A Guide to Forensic Testimony

The Art and Practice of Presenting Testimony as an Expert Technical Witness

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so-called eyewitnesses. The expert has become the prosecutor's best argument to the jury as to why they should still convict the defendants, because all the eyewitnesses have been impeached.

But note that this is not an objective expert's attempt to consider all the possible explanations for the apparent similarities between the tracks the murderer's vehicle left at the scene and the tires on the defendants' car. As we will see, Vinny's witness will take into account all the relevant facts and be able to conclusively demonstrate that the FBI's tire expert was simply wrong to suggest that the defendant's car was capable of leaving the tracks at the murder scene.

After cross-examining the FBI expert, Vinny attempts to convince his fiancée to take the stand as his expert witness. There is no one else to turn to, especially since the judge has given him five minutes to put up or shut up. Mona Lisa adamantly refuses to take the stand, and by the time she is brought kicking and screaming into the courtroom and forced to take the oath by the judge, it is clear to the audience that Vinnie has figured out a way to get two things he needs. For not only does he get the evidence he needs but also, and equally important, he gets beyond the problem of the appearance of bias due to the amorous relationship between the witness and the attorney. As the scene is presented, the judge, jury, and prosecutor can clearly see that, at the moment, Mona Lisa hates Vinny's guts and wants no part of testifying on behalf of the defense.

This cartoon caricature of how to handle the inherent problems of witness bias helps us understand its fundamental nature in all cases involving experts. Incidentally, this situation is one that can and will be examined by opposing counsel whenever an expert has been hired by one party to give an opinion that is helpful to the hiring party or harmful to the interests of the opposing party. The slapstick staging provides an amusing illustration of how an extreme form of this constant problem can be overcome. Here in its most ridiculous pose—that of a beleaguered lawyer resorting to calling his fiancée and paralegal to take the stand as an expert witness in order to give her opinion on what may be the ultimate issue in the case—we can more easily see how less severe problems of bias can and do arise in nearly every case, if only because the witness is usually being paid by the proponent for his or her time. Steven Lubet, in his excellent book, *Expert Testimony*, puts the problem of "relationship bias" in its more typically encountered forms this way:

> *An expert's relationship with a party or counsel may also be used to imply a lack of impartiality. Some witnesses seem to work repeatedly with certain law firms (or litigants), testifying to similar conclusions in case after case. While such an ongoing relationship is not proof of actual bias, cross-examiners can be counted on to insinuate that the association must have been sustained for a reason.*[4]

4. Lubet, Steven. *Expert Testimony: A Guide for Expert Witnesses and the Lawyers Who Examine Them.* Notre Dame, IN: National Institute for Trial Advocacy (NITA), 1998, p. 106.

Alternatively, Lubet suggests that "positional bias," where it can be demonstrated to exist in an expert by the opponent, is also likely to be challenged in cross-examination and should be kept in mind by an expert who may have become identified with a particular stance or position on an area of expertise.

Another typical kind of impeachment on bias involves the fees paid to an expert. Jack Matson offers the expert the following advice on this perennial problem when an aggressive attorney attempts to impeach on cross-examination for large payments for contested opinions.

> *. . . [T]he examiner is trying to show how mercenary you were, and how much you charged for such minimal and flawed work. You are another living example of a high priced hired gun willing to say anything for a price. About all you want to do in these circumstances is maintain your composure and be dignified. Don't be defensive!*[5]

Once you begin to think about expert testimony like a trial lawyer, you begin to see why an attack on the various kinds of bias that may exist is considered to be one of the most fertile fields for cross-examining an expert. So, ironically, the fact that Mona Lisa Vito is not being paid at all for her testimony is also a promising area for cross-examination on the issue of bias. The reader may initially think that because Mona Lisa is not being paid for her testimony, this would count in her favor as indicating a lack of bias. However, the combination of a longstanding relationship with the defense attorney coupled with the total lack of compensation could be turned nicely by the cross-examiner into a ladder of bias questions. The point here is simply that compensation will always be an issue—either at the deposition or at trial—so experts should be prepared to explain how they came to the conclusion that some fee (or no fee) was appropriate for the work at hand.

