

# How I Created a Monster

GABRIEL A. FUENTES

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The author is a partner with Jenner & Block LLP, Chicago.

I never thought that as a trial lawyer, I would ever have anything in common with the creator of the monster in Mary Shelley's *Frankenstein*. But like Shelley's "modern Prometheus," I learned that a natural, human striving for a greater understanding of scientific knowledge can have unintended and even dangerous consequences.

In my case, a 2009 pro bono court appointment in a federal drug prosecution, I dared to challenge a gold standard of so-called "scientific" evidence. I dared to argue that everything we have been told about fingerprint examiners' ability to claim a match between a fingerprint deposited on a surface somewhere and a particular individual is without any real scientific basis, and that without an adequate showing of validity or reliability these claims should not be admitted as proper expert testimony.

Immersed in the task and thrill of the exploration, I thought I was pioneering, and in many senses, I was. I thought I was on the cutting edge of science or law, or even both. Only after my creation came to life and began terrorizing the countryside did I realize the horror I had wrought.

Others had challenged fingerprint identification testimony before, but the courts widely rejected all of those challenges under a line of cases dating back at least 100 years. Those cases stretched to a time when the notion of the infallibility of fingerprint identification first entered the public consciousness

following the publication of Mark Twain's *Pudd'nhead Wilson* in 1894. In Twain's story, the protagonist lawyer wins the acquittal of his clients by matching the fingerprints on the murder weapon to someone else. Twain apparently had read the work of Sir Francis Galton, published two years earlier. Galton, in short, had dropped cut-up images of fingerprints onto a piece of paper and concluded that the chances of one person's print being identical to that of another specific person were 1 in 64 billion.

None of those earlier court challenges had the benefit of a watershed 2009 report by the National Academy of Sciences (NAS), the leading scientific research arm of the U.S. government. See NAT'L RESEARCH COUNCIL, NAT'L ACAD. OF SCIS., STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES: A PATH FORWARD (Feb. 2009), available at [www.ncjrs.gov/pdffiles1/nij/grants/228091.pdf](http://www.ncjrs.gov/pdffiles1/nij/grants/228091.pdf). The NAS report concluded that, with the exception of nuclear DNA evidence, "no forensic method has been rigorously shown to have the capacity to consistently, and with a high degree of certainty, demonstrate a connection between evidence and a specific individual or source." *Id.* at 7. The report says, among other things, that fingerprint examiners are "unjustified" in claiming they can match a latent fingerprint to a particular individual, that broad claims about the uniqueness of individual prints across the population are unsubstantiated, and that the most commonly

accepted fingerprint identification method “is not specific enough to qualify as a validated method for this type of analysis” and does not guarantee that two analysts following the method will reach the same results. *Id.* at 142–44.

In my case, *United States v. Clacy Watson Herrera*, the purported match stemmed from two smudged fingerprints recovered from a piece of tape on a package of heroin U.S. Customs agents extracted from a courier’s body cavity in 1999 at a Texas airport. The indictment alleged that my client provided the courier with the heroin in Panama. What was more important, the government wanted to use fingerprint identification testimony to shore up a case based almost entirely on cooperating witnesses who implicated my client after pleading guilty. According to the government, the fingerprints showed not only that my client had handed the heroin package to the courier but also that everything said about him by other witnesses was true—that he was the source of supply in Panama for a conspiracy to smuggle liquefied narcotics into the United States in baby formula cans, emptied of formula and refilled with drugs.

The conspiracy, the government said, involved flying young women from the South Side of Chicago to Panama, where they would be handed the drug-filled baby formula cans. To make their transportation of the cans appear legitimate, the young women allegedly posed as the mothers of infants. The story got even worse: The alleged conspiracy actually *rented babies* from desperate South Side couples so couriers could bring real children back and forth to Panama as a cover for the scheme.

The charged plot was as dastardly as it was brilliant. The only question was whether the government could prove my client was behind it—without surveillance testimony, pictures, recorded interceptions, or any incriminating statements.

We would not hear about fingerprints until November 2009, on the day before the scheduled trial. I had asked the government to disclose the results of examinations and tests under Federal Rule of Criminal Procedure 16, and the government said there was none concerning fingerprints. Late in the pre-trial preparation, though, the government informed us that it was having some of the old evidence examined. I knew right away why—when I had been a prosecutor, I had done the same thing. If the examination results yielded nothing, that didn’t matter. What mattered was stopping defense counsel from telling the jury that the government never had the evidence examined for fingerprints at all. Juries have this thing about fingerprints. They believe in them, so not bothering to look for them would be potentially disastrous for the government.

Before too long, the government’s examiner reported back that, in his opinion, two latent prints on the drug packaging tape belonged to my client. I geared up to challenge the report, and that was when the monster was conceived.

