline January 2000*, *supra* note 65; *Frontline May 2000*, *supra* note 67. On May 2, 2002, a letter was sent to the Scottish Minister of Justice, Mr. Jim Wallace, from Mr. Michael Russell, a representative of the latent fingerprint community, supported by 130 fingerprint experts from across the world, stating: "It can be easily demonstrated and proven that the SCRO experts were clearly wrong in identifying the mark as Shirley McKie's and this makes the SCRO defense that it is a matter of opinion false and untenable. . . . [Furthermore, these] experts have also viewed the disputed SCRO 'identification' in the David Asbury case and believe it to be equally wrong." For the full letter, *see* Letter to Mr. Jim Wallace from Mr. Michael Russell, McKie Page, Complete Latent Print Examination, *available at* <http://www.clpex.com/Articles/McKie/Russelletter.htm>; for additional information about the fingerprint community's response to the McKie case, *see* McKie Page, Complete Latent Print Examination, *available at* <http://www.clpex.com/Articles/McKie/Russelletter.htm>.

strengthened the argument that fingerprint identification error had occurred in the case and had also possibly helped convict the wrong man of murder.

The story of the misidentification of Detective McKie has an atypical result when compared with the typical scenario of an accused.⁷⁹ Certainly, Detective McKie was wrongly placed at the scene of the murder, but because she was a respected police detective, nobody even suspected her of being the killer. Luckily for her, she only lost her job, her career, and her good name.⁸⁰ The average citizen whose fingerprint links them to a murder scene would likely lose liberty, and possibly life, if indicted on capital murder charges.⁸¹ Remember, David Asbury's murder conviction was based at least in part upon allegedly erroneous fingerprint identification evidence. Even though the reliability of the SCRO's fingerprint analysis was called into question during the trial, the incriminating prints were never excluded from evidence, and the SCRO's expert was permitted to opine that the latent prints matched both the accused and the victim.⁸²

No one can say, with any certainty, whether fingerprint identification evidence is always truly accurate. The point of including this Scottish case is to exemplify the evidentiary crisis that exists with fingerprint evidence.⁸³ It begs the question of whether the accuracy of

79. See *supra* note 10. (Richard Jackson & Stephan Cowens are recent examples of "average joe" citizens being wrongfully convicted based on erroneous fingerprint evidence. Mr. Jackson spent two years and Mr. Cowens spent six years in prison prior to their ultimate exonerations.)

80. *Frontline January 2000, supra* note 65. (Detective McKie told *Frontline*: "Still people think that I was lucky, and that hurts so much, because I wasn't lucky. I told the truth. I got found not guilty, and someone else made a mistake, and they've got to take responsibility for that. But they're not, and that is what is frustrating me more than anything. And that's probably why people still think I was lucky, because nothing has changed.")

81. *Frontline May 2000, supra* note 67. ("[M]ost of the evidence against David Asbury was circumstantial. So the print on the tin was to prove crucial. Asbury could offer no explanation as to how [the victim's] fingerprint came to be on a tin he claim belonged to him. And because the tin contained so much money it also suggested that the motive for the murder was robbery.")

82. Note, however, that at the request of David Asbury's attorney, both Wertheim and Bayle reviewed the incriminating prints: 1) the latent print on the Christmas gift tag compared to Asbury's known prints, and 2) the latent print on the biscuit tin compared to the victim's known prints. Regarding the gift tag, both agreed the latent print matched Asbury. However, the latent print on the biscuit tin did not match the victim. This discovery contradicted the SCRO's finding but corroborated Asbury's consistent urging that the tin and the money was his and had never left his bedroom. *Id.* Due to the appellate judge's concern with the reliability of the fingerprint evidence, Mr. Asbury was released from custody pending appeal. Specter, *supra* note 1, at 96; *Frontline May 2000, supra* note 67. In August 2002, after having spent a total of three and a half years in prison, Mr. Asbury's murder conviction was overturned and his sentenced quashed by The Crown Court. Mr. Asbury commented: "I want the Scottish Criminal Records Office to admit it made a mistake." BBC News, *Murder Conviction Quashed*, August 15, 2002, available at <http://www.innocent.org.uk/cases/davidasbury/>.

83. *Id.* (John Scott of the Scottish Human Rights Centre stated that "it was alarming in relation to [Detective Shirley McKie's] position and her fingerprint. . . . It's difficult to see how this can be anything other than the most serious problem that has ever been encountered with fingerprint

fingerprint identification evidence is a factual truth or merely an urban legend – a legend that has only been demystified by one misidentified Scottish detective.⁸⁴ Although one may compartmentalize this problem as merely an evidentiary dilemma for the criminal litigator, it is more accurately described as an issue threatening the public confidence of the jury system and the reliability of modern criminal law. Indeed, it poses a serious menace to justice.⁸⁵

IV. Applying the *Daubert-Kumho* Standard to Fingerprint Experts

A. The *Daubert-Kumho* Standard Unwrapped

The following discussion of the standard applied to expert opinion testimony is aimed at illuminating three salient points: 1) the *Daubert* court's articulated standard for how expert opinion testimony will be judged, 2) the *Daubert* court's detailed reiteration of the judge's role as gatekeeper of relevant and reliable evidence, and 3) the *Kumho Tire* court's extension of the *Daubert* factors to all expert witnesses including non-scientists, such as latent fingerprint examiners.

Prior to 1993, there was a debate regarding the prevailing authority governing the admission of expert testimony: whether the *Frye* test⁸⁶ or Federal Rule of Evidence 702 was the primary authority. The distinction between the two standards was that the *Frye* test only allowed for the testimony of experts whose opinions were “generally accepted in the scientific discipline,”⁸⁷ whereas Federal Rule of Evidence 702 allowed for

evidence.”).

84. *Id.* (quoting Detective McKie: “And they, [the Scottish Criminal Records Office] were prepared to do that to me, so I mean, who else? Who else is in jail just now because of fingerprint evidence.”).

85. Detective McKie's situation is extremely unique because she was never charged with the underlying murder, notwithstanding that her prints were found in the room where the murder took place and there was no benign explanation for the print being there. No explanation was given other than McKie's assertion that it was a misidentification; however, law enforcement never acknowledged a forensic mistake. It is truly a bizarre scenario. What did law enforcement think McKie's motivation to lie was, if she was not involved in the murder, and everyone can agree that she was not? Why would she go to such great lengths to say she was misidentified if she truly was not? If law enforcement will not believe the word of its own detective, or ever admit human error, no accused should believe the axiom “innocent until proven guilty;” instead it is more accurate to believe “guilty notwithstanding proof.” I wonder how David Asbury would describe it. In a BBC News report Mr. Asbury was described as bitter about his experience and stated: “I cannot describe it in words. It is beyond description.” See BBC News, *supra* note 82. *Cf.* *State v. Caldwell*, 322 N.W. 2d 574, 580 (Minn. 1982) (on appeal, defendant's conviction was reversed due to erroneous identification made by both prosecution and defense experts).

86. *Frye*, 293 F. 1013 (D.C. 1923).

87. *Id.* at 1047; See also Monahan and Walker, *supra* note 52, at 27.

the admission of expert testimony that “assisted the trier of fact.”⁸⁸ The *Frye* test was adopted in 1923; however, the dispute arose in 1975 once the Federal Rules of Evidence were adopted.

The dispute, specifically, was whether Federal Rule of Evidence 702 was meant to supplement or replace the older *Frye* test. Scholars opined about the two rules and many journal articles were published on the subject; however, the question remained unsettled until the United States Supreme Court decided *Daubert v. Merrell Dow Pharmaceuticals, Inc.*⁸⁹ The *Daubert* decision made clear that Federal Rule of Evidence 702 replaces *Frye*. *Daubert* thus articulated a new standard to apply to expert testimony, which resulted in Federal Rule of Evidence 702 being amended in 2000 to properly reflect the *Daubert* holding.⁹⁰ Consistent with the focus of *Daubert*, the amended Federal Rule of Evidence 702 addresses the concern for validity of the science behind the expert’s opinion.⁹¹

The *Daubert* court dealt exclusively with scientific experts and left open the question of how other expert witnesses should be qualified. The Supreme Court answered that question in *Kumho Tire Co. v. Carmichael*,⁹² which extended the *Daubert* test to all expert witnesses, not just scientists. The *Daubert-Kumho* standard presents a new approach to examining expert opinion testimony, and an authentic application of this approach is still

88. FED. R. EVID. 702.

89. 509 U.S. 579 (1993).

90. The old FED. R. EVID. 702 Testimony by Experts stated: “If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.” This version was in force when the cases of *Daubert*, *General Elec. Co. v. Joiner*, 522 U.S. 136 (1997), and *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999) were decided. The new FED. R. EVID. 702 Testimony for Experts (as amended in 2000) states: “If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.” (“[Committee Note:] Rule 702 has been amended in response to *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), and to the many cases applying *Daubert*, including *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999). In *Daubert* the Court charged trial judges with the responsibility of acting as gatekeepers to exclude unreliable expert testimony, and the Court in *Kumho* clarified that this gatekeeper function applies to all expert testimony, not just testimony based on science. [citation omitted] The amendment affirms the trial court’s role as gatekeeper and provides some general standards that the trial court must use to assess the reliability and helpfulness of proffered expert testimony. Consistently with *Kumho*, the Rule as amended provides that all types of expert testimony present questions of admissibility for the trial court in deciding whether the evidence is reliable and helpful.”)

91. There is scholarly debate regarding whether the current version of FRE Rule 702 does accurately reflect the *Daubert-Kumho* standard.

92. 526 U.S. 137 (1999).

evolving as challenges are raised against traditional forms of criminal evidence, such as fingerprint identification evidence.⁹³

In *Daubert*, the United States Supreme Court articulated an approach for trial judges to follow when determining whether expert opinion testimony should be admitted. The approach can be described as a three-step rule. Step one is essentially a relevance inquiry. The court must determine whether the expert witness is proposing to testify to (1) scientific knowledge (2) that will assist the trier of fact to understand and determine a fact in issue.⁹⁴ This requires a preliminary assessment of whether the opinion testimony is scientifically valid and is legally relevant to the facts in issue.

Step two determines scientific validity, i.e., legal reliability. The primary factors weighed are: (1) *scientific methodology*, (2) *peer review*, (3) *rate of error* and (4) *general acceptance*. The scientific methodology factor asks whether the science can be or has been tested, or whether the hypothesis has been falsified.⁹⁵ The peer review or publication factor involves an inquiry into whether the work has been submitted to the scrutiny of the scientific community. Peer review scrutiny is a component of testing “good science” in part because it increases the likelihood that substantive flaws in the methodology have been detected. Publication is a relevant factor, but it is not dispositive because in some cases well-grounded but innovative theories will not have been published. Also, theories that have less commercial value may lack publication opportunities. The rate of error factor asks what the potential rate of error is and inquires about the existence and maintenance of standards

93. With regard to fingerprint identification evidence and the expert latent print examiners that proffer this evidence, courts are not consistent in their application of the *Daubert-Kumho* test, and there is no uniform approach to weighing the relevant factors. The bench is consistent and unanimous in its rulings, thus far, that fingerprint identification evidence meets the standard and is admissible as both relevant and reliable in criminal jury trials; see *supra* note 64.

94. See FED. R. EVID. 104.

95. W. PAUL VOGT, *DICTIONARY OF STATISTICS AND METHODOLOGY* 91 (1993) (Falsificationism is “the doctrine, originating with Karl Popper, that we can only refute (‘falsify’) theories; we can never confirm them. A good theory is one that we have tried repeatedly, but unsuccessfully, to disprove or falsify.”). Null Hypothesis is “the hypothesis that two or more variables are not related or that two or more statistics (e.g. means for two different groups) are not the same. In accumulating evidence that the null hypothesis is false, the researcher indirectly demonstrates that the variables are related or that the statistics are different. The null hypothesis is the core idea in hypothesis testing.” *id.* at 156. See also *Plaza I*, 179 F. Supp. 2d at 505 (discussing the distinction between adversarial testing and scientific testing). See generally Michael Green, *Expert Witnesses and Sufficiency of Evidence in Toxic Substances Litigation: The Legacy of Agent Orange and Bendectin Litigation*, 86 NW. U. L. REV. 643 (1992); Edward J. Imwinkelried, *Evidence Law Visits Jurassic Park: The Far-Reaching Implication of the Daubert Court’s Recognition of the Uncertainty of the Scientific Enterprise*, 81 IOWA L. REV. 55, 62 (1995); Bert Black et al., *Science and the Law in the Wake of Daubert: A New Search for Scientific Knowledge*, 72 TEX. L. REV. 715, 755-56 (1994).

controlling the technique's operation.⁹⁶ The general acceptance factor is a throwback to *Frye* and explores how well accepted the work is by the scientific community.

Under *Daubert*, as distinct from *Frye*, the relevant scientific community is not strictly defined to a particular degree of acceptance within that community. *Daubert*, unlike *Frye*, does not require literal "general acceptance;" instead, "minority acceptance" is sufficient to satisfy this prong of the test. Additionally, it is important to be mindful that the *Daubert* test is a fluid and flexible test and that no one factor is decisive. The four factors specifically listed are not the only factors the court can consider in assessing scientific validity, and the factors are not necessarily weighed equally or applied in every case. For example, although fingerprint evidence has strong acceptance and may satisfy the general acceptance prong, that fact alone is not enough to satisfy the *Daubert* test for scientific validity. As Judge Pollak wrote in *Plaza I*:

General acceptance by the fingerprint examiner community does not, however, meet the standard set by Rule 702. First, there is the difficulty that fingerprint examiners, while respected professionals, do not constitute a "scientific community" in the *Daubert* sense. Second, the Court cautioned in *Kumho Tire* that general acceptance does not "help show that an expert's testimony is reliable where the discipline itself lacks reliability." The failure of fingerprint identifications fully to satisfy the first three *Daubert* factors militates against heavy reliance on the general acceptance factor. Thus, while fingerprint examinations conducted under the general ACE-V rubric are generally accepted as reliable by fingerprint examiners, this by itself cannot sustain the government's burden in making the case for the admissibility of fingerprint testimony under Federal Rule of Evidence 702.⁹⁷

Step three focuses solely on the principles and methodology, not on the conclusions that they generate. This is a very important step in the analysis

96. When analyzing the scientific validity of fingerprint evidence, the rate of error is typically an issue of great contention. It is problematic because the error rate is currently due to lack of empirical study. However, the rate of error issue poses more complex problems because one may tend to conflate multiple error rates instead of evaluating each distinct error rate and its specific threats to both internal and external validity. For example, the methodology employed by the fingerprint examiner may yield an error rate of zero. (In fact, this is actually what FBI experts purport the error rate to be.) However, the error rate of the latent print examiner may be 50%. But it would not be accurate to simply say that fingerprint evidence could be wrong 50% of the time. This point will be made more clearly in Section IV.C.2, wherein error rates are discussed in more detail and the *Mitchell* experiment is explained.