Stanley L. Brodsky, who has 30 years of experience training health professionals in giving expert testimony, points to an even subtler form of the bias issue. This may totally escape the questioning of the cross-examining attorney, but it needs to register in the mind of every expert as he or she undertakes each assignment to testify. Brodsky calls it the "pull to affiliate."

> *Bought experts may or may not exist, depending on one's perspective. Those who believe experts can be bought describe individuals who conform their opinions to the side that employs them. Although a few rare birds may indeed be bought, my perspective is that a subtle social-psychological process influences many witnesses toward "our" side. The courtroom drama does have an "us-versus-them" dichotomy. Just as the attorneys accept the viewpoint of their side, some expert witnesses may do the same. The affiliation process is rarely deliberate or conscious. Instead the pull, and sometimes the reality, is to shape one's opinions in small ways to conform to*

5. Matson, Jack. *Effective Expert Witnessing*, 3rd ed. New York: CRC Press, 1999, p. 102.

what is seen as the "right side." Almost all expert witnesses would deny that their opinions are so influenced. However, the affiliation process begins early. From the time the attorney first speaks with a potential expert, the attorney probes, suggests, assures, and woos.

As often as I withdraw, I stay with cases—and so do most experts. As the cases progress, a litmus test for continued involvement occurs at the findings stage. The expert reports, usually by telephone, and the attorney decides about using the expert in court. If this decision is positive, then a series of additional stimulus demands to affiliate with this side take place. Meetings occur with the attorney. There is talk about the best way to present the expert's findings and opinions. Discussions may take place about the likely strategy of the opposing attorneys. A meeting prior to deposition may have the attorney helping the expert prepare. It is not unusual to observe an exchange of cooperative actions and warm feelings. Under these conditions, the impartiality of the expert may be compromised. . . . These events constitute a far greater hazard to impartiality than the mythical bought witness. Their impact is gradual and beyond the immediate awareness of the expert. These influences are sufficiently powerful that they may be the single greatest threat to expert integrity. Becoming aware of these events is a first way of preventing them.[6]

Regardless of all the potential pitfalls involved in attempting to place Mona Lisa on the stand, Vinny has no other options. As a car buff, he has noticed something about the photographs of the tire marks that shows that the tracks could not have been left by a car with the equipment on his cousin's car. Since he can't testify himself, and he can't rely on the depth of knowledge or the honesty of the government's witness to produce the right answer on a complete cross-examination, he has to get his fiancée on the stand and qualify her as an expert witness. He knows that Mona Lisa is an accomplished mechanic and a highly qualified expert who is able, based on her knowledge, training, and experience with cars, to point out to the court what Vinny has seen in the pictures and furthermore to explain why the tire marks exonerate the defendants.

It turns out that Vinny's method of getting his fiancée on the stand has effectively disarmed the prosecutor as to the bias issues, and his tender of Mona Lisa as an expert invites the overconfident prosecutor to make a fundamental mistake. The prosecutor acts on his obvious belief that his knowledge about cars will suffice to put this nice little lady in her proper place and make her appear in the eyes of the jury much less of an expert about cars than he is. He asks for and is granted the right to conduct what is called in the trade a voir dire examination of the tendered expert. Cocky as can be, the prosecutor decides to ask his questions designed to test Mona Lisa's qualifications as an expert witness in front of the jury. This is a strategic decision in which the attorney attempts to display the lack of expertise of an untested expert before the jury

6. Brodsky, Stanley L. *Testifying in Court: Guidelines and Maxims for the Expert Witness*. Washington, DC: American Psychological Association, 1991, pp. 8–9.

in an effort to discredit the witness even before testimony occurs. Technically, the voir dire is only supposed to test the legal sufficiency of the expert's qualifications to give an opinion and is often conducted outside of the presence of the jury when either attorney requests it. But Vinny knows his expert's qualifications and experience, and he is not about to deprive the jury of the chance to find out just how good an expert she is. Neither does he want to save the overconfident prosecutor from the just desserts of his male chauvinist appetite.