Illustration by Tim Foley

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## Challenging Fingerprints

I reread the NAS report and its conclusion about the shortcomings of the government's method of fingerprint identification and of the supporting research in general. Building on its conclusion that more research was needed to support claims by examiners that they could "match" a latent fingerprint to a single person, I embarked on what may have been the first comprehensive *Daubert* challenge to the admissibility of fingerprint identification evidence based on the NAS report.

By the time it was filed, the *Daubert* motion and exhibits ran to hundreds of pages. I relied heavily on the NAS report to show that the hundred-year-old line of cases was simply wrong. No one had ever offered research validating fingerprint matching, and no court had ever really demanded any. Now the NAS had established that little or none existed. Some courts had relied on now-disproved testimony that fingerprint identification had a zero error rate. But none had undertaken a *Daubert* analysis of the issue since the NAS report except in one case in federal district court where I thought the issue had not been comprehensively presented. Therefore, the older cases were more than wrong; they were obsolete and failed to account for the evolving state of scientific knowledge. Relying on them would be a failure to acknowledge that science itself progresses.

Today's courts, I argued, should look at fingerprint evidence through a new prism. It wasn't that fingerprint identification, as a science, is unreliable. The problem, I sought to explain, is that prosecutors cannot make *Daubert's* required showing that the evidence has *already been shown* to be reliable. It was impossible to know whether the opinion in our case was reliable enough for the jury to hear. There was no real way to know whether the opinion of a match was well grounded or whether it was one of a growing list of misidentifications, including the widely reported case of Brandon Mayfield, an Oregon lawyer erroneously identified as a terrorist whose fingerprint was on a bomb fragment from the 2004 Madrid train bombing. A 2006 report by the Federal Bureau of Investigation's Office of Inspector General found a number of the fingerprint identification procedures in the Mayfield case lacking, and it recommended a number of reforms. OFFICE OF INSPECTOR GEN., FED. BUREAU OF INVESTIGATION, A REVIEW OF THE FBI'S HANDLING OF THE BRANDON MAYFIELD CASE (Mar. 2006), available at [www.justice.gov/oig/special/s0601/PDF\\_list.htm](http://www.justice.gov/oig/special/s0601/PDF_list.htm). Almost none of those reforms had been implemented by the Department of Homeland Security lab that had done the testing in my case.

The government responded that the NAS report changed nothing and that courts had admitted fingerprint identification for 100 years. Moreover, the government said, fingerprint identification wasn't a science anyway. Rather, it's an "experiential" discipline, meaning that the government need not provide

any research at all to support its scientific validity because the evidence did not need scientific endorsement to be admissible. And no such research was presented. Sir Francis Galton was not even mentioned. My expert affidavit, from a researcher whose work was cited in the NAS report, went un rebutted.

The district court denied the *Daubert* motion, following the pre-NAS report case law. We proceeded to trial, at which the fingerprint evidence, not surprisingly, took center stage. After the defense lost a battle royal over whether the packaging tape should be admitted, the government's fingerprint identification expert took the stand to give what the government had earlier called nonscientific testimony about my client being the person who left the fingerprints on the drug packaging.

In his first few words to the jury, the examiner identified himself as "a forensic scientist" assigned to the Department of Homeland Security's "Southwest Regional Science Center" in Houston. So much for the discipline being "experiential."

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## Different examiners looking at the same sets of fingerprints reached different conclusions.

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He blew one of the latent prints up onto a large TV screen and launched into a whirlwind narrative about why it was a "compelling" match to the defendant. The jury seemed to get it—here was somebody who knew a lot more than they did about fingerprints, and he was saying the prints came from the defendant.

The cross-examination, I knew, represented another step on our journey toward making a record I hoped some reviewing court would ultimately see was devoid of anything demonstrating the reliability or validity of this evidence. The district court allowed me great leeway in presenting not only the NAS report and the Brandon Mayfield episode but also the expert cited by the NAS for the proposition that no study established the validity or reliability of the government's method.

Our expert, Ralph Haber, testified that he chose to examine the research basis behind fingerprints because he "figured there would be a hundred years of research and data that we could study." Instead, he said, "we were unable to find a single experiment, a single article, a single book that had published any research . . . on how accurate those methods were or how accurate an individual fingerprint examiner was." But there was

research, and Haber cited it, showing that different examiners looking at the same sets of fingerprints reached different conclusions, while other research showed that the same examiners looking at the same evidence at different times also reached different conclusions. Haber mentioned another study, by a researcher named Itiel Dror, showing that once “biasing information” suggesting that the identified person could not have left the fingerprint was told to examiners, 80 percent of them changed their answer, five years later, from identifications to exclusions.