97. *Plaza I*, 179 F. Supp. 2d at 518 (citing *Kumho Tire*, 526 U.S. at 151).

and the fictional blindness it requires is critical. The expert witness' proffer must be analyzed without concern for the expert's actual conclusions. Therefore, when analyzing whether a fingerprint examiner can testify regarding his or her opinion of the identity of the latent print found on the murder weapon, the judge cannot consider whether the identification will be positive, negative, or inconclusive. The conclusion is immaterial because *Daubert* is a quest for relevant and reliable evidence, not a search for specific conclusions.

Analysis of the reliability disjointed from the conclusion also eliminates, at least in theory, the possibility for unfairness to either party in the litigation. If the science behind fingerprint identification is sound, then both the prosecution and defense can present their respective witnesses and ask their opinions regarding the true identity of relevant latent fingerprint evidence. If the evidence is unreliable, its use will be disallowed for both parties equally.

The *Daubert* factors are not intended to be an exhaustive list of things for the court to consider, and no one factor should be seen as tantamount to the others.⁹⁸ For further guidance, although not binding authority, it is illustrative to examine the additional factors the United States Court of Appeals for the Ninth Circuit,⁹⁹ on remand, considered in its application of the *Daubert* test. The Ninth Circuit focused significant attention on whether the scientific research was *research independent of the litigation*.¹⁰⁰

98. Federal courts interpreting the application of the *Daubert* standard and its flexibility have expanded the list of factors the court should consider to determine reliability of the expert's opinion. The Third Circuit in *In re Paoli R.R. Yard PCB Litigation*, 35 F.3d 717, 742 n.8 (3d Cir. 1994), expanded the list of relevant factors for consideration: "(1) whether a method consists of a testable hypothesis; (2) whether the method has been subject to peer review; (3) the known or potential rate of error; (4) the existence and maintenance of standards controlling the technique's operation; (5) whether the method is generally accepted; (6) the relationship of the technique to methods which have been established to be reliable; (7) the qualifications of the expert witness testifying based on the methodology; and (8) the non-judicial uses to which the method has been put."

99. See *Daubert v. Merrell Dow Pharms., Inc.*, 43 F.3d 1311 (9th Cir. 1995). After the United State Supreme Court articulated the *Daubert* test, it remanded the case back to the Ninth Circuit for that court to reevaluate whether plaintiff's expert was qualified to testify in light of the new *Daubert* test factors.

100. Cf. *Plaza I*, 179 F. Supp. 2d at 507, n.17. In response to the recent post *Daubert* challenges to fingerprint evidence, the National Institute of Justice began soliciting fingerprint research to be conducted. The advertisement was placed under "Areas of Research Required" and read: "statistical validation of individuality in friction ridge analysis," "qualitative/quantitative aspects of friction ridge comparison," and "statistical validation of standard operating procedures for friction ridge (fingerprint) comparison." (citation omitted) The solicitation further stated that the need for this research/testing stemmed from *Daubert*: "All expert testimony must follow the admissibility rules for scientific evidence set forth in recent court cases e.g. *Daubert*. . . . These rules require scientists to address the reliability and validity of the methods used in their analysis. Therefore, the purpose of this solicitation is to address the needs identified in the above NIJ publication and to provide greater scientific

The Ninth Circuit opined that research independent of litigation was objective proof that it comports with good science. An expert is less likely to be biased toward a particular conclusion if the research is independent. Independent research carries its own indicia of reliability because it normally satisfies a variety of standards to attract funding and institutional support.¹⁰¹ The market factors of supply and demand will limit the number of experts conducting independent research in a particular area, thus providing a natural constraint on the parties' ability to "expert shop" for desired conclusions.

In its application of the "independence" factor to the underlying facts of the case, the appeals court further explained the type of evidence that would help to overcome a taint of research done for litigation purposes. "The party proffering the expert must show other objective and verifiable evidence to prove the testimony is based on 'scientifically valid principles.' This can be done by showing peer review or publication and scrutiny of the scientific community."¹⁰² Although the same *Daubert* factors apply to evidence produced solely for litigation, the Ninth Circuit application of the rule teaches the trial judge to apportion the most weight to the scientific methodology and peer review factors and the least weight to the general acceptance factor. On balance, scientific findings independent of pending litigation will more easily survive *Daubert* scrutiny.¹⁰³

Fingerprint identification evidence is weakened by this point. Forensic work is almost exclusively conducted for litigation purposes.¹⁰⁴ Additionally, it is most often done "in-house" by a corresponding law enforcement agency connected to the prosecution.¹⁰⁵ Thus, it is appropriate

foundation for forensic friction ridge (fingerprint) identification."

101. *Daubert*, 43 F.3d at 1317.

102. *Id.* at 1317-18.

103. Another factor the Ninth Circuit considered was whether the research was described in sufficient detail in order for the court to determine if the research was scientifically valid. *See Id.* at 1318.

104. *See generally* Harvard Law Review Association, *Evidence – Fingerprint Experts -- Seventh Circuit Upholds The Reliability Of Expert Testimony Regarding The Source Of A Latent Fingerprint – United States v. Havvard*, 260 F.3d 597 (7th Cir. 2001), 115 HARV. L. REV. 2349, 2351 (2002). This article points out that the *Havvard* court "failed to expose weaknesses in the fingerprint examiner community. . . . Fingerprint expert testimony does not survive application of the *Daubert* factors because the fingerprint examiner community, unlike most other expert communities, has developed exclusively for litigation and does not have a tradition of disinterested self-testing." *Id. Cf. Daubert v. Merrell Dow Pharms., Inc.*, 43 F.3d 1311, 1317 n.5 (The court took exception to latent fingerprint experts. Although their analyses are conducted for the purpose of litigation, the court stated that fingerprint experts should not be penalized as heavily as other experts whose research would not normally be a subject of litigation: "As to such disciplines, the fact that the expert has developed an expertise principally for purposes of litigation will obviously not be a substantial consideration.").

105. FED. R. CRIM. P. 16 is the discovery statute that treats law enforcement and prosecutor's

to place heightened emphasis upon the methodology, testability, peer review scrutiny, and measurable error rates of fingerprint identification experts.¹⁰⁶

In *General Electric Co. v. Joiner*,¹⁰⁷ the United States Supreme Court stated that “abuse of discretion” is the appropriate appellate standard of review by which to evaluate a trial court’s decision to admit or exclude expert testimony after conducting a *Daubert* inquiry. In *Joiner*, the trial judge excluded the expert’s testimony and held that the gap between the scientific data and the expert’s opinion was too great. In other words, there was insufficient reliability that the opinion was supported by valid science.¹⁰⁸ The Court of Appeals reversed the trial court, holding that the trial judge should have admitted the expert testimony because it was legally reliable and the jury could have determined the correctness of the competing expert opinion.¹⁰⁹ The United States Supreme Court reversed the Court of Appeals, holding that the appropriate standard of review is abuse of discretion and that the trial judge, as the gatekeeper, had not abused that discretion.¹¹⁰

The abuse of discretion standard articulated in *Joiner* is significant because it provides little redress against unfavorable trial court rulings. The Ninth Circuit *Daubert* court, on remand, stated that “trial judges may not simply defer to the scientific community, but must make their own determination whether the proffered evidence meets minimum standards of scientific validity.”¹¹¹ Further, because the *Daubert* test is so fluid and depends widely upon the discretion of the individual judge, the potential for inconsistency in admissibility of the same evidence in different courtrooms is a realistic concern for litigants. For standard types of expert testimony, like fingerprint identification, it is problematic that one lone judge can determine for his courtroom that fingerprint identification evidence lacks scientific validity notwithstanding its universal acceptance

office as one entity for the purpose of discovery and possession of evidence. Therefore, the argument that the FBI is a separate agency from the U.S. Attorney’s Office is transparent and ineffective in this context.

106. In this regard, the defense’s argument for exclusion gains the most steam and provides context for Epstein’s assertion that fingerprint analysis is merely an “unfounded creation of the law enforcement examiner.” Epstein, *supra* note 17, at 607. In essence, the defense is seeking exclusion based on bias and lack of integrity, not only of the “scientific” analysis of the evidence, but also based on the inherent prejudice or bias of the expert who conducted the analysis for a self-serving purpose.

107. 522 U.S. 136 (1997).

108. *See id.* It is the responsibility of the moving party to proffer sufficient scientific evidence to the trial judge to support the opinion the expert wants to make before the jury.

109. *See id.*

110. *See id.*

111. *Daubert*, 43 F.3d at 1316. *See also* ROGER C. PARK, TRIAL OBJECTIONS HANDBOOK 2D, §8:6 (2001).

in every other courtroom in the jurisdiction. Therefore, the cost of *Daubert's* flexibility is a lack of certainty of outcome. In the context of criminal cases, the right to present certain relevant evidence should not be a function of which court one haphazardly lands.

The *Daubert-Kumho* standard is more lenient and theoretically should allow more expert testimony into evidence. Although when applying the test to certain evidence that has strong general scientific acceptance but weak external or independent empirical testing, such evidence may still be excluded because general acceptance is only one factor of the test. That is exactly the hurdle that fingerprint evidence is seeking to overcome. In other words, notwithstanding its general acceptance in the forensic community and in the legal community, it still must be established that the methodology is sound and any error rate is known and measurable.

Therefore, although the *Daubert-Kumho* standard was intended to be a more flexible standard by which more science, including innovative and new science, could be admitted, it also works as a stricter rule when applied to old science, like fingerprint analysis, that has never been scientifically validated but instead has been universally accepted by the courts as reliable. Thus, notwithstanding nearly 100 years of unquestioned admissibility, the *Daubert-Kumho* standard creates a new evidentiary quandary for fingerprint evidence whose use pre-dates the American jury system.¹¹² As was made clear by Judge Pollak's opinion in *Plaza I*, however, adversarial testing is not the type of testing to which the *Daubert* court was referring and is an insufficient substitute for rigorous empirical study and scientific testing.¹¹³

Trial practice and evidence scholar Roger Park, therefore, asserts that, "*Daubert* both raises the bar and lowers it."¹¹⁴ *Daubert* properly places the focus on the scientific validity of evidence and diminishes the importance of general acceptance. This shift in focus is extremely significant. Consider Professor David L. Faigman's¹¹⁵ analogy of the acceptance of fingerprints in the law to the use of leeches in medicine:

Leeches were used for centuries. . . . It was especially common for the treatment of pneumonia and it was considered

112. See generally Cole, *supra* note 19, at 96.

113. *Plaza I*, 179 F. Supp. 2d at 504.

114. Park, *supra* note 111, at 8-22.

115. Professor David Faigman, professor of law at the University of California, Hastings College of the Law is an expert legal scholar in evidence and has published many articles on the subject. He is the primary author of the treatise MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY (West Publishing Co. 2002).

an effective therapy. It wasn't till late in the nineteenth century that they did the clinical tests to show that leeches did not help for pneumonia, and they may have actually hurt. Fingerprinting is like that in at least one critical way: it is something we assume works but something we have never properly tested. Until we test our beliefs, we can't say for sure if we have leeches or we have aspirin. . . . One of the things that science teaches us is that you can't know the answers until you ask the questions.¹¹⁶

In this light, the danger of admitting evidence that lacks proven scientific validity is exposed. Professor Faigman's comparison correctly labels the weakness of the forensic science of fingerprint analysis by illustrating why it is not science at all – it has been unwilling to ask the necessary questions and test the hypothesis.¹¹⁷ Michael Specter's article in *The New Yorker*, on the reliability of fingerprint evidence, synthesizes the point that “[s]cientific methodology is based on generating hypotheses and testing them to see if they make sense; in laboratories throughout the world, researchers spend at least as much time trying to disprove a theory as they do trying to prove it. Eventually those ideas that don't prove false are accepted.”¹¹⁸

Fingerprint analysis was developed not as a science; thus, its conclusions have not been scientifically analyzed for validity. Instead, fingerprint identification was developed as a law enforcement tool to keep track of criminal identities,¹¹⁹ and as such has never been subjected to rigorous testing. Christophe Champod, a British fingerprint examiner, criticized his colleagues at an industry conference in Wales in 2001. “[Champod] told the audience that they had only themselves to blame for the state of the field [of fingerprint identification], that for years they had resisted any attempts to carry out large trials [or studies]. . . .”¹²⁰

Regardless of the reason for not conducting the supporting research for fingerprint identification, the lack of empirical study and testing of the processes is a glaring lacuna in the overall methodology of forensic “science.”¹²¹ On balance, it is the *unknown answer* to the question of whether a fingerprint examiner's conclusions are scientifically valid which

116. Specter, *supra* note 1, at 101 (quoting Professor Faigman).

117. Not until the *Mitchell* ruling was the industry concerned with testing its scientific validity. Real scientific research is not contingent upon court rulings, real science is driven by the need to check its own accuracy and falsify its hypothesis. *Plaza I*, 179 F. Supp. 2d at 507.

118. Specter, *supra* note 1, at 101.

119. See generally, Cole, *supra* note 20.

120. Specter, *supra* note 19, at 102.

121. The FBI does require more education and training for its examiners. See *Plaza II*, 188 F. Supp.2d at 555-56 n.2.

causes discord with the *Daubert-Kumho* standard. For example, a known rate of error could be considered by the court and found scientifically reliable. But an unmeasured and unknown rate of error weighs against an expert's opinion being legally reliable.

Daubert's focus on the validity of the science makes the *Daubert-Kumho* standard a drastic shift from *Frye*, since the *Frye* test merely required the relevant scientific community¹²² to agree that the methodology or opinion was generally acceptable. The *Frye* test created a situation in which the forensic community, specifically latent fingerprint examiners, could agree not to test their own methods and still enjoy universal and unquestioned admissibility of their conclusive findings.¹²³

B. *Plaza I & II*: Federal District Court's Application of the *Daubert-Kumho* Standard

Many courts avoid doing a thorough *Daubert* analysis for all expert witnesses, not just latent fingerprint experts. Fingerprint evidence, however, presents an even more blatant example of judicial unwillingness because of the generally held belief that fingerprints are reliable.¹²⁴ Thus, the first reaction of judges to evidentiary challenges to fingerprint identification evidence is instinctively to conclude: "there is nothing here to analyze, motion denied." Many judges rule orally without even having a *Daubert* hearing on the merits of the challenge.