Steven Lubet explains the function of voir dire as follows:

> *In esssence, the voir dire is a mini-cross, aimed exclusively at the legal sufficiency of the expert's qualifications. In legal terms, the only question is whether the witness is "qualified as an expert by knowledge, skill, experience, training, or education." No matter what the voir dire uncovers, the witness will usually be allowed to proceed with her testimony so long as she meets this minimum requirement.*[7]

Without objection the judge allows the prosecutor to question Mona Lisa with the jury present. The prosecutor immediately attempts to challenge her qualifications and experience by asking her profession, which she happily admits is that of an out-of-work hairdresser. He then asks her what qualifies her as an expert in the field of automobiles. She effortlessly recounts her family's tradition of expertise in repairing and maintaining autos for most of the century. Her father, like his father before him, was a mechanic, as were her maternal grandfather, her four uncles, and her three brothers.

Before Mona Lisa can continue, the prosecutor concedes that her family is obviously qualified, but he then wants to know what makes her think that she is also an expert mechanic. Mona Lisa begins what quickly becomes an apparently unending inventory of the kinds of repair jobs she has personally performed as an automobile mechanic. The prosecutor immediately cuts her off again by asking why, even with all that experience maintaining and repairing all kinds of cars, she feels qualified as an expert in the specific area of tire mark identification.

For our purposes in this chapter, this is probably Vinny's key strategic move. Vinny has carefully carved out the general area of automobile technology as Mona Lisa's expertise but has not offered her as a specialized expert on tires. He needs to establish her as a general expert about all automobiles, not as a specialized tire expert, in order to explain to the judge and the jury the meaning of the photographs of the tire marks in the context of her expert analysis of what sort of automobile could have made those particular types of tracks. She is not being offered as a tire expert but as a more general kind of expert. This more general expertise will allow her to render an opinion about more relevant evidence in the case that will also make clear that the

7. Lubet, *Expert Testimony*, pp. 96–97.

opinion of the more specialized tire expert was erroneous due to ineptitude or ignorance. And if necessary this will also allow Vinny to argue that the prosecutor has attempted to mislead the jury by bringing an expert who lacked the necessary expertise to adequately address the real problem. But for Mona Lisa to be able to give her opinion, the judge and the jury must believe two things that are crucial for every technical expert to appear competent and credible to the fact finder.

The genius of this tactical move of presenting the witness as a general expert is that it gets over the two largest hurdles encountered when qualifying any technical expert witness.

1. Is this expert qualified by knowledge, experience, and training?
2. Is the expertise that this expert claims one that is generally recognized to exist by society and a socially recognized community of experts?

The staging of the voir dire by the prosecutor leaves no doubt in his mind or the minds of the audience that Mona Lisa is a genuinely qualified and experienced expert in the area of how cars are built and repaired. Remember that this fiction takes place in a rural Southern town where people's cars are an important part of their lives. The judge and the jury all know who the good mechanics are and which families turn out the best mechanics; that's the way someone becomes a good mechanic and gets recognized as an expert. The judge and the jury, like the prosecutor, also believe they know a little bit about cars themselves, or they have a sibling or an uncle who knows a great deal about cars and knows how to explain how they work and what to do to fix them. To claim a family tradition of expertise in auto mechanics is even more natural to this set of fact finders than the academic and professional qualifications of the FBI expert witness when he is called to the stand and qualified as a tire expert.