Haber also testified that a proper evaluation of an examiner’s identification testimony required analysis of the examiner’s methods, and such an analysis could not be done if the examiner had documented only the conclusions. A few days earlier, the government’s examiner had testified that he did not write down how he had applied his examination method because “[t]hat’s just not something that our laboratory requires us to do.”

My creature was walking and talking now, even if, as a legal concept, it didn’t sway jurors who had probably been bombarded their entire lives with fingerprint identification’s established place in popular culture. After all, hadn’t the Supreme Court said in *Daubert* that the reliability of expert testimony is for the court, not the jury? In the end, after a bruising four-week trial, the jury convicted my client on eight of the 14 counts, including the one involving the heroin package with the latent fingerprints said to be left by him and no one else.

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## The Appeal

Despite the verdict, my creature was just getting started. We proceeded to the Seventh Circuit. The fingerprint match to our client became the central issue in the appellate briefing and the oral argument. I hoped the long-standing authority accepting fingerprint identification testimony more or less unquestioningly was ripe for a fresh look after the NAS report. *See* Gabriel A. Fuentes, *Toward a More Critical Application of Daubert in Criminal Cases: Fingerprint Opinion Testimony After the National Academy of Sciences Report*, BLOOMBERG BNA EXPERT EVIDENCE REP. (Oct. 22, 2012), available at [www.bna.com/uploadedFiles/Content/Press/Toward\\_a\\_More\\_Critical\\_Application\\_of\\_Daubert\\_EXER.pdf](http://www.bna.com/uploadedFiles/Content/Press/Toward_a_More_Critical_Application_of_Daubert_EXER.pdf) (summarizing evolution of case law on admissibility of fingerprint opinion testimony before Seventh Circuit’s decision in *United States v. Herrera*, 704 F.3d 480 (7th Cir.), *cert. denied*, 134 S. Ct. 175 (2013)).

Alas, my creature didn’t fare well on appeal. The Seventh Circuit’s opinion, written by Judge Posner, reached several key conclusions:

- “Responsible” fingerprint matching testimony by an expert “is admissible evidence, in general and in this case.” While the opinion did not make clear precisely what could render

such testimony “responsible,” it suggested that certification by an examiners’ group called the International Association for Identification might be one factor. *Herrera*, 704 F.3d at 486–87.

- Fingerprint matching is not as reliable as DNA matching, but it need not be because other forms of admissible identification evidence, such as eyewitness testimony, is “less rigorous than the kind of scientific matching involved in DNA evidence,” and, moreover, “[e]vidence doesn’t have to be infallible to be probative.” *Id.* at 486.
- Comparing latent fingerprints to known fingerprints is analogous to an art expert opining on the style of a particular artist to conclude that a work of art is genuine or a forgery. *Id.* at 485–86.
- “[E]rrors in fingerprint matching by expert examiners appear to be extremely rare,” and the likelihood of error based on the probability of two people having “identical” fingerprints is low. *Id.* at 487. For this conclusion, the court relied heavily on its impression that Francis Galton in 1892 had estimated that the odds of “two people in the world having identical fingerprints” were 1 in 64 billion. *Id.* (Twenty-four scientists and scholars who later filed an amicus brief supporting Herrera’s petition for certiorari differed with this interpretation of Galton’s estimate, noting that it applied to whether one person’s fingerprint was identical to that of any other random person’s; the amici said Galton’s actual estimate of the probability that a specific fingerprint would match any other in the world was 1 in 4).

Naturally, I respectfully disagreed with each of these views and with the idea that a *de facto* *Daubert* hearing could be conducted on appeal without either party having its say about the validity of the court’s independent research. Although the issue was one of first impression, and the court of appeals did its usual conscientious and thorough job, I feared my creature had gotten out of hand. In the Mary Shelley novel, the monster eventually kills Victor Frankenstein’s wife and taunts him as he lies over the corpse. As I read the opinion and contemplated the death of my client’s claims, I felt a little like Victor Frankenstein.

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## The Questions Continue

The Supreme Court denied certiorari, leaving me to reflect on my creature and the unintended consequences of having created it. On the one hand, the monster left me far behind and is making mischief in the wider world, spreading to other areas of evidence law. The Seventh Circuit has now applied *Herrera* outside the fingerprint context to hold that an expert in premises security could testify even though his methodology “may not have been scientific.” *Lees v. Carthage Coll.*, 714 F.3d 516,

524–25 (7th Cir. 2013). But as the *Herrera* court noted correctly, even “non-scientific” expert evidence must be “shown to be reliable” before it may be admitted. *Herrera*, 704 F.3d at 486. *Herrera* left unanswered questions about how the reliability of “non-scientific” evidence will be judged, such as (1) when is an expert’s testimony sufficiently “non-scientific” to justify a less rigorous application of *Daubert*? and (2) when we say we need not be as rigorous, just how far will we drift from *Daubert*’s proven mechanism of ensuring reliability? *Daubert* was meant to be a flexible standard, but the heart of the case was about testing the validity of testimony from experts otherwise all too likely to be taken at face value by lay jurors.