Judge Pollak became the exception to the rule and seriously considered the evidentiary motions to exclude fingerprint evidence in *United States v. Llera Plaza*.¹²⁵ Judge Pollak issued two written opinions on the issue, *Plaza I*¹²⁶ and *Plaza II*.¹²⁷ In *Plaza I*, relying on the transcript

122. *Frye*, 293 F. at 1014.

123. See, e.g., *Moon v. State*, 198 P. 288, 290 (Ariz. 1921) (A 1921 state supreme court acknowledged that the admission of the expert opinion of latent fingerprint examiners was well settled in the United States).

124. See generally *United States v. Sherwood*, 98 F.3d 402, 408 (9th Cir. 1996) (finding that the district court did not err in admitting fingerprint testimony); *United States v. Havvard*, 117 F. Supp. 2d 848, 855 (stating that "latent print identification is the very archetype of reliable expert testimony"), *aff'd* 260 F.3d 597 (7th Cir. 2001) (reviewing the district court's determination de novo and finding that the district court did not err in its consideration of the *Daubert* factors as they apply to fingerprint techniques); *United States v. Cooper*, 91 F. Supp. 2d 79, 82 (D.C. 2000) (declining to hold a pre-trial *Daubert* hearing and finding that fingerprint identification techniques are "well-established principles"); *United States v. Reaux*, 2001 WL 883221 (E.D. La. July 31, 2001) (relying on the Seventh Circuit's opinion in *Havvard* and admitting fingerprint testimony); *United States v. Martinez-Cintrón*, 136 F. Supp. 2d 17 (D.P.R. 2001) (admitting fingerprint examination testimony); *United States v. Joseph*, 2001 WL 515213 (E.D. La. May 14, 2001) (finding that fingerprint analysis is "scientific knowledge").

125. *Plaza I*, 179 F. Supp. 2d 492 (E.D. Pa. Jan. 7, 2002).

126. *Id.*

of the *Mitchell*¹²⁸ hearing, Judge Pollak held that fingerprint examiners could not give their expert opinions regarding the identity of the fingerprints, but they could testify about fingerprints in a more general manner.¹²⁹ Judge Pollak ruled that the testimony of the proffered latent fingerprint expert witnesses would be allowed to:

1) describe how the rolled and latent fingerprints at issue in this case were obtained, 2) identify and place before the jury, the fingerprints and such magnifications as may be required to show minute details, and 3) point out observed similarities and differences between any latent print and any rolled print the government contends are attributable to the same person. The defendants may present expert fingerprint testimony countering the government's fingerprint testimony. But no expert witness for any party would be permitted to testify that, in the opinion of the witness, a particular latent print is – or is not – the print of a particular person.¹³⁰

Judge Pollak's ruling was clearly the first "successful" defense challenge to fingerprint identification evidence.¹³¹ Although the defense motion sought to exclude the fingerprint evidence entirely as unreliable, preventing the prosecution's expert from rendering a conclusive opinion regarding identity was still considered a significant defense victory. Under the *Plaza I* ruling, the prosecution's expert witness would not be able to opine that the incriminating latent prints matched the accused. No one had heard of such a thing. This type of evidence had been routinely admitted in criminal trials since 1918.¹³² How could Judge Pollak have ruled this way?

127. 188 F. Supp. 2d 549.

128. *United States v. Mitchell*, 199 F. Supp. 2d 262 (E.D. Pa. 2002), *aff'd*, *United States v. Mitchell*, 365 F.3d 215 (3d Cir. 2004).

129. In other words, the judge's ruling intended to exclude adjudicative fact testimony but allow framework testimony by the expert.

130. *Plaza I*, 179 F. Supp. 2d at 518.

131. *Plaza I's* ruling is still problematic because it allows the jury, armed with no methodology or experience whatsoever, to ultimately determine whether the prints match. This result seems illogical, since the evidentiary problem is that the ultimate opinion is a "subjective decision" is . . . based upon the examiner's knowledge and experience and . . . ability which may in some instances be insufficient or produce erroneous analysis." If that is the case, the jury's opinion is no different and an even less reliable opinion upon which to determine guilt or innocence. At least the examiner's subjective determination of identity is based upon some level of experience and training, whereas petit jurors typically serve on only one criminal case in their entire lifetime and have no prior experience comparing fingerprints. See generally *Plaza I*, 179 F. Supp. 2d at 507 (citing *Test. Ashbaugh*, Tr. July 7, 1999, at 115-16, testimony regarding the fact that the final determination of identity is "a subjective decision . . . based on [the examiner's] knowledge and experience and . . . ability.").

132. In 1918, there was no articulated standard for fingerprint experts in U.S. courts. American courts relied on opinions from sister jurisdictions which had already admitted fingerprints. However,

Upon close examination of the evidentiary requirements for expert opinion testimony articulated in the *Daubert-Kumho* standard, Judge Pollak's ruling was not radical. Pollak appears to be the first judge to fully analyze the scientific validity of fingerprints under the true tenets of the *Daubert-Kumho* standard. In effect, Judge Pollak was only limiting the prosecution's ability to use the most persuasive form of expert testimony – adjudicative fact in the form of a conclusive opinion regarding the identity of the fingerprints. Yet he was still allowing the expert to testify regarding framework evidence, the meaning and significance of fingerprints themselves.¹³³ It was only the expert's ultimate conclusion regarding identity that lacked scientific validity under the *Plaza I* opinion.

What makes the ruling particularly newsworthy is the fact that the expert's opinion involved fingerprint identification – a type of evidence that has universal and unquestioned acceptance. But the part that is equally troubling is that the mainstream news stories only picked up on the ruling's limitation of the expert's opinion regarding identification and did not comment on the opinion's detailed analysis regarding fingerprint evidence's lack of: 1) testing, 2) peer review and/or publication, and 3) measured rate of error and controlling standards. The news wire blurbs did not articulate that the “final decision [of fingerprint identification] is a subjective decision,”¹³⁴ with no objective standards.¹³⁵ Nor was it broadcasted that there are no uniform qualifications to be hired as a fingerprint examiner, and examiners are not required to be certified or tested for competency.¹³⁶

The holes in the procedures that are exposed in the *Plaza I* opinion are startling. It is even more puzzling why it has taken nearly a century for the methodology of forensic science to be closely examined, or, rather, the lack of close examination to be questioned. Although no longer legally binding as good law, *Plaza I's* analysis is still interesting and has relevancy

none of the sister jurisdictions were applying *Frye*, *Daubert*, or any other type of test to fingerprint evidence. Therefore, the origin of fingerprints' general acceptance is one of unquestioned wholesale acceptance. Amazingly, it is from this seemingly weak historical authority that the overwhelming belief in the infallibility of forensic evidence comes. FAIGMAN, *supra* note 2, at §27-1.2.7 [pocket part].

133. Limiting testimony to framework evidence has been done with other experts; however, the ironic part is that the other experts were told that their science was not as reliable as fingerprint evidence. See *Ibn-Tamas v. United States*, 455 A.2d 893, 895 (D.C. 1983) (In the context of a hearing to determine the scientific validity and legal reliability of the expert opinion testimony of battered woman's syndrome expert, which at that time was a novel theory, the court stated: “This is why the judiciary should proceed with reasonable caution, where the evidence comes as a new scientific theory, as distinguished from a well established field, e.g., fingerprint evidence.”).

134. *Plaza I*, 179 F. Supp. 2d at 507.

135. *Id.* at 513-14.

136. *Id.*

in the larger debate of the scientific validity and admissibility of fingerprint identification evidence.¹³⁷

C. Arguments the Criminal Defense Bar Has Asserted Against the Admission of Fingerprint Identification Evidence

1. One Hundred Years of Adversarial Testing Does Not Establish Scientific Validity

Daubert's focus is on determining whether the underlying principles of an expert's opinion are valid and whether these principles were established by using proper scientific methods. In other words, *Daubert* is not satisfied by a simple showing of "general acceptance," or even universal acceptance, of fingerprints by courts over the last one hundred years. General acceptance is only one factor of the *Daubert* analysis.¹³⁸ In order to fully weigh the value that the last one hundred years should have on the question of current admissibility of fingerprint identification evidence, one must consider the operative evidentiary standards in 1911 when fingerprints were first introduced.¹³⁹

In 1923, when the *Frye* general acceptance standard was adopted, fingerprints, although still untested, had already gained general acceptance in the law enforcement and forensic "science" communities and thus satisfied the *Frye* standard.¹⁴⁰ After examining the evidentiary standard, or

137. Defenders contend that Judge Pollak got it right the first time and his more rigorous and stricter application of the *Daubert-Kumho* standard in *Plaza I* is the more correct application of the standard for legal reliability under the current evidentiary rules. However, no other federal district court has agreed with the *Plaza I* analysis, notwithstanding the several subsequent motions that have been filed in various federal districts; see *United States v. Mitchell*, 365 F.3d 215 (3d Cir. 2004)(The *Mitchell* and *Plaza* cases share some of the same *Daubert* hearing record. The Third Circuit Court of Appeals recently affirmed both the conviction and the admission of the fingerprint evidence by the trial court.); see generally listing of evidentiary challenges to fingerprint evidence in federal district courts, at http://onin.com/fp/daubert_links2.html. See also discussion *infra* Section IV.D; but cf. discussion *infra* Section IV.E (considering the consequence that blanket exclusion of fingerprint evidence would eliminate its use to exonerate the wrongly accused.).

138. FAIGMAN, *supra* note 2, §27-1.2.7 [pocket part], at 38-39. ("More importantly, under *Daubert*, general acceptance must be evaluated in conjunction with other factors. In fields which have been found to have a vigorous tradition of testing, that which becomes generally accepted carries more weight than in fields without such a tradition. Where inquiry into other factors (testing, methodological quality of published peer reviewed research, error rates) does not support admission, general acceptance does not become the one last hook on which admission decisions can be hung. As the Supreme Court put it in *Kumho Tire*: "general acceptance does not 'help show that an expert's testimony is reliable where the discipline itself lacks reliability.'" *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 151(1999).)

139. See Epstein, *supra* note 17, at 615-17.

140. FAIGMAN, *supra* note 2, §27-1.0, at 348 ("The seminal cases admitting fingerprint evidence in American courts paid so little attention to the foundation of the asserted science that they offer no

lack thereof, that has been applied to fingerprint identification evidence over the last hundred years, the adversarial testing argument loses some of its strength. Additionally, there is no showing that fingerprint evidence has ever been scientifically tested or rigorously analyzed for its validity in a court of law, until most recently. Thus, the general acceptance of fingerprints over the last century, in actuality, is *judicial* general acceptance, not *scientific* general acceptance. Therefore, reliance upon the last one hundred years to support the current admission of fingerprint evidence misstates the evidentiary standard of both *Frye* and *Daubert*. Both require general acceptance by the scientific community, not the legal community,¹⁴¹ and the general acceptance prong implies the existence of some type of scientific examination of the proffer.

When considering what prior courts have done in the past, it is important to remember that fingerprint evidence is not akin to a legal construct like opening statement, cross-examination, or selection of the jury – procedures created within the legal system to ensure fair trial and due process. The efficacies of adversarial tools are what years of adversarial process can test. The adversarial system cannot test science. It is simply not designed for such a task and is ill equipped to accomplish it.

The evidentiary standard regarding the admission of expert testimony has changed in order to better ensure that only reliable and relevant evidence is admitted. Therefore, proof that prior courts over the last century accepted fingerprint evidence is somewhat irrelevant to the current evidentiary standard of *Daubert-Kumho*. Further, the hundred-year-argument is flawed in the same way the reasoning that “my grandfather, and his father, and his father before him did it this way” is a flawed rationale to establish whether my grandfather’s way is the proper way to do things. Akin to Professor Faigman’s leeches example, just because admitting fingerprint evidence without question is what has been done for a long time does not mean it is correct.

Daubert does not look to legal precedent regarding what other courts have done; it looks for scientific validation of the principles underlying the expert’s opinion. The *Daubert-Kumho* standard requires judges to examine the relevance and reliability of the expert with full consideration of the “task-at-hand” in light of the specific facts before the

help in evaluating the admissibility of fingerprint identification evidence under *Daubert* and *Kumho Tire*.”).

141. *Id.* For an example of the court misstating the significance of the one hundred years of accepting fingerprint evidence, see *United States v. Cline*, 188 F.Supp.2d 1287, 1294 (2002) (“Used successfully in criminal trials for over 100 years, fingerprint identification analysis has withstood the scrutiny and testing of the adversarial process.”).

court.¹⁴² Therefore, without scientific testing of the theories and methodology that support examiners' conclusions regarding fingerprint identity, their opinions cannot be deemed reliable under current evidentiary rules.

2. The Unknown Error Rate of Fingerprint Identification Analysis Makes It Unreliable Evidence

The defense argument urges that the unknown error rate of fingerprint examiners makes fingerprint identification evidence unreliable. Judge Pollak addresses the issue of error rates, distinguishing the different rates of error for analysis of known prints and analysis of latent prints. The dissimilarity is quite startling.

The *Plaza I* decision was made based on the record of the *Daubert* hearing in the related *Mitchell*¹⁴³ case. In *Mitchell*, the government proffered an experiment to prove the accuracy and scientific validity of fingerprint analysis. There were two parts to the experiment. In the first part, the FBI sent out defendant Mitchell's ten-print card, i.e., a complete set of Mitchell's known fingerprints, to be compared with the databases of known fingerprint records in other states. The result was that only one match was reported – in Philadelphia where Mitchell was arrested and in-custody. Philadelphia was the only state in which Mitchell had known prints on file; therefore, this part of the experiment was successful. It was intended to show that fingerprints are unique and that multiple matches would not occur from one set of prints – the premise being no two fingerprints are alike.

The accuracy of comparing full sets of known prints to one another is not the real issue regarding the admission of fingerprint identification evidence. The contention is regarding the comparison of known prints to latent prints. The significant difference is that latent prints that are taken from crime scenes are smaller and imperfect prints. Also, the condition of these latent prints varies from clean, to smudged, to bloody, to even one being on top of the other; thus, the accuracy of latent print identification is where the real evidentiary challenge lies.¹⁴⁴

The second part of the *Mitchell* experiment addressed the concerns of latent prints, which proved to be more problematic. In the second part, the FBI sent Mitchell's ten-print card along with the latent prints that were

142. *Daubert*, 509 U.S. at 597; *Kumho Tire*, 526 U.S. at 141.