It is crucial to bear in mind that Vinny has called Mona Lisa as a general expert and that he has already somewhat defused the specific tire-related expert testimony of the FBI witness with his constructive cross-examination about the popularity of the tires in question. With automobile technology, it is a simple matter to find the statistics about which tires are used on which vehicles and which treads appear on which tires. These standards and statistics are widely available and accessible to everyone with an interest. There are also reasonable assurances that manufacturing standards have been scrupulously followed by the major automobile and auto parts manufacturers. This also holds true for the performance criteria of the different technologies and vehicles that have those technologies installed in particular models. And all of this objective information is available to any expert (or for that matter, to any judge or juror) to confirm. What Vinny still needs to prove to the judge and the jury for his witness to be allowed to give her opinion is that she has become expert as a result of her inheritance of the family tradition of expertise and through her own experience and training. There are many ways to demonstrate this economically in technical areas

where licensing and certification are not required to become a recognized expert. Once again the sexist prosecutor comes to Vinny's aid.

Having nowhere to go with his challenge to her qualifications, since she has testified to her family tradition and her experience as a mechanic practicing with these other experts, the prosecutor next frames a question that appears to be highly technical. However, he poses it as if it were a fair test of Mona Lisa's experience and ability to provide a technical solution to a hypothetical mechanical problem. The witness instantly recognizes that the prosecutor has asked her a trick question, and she refuses to answer it. Furthermore, she explains to the judge and the jury why it is a trick question without an answer and goes on to add sufficient facts to the question to give it some sense. She then supplies and explains her answer to the clarified question, to the humiliation of the prosecuting attorney. The lawyer sits down, and the judge and jury are obviously impressed with Mona Lisa's control of the situation.

By her ability to listen carefully to the trick question and to refuse to play a blatantly bogus game with the lawyer, Mona Lisa has succeeded in shifting the balance of control in her favor. By taking the time to understand the question and the situation and by carefully explaining the correct question and answer to the judge and the jury, she has eliminated any doubt that she is an expert in the area about which she was called to testify. She has also set the stage for Vinny to ask her expert opinion on the ultimate question that will win the case.

After this masterful defense of her qualifications as an expert, we finally see Mona Lisa, on direct examination, handle exhibits and questions that she has never seen before. The movie audience knows full well that this would never take place in the real world, but the staging of this portion of the screenplay makes her testimony even more credible in the context of the story. It is obvious to one and all on the jury that this is in no way rehearsed or coached testimony. (This is something that jurors can worry about, and it needs to be explained by the lawyer and the expert during the course of the testimony so that the necessary preparation of expert testimony is seen as a normal process.) The staging of this piece of testimony in the movie removes that line of questions from the cross-examiner's normal arsenal. Mona Lisa goes on to destroy the opinion of the government's expert by pointing out that he had failed to consider all the information in the photos in light of the known capabilities of the defendants' car and other similar-looking cars on the market.

She is able to demonstrate, by using the photographic evidence in combination with her extensive knowledge and experience with cars, that there is only one reasonable explanation for the kind of tracks that the killer's vehicle left at the scene. In her expert opinion, the vehicle must have had both positraction and independent rear suspension in order to have left such tracks over both the pavement and curb. She then narrows the field of vehicle models that have both these features. This process of elimination leaves only two possible models. One is the Corvette, which could not possi-

bly have been mistaken for Vinny's cousin's car. The other is the 1963 Pontiac Tempest, which just happens to have the same wheel base and body shape as the defendants' vehicle. This model was also available in the same color as the defendants' vehicle. In other words, the defendants' car could not have made the tire marks at the scene, but another kind of car, which looks a lot like theirs, could have.

Vinny then recalls the FBI expert, who turns out to be an honest man despite being an inept expert. Having been as impressed with the defense expert's testimony as everyone else in the courtroom, the FBI expert promptly corroborates Mona Lisa's conclusions and admits that he was mistaken in his testimony. Meanwhile, the sheriff has a change of heart and discovers that a stolen 1963 Tempest has just been recovered upstate and that the murder weapon has been recovered in that stolen vehicle. Faced with these new developments, the district attorney dismisses the charges against the boys, and Vinny and his beaming expert beat it out of town before the judge can discover Vinny's masquerade as an attorney.