My monster is also hard at work in trial courts around the country. Despite the NAS’s carefully researched and reasoned questioning of the legendary notion that a fingerprint examiner can confirm a match, prosecutors continue to offer this testimony in criminal cases and federal and state courts continue to admit it, sometimes relying on *Herrera*. A brief survey of state court decisions finds examples in Arizona, Illinois, Pennsylvania, and Washington. The Illinois case was particularly significant. The state court cited *Herrera*, without extensive discussion, for the reliability and admissibility of fingerprint identification evidence to uphold the conviction of one of the accused murderers of seven people in a Brown’s Chicken restaurant in January 1993. *People v. Luna*, 989 N.E.2d 655, 671 (Ill. App. Ct. 2013).

On the other hand, there’s hope my creature may yet find the right path. *Herrera* might spark a rethinking of the unquestioned admission of fingerprint matching or at least might prompt a reasoned discussion about the limits of the science—or, shall we say, the “experiential discipline.” Much has happened since the 2010 *Herrera* trial to provide grist for a decent *Daubert* or *Frye* hearing. Sources considered authoritative in the fingerprint examiner community have issued studies and position papers urging examiners to stop short of claims that they may “individualize” a latent fingerprint to a single person, in view of the inadequate research supporting that conclusion. See NAT’L INST. OF STANDARDS & TECH., NAT’L INST. OF JUSTICE, LATENT PRINT EXAMINATION AND HUMAN FACTORS: IMPROVING THE PRACTICE THROUGH A SYSTEMS APPROACH 197 (Feb. 2012), available at [www.nist.gov/oles/upload/latent.pdf](http://www.nist.gov/oles/upload/latent.pdf); Scientific Working Grp. on Friction Ridge Analysis, Study & Tech., Individualization/Identification Position Statement (Apr. 21, 2012), [www.swgfast.org/Comments-Positions/120306\\_Individualization-Identification.pdf](http://www.swgfast.org/Comments-Positions/120306_Individualization-Identification.pdf). Meanwhile, the value and methodology of more recent research on fingerprint misidentification rates are the subject of a robust debate. Compare Bradford T. Ulery et al., *Accuracy and Reliability of Forensic Latent Fingerprint Decisions*, 108 PROC. OF NAT’L ACAD. OF SCIS. 7733 (2011), available at [www.pnas.org/content/108/19/7733.full](http://www.pnas.org/content/108/19/7733.full), with R.N. Haber & L. Haber, *Experimental Results of Fingerprint Comparison*

*Validity and Reliability: A Review and Critical Analysis*, SCI. & JUST. (2014), available at [www.scienceandjusticejournal.com/article/S1355-0306\(13\)00085-3/abstract](http://www.scienceandjusticejournal.com/article/S1355-0306(13)00085-3/abstract).

To date, no court has sought to unpack, analyze, or revisit the rationale behind *Herrera*’s conclusions or the authoritative-ness of its independent research. That may also change. Some scholars already have begun to chisel away at *Herrera*’s application of *Daubert*. See Jonathan J. Koehler, *Forensic Fallacies and a Famous Judge*, 54 JURIMETRICS J. 216–17 (Spring 2014) (criticizing *Herrera*’s basis for concluding that fingerprint identification errors are “very rare”); DAVID L. FAIGMAN ET AL., MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY § 33:20 (Dec. 2013) (calling the evidentiary basis for *Herrera*’s determination of fingerprint identification’s reliability, made without a *Daubert* hearing, “remarkably thin,” and describing *Herrera*’s analogies between fingerprint identification and the detection of art forgery and the admissibility of eyewitness identification as “a strikingly peculiar passage in a case involving, let us remember, expert evidence”).

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## Unlike Victor Frankenstein, litigators can’t afford regret.

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Other creative defense counsel should and probably will try the argument, and perhaps a searching *Daubert* inquiry will help a trial court sort out whether or not there really is a valid basis for expert claims of a fingerprint match or whether the testimony should be limited to the examiner’s description of similarities between latent and known fingerprint images. Perhaps someday a court will tell us more about the degree of rigor needed to assess “experiential” experts whose testimony, as the Seventh Circuit in *Herrera* correctly stated, still must be “shown to be reliable.”

In the end, I remind myself that the goal was never to achieve some lofty ideal or strike a blow for “good science.” I was simply defending a client. If the circumstances demanded it, I would do it again. Unlike Victor Frankenstein, litigators can’t afford regret. ■