143. *United States v. Mitchell*, 199 F. Supp. 2d 262 (E.D. Pa. 2002), *aff'd*, *United States v. Mitchell*, 365 F.3d 215 (3d Cir. 2004).

144. FAIGMAN, *supra* note 2, at §27-1.2.11[pocket part].

in question to thirty-four different state labs, i.e., thirty-four different jurisdictions with thirty-four different forensic fingerprint examiners. The FBI requested analysis and comparison of the prints for identification. The results were not good. Twenty-five agencies reported a conclusive match. Nine of the thirty-four were however unable to identify the prints as a positive match. This result was troubling because fingerprint examiners purportedly adhere to the forensic principle of being extremely conservative and only declaring a conclusive match when the evidence is very clear; thus, if there is any question, the examiner is to err on the side of caution and opine no match.¹⁴⁵

If, however, fingerprint analysis is as accurate as proponents claim, and if the conservative principle is employed, all thirty-four examiners should have unanimously reported no match. Notwithstanding this ideological inconsistency, the remainder of the experiment makes matters worse. The FBI, in an effort to “correct” the errors in the first analysis, sent letters to the nine examiners who failed to identify the prints, explaining the significance of the *Mitchell* experiment and its use in a pending *Daubert* hearing. Along with these letters, the FBI included enlarged photos of the fingerprints in question and pointed out similarities in the prints for the examiners to see more clearly.¹⁴⁶ After receiving this additional guidance, almost like magic, all nine examiners were able to identify the prints as a positive match.

The FBI did not see a problem with the methodology of this experiment.¹⁴⁷ When the FBI fingerprint expert, Mr. Meagher, was asked to explain why the nine examiners initially failed to identify the rolled fingerprints and the latent fingerprints as a match, the following explanations were given:

[T]he examiner did not know that the survey was

145. *Id.* at §27-1.2.

146. *Plaza I*, 179 F. Supp. 2d at 513, n.23 (“Mr. Meagher followed up by sending photographic enlargements of the prints in a plastic sleeve, on which the level two Galton detail information was marked. Mr. Meagher asked the nine agencies to reconsider their initial responses, emphasizing that the survey was being prepared for a *Daubert* hearing. All nine agencies changed their responses and made a positive identification.”).

147. *Id.* (quoting from Mr. Meagher’s testimony cited by the court: “Well, just as if I would have done in-house with any examiner, especially in a training status, if an individual fails to make an identification that we believe they should have been able to, we would take that information back to the individual, show them the characteristics of which they should take into consideration, ask them to reassess their position and, you know, use the information that’s now presented to them and try to come up with the same conclusion. That is, that the two prints were identical.”) However, the *Mitchell* experiment was not an FBI training exercise; it was a test to prove the accuracy of fingerprint analysis and the lack of error. It was needed to bolster Meagher’s testimony that the error rate of fingerprint analysis methodology is zero. *Id.* at 511.

related to a *Daubert* hearing (citation omitted); the photos of the ten-print card [i.e., suspect's known prints] or latent prints were insufficiently clear (citation omitted); three of the examiners "just screwed up" (citation omitted); inexperience (citation omitted); insufficient time (citation omitted); the examiners["] "attitude toward the survey was not as serious as it should have been" (citation omitted); and "it was late in the day and the examiner was probably tired. (citation omitted)"¹⁴⁸

Are these reasons supposed to make one feel more secure about the work of latent fingerprint examiners? These excuses appear to solidify the defense bar's contention that the accuracy of fingerprint identification is suspect. Further, it seems to prove that the examiners' high accuracy rate has been assumed but never proven.

The impromptu *Mitchell* experiment clearly identifies the weakness of "practitioner error."¹⁴⁹ Judge Pollak's assessment of the *Mitchell* experiment was mixed. Regarding the portion of the experiment that compared Mitchell's known prints with the state records of other known prints, wherein a "hit" was only reported in Pennsylvania, Pollak found this "was significant confirmation of the uniqueness of fingerprints."¹⁵⁰ Regarding, however, the "survey" of thirty-four state agencies comparing Mitchell's known prints to the crime scene latent prints, Pollak found "the survey results fall far short of establishing a 'scientific' rate of error; they are (modestly) suggestive of a discernible level of practitioner error."¹⁵¹

148. *Id.* at 512-13. (quoting from the testimony of the FBI's fingerprint expert Meagher in the *Daubert* hearing for the *Mitchell* case that was relied upon in *Plaza I*).

149. *Id.* In *Plaza I* the government took the *Daubert* factor, rate of error, and divided it into two parts: methodology error and practitioner's error. One government expert, Dr. Budowle, testified that the methodology error cannot be measured: "We have to understand that error rate is a difficult thing to calculate. I mean, people are trying to do this, it shouldn't be done, it can't be done." *Id.* at 510. Although never scientifically measured, Mr. Meagher ultimately testified that the error rate as applied to the scientific methodology is zero. *Id.* at 511. The *Mitchell* experiment was conducted to show a low practitioner's error rate, but failed in this regard. *Cf.* *United States v. Mitchell*, 365 F.3d at 239-40 (the appeals court concluded that although the *Mitchell* experiment yielded several false negatives, the experiment exhibited a low false positive error rate).

150. *Id.* at 512.

151. *Id.* at 513. The court also included a footnote on the issue of error: "The defendants also point out that in proficiency examinations that were given to fingerprint examiners beginning in 1995, the error rates have been alarmingly high. In 1995, fewer than half of the 156 participating examiners—44%—correctly identified all five latent prints that were being tested, while 31% of the examiners made erroneous identifications. *See Possession of Truth*, 46 J. FORENSIC IDENT. 521, 524 (1996)(Def. Ex. 2). While the results had improved somewhat by 1998, only 58% of the examiners correctly identified all the matching prints and did not make incorrect identifications. Latent Prints Examination Report No. 9808, Forensic Testing Program 2 (Def. Ex. 3). As with the *Mitchell* survey, these proficiency examination results may be taken as somewhat suggestive of practitioner error. However, it should be

The *Mitchell* experiment is significant in three important ways, as it highlights: 1) the *lack of accuracy* among fingerprint examiners, specifically with regard to latent prints which are almost always the most incriminating type of fingerprint evidence used in a criminal case, i.e., the latent print found on the murder weapon; 2) the *lack of scientific methodology* employed within the “forensic science community,” evidenced by how Mr. Meagher administered the “survey” portion of the *Mitchell* experiment, the excuses he gave for the inaccurate results, and his attempt to “correct” the mistakes by telling the examiners what their findings should have been; and 3) the *lack of any scientific study* to establish the scientific validity of fingerprint identification was confirmed by the FBI’s mid-trial, haphazard “*Mitchell* experiment” done in order to prove that fingerprint evidence is reliable. This experiment, albeit unintentionally, emphasized the fact that no real studies exist which scientifically analyze the accuracy of fingerprint identification.¹⁵²

The real lack of study notably sets forensic “science” apart from other forms of science. The legal treatise *Modern Scientific Evidence* notes that “[m]ost fields of normal science could pull from the shelf dozens or hundreds, if not thousands, of studies testing their various hypotheses and contentions, which had been conducted over the past decades or century, and hand them to the court.”¹⁵³ The distinction of forensic science from other types of science is further illustrated by a response Mr. Meagher gave in an interview to journalist Michael Specter from *The New Yorker* magazine wherein he was asked whether forensic science was science:

Meagher said that he didn’t think of science as a term that could be easily defined or tailored to fit all disciplines in the same way. “There is academic science, legal science, and forensic science. . . . They are different. You can be an expert in the field and give testimony without having an academic level of

stressed that these results, standing alone, can hardly be regarded as significant evidence of what the ‘rate of error,’ in the *Daubert* sense, may be. 509 U.S. at 594.” *Id.* at n.24.

152. FAIGMAN, *supra* note 2, §27-1.2, at 360 (“An interesting postscript to the *Mitchell* case is the discovery after trial and conviction that the FBI had prevailed upon the National Institute of Justice to delay release of its request for research proposals to test important beliefs about fingerprint identification until after the conclusion of Mitchell’s trial. Thus, at the same time the FBI was telling the *Mitchell* court that everything that needed to be known to confirm the reliability of fingerprint identification already was known, they were telling the NIJ to delay the process of funding research aimed at answering some of the unknowns, studies that it was hoped would be useful in defending against future challenges.” (citation omitted)). *Cf.* *United States v. Mitchell*, 365 F.3d at 257 (The appeals court rejected Mitchell’s *Brady* violation claim and also stated “we conclude that a reasonable jury would not conclude that the solicitation [by the NIJ for further research regarding fingerprints] was the smoking gun that Mitchell makes it to be.”).

153. *Id.* at 358.

scientific knowledge. . . . It is not achievable to take pure science and move it into a legal arena.” This seemed surprising, since Meagher had often argued that, when performed correctly, fingerprint analysis is an “objective” science. In 1999, when he was asked in court whether, based on unique properties of fingerprints, he had an opinion of the error rate associated with his work, he said: “As applied to the scientific methodology, it’s zero.” (Scientists don’t talk this way; it is an axiom among biomedical researchers that nothing in biology is true a hundred percent of the time.)¹⁵⁴

Specter asked Professor Faigman’s opinion of Meagher’s definition of science being different types: “academic science, legal science, and forensic science.”¹⁵⁵ Reportedly, Professor Faigman’s response was first laughter then a comment that Meagher’s logic “of course . . . makes no sense.”¹⁵⁶ Professor Faigman drew a different analogy of how “forensic science” relates to real science:

Mr. Meagher operates on a sixteenth-century notion – a Francis Bacon idea – of what science is all about. To me, the analogue for law is meteorology. It deals with physics and chemistry – the most basic sciences. Yet it has to make predictions and empirical statements regarding complex reality. That is because so many factors determine the weather that it’s really a probabilistic science. And I think fingerprinting is the same.¹⁵⁷

154. Specter, *supra* note 1, at 104.

155. *Id. Cf. United States v. Mitchell*, 365 F.3d at 219 (The appeals court found that Defendant Mitchell’s experts were properly precluded from testifying “about whether latent fingerprint identification is a “science.”)

To the extent that Mitchell’s attack rests on his experts’ claim that latent fingerprint examiners do not engage in “science,” he does not heed the text of Rule 702 or the Supreme Court’s teachings in *Kumho Tire*. Rule 702 “makes no relevant distinction between ‘scientific knowledge’ and ‘technical’ or ‘other specialized’ knowledge.” *Kumho Tire*, 526 U.S. at 147, 119 S.Ct. 1167. The very holding of *Kumho Tire* is that those categories simply address what type of testimony is covered by the rule, and that, in addressing admissibility under Rule 702, the same factors generally apply to all categories of expert testimony. *Kumho Tire* explicitly rejected as unworkable and unnecessary any “distinction between ‘scientific’ knowledge and ‘technical’ or ‘other specialized’ knowledge.” *Id.* at 148, 119 S.Ct. 1167. That a particular discipline is or is not “scientific” tells the court little about whether conclusions from that discipline are admissible under Rule 702; at best, there will be some overlap between the factors that bear on a field’s status as “science” and *Daubert*’s factors addressed to reliability. Reliability remains the polestar. *Id.*

156. *Id.*

157. *Id.* at 104-05.

At first blush, Professor's Faigman's comparison of fingerprint identification to weather prediction seems a bit extreme. Faigman's comments are however useful to illustrate the point that neither law nor forensic science deals in absolute certainties. It is a myth that latent fingerprint identification is absolutely accurate or has an error rate of zero, particularly since fingerprint identification is based on a statistical-probability model.¹⁵⁸ It is important to note that an analysis conducted based upon a statistical-probability model can still be reliable. Two critical questions must, however, be tested: 1) what is the probability of an erroneous match, and 2) under what circumstances are errors more likely or less likely to occur.¹⁵⁹ These questions have not been asked of fingerprint identification evidence and the lack of knowledge of the real answers to these questions is what makes the conclusions drawn from fingerprint analysis suspect and arguably unreliable.

Although a jury's verdict is the final answer to the legal question of guilt or innocence, it is not absolute proof of whether the defendant committed the crime. The applicable standard is not proof beyond all doubt,¹⁶⁰ but rather it is proof beyond a reasonable doubt; thus, there is an error factor for juries as well. The rigorous scrutiny applied to the evidence the jury is allowed to consider is crucial in order to keep jury error as low as possible. Therefore, the "gatekeeper" role is essential. Defense challenges to the scientific validity of the evidence must be taken seriously, and the *Daubert-Kumho* standard applied thoroughly to all evidence, especially fingerprints.

158. *Id.* at 105 (Quoting Mr. Meagher: "Our system is a huge statistical-probability model, but it doesn't make identifications, because it doesn't have all the information that is needed. It's a job for human beings.").

159. FAIGMAN, *supra* note 2, §27-1.2.11 [pocket part], at 42-47.

160. One counter-argument suggests that current defense motions to exclude fingerprint identification evidence seek to push the evidentiary standard or burden of proof to "absolute certainty." However, certainty can never be absolute in any case or controversy, nor is law or science intended to be absolutely certain about anything one hundred percent of the time. If the evidentiary standard were heightened to "absolute certainty," no evidence would ever be admitted. Not even eyewitnesses would be satisfactory enough witnesses because statistics prove their testimony is often flawed with errors. Instead of changing the standard to absolute certainty and thereby excluding all evidence that falls short, justice demands the inclusion of relevant evidence and a heightened ability for opponents to contradict and challenge the evidence presented. *See also infra* Section V. (This section discusses the special jury instruction method to alert jurors of the possibility of fingerprint examiner error.)

3. The Lack of Uniform Standards for Fingerprint Analysis Weakens Its Scientific Validity Under *Daubert's* Methodology Factor

The case against the scientific validity of fingerprint identification is further strengthened after examining the facts regarding the experts' training, qualifications, and standards for identification. One might be surprised to learn that there are no mandatory qualifications to become a fingerprint examiner.¹⁶¹ Though "[t]he Scientific Working Group on Friction Ridge Analysis, Study, and Technology (SWGFAST) adopted 'quality assurance guidelines for latent print examination' in 1997,"¹⁶² the SWGFAST's guidelines are optional, not mandatory.