Fairy-tale staging aside, *My Cousin Vinny* is a classic demonstration of how two honest and highly qualified experts can give persuasive testimony about relevant issues in a case, and yet only through the advocacy system can it become clear to the fact finder that only one of the experts possesses the ability to adequately resolve the technical questions in the case. It is not unusual for an attorney and his or her expert to simply fail to consider all of the facts that have a bearing on the issues in the case. In fact, sometimes an attorney requests only a selective review of all the available facts. Experts who do not insist on accessing all the relevant and material facts risk being placed in the position of the FBI forensic expert *in My Cousin Vinny*. And experts, unaided by screenwriters' scenarios, need ample time and resources to properly prepare for their testimony.

Unfortunately, the trial-by-ambush techniques first used by the prosecutor and later by Vinny may reinforce for the beginning expert other dramatic but unrealistic TV and movie portrayals of the justice system. Many people still believe that entertaining fictional accounts of courtroom events are also an accurate account of the way things are done in the courts. This fear, based on the fiction that we all consume in our daily dole of entertainment, can make potential experts reluctant to become involved in the legal system. They view the system as a ritual of conflict resolution designed to allow and abet attorneys to hide the ball or to humiliate the expert witness. In fact, as we will see in great detail in subsequent chapters of this book, the rules of procedure for both civil and criminal trials together with the reasonable exercise of judicial discretion by the courts attentuate the most objectionable of these behaviors. In particular, they require the parties to disclose nearly everything in the process of discovery and pretrial litigation.

Many things about the legal system's tradition and philosophy allow the opposing parties to test each other's theories and proof, including their respective expert's qual-

ifications, methods, and opinions. However, the rules that are consistently followed by both court and counsel in all state and federal jurisdictions do not allow for the kind of dramatic surprise and comic relief in the staged litigation that makes *My Cousin Vinny* and other courtroom dramas so entertaining.

Bernard Ewell: Fine Art Appraiser and Salvador Dali Expert

Bernard Ewell specializes in the appraisal and authentication of questioned works attributed to the surrealist artist Salvador Dali (Figure 1-1). To testify in court, an art expert needs to conduct a comprehensive, independent investigation of a questioned piece. There are striking similarities between the techniques that the forensic art expert uses to carry out this sort of investigation and the work of an IT forensic expert. Regardless of the training, experience, and knowledge of the art expert, due to the complexity of the problem of authenticating and appraising centuries-old art, there is always the possibility that the expert will reach the wrong conclusion. This well-