Further, there appears to be no uniformity among examiners regarding the training they have received, the organization through which they are certified, or the minimum level of education required.¹⁶³ The International Association of Identification (IAI) "is a forensic organization here in the United States that supports training and holds conferences and attempts to set standards for the United States."¹⁶⁴ IAI certification is, however, not mandatory, and many examiners are not part of IAI. Although most examiners are certified at least by their own local jurisdiction's police agency, there are no uniform standards required for these certifications; instead, the requirements are determined by the individual jurisdictions and vary widely.¹⁶⁵

161. *United States v. Llera Plaza (Plaza I)*, 179 F. Supp. 2d at 514. *See also* David L. Grieve, *The Identification Process: The Quest for Quality*, 40 J. FORENSIC IDENT. 109-11 (1990). "Traditionally, fingerprint training has centered around a type of apprenticeship, tutelage, or on-the-job training, in its best form, and essentially a type of self study in its worst. Many training programs are the "look and learn" variety, and aside from some basic classroom instruction in pattern interpretation and classification methods, are often impromptu sessions dictated more by the schedule and duties of the trainer than the needs of the student. Such apprenticeships are most often expressed in terms of duration, not in specific goals and objectives, and often end with a subjective assessment that the trainee is ready." *Id.*

162. *United States v. Llera Plaza (Plaza I)*, 179 F. Supp. 2d at 514; *see also* *United States v. Mitchell*, 365 F.3d at 241 (The appeals court found that "maintenance of standards" of latent fingerprint examiners does not favor admitting their opinions, although the overall *Daubert* test is met. "Some standards do remain: There are procedural standards (such as ACE-V) and terminological standards (such as naming conventions for Galton points.) But these are insubstantial in comparison to the elaborate and exhausting refined standards found in many scientific and technical disciplines." *Id.*)

163. *Id.* (The FBI's Mr. Meagher testified that "while some FBI examiners are certified by the International Association for Identification (IAI)," [Mr. Meagher] was certified by the FBI.); *see also* FAIGMAN, *supra* note 2, §27-2.2.6, at 385 ("Fingerprint examiners differ in their level of training, experience and ability."); *but see Plaza II*, 188 F. Supp. 2d at 556, n.2 ("To become an FBI fingerprint examiner one must have a bachelor's degree – preferably as a science major – and then successfully complete a two-year in-house training program culminating in a three-day certifying examination.").

164. *Plaza I*, 179 F. Supp. 2d at 514, n.27.

165. *See* FAIGMAN, *supra* note 2, at §27-1.2.7 [pocket part].

4. Fingerprint Identification Is Based upon the Subjective Decision of the Examiner, Not Science

When considering scientific analysis, one automatically assumes that the tests conducted are based on objective standards. One may have presumed that fingerprint analysis is conducted by a computer or by some other sophisticated machine.¹⁶⁶ Therefore, it might further be thought that because these are scientific tests, conducted with objective standards, maybe even with some foolproof automated computer system, that the specific qualifications of the individual actually examining the evidence is of little consequence. These are all common assumptions laypeople have about fingerprint identification evidence, and these assumptions act to solidify the heightened reliability associated with fingerprint identification evidence. These assumptions follow the conventional myth that fingerprint examinations are objective and scientific, and that is why “fingerprints don’t lie.” The reality of the process is quite different.

In actuality, latent fingerprint identification is a *subjective* decision of the examiner.¹⁶⁷ Although computers might be used to initially retrieve the known fingerprint records to compare to the latents, this computer search merely “provides a list of candidates . . . [but the] direct comparisons are made by a fingerprint examiner.”¹⁶⁸ Therefore, the validity of the analysis is uniquely connected to the specific knowledge, ability and experience of the individual examiner who conducted the analysis.¹⁶⁹ This may explain why when experts Pat Wertheim and Allan Bayle examined Detective McKie’s fingerprints in Scotland they easily determined there was no match; it was not even a close call for them. Their analyses, however, were based on twenty and twenty-five years of experience, respectively. Arguably, the SCRO’s examiners were just not

166. IAFIS is a FBI computer that does attempt to identify fingerprints. Specter, *supra* note 1, at 99. IAFIS is a huge database of known prints and can be used to retrieve candidate “suspects” for comparison. FAIGMAN, *supra* note 2, at § 27-2.0; CBS, *supra* note 10 (“On TV, fingerprints are matched automatically by computer. But that never happens in real-life forensic work.”).

167. *Plaza I*, 179 F. Supp. 2d at 513. (The issue of the subjectivity of the examiner’s ultimate opinion was not even a contested point in the litigation. “[The] Government and defense witnesses agreed that the actual identification of a latent fingerprint – this is, the decision that the ridges of the two prints that are being compared are sufficiently ‘identical’ to be considered an ‘absolutely him’ match – is a subjective determination”).

168. FAIGMAN, *supra* note 2, §27-2.1.2[2], at 376.

169. *Plaza I*, 179 F. Supp. 2d at 513-14. (“Sergeant Ashbaugh testified for the government: ‘The opinion of individualization or identification is subjective. It is an opinion formed by the friction ridge identification specialist based on the friction formations found in agreement during comparison. The validity of the opinion is coupled with an ability to defend that position and both are found in one’s personal knowledge, ability and experience.’”).

as knowledgeable or astute.¹⁷⁰ These types of inconsistent findings are especially alarming when dealing with the serious issues of guilt and innocence coupled with life-altering criminal sanctions – the stakes are too high for inexperience. Subjectivity in this regard is dangerous.

An unidentified SCRO fingerprint expert commented specifically on Detective McKie's case and generally on the reliability of fingerprint identification evidence. He agreed that Detective McKie's print was misidentified, but was still confident in the reliability of fingerprint identification evidence. He said: "The system of fingerprint identification is infallible. The expert individually is not. Any expert can make a mistake, and should be seen to admit making a mistake."¹⁷¹ The truth is that the forensic community is not at the point where it is willing to admit error. The SCRO has not admitted its error. And in the United States, the *Mitchell* experiment proves that the FBI's stance is not that different. Although the *Mitchell* experiment did not produce any misidentifications from the various jurisdictions conducting the analysis, Mr. Meagher's excuses for the horribly inconsistent conclusions show that fingerprint examiners in the United States are also unwilling to admit mistakes even after they are blatantly exposed.¹⁷² Mr. Meagher testified in the *Mitchell* case that the error rate of latent fingerprint examinations was zero.¹⁷³

During the *Daubert* hearing in *Plaza I*, Judge Pollak received the following testimony from defense witness Dr. Stoney:¹⁷⁴

170. Yet, the SCRO claims their examination was also verified by four other experts, three internal and one independent, who all agreed that the mark matched Detective McKie. See *Frontline January 2000*, *supra* note 65.

171. *Frontline January 2000*, *supra* note 65.

172. However, not all law enforcement agencies and fingerprint examiners are unwilling to admit their errors. See Mnookin, *The Washington Post*, *supra* note 10 (in the investigation of the Madrid terrorist bombing, FBI agents admitted they had erroneously identified Oregon lawyer Brandon Mayfield when the print actually belonged to Ouhname Daoud, an Algerian man.); See also LAS VEGAS REV. J., *supra* note 10. ("Las Vegas police had mistakenly matched the fingerprints . . . with those of a decomposed woman's body found in June in the desert east of Las Vegas." According to Lt. Tom Monahan of the Metropolitan Police Department Homicide Section, "[t]here's no question. A mistake was made.")

173. *Plaza I*, 179 F. Supp. 2d at 511.

174. Dr. Stoney earned a Bachelor of Science in chemistry and criminalistics, a Masters of Science in Public Health, and a Ph.D in forensic science from the University of California, Berkeley. He has published various texts and journal articles on his thesis of quantitative statistical fingerprint modeling, and worked at the Institute of Forensic Sciences Criminalistic Laboratories in Oakland, California (an independent crime lab). He has performed various forensic examinations, including latent print comparisons. He has served as an associate professor and director of the Forensic Science Program at the University of Illinois, Chicago. Dr. Stoney is the director of the McCrone Research Institute in Chicago, Illinois. Stoney has published approximately two dozen articles on various aspects of forensic science, including fingerprints. His main criticism of fingerprint identification evidence is as follows: "1) ACE-V methodology has elements of subjectivity and the evaluation is ultimately not scientific; 2) No objective criteria or measurements are used to measure individuality; 3) Reliability of

The determination that a fingerprint examiner makes . . . when comparing a latent fingerprint with a known fingerprint, specifically the determination that there is sufficient basis for an absolute identification *is not a scientific determination. It is a subjective determination standard. It is a SUBJECTIVE determination without objective standards to it.* Now, by “subjective” I mean that it is one that is dependent on the individual’s expertise, training, and the consensus of their agreement of other individuals in the field. By “not scientific” I mean that there is not an objective standard that has been tested; nor is there a subjective process that has been objectively tested. It is the essential feature of a scientific process that there be something to test, that when that something is tested, the test is capable of showing it to be false.¹⁷⁵

On balance, this exploration into the latent fingerprint examination process clarifies why a close application of the *Daubert-Kumho* standard is so important. Since the final decision regarding identity is based on a subjective determination by the examiner, scrutiny of the methodology employed by examiners is imperative in order to determine whether the evidence is legally reliable.

D. Motions Challenging Scientific Validity Continue, Yet Federal Courts Still Find Latent Fingerprint Identification Legally Reliable Evidence

“It can hardly be disputed, of course, that a consensus exists in the general public, as well as the judiciary, that latent fingerprint identifications are perfectly reliable.”¹⁷⁶ Yet, as the current fingerprint evidence debate exposes, there is no clear consensus between prosecutors

examiners practicing the ACE-V method has not been sufficiently tested; 4) Error rate is meaningless without a standardized objective method of measurement; 5) Ultimately, fingerprint identification works and it is good evidence, but it isn’t science and it doesn’t meet *Daubert* requirements.” See <http://www.clpex.com/Articles/TheDetail/TheDetail60.htm>.

175. *United States v. Mitchell*, 365 F.3d 215, 226 (2004). *Plaza I*, 179 F. Supp. 2d at 514 (emphasis added) (Judge Pollak opined: “With such a high degree of subjectivity, it is difficult to see how fingerprint identification – the matching of a latent print to a known fingerprint – is controlled by any clearly describable set of standards to which most examiners subscribe.”). *Id.*

176. Epstein, *supra* note 18, at 646. See also *United States v. Mitchell*, 365 F.3d at 241 (The Third Circuit Court of Appeals also found that the lack of standards was one factor that weighed against admissibility.).

and defenders whether current forensic methodology constitutes “good grounds” sufficient to support the conclusive findings of latent fingerprint analysis. That is why previously welcomed fingerprint experts are now being greeted with motions to exclude their testimony. Notwithstanding the vigorous challenges waged by skilled defense attorneys in various federal districts, motions to exclude have all been unsuccessful.

It is well established in the minds of the judiciary and proponents of fingerprint evidence that, even with scant empirical testing of its accuracy, latent fingerprint analysis is something more than guesswork. Further, they believe fingerprinting has sufficient evidentiary reliability to be used in a court of law. Even in the face of these recent evidentiary challenges, the judiciary is not willing to denounce fingerprints, a form of evidence that has supported thousands of convictions, simply on the speculation of its “newly discovered” unreliability.

Arguably there is prudence behind judicial skepticism of blanket exclusion. It is true that fingerprint analysis has not undergone the scrutiny of hypothesis testing, falsification, and peer review, which true science demands. Under a liberal reading of the *Daubert-Kumho* standard, however, trial judges have consistently held that neither the United States Supreme Court nor the Federal Rules of Evidence mandate exclusion when a weakness or error in the evidence is discovered.¹⁷⁷ The federal district courts have not agreed with defense attorneys’ strict reading of the *Daubert-Kumho* standard.¹⁷⁸ The defense bar’s interpretation is arguably constricted and misstates the judicial requirements as gatekeeper. Further, no court has found fingerprint identification evidence legally unreliable for lack of scientific validity. Instead, the courts have repeatedly followed a more expansive reading of the *Daubert-Kumho* requirements.¹⁷⁹

177. *Daubert*, 509 U.S. at 590. (“Of course, it would be unreasonable to conclude that the subject of scientific testimony must be ‘known’ to a certainty; arguably there are no certainties in science.”).

178. Even Judge Pollak’s ruling in *Plaza I* did not find that fingerprint evidence should be completely excluded as unreliable. Instead, *Plaza I* held that the latent fingerprint examiners, for both the prosecution and defense, could testify to framework evidence, but not to ultimate conclusions regarding positive or negative identification. *Plaza I*, 179 F. Supp. 2d at 514.

179. Even while *Plaza I* was still good law, other federal trial courts refused to follow Judge Pollak’s analysis and rejected the conclusion that latent fingerprint experts were not qualified to testify to conclusive opinions regarding identity. See *United States v. Salim*, 189 F. Supp. 2d 93, 101 (S.D.N.Y. 2002) (“This Court is unpersuaded by [*Plaza I*]’s reasoning, for it hearkens to an imprudently stringent understanding of scientific objectivity. Contrary to the *Plaza I* reasoning, the mere fact that an expert utilizes his or her expertise and training to determine whether there is enough agreement of the various print ridge formations to be able to individualize and ultimately, to ‘match’ a print, does not constitute an absence of standards to render the technique unreliable. Rather, the methods of comparison are in fact testable such that both parties can subject prints to verification. The appropriate attack of an expert’s ‘match’ opinion is in rigorous cross-examination and the presentation of other experts to challenge the findings, not the whole-sale preclusion of a reliable methodology.”). Instead, several federal circuit appeals courts have affirmed the admissibility of fingerprint

This liberal reasoning and application was articulated by the United States Court of Appeals for the Third Circuit in *In re Paoli R.R. Yard PCB Litigation*¹⁸⁰ (hereinafter *Paoli II*), which states the post-*Daubert*¹⁸¹ requirements for legal reliability in the following manner:

[Plaintiffs] do not have to demonstrate to the judge by a preponderance of the evidence that the assessments of their experts are *correct*, they only have to demonstrate by a preponderance of evidence that their opinions are reliable. . . . *Daubert* states that a judge should find an expert opinion reliable under Rule 702 if it is based on “good grounds,” *i.e.*, if it is based on the methods and procedures of science. A judge will often think that an expert has good grounds to hold the opinion that he or she does even though the judge thinks that the opinion is incorrect. . . . The grounds for the expert’s opinion merely have to be good, they do not have to be perfect. The judge might think that there are good grounds for an expert’s conclusion even if the judge thinks that there are better grounds for some alternative conclusion, and even if the judge thinks that a scientist’s methodology has some flaws such that if they had been corrected, the scientist would have reached a different result.¹⁸²

When Federal Rules of Evidence Rule 702 was amended in 2000, the Rules Advisory Committee adopted the *Paoli II* reasoning and explained that expert opinion testimony could be admitted even if the expert was “not rely[ing] on anything like a scientific method.”¹⁸³ In other words the expert’s opinion testimony may be admissible, if “it is properly grounded, well-reasoned, and not speculative.”¹⁸⁴

Proponents of the reliability of fingerprint identification evidence would agree that the more expansive reading of the *Daubert-Kumho* standard is an accurate interpretation of the evidentiary rules and remains

identification evidence and latent fingerprint expert’s testimony. See generally United States v. Mitchell, 365 F.3d 215 (3d Cir. 2004), United States v. Crisp, 324 F.3d 261 (4th Cir. 2003), United States v. Hernandez, 299 F.3d 984 (8th Cir. 2002), United States v. Havvard, 260 F.3d 597 (7th Cir. 2001), United States v. Sherwood, 98 F.3d 402 (9th Cir. 1996).

180. 35 F.3d 717 (3d Cir. 1994) (commonly referred to as *Paoli II*). *Paoli II* is an influential case in the Third Circuit, which is the same circuit from which Judge Pollak and the *Plaza I & II* cases come.

181. *Paoli II* was decided post-*Daubert* but prior to the amendment of FRE Rule 702, and prior to *Kumho Tire’s* extension of the *Daubert* standard to non-scientists.

182. *In re Paoli R.R. Yard PCB Litigation (Paoli II)* 35 F.3d at 744.

183. FED. R. EVID. 702, Testimony by Experts, advisory committee’s note.

184. *Id.*

consistent with the spirit and letter of the standard the United States Supreme Court articulated in *Daubert*. The *Daubert* court stated:

Of course, it would be unreasonable to conclude that the subject of scientific testimony must be “known” to a certainty; arguably, there are no certainties in science. . . . But, in order to qualify as “scientific knowledge,” an inference or assertion must be derived by the scientific method. Proposed testimony must be supported by appropriate validation – *i.e.*, “good grounds,” based on what is known.¹⁸⁵

In a corresponding footnote, the *Daubert* court clarified its understanding of “good grounds” to be synonymous with *trustworthiness* – in other words, evidentiary reliability consistent with the Federal Rules of Evidence.¹⁸⁶ Opponents protest that the underlying support for the experts’ conclusions is unscientific and unproven – not “good grounds.”¹⁸⁷ The *Daubert* court, however, never intended expert opinion testimony to be flawless, without weakness, or even without error in order to be admissible in a court of law.¹⁸⁸ One federal judge even opined that “[t]rials would be very short if only perfect evidence were admissible.”¹⁸⁹

185. *Daubert*, 509 U.S. at 590-91.

186. *Id.* at 590, n.9 (“We note that scientists typically distinguish between ‘validity’ (does the principle support what it purports to show?) and ‘reliability’ (does application of the principle produce consistent results?) . . . [O]ur reference here is to *evidentiary* reliability – that is, *trustworthiness* . . . [I]n a case involving scientific evidence, *evidentiary* reliability will be based upon *scientific validity*.”)

187. See Epstein, *supra* note 17, at 648-49. Epstein argues that effective cross-examination and/or the use of a defense fingerprint expert would not cure problems in the methodology of fingerprint analysis. “But to the extent that there are reliability problems inherent to fingerprint methodology itself, the retention of a defense expert might not do any good. Just as two polygraph examiners might reach the wrong conclusion about whether someone is telling the truth, because of the deficiencies in the polygraph, so too might several fingerprint examiners make a false identification with respect to a particular fingerprint because of the deficiencies in the standard and procedures of the fingerprint profession. Indeed, in one of the most famous cases of fingerprint error, the misidentification was made not only by the prosecution’s expert, but by a defense-retained expert as well. The erroneous identification was discovered only upon the subsequent trial of the defendant’s wife.” *Id.* Cf. *United States v. Mitchell*, 365 F.3d at 239 (The appeals court found that there was no showing that there is a significant problem with latent fingerprint experts, largely because the errors identified were false negatives and not false positives. The appeals court was less concerned with errors reflected in false negative results: “While a system of identification with a high false negative rate may be unsatisfactory as a matter of law enforcement policy, in the courtroom the rate of false negatives is immaterial to the *Daubert* admissibility of latent fingerprint identification offered to prove positive identification because it is not probative of the reliability of the testimony for the purpose for which it is offered (*i.e.*, for its ability to effect a positive identification).”).

188. See Barry Scheck & Peter Neufeld, *DNA and Innocence Scholarship*, in *WRONGLY CONVICTED: PERSPECTIVES ON FAILED JUSTICE* 241, 249 (Saundra D. Westervelt & John A. Humphrey eds., 2001). Well-known defenders of innocence Barry Scheck and Peter Neufeld recognize that simple error does not equal inadmissibility. When speaking of DNA testing, forensic evidence, and exoneration, they note: “[t]he underlying theory and methods used for forensic DNA testing are surely

The real legal question that remains open is: how grave must the potential for error be before the gatekeeper must find the proffered opinion no longer supported by “good grounds?” Proponents of the reliability of fingerprint identification evidence urge that the United States Supreme Court purposely left this question open to the discretion of the gatekeeper. That is precisely why the *Daubert* factors are explicitly *not* a finite set of considerations; instead the trial judge is required and even encouraged by the spirit of *Daubert-Kumho* and the Federal Rules of Evidence to liberally construe the rules to favor admissibility rather than exclusion. The *Daubert* court specifically rejected the *Frye* standard because it was too strict and inflexible, and inconsistent with the more liberal admissibility standard intended by the Federal Rule of Evidence.¹⁹⁰

Although some evidence scholars and critics of forensic science predict that fingerprint identification evidence will soon be excluded for lack of scientific validity, the courts’ rulings are not leaning that way. Therefore, it is important to consider the due process concerns that still exist, assuming the status quo of the continued admission of fingerprint evidence.

E. Should Defense Attorneys Be Careful What They Wish For? Exclusion of Fingerprint Identification Evidence Would Also Eliminate Its Use for Exoneration Purposes As Well

Not only is fingerprint identification evidence used by the prosecution to convict, it also has significant exoneration power and can greatly bolster a defendant’s claim of innocence.¹⁹¹ Mindful of the

sound; yet like any scientific technique, it can, and has been, applied incorrectly. Many of the concerns include errors in sample handling, interpretation of results, and collection and preservation of samples. Nonetheless, there is little doubt that DNA testing has been the most reliable and revolutionary tool of forensic scientists since the invention of fingerprinting.” *Id.*

189. *Indianapolis Colts, Inc. v. Metro. Baltimore Football Club*, 34 F.3d 410, 415-16 (holding that, even where the expert’s mistake was discovered, exclusion was not required.).

190. *Daubert*, 509 U.S. at 589. (“Given the Rules’ [FRE] permissive backdrop and their inclusion of a specific rule on expert testimony that does not mention ‘general acceptance,’ the assertion that the Rules somehow assimilated *Frye* is unconvincing. *Frye* made ‘general acceptance’ the exclusive test for admitting expert scientific testimony. That austere standard, absent from, and incompatible with, the Federal Rules of Evidence, should not be applied in federal trials.”).

191. Defenders cherish all means that enable them to prove the innocence of their clients with some measure of scientific certainty. Compare DNA exoneration with the use of fingerprint identification evidence. At the advent of the use of DNA, scientists and lawyers hotly debated the scientific validity of DNA and whether it was legally reliable evidence. However, now DNA analysis is responsible for several exoneration. As of February 2004, one hundred and forty-one post-conviction DNA exoneration have been reported in the United States. Furthermore, the scientific technology of DNA testing is improving everyday, wherein its purported results are deemed to be even more certain. Scholars anticipate record numbers of additional exoneration to surface. Scheck & Neufeld, *supra* note

defendant's right to a fair trial and to defend against the charges, negative fingerprint evidence is often used to further the defendant's theory of the case, such as "I could not have done this crime because my prints do not match those found on the murder weapon." Therefore, one must critically consider whether the defense argument for blanket exclusion of fingerprint identification evidence actually benefits the accused and enhances due process.

The defense argument may in fact overstate the deficiencies of fingerprint identification evidence, and thereby, as an unforeseen but natural consequence of the argument, advocate for eliminating the use of fingerprint evidence for exoneration purposes. Although zealous, the argument for blanket exclusion is short-sighted.

FBI expert Mr. Meagher testified in the *Mitchell* and *Plaza* hearings regarding the actual process of fingerprint analysis. In short, Meagher described that there are three levels of detail in each fingerprint that an examiner evaluates prior to making a positive identification. The latent print must consistently match the known exemplar at each of the three levels of analysis in order to constitute a conclusive match. However, an examiner can make an exclusion, i.e., determine that the latent does not match the accused, based on only one level of analysis. "[T]he standard for exclusion is one of dissimilarity. One single dissimilarity of an unexplainable nature constitutes exclusion."¹⁹²

Thus, although based on the same methodology that is used to make positive identifications, the standard for exclusion is easier for the examiner to achieve because a suspect's known prints must be excluded from consideration if only one level of inconsistency is found. The truth is that examiners often make negative or inconclusive findings, or both, which helps the defendant's case. Yet, if fingerprint evidence is excluded as unreliable, defendants would be unable to utilize negative and inconclusive findings to challenge the charges against them.

The defense bar's evidentiary challenge against fingerprint evidence, although currently focused on the prosecution's introduction of

188, at 249; see Cole, *supra* note 19, at 5; see generally EDWARD CONNORS ET AL., CONVICTED BY JURIES, EXONERATED BY SCIENCE: CASE STUDIES IN THE USE OF DNA EVIDENCE TO ESTABLISH INNOCENCE AFTER TRIAL (1996)(National Institute of Justice). Although it is true that the science of DNA testing is much more sophisticated than the methodology of latent print comparison, DNA is not infallible either. *Id.* ("Not even DNA testing is fool proof. Only a fool would make that claim.") Ironically, according to the vocal critics of fingerprint identification evidence, the apparent evidentiary value of DNA testing and fingerprinting has flip-flopped. "At the turn of the twenty-first century, the relative positions of fingerprinting and DNA seem to have reversed. DNA typing has become much more widely trusted than it was a few short years ago. Meanwhile, longstanding fissures in the reliability of fingerprint identification have become visible cracks." Cole, *supra* note 20, at 5.

192. *Plaza II*, transcript of hearing Feb. 25, 2002, at 42.

incriminating prints, is not as sound an argument when applied to the defense's case. Would defenders really embrace the impending outcome of their current request for exclusion? The result would permit defendants to be found guilty even if the fingerprint identification evidence could clearly prove the accused's innocence. It would be contradictory to due process, fair play, and justice to allow a conviction to stand when exculpatory forensic evidence exists that would vitiate the jury's guilty verdict.

The strength of the *Daubert-Kumho* analysis is that it seeks to determine reliability of the expert's proffered opinion irrespective of the expert's actual finding, whether positive or negative.¹⁹³ The *Daubert-Kumho* focus is on the reliability of the underpinnings of the methodology that leads the expert to his or her respective conclusion¹⁹⁴ – exclusively an effort to weed out “junk science.” Thus, if latent fingerprint evidence is excluded as scientifically invalid and legally unreliable, it must be excluded for all purposes and by both parties; neither the prosecution nor the defense would be allowed to use either incriminating or exonerating fingerprint identification evidence.

Although defense attorneys are arguing for a conservative reading of the *Daubert-Kumho* standard, a liberal admissibility standard errs to the benefit of the accused because it enables him to introduce exculpatory evidence in his own defense. It may not be readily obvious to the lay observer, but negative fingerprint evidence is more common than are positive findings. In other words, even though fingerprint evidence is very powerful and persuasive prosecution evidence, it is often not present. Latent fingerprints are difficult to collect and typically only found on a limited few surfaces and locations.¹⁹⁵ Therefore, the result of excluding

193. American College of Trial Lawyers, *Standards and Procedures for Determining the Admissibility of Expert Evidence After Daubert*, 157 F.R.D. 571, 576 (1994) (citing *Daubert*, 509 U.S. at 595.) (“[C]learly stated in *Daubert*, the focus of the trial judge's scrutiny should be on the principles and methodology used by the expert, not on the conclusions reached. . . .”).

194. *Id.* “The Supreme Court's differentiation between underlying methods and ultimate conclusions reinforces the crucial distinction between determining admissibility of evidence under Rule 702 and determining the weight or sufficiency of evidence. By concentrating the judge's gatekeeper role on a review of the underlying principles and methodology, the Court recognizes that competent analysis and review of the ultimate conclusions reached and how well those conclusions follow from the stated premises must be determined by the fact-finder after the evidence has been tested through vigorous cross-examination and the presentation of rebuttal evidence and after it has been analyzed in light of all of the evidence and according to the judge's instructions on burden of proof.” *Id.*

195. Latent prints are generally only recoverable from certain types of hard, smooth, non-porous surfaces. New technologies are being developed to alleviate this limitation on latent fingerprint collection. In Australia, “[f]orensic scientists at the University of Technology, Sydney have demonstrated that fingerprints can be successfully lifted from rough surfaces, like bricks, boosting the effectiveness of a crime fighting weapon that is now a century old. In collaboration with the Australian Federal Police (AFP), has thoroughly tested the effectiveness of a new generation of chemical sprays, showing that they offer police the chance to collect evidence from surfaces not previously regarded as

fingerprint identification evidence from criminal jury trials as unreliable could easily harm defendants more often than it would help them.¹⁹⁶

If the defense argument is accepted, and a stricter and less fluid application of *Daubert-Kumho* is followed by the courts, fingerprint evidence will gain the discredited status reserved for lie detector tests and other forms of “shaky evidence” and vanish entirely from all courtrooms.¹⁹⁷ Not only would fingerprint evidence become inadmissible

viable sites for fingerprints.” University of Technology Sydney, *Finding Fingerprints in the Rough* (November 23, 2003) available at <http://www.uts.edu.au/new/releases/2003/November/25.html>. Scientist Katherine Flynn presented at the 17th International Symposium on Forensic Science a paper entitled “The Evaluation of Spray Reagents for the Detection of Latent Fingerprints at the Crime Scene.” The abstract is available at <http://www.forensics.edu.au/sections.php?op=printpage&artid=128>). Canadian scientist, Maria Viazhikova, from the Ottawa University Heart Institute, is developing techniques to extract DNA from fingerprints. “Even if the only evidence forensic analysts can pull from a crime scene is a fingerprint smudged beyond recognition, a new technique developed by Canadian scientists soon could harvest enough DNA from the print to produce a genetic identity. . . . The novel system can extract DNA in only 15 minutes.” . . . Charles Choi, United Press International Science News, *DNA Extractable from Fingerprints*, July 31, 2003, available at <http://www.upi.com/view.cfm?StoryID=20030730-040600-4102r>. Information regarding this research was presented at the American Society of Microbiology’s Nanotechnology Conference in New York City, 2003. See generally www.asm.org. Notwithstanding new developing techniques to enhance the process of collection and examination, latent prints found in public places, such as a convenience store or a bank, are typically extremely poor quality and usually render inclusive of negative findings. Therefore, in the common 7-Eleven robbery, positive fingerprint evidence is typically not introduced by the prosecution because it is unavailable. However, negative fingerprint evidence – the insufficient latent prints that were recovered that do not match the accused, or the complete lack of available latent prints – is introduced by the defendant to bolster his defense that he was not the person who robbed the 7-Eleven because his prints were not found on the 7-Eleven doors or the 7-Eleven cash register. The use of negative fingerprint evidence as defense evidence is powerful in discrediting the eyewitness testimony. Defense attorneys are able to argue more effectively that the 7-Eleven clerk was mistaken and unsure about the identity of the person who committed the robbery because there is no physical evidence, no corroborating fingerprint evidence to establish the accused’s presence in the 7-Eleven on the night in question. But if the defense bar wins its request for blanket exclusion of fingerprint evidence, these defense arguments used to refute identity would be eliminated as unreliable.