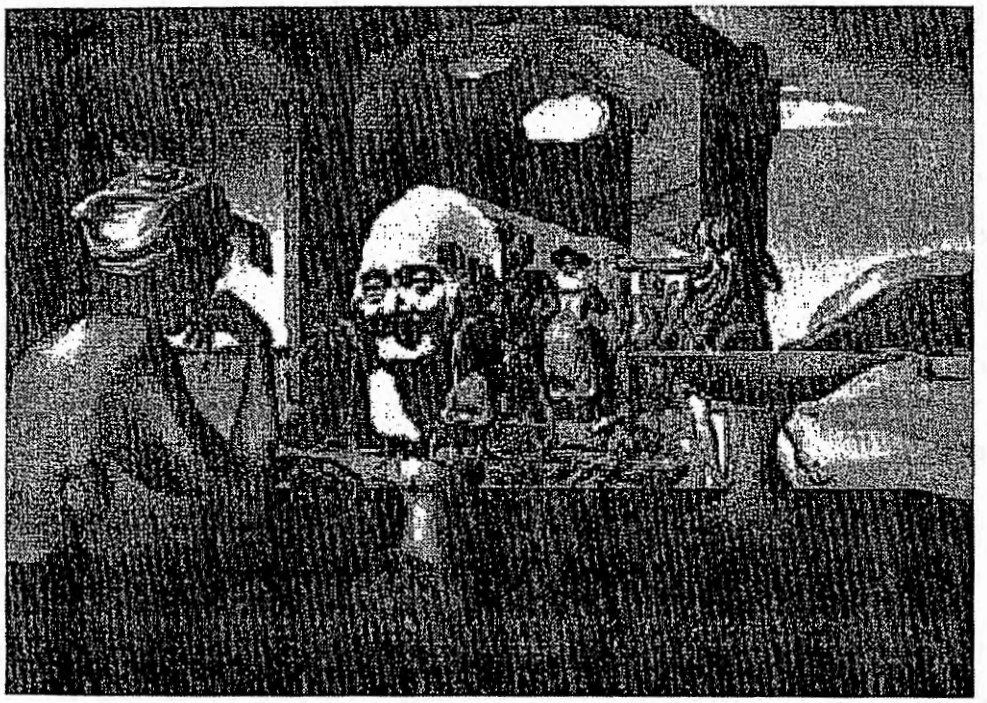

Figure 1-1. Slave Market with the Disappearing Bust of Voltaire *(1940). Oil on canvas, 18 1/4 × 25 3/8 inches. Collection of The Salvador Dali Museum, St. Petersburg, Florida. Copyright © 2002, Salvador Dali Museum, Inc.*

Modern Examples of Questionable Forensic Science Claims

What do economic experts and handwriting experts have in common? Do they have a science to offer to the marketplace, or is it simply that no market exists for their science outside the courts?

The Economists

Forensic economists served as expert witnesses throughout the twentieth century. They are most often encountered in litigation as experts on the causation and calculation of economic damages. More recently they have played an important role in restraint of trade and antitrust cases such as the Justice Department's high-profile civil prosecution of Microsoft. Just as the practice of phrenology did a century before, forensic economists have developed a highly technical discipline. The general acceptance of forensic economics is reflected in numerous broad and deep academic programs at major universities that grant B.A., M.A., and Ph.D. degrees in the discipline. The past 20 years have marked the formation of national associations of forensic economists and academies of economic experts. Commercial forensic economists conduct research and publish scholarly journals and books on a regular basis. However, the professional economics associations organized for forensic purposes as a rule neither regulate nor certify their practitioners. Insurance defense attorneys maintain that they have no choice but to counter the irresponsible economic experts so often called by their brothers and sisters of the plaintiffs' bar. Samuel Day describes the situation:

> *The defense decision to use a forensic economist is critical in terms of the potential impact on a jury's verdict. A solid, well-reasoned analysis from a forensic economist can be the saber that strikes the fatal blow to a plaintiff's damage claim. An untested analysis based primarily on theory and assumption from a forensic economist can be the express elevator to a substantial plaintiff's verdict.* [9]

Day argues convincingly that the new standards of reliability being imposed by the courts open up new opportunities for defense lawyers to challenge unqualified plaintiff's experts, but make the game much less certain to predict when challenges can and will be made by both parties to the opposing experts and how the legal system can weed out the bad experts.

> *Faith in market forces operating within the litigation industry, which in turn is based on the advocacy of competing parties and their lawyers, has been suggested as an operational necessity given the current state of such a profession.*

9. Day, Samuel. "Use of Forensic Economists in Commercial Litigation: A Defense Perspective." *Defense Counsel Journal*, October 1999, pp. 552–560.

. . . Thus, it is left to the attorneys and their clients to regulate the field by market forces—unethical experts will not be hired and zealous advocacy on the part of experts will be identified and discredited in the courtroom.[10]

The Handwriting Experts

Interestingly, the use of the market metaphor has led David Faigman, a highly regarded commentator on the problems of expert testimony, to a decidedly different conclusion about its efficacy to weed out the bad experts in the field of handwriting analysis. Faigman has suggested that with regard to the validity of handwriting expert testimony, the failure of experts who practice the art of handwriting identification to progress to the establishment of any sort of scientific reliability of their techniques is due primarily to a single cause: market failure.

There are a number of aspects of nineteenth-century methods of handwriting identification that seem to be problematic. Most striking, perhaps, is how unscientific the process appears. The experts all knew what results would confirm the hypotheses they were testing. Experimenter bias, usually avoided at all costs in empirical research, was palpable here. The experts also approached the samples looking for confirming instances and were quick to discount or dismiss differences as "adapted for disguise."

The practice of searching a multitude of exemplars for similarities actually turns the scientific method on its head. These experts seemed to take the view that if you have a hundred points of comparison and five constitute "matches" this observation supports the conclusion that the two samples came from the same hand. A less biased method would ask what percentage of matches would be expected if the person did not write the disputed document. A comparison of this number to the number discovered would provide a more accurate statement concerning likely authorship.

Unlike many other sciences, the primary market for handwriting experts is the law. Neither do they compete among themselves to discover new insights about handwriting comparison, nor do their discoveries have value to other fields. They are a discrete and insular sect of self-validating specialists. They are not trained in the scientific method and they have little clue how to test their claims of expertise. So long as their customers, the courts, keep buying the old model there is no need to come up with anything new. It is as if they began making the Edsel and over the years nondiscriminating car buyers just kept plunking down money for the same old car.[11]

If it turns out, as seems likely, that many of the forensic uses of IT expertise will remain within the litigation industry, are we facing the same dilemma that appears to occur in other areas of technical expertise? If IT experts are not required to be scien-

10. Day, "Use of Forensic Economists in Commercial Litigation."

11. Faigman, David. *Legal Alchemy: The Use and Misuse of Science in the Law.* New York: W. H. Freeman, 1999, pp. 4–5.

tific until they get to court, or at least until they prepare their expert reports, in what sense can we expect to see scientific or technical standards for IT forensic methods and evidence developed through acceptable scientific methods, or adequate testing and peer-reviewed techniques produced outside the litigation industry?

You may still assume that the foregoing examples are all either ancient history or of little relevance to the brave new world of IT forensics. Or you might believe that these concerns about determining the scientific methods of economists and with their potential biases as hired experts are just plain old sour grapes from authors who lost their money in the stock market and are looking for expert economists to blame for their investment follies. Perhaps it seems that these issues are now so obvious that the lessons learned from these marginally relevant accounts of the use of expertise to sell predictions have already been assimilated and are being dealt with by the courts.

However, the real point of this discussion is that IT in general and the hundreds of potential branches of expert knowledge about its interconnected technologies and techniques are all either subject to legal dispute or essential to determining what the electronic evidence means in a case where IT stands between the relevant evidence and the parties' understanding of its existence or significance. Not only that—it often takes a series of experts from different technical specialties to set the stage for the key IT expert to explain what happened in a network environment and what the evidence collected from that environment means.

There will inevitably be a number of rounds of challenges from lawyers once such expertise becomes an issue in a piece of litigation. No practitioner of a discipline based on IT engineering should take for granted that their particular area of expertise will be accepted by the adversary or by the court. Worse yet, the techniques information technologists assume are appropriate and generally accepted by their peers are likely to be almost incomprehensible to the judge who is trying the case and hearing the technical details for the first time, without some additional help from a special master or court-appointed expert.

As lawyers and courts learned to apply new standards to the qualification of scientific and technical experts and to the admission of opinions from fields that have been customarily accepted by the courts and the litigants as scientific, some unexpected and quite serious bumps have been encountered. These bumps suggest what may be in store for expert witnesses who are called to testify about their qualifications and the collection of methodologies they use to understand and solve problems in the behavior of software applications, operating systems, intrusion detection systems, and complex computer and communications network transactions. Even if the expert is successful in explaining his or her qualifications and methodologies, there is still no guarantee that the expert will be allowed to give any or all of the opinions concerning the facts he or she has been asked to investigate and analyze. This is especially true if the judge is lost in the technobabble of the expert or the confusion injected by opposing experts and

counsel. The courts are now looking for preliminary proof of the scientific methodology