196. In order to fully weigh this argument one must consider the juror’s bias in favor of fingerprint evidence. As mentioned early on in this Article, “everyone” knows fingerprint evidence does not lie. Therefore, the lack of fingerprint evidence at trial may lead a juror to speculate (although improperly) that the prosecution has no evidence linking the accused to the crime. This inference, although outside the facts a juror is allowed to consider, may ultimately benefit the accused by leading the juror to believe that the prosecution’s case is weaker because it lacks corroboration.

197. Although polygraph evidence was previously *per se* excludable from all criminal trials, *Daubert* has changed the status of the admissibility of this type of evidence. In 1997, the Ninth Circuit Court of Appeals opined that lie detector expert witnesses are subject to the same analysis under the *Daubert* test – further finding that lie detector evidence is not *per se* inadmissible and is otherwise within the discretion of the trial judge. See *United States v. Cordoba*, 104 F.3d 225 (9th Cir. 1997). Some jurisdictions have legislated this issue and enacted statutes that permit the admission of lie detector evidence. See e.g., NMRA Rule 11-707(c)(New Mexico’s Rules of Evidence allow for the admission of polygraph evidence: “Subject to the provisions of these rules, the opinion of a polygraph examiner may in the discretion of the trial judge be admitted as evidence as to the truthfulness of any person called as a witness if the examination was performed by a person who is qualified as an expert polygraph examiner pursuant to the provisions of this rule.”). Subsequently, in a case arising from the

through expert witnesses, but the mere mention of its existence would also be prejudicial and could result in reversible error. This result would be unfortunate. The exclusion of fingerprint evidence would create broad and sweeping implications that reach beyond the criminal justice system;¹⁹⁸ further, its exclusion would not match the spirit of *Daubert-Kumho*, which is intended to be more inclusive, not more restrictive.¹⁹⁹ Moreover, the due process rights of the accused may be curtailed in essence by restricting the defense theories available to prove innocence.

V. *Deus Ex Machina*:²⁰⁰ Resolving the Evidentiary Dilemma of Using Fingerprint Identification Evidence In Criminal Jury Trials

Criminal jury trials are a substantial undertaking. They are serious, not only for the liberty interests of the accused, but also for the safety interests of the community. For those reasons, the prosecution's burden of

military courts, the United States Supreme Court ruled that the military court's per se rule against the admissibility of lie detector evidence does not violate a defendant's Fifth or Sixth Amendment rights. *United States v. Scheffer*, 523 U.S. 303 (1998).

198. It is contradictory to apply the exclusionary rule to fingerprint identification evidence based on an underlying analysis that it is unscientific and unreliable, notwithstanding its universal use in many other important non-judicial purposes. For example, fingerprint experts conducted numerous comparisons while working with New York City mortuaries following the World Trade Center tragedy. For a description of the examiner's efforts, see "Alumnus Spotlight: Alumnus Assists at the World Trade Center" at <http://www.wscc.cc.tn.us/foundation/publicinfo/hubweb/hub11-01/spotlight.htm>. Additionally, advocates for the child registry database aimed at fighting against child abduction encourage parents to photograph and fingerprint their children as part of a DNA kit for kids to be used for investigation and identification purposes in the unfortunate event the child is reported missing. See, e.g., "Kids DNA Tracing" at <http://www.kids-dna.com> (selling home DNA products for parents to collect samples from their children, including a home fingerprinting kit). Fingerprinting is routinely used as a security measure to verify identity in heightened security situations. See, e.g., Andrew Buncombe, *Rings of Steel*, THE INDEPENDENT (LONDON), Jan. 15, 2002 (describing the use of fingerprinting as a heightened security measure at the 2002 Winter Olympics. Specifically, biometric scanners were used to match fingerprints and limit access in the highest security areas.)

199. Also, exclusion is similarly inconsistent with the FRE and the Advisory Comments that accompanied the post-*Daubert* amendment of FRE 702. See generally American College of Trial Lawyers, *Standards and Procedures for Determining the Admissibility of Expert Evidence After Daubert*, 157 F.R.D. 571 (1994).

200. *Deus ex Machina* is a Latin phrase loosely meaning something that provides a sudden and unexpected solution to a difficulty. See Merriam Webster Online, available at <http://www.merriam-webster.com>. *Daubert*, 43 F.3d 1311, 1316 (The court entitles section II.B. of its opinion *Deus ex Machina* referring to the difficult task judges, as legal experts, have when attempting to properly apply the *Daubert* factors to technical scientific testimony. This section of the opinion emphasizes, however, albeit difficult, judges, as "gatekeepers," must reconcile the issues of scientific validity and legal reliability for expert witnesses testimony. The court stated: "How do we figure out whether scientists have derived their findings through the scientific method or whether their testimony is based on scientifically valid principles? Each expert proffered by the plaintiffs assures us that he has "utiliz[ed] the type of data that is generally and reasonably relied upon by scientists" in the relevant field, (citation omitted) and that he has "utilized the methods and methodology that would generally and reasonably be accepted" by people who deal in these matters (citation omitted).")

proving the charges beyond a reasonable doubt is a sizeable task and should not be undermined by semantics or distracting defense tactics aimed at confusing or tricking the jury. In cases where identity is a key issue and fingerprint identification evidence is present, however, both parties should be given an opportunity to fully present their respective theories to the jury.

In addition to each litigant's case being fairly presented to the jury, consistency is another issue that should be considered. Each litigant should also have a degree of certainty regarding the probable outcome of evidentiary motions challenging customary evidence such as fingerprint identification evidence.²⁰¹ The solutions discussed in this section are geared toward maintaining the admissibility of fingerprint identification evidence while still protecting both the defendant's and the prosecution's right to a fair trial. In order to preserve this fair trial right in every criminal case, the defendant must be provided a full opportunity to challenge the evidence against him, while, at the same time, preserving the prosecution's right to present the full force of its evidence. It is a balance that judges constantly confront with every filed motion and/or contemporaneous courtroom objection. Nonetheless, each defendant has a due process right to defend himself and present all relevant theories of his case. This includes the ability to attack the strength of the incriminating physical evidence, even fingerprint identification evidence. Particularly when the defense's argument is pure innocence, e.g., "it was not me, you've got the wrong man," a defendant should be allowed to present the possibility of a misidentification error by the fingerprint examiner.²⁰² A real concern with

201. Certainty of results, i.e., the ability for attorneys to accurately predict outcomes, is very acute in criminal law wherein ninety percent of defendants plead guilty. In order to properly assess the fairness of the plea bargains, both the prosecution and the defense need to be able to accurately predict the probable outcome of key evidentiary rulings. Without a firm knowledge of whether the fingerprint identification evidence will be admitted or excluded, defense attorneys cannot properly advise their clients whether to plead guilty or risk the outcome of a jury trial. Arguably, a defendant could reject an early plea negotiation in order to attack the fingerprint evidence in an *in limine* motion. However, the earliest plea offers are typically the most favorable to defendants, and the prosecution would likely withdraw these favorable negotiations once the defendant began to file evidentiary motions and rigorously challenge the evidence. The "discount" given by prosecutors in plea negotiations is largely based upon the amount of time, effort, and government resources that have been expended on the case. Once "full litigation" of the issues begins, the prosecutor's settlement offer automatically goes up. Defendants should not have to risk this chance on standard evidence like fingerprints.

202. This reality highlights the significance and sheer uniqueness of Detective McKie's case, wherein because of her status as a police officer and the belief that she was not involved in the murder, she was able to challenge the false fingerprint evidence against her in a completely different way. The average accused is nearly unable to present even the possibility of error, let alone actually prove the examiner made a mistake. If Detective McKie was the victim of a misidentified fingerprint, it is possible that an innocent defendant could fall prey to the same mistake. He or she should be entitled to present the evidence to support the theory of mistake. *See generally* United States v. Mitchell, 365 F.3d at 246 (Not only are extensive *Daubert* hearings unusual in criminal cases, they are not required. "None of this [the Third Circuit's *Mitchell* opinion], however, should be read to require

the admission of fingerprint identification evidence in jury trials lies in the defendant's due process right to present counter-evidence or expose the possibility that the perceived infallibility of fingerprint evidence may be wrong. More often than not, however, defendants are not able to effectively attack the fingerprint evidence.

Even though the conclusive opinions of fingerprint experts remain quite vulnerable to pointed criticism in legal scholarship and vigorous cross-examination in trial, federal trial judges' rulings conclude that complete exclusion overstates the weakness of the evidence and is a harsher remedy than the rules require. Right, wrong, or indifferent, fingerprint identification evidence is not going anywhere, and defenders must be prepared to effectively expose its limitations in front of the jury. In this regard, many trial judges have allowed defense attorneys great latitude in cross-examination, and even permitted defense counter-experts to testify as rebuttal to the prosecution's experts.

For example, in *United States v. Mitchell*,²⁰³ after the *Daubert* hearing was conducted, the trial judge orally ruled from the bench "that the fingerprint expert testimony was admissible, that its probative value outweighed its prejudicial impact, and that the defense was prohibited from presenting witnesses to the jury who would testify about the general flaws in fingerprint identification."²⁰⁴ However, in an opposite example, an appellate court stated that "to the extent that [the defendant] questions the [scientific] validity of the fingerprint comparison, this is a question of weight and credibility that properly [goes] to the jury."²⁰⁵ Thus, currently,

extensive *Daubert* hearings in every case involving latent fingerprint evidence. The Supreme Court has emphasized that district courts "have the same kind of latitude in deciding *how* to test an expert's reliability" as they do in deciding "*whether or not* that expert's relevant testimony is reliable." *Kumho Tire*, 526 U.S. at 152, 119 S.Ct. 1167. Thus a district court would not abuse its discretion by limiting, in a proper case, the scope of a *Daubert* hearing to novel challenges to the admissibility of latent fingerprint identification evidence – or even dispensing with the hearing altogether if no novel challenge was raised.”)

203. 199 F. Supp. 2d 262 (E.D. Pa. 2002), *aff'd*, *United States v. Mitchell*, 365 F.3d 215, 251 (3d Cir. 2004) (The appeals court affirmed the district court's exclusion of Defendant Mitchell's defense experts. However, the appeals court suggested a method by which these defense experts may have been permitted to testify: "Mitchell could have asked the Court whether Prof. Starrs and Dr. Cole would be permitted to testify as to the reliability of fingerprint identification, provided that they did not opine on the irrelevant issue of whether it [latent fingerprint identification], was a science. Instead he [Mitchell] accepted their exclusion. Mitchell could have proffered the subject matter of testimony he would like to present. Instead he proffered the witnesses he would like to call. Mitchell could have attempted to put his witnesses on the stand to preserve his objections. Instead, they never appeared at trial." *Id.*).

204. *Id.* See also FAIGMAN, *supra* note 2, §27-1.2, at 359.

205. *United States v. Malveaux*, 2000 WL 125917, n.5 (9th Cir. 2000) (unpublished). See also FAIGMAN, *supra* note 2, at §27-1.2.

courts are inconsistent regarding a defendant's right to affirmatively challenge the fingerprint identification evidence during trial.²⁰⁶ This inconsistency should be eliminated.

This Article suggests an alternative vehicle by which an accused can challenge the fingerprint evidence against him – the special jury instruction.²⁰⁷ In a balanced manner, the special jury instruction would address the possibility of fingerprint examiner error by providing the jurors with a list of relevant factors to consider when weighing the fingerprint evidence presented in their particular case. The instruction(s) would not be given in every case involving fingerprint evidence, but could be requested by the defense in cases in which the main incriminating evidence was fingerprint identification evidence and the defense was innocence.²⁰⁸ Two special jury instructions are proposed. The first instruction would clarify for the jury that a latent fingerprint expert's testimony is opinion, and not fact. For example, the language of the proposed instruction would include the following:

206. Notably any defense challenge would be subject to FRE Rule 403 and would have to be more probative than prejudicial before it could be admitted. Further, the court would have to deem the counter-evidence more than a distraction or a waste of time. Unfortunately for the defendant, since the reliability of fingerprint evidence is ingrained into the minds of judges, many judges would reject the defendant's request as violating FRE Rule 403 and a waste of time. Therefore, another trial practice change that is proposed by this Article is to require a specific showing by the defense that the fingerprint identification evidence is the prosecution's key evidence of guilt. This is a procedural safeguard aimed at FRE Rule 403 concerns that the jury not be distracted or confused by non-material issues.

207. Scholars of jury bias have written on the issue of over- and under-weighting of evidence by the jury. The "battle of the experts" is a situation in which this type of jury bias can commonly occur. Specifically, in trials where litigants have experts fighting over which opinion is more correct, jurors either simply ignore both experts and only focus on the other evidence in the case, or alternatively ignore all the other evidence in the case and only consider the opinion testimony of the experts. Both, over- and under-weighting of important criminal evidence, especially fingerprint evidence which points to identity, injects a problem of jury bias for both litigants. The jury instruction method helps to alleviate the inherent prejudicial effect of the "battle of the experts" while simultaneously affording every defendant, even those who cannot afford to hire an independent defense expert, the opportunity to challenge the validity of the fingerprint identification evidence.

208. It is important to narrowly limit when the instruction can be given in order to prevent unduly distracting the jury with irrelevant side issues. For example, in a case where the crime was allegedly committed in the defendant's residence, attacking the existence of the latent fingerprints found in the defendant's bedroom would not be appropriate. The special jury instruction should not be given in this situation because the existence of the accused fingerprints is not an essential part of the prosecution's evidence of guilt. Additionally, the defense case would be required to be actual innocence. For example, in a murder case, the defendant would have to argue that he did not kill the victim, like Asbury argued in the Scotland case. See *supra* note 67. The special jury instruction regarding examiner error would not be allowed in a case where the defendant was arguing his level of *mens rea*, i.e., manslaughter instead of murder. In such a case, the special jury instruction would be more of a hindrance than a help and would instead distract the jury from the true issues in the case.

The latent fingerprint expert's testimony is his or her professional opinion. It should not be considered by you as a conclusive fact, but should be weighed along with all the evidence that you have heard in this case. Testimony from a latent fingerprint expert is not conclusive, in itself, on the issue of guilt; instead, guilt must be proven in light of all the evidence. As jurors, you are the ultimate fact finder and may give the fingerprint evidence whatever weight you determine is appropriate.

The second proposed jury instruction would address how much weight to give the testimony of the latent fingerprint expert. Although an expert's opinion may often warrant being given a great deal of weight, an expert's opinion is not automatically more important than other physical or testimonial evidence admitted in the case. Due to the identified biases and misconceptions that fingerprint evidence is infallible, it is particularly important to give jurors some guidance, in the way of an instruction, regarding how to analyze the value of the fingerprint evidence admitted in the particular criminal case before them to consider. Therefore, instead of applying an automatic or unreasoned meaning to the fingerprint evidence, e.g., fingerprint match = defendant is guilty, this instruction encourages jurors to think critically about the quality of the physical evidence as well as the competence of the expert examining it. Entitled, "Factors Jurors May Use To Determine The Credibility Or Reliability Of The Particular Testifying Latent Fingerprint Expert," the second instruction would state:

In weighing the credibility of a latent fingerprint examiner, you may consider the following factors: a) the experience, training, and expertise of the examiner; b) the number of similar fingerprint ridge characteristics found among the latent and known print(s); c) whether there are dissimilar fingerprint ridge characteristics found among the latent and known print(s); d) the size of the latent print(s) relied on; e) the quality and clarity of the latent print(s) relied on.²⁰⁹

209. See *Regina v. Buckley*, 143 SJ LB 159 (April 30, 1999). *Buckley* is a case from the United Kingdom, and at the time of the *Plaza II* decision, it was the seminal case on the issue of the admissibility and reliability of fingerprint identification evidence. In *Buckley*, the Court of Appeal (Criminal Division) described the history of fingerprinting which originated in England and explained the evolution of the standards for analyzing fingerprints established by the National Conference of Fingerprint Experts. Beginning in 2000, the standard changed from requiring a set number of points of similarity to a standard which mirrors the standard utilized by the FBI, which does not require a certain number of points in order for the expert to render an opinion regarding identity. Therefore, in an effort to give some guidance to the trial courts, the *Buckley* court held that in cases where the latent fingerprint expert's opinion was based on fewer than eight "similar ridge characteristics," the

The instruction could be adjusted by the trial court to appropriately fit the facts of the case, and should, for example, state only the contaminates which were established in evidence during trial. These could include such issues as, consideration of possible injury to the person who left the print, as well as actual physical contaminates like other overlying fingerprints, dirt or blood. Not all cases will present the same issues regarding quality and clarity of the latent print, and the proposed instruction should be expanded or redacted accordingly, as not to inject undue prejudice or confusion into the jury's determination.

As the reference notes indicate, the United Kingdom, in *Regina v. Buckley*, has espoused these credibility factors for fingerprint identification evidence and instructed the trial judge, as a question of law, to weigh them in determining the legal question of admissibility in a particular case. My proposal echoes the *Buckley* court regarding the relevant factors that must be weighed but instead advocates that the jury consider them as a question of fact. Consistent with the current liberal admissibility interpretation of the *Daubert-Kumho* standard that the U.S. appellate courts have applied, there is no real debate whether, as a legal question, fingerprint evidence is admissible. It clearly is. Nevertheless, it is arguable by both prosecution and defense whether all fingerprint evidence is equal and whether the quality of the analysis of every expert is reliable – factual questions for each juror to weigh along with all the other evidence. Although trial judges possess the discretionary authority to exclude fingerprint identification evidence that falls below the standard of legal reliability, as of the writing of the Article there is no corresponding binding authority in American law, akin to *Buckley*, that would require a judge to exclude fingerprint identification evidence that fell below a certain number of ridge comparison points. The use of the *Buckley* factors in special jury

fingerprint identification evidence should not be admitted by the prosecution; however, in cases where the latent fingerprint expert's opinion is based on "eight or more similar ridge characteristics, a judge may or may not exercise his or her discretion in favour [*sic*] of admitting the evidence." The *Buckley* court went on to list the elements that the trial judge should consider when performing the gatekeeping function to admit or deny the admission of fingerprint identification evidence. As excerpted in *Plaza II*, the following factors were listed: "(i) the experience and expertise of the witness; (ii) the number of similar ridge characteristics; (iii) whether there are dissimilar characteristics; (iv) the size of the print relied on, in that the same number of similar ridge characteristics may be more compelling in a fragment of print than in an entire print; and (v) the quality and clarity of the print on the item relied on, which may involve, for example, consideration of possible injury to the person who left the print, as well as factors as smearing or contamination. In every case where fingerprint evidence is admitted, it will generally be necessary, as in relation to all expert evidence, for the judge to warn the jury that it is evidence opinion only, that the expert's opinion is not conclusive and that it is for the jury to determine whether guilt is proved in the light of all the evidence." *Plaza II*, 188 F. Supp. 2d at 566-67.

instructions, however, gives guidance to jurors regarding how to evaluate the evidentiary worth of fingerprint evidence and credibility of the specific expert witnesses testifying regarding it.

Although not previously used for fingerprints, there is precedent in American courts for instructing jurors specifically about certain testimonial evidence, intentionally giving jurors guidance on how to evaluate it and the appropriate weight to give it; consider the special jury instructions given in cases wherein eyewitness identification testimony is the prosecution's primary incriminating evidence.

The eyewitness identification example is comparable to the fingerprint identification issues in one important aspect: the information contained in the defense special instruction is in direct contradiction to the prosecution's theory of the case and is counter-intuitive to assumptions that the average layperson juror would make about the evidence. In other words, in the eyewitness context, the lay juror is more likely to believe a victim who is absolutely sure about the identity of her attacker over a victim who testifies less adamantly regarding identity. Yet, scientific studies of eyewitnesses' ability to correctly identify their true attacker support the opposite conclusion, and the victim who testifies that she is "100% sure" about identity is no more often correct about the identity of her true assailant than the victim who testifies less adamantly. Therefore, the knowledge of this empirical fact, in the form of framework evidence contained in a special jury instruction, helps the jury to properly assess the victim's credibility and not overweigh her eyewitness identification testimony simply because she says she is 100% sure.

With fingerprint evidence, it is similarly counter-intuitive to believe that the fingerprints could "lie." There is, however, no scientific support for the theory that fingerprint evidence is infallible, and if courts are going to continue to interpret the *Daubert-Kumho* standard liberally, the defense should be entitled to present framework evidence, in the form of a special jury instruction, to allow jurors to appropriately weigh the value of the fingerprint evidence which includes the possibility of disregarding it as unpersuasive in a particular case or even possibly erroneous; a thought that they would otherwise reject as impossible.

Courts have recognized the use of the jury instruction method to present expert opinion evidence. In *State v. Alger*,²¹⁰ the Court of Appeals of Idaho noted the Arizona Supreme Court's use of jury instructions to inform the jury regarding potential eyewitness identification errors:

210. 764 P.2d 119 (Idaho Ct. App. 1988).

Our conclusion is consistent with recent decisions of other state courts that have considered [the use of eyewitness identification jury instructions]. In *State v. Chapple*, 660 P.2d 1208 (Ariz. 1983)(en banc), the Arizona Supreme Court held that even if jurors of ordinary education need no expert testimony to enlighten them on the dangers inherent in eyewitness identification, expert testimony on the issue nonetheless would be admissible to support a defense of misidentification. The Court reasoned that the concepts developed through the expert's research would be of substantial assistance to the jury. This trend is reflected by decisions of other courts mandating the use of jury instructions warning the jury of the dangers inherent in eyewitness identification. *See, e.g., State v. Warren*, 230 Kan. 385, 635 P.2d 1236 (1981); *Commonwealth v. Bowden*, 379 Mass. 472, 399 N.E.2d 482 (1980); *State v. Long*, 721 P.2d 483 (Utah 1986); *State v. Payne*, 167 W.Va. 252, 280 S.E.2d 72 (1981).²¹¹

The use of the jury instruction method, instead of presenting a counter-expert in the defense's case, is preferable for two reasons: 1) it affords every defendant, regardless of financial resources available to hire counter-expert witnesses, the ability to present and argue the issue of potential examiner error before the jury; and 2) it avoids the "battle of the experts" circus during trial which often results in the jury overweighing or underweighing the piece of evidence the experts are fighting over. With the jury instruction method, the judge can tailor the appropriate instruction to fit the status of the law and science at the time of the trial as well as the relevant facts of the case. The parties are provided an opportunity, outside the presence of the jury, to argue and make a record of specific objections to the instruction in order to properly preserve issues for appeal. Further, the jury instruction would only be providing "framework" evidence, not adjudicative fact, and as such is less persuasive and creates less prejudicial effect on the prosecution's case. The jury would merely be exposed to the knowledge that misidentification is reasonable given the quality of the fingerprint evidence and all the other relevant evidence in the case.

The caveat to the jury instruction method is that only theories that are well-settled should be instructed in this fashion.²¹² John Monahan and

211. *Id.* at 127.

212. Therefore, it must be first determined by the trial court that the defense's argument attacking the validity of fingerprint identification is valid, i.e., the defense must proffer evidentiary support for this argument. In the case of fingerprint identification, this step in the analysis is a bit oxymoronic because fingerprints allegedly have not met the showing of scientific validity required by *Daubert-Kumho*; thus to force the opponent to meet a standard for its theory that the proponent cannot meet

Laurens Walker, two of the leading experts in the use of social science in law and advocates of the jury instruction method, explained it this way:

The question . . . is what courts should do when a party requests “social framework” instructions but presents no social science research, or only inadequate social science research, to support the request. The answer is to be found by turning to the standard for framing jury instructions. That standard is clear: courts must give only instructions that state the law “correctly” or “accurately.” . . . If the research comprising the framework is valid in the court’s estimation, and relevant to the facts of the case, the instruction should be given. If the research is invalid, or nonexistent, it would follow from the law regarding jury instructions that no instruction would be forthcoming. An instruction would be unnecessary to decide the case: lacking valid research, a jury is as well equipped as a judge to speculate on the effect of social context in determining the facts at issue in the case.²¹³

Therefore, the instruction proposed in this section lists established and relevant factors used to evaluate fingerprint identification evidence – factors which either make the evidence stronger or weaker in a particular case. However, it is foreseeable, as more becomes known about the “science” of fingerprinting, that future special jury instructions could include more details about the strength or limitation of the evidence. In any event, it would be a legal question for the judge to determine whether the counter-evidence claiming the inaccuracy of fingerprint identification evidence was reliable, i.e., “accurate,” enough to support giving such an instruction. On balance, the jury instruction method favors the defendant’s right to fair trial in that it would allow every defendant to assert the theory of fingerprint misidentification in relevant cases where fingerprint evidence is the main incriminating evidence.

seems backward. Proponents of fingerprint identification evidence argue that merely exposing the fact that fingerprint examiners make mistakes or that their accuracy has not been empirically studied does not establish lack of scientific validity or that their expert opinions are not based on “good grounds.”

213. John Monahan & Laurens Walker, *Empirical Questions Without Empirical Answers*, 183 WIS. L. REV. 569, 592 (1991).

VI. Conclusion

The *pas de deux*²¹⁴ between the defense and the prosecution on this issue is a necessary exercise, and essential to the operation of the adversarial system that strives to seek justice. Akin to the checks and balances in the United States' tripartite democracy, the soundness and reliability of the rulings and verdicts handed down from the judicial branch is essential to the stability and health of the democratic system of government.

Currently fingerprint analysis is under attack because of the lack of study done on the accuracy of the examiners coupled with the unwillingness or inability of the forensic science community to detect, acknowledge, and correct mistakes. Another weakness lies in the fact that fingerprint identification is an industry of analysis conducted with an eye towards litigation and is monopolized by law enforcement. This lopsided division of labor would not be such a concern if latent fingerprint examiners were also independently checked, monitored, or regulated. But instead it is all self-contained: investigation, production or analysis of evidence, and prosecution. It leads to dangerous suspicions and produces realities like Detective McKie's.

The issue of fingerprint identification is more complex because of the uniqueness and permanence of fingerprints themselves and the history of universal acceptance this type of evidence has enjoyed. Notwithstanding the human and subjective elements of fingerprint analysis, which inevitably creates errors, courts have mechanically relied on these test results for nearly one hundred years. The *Daubert-Kumho* standard now forces courts to scrutinize expert opinion testimony, including fingerprint identification experts, to a heightened degree.

Expert fingerprint examiner Pat Wertheim summed up the real fear with fingerprint identification evidence and why the certainty of its reliability is crucial. In his interview with BBC's *Frontline*, he stated: "In a free society a person has the right to be confronted in court only with valid evidence. If we allow the police to introduce bogus evidence in the court then we become a police state."²¹⁵ Therefore, without proper methodology and testing and ways to identify errors, a prosecutor will never know if she is convicting David Asbury or the real killer. It is too serious of a question at which to guess. The evidence used in criminal

214. *Pas de deux* is a Latin phrase which is defined as "an intricate relationship or activity involving two parties or things." See Merriam Webster Online, available at <http://www.merriam-webster.com>.

215. *Frontline May 2000*, *supra* note 67.

cases must be scientifically valid and legally reliable.

Faigman's treatise, *Modern Scientific Evidence*, predicts the future landscape for this area of law:

One likely and beneficial scenario would be that the belated empirical research sparked by the fingerprint community's fear of exclusion under *Daubert* and *Kumho Tire* will result in knowledge that will lead courts not to exclude but to require fingerprint identification expert witnesses to remain within the bounds of those data, to become aware of and be candid about the field's limitations, and to refrain from making unsupportable exaggerations – some of which virtually define the field in the popular imagination.²¹⁶

Empirical testing of the validity of latent fingerprint identification evidence can only help the justice system, not hurt it. Frankly, it is somewhat shocking that in 2004 the hard data does not already exist to support the general belief that fingerprints do not lie.

216. Faigman et al, *supra* note 2, §27-1.0, at 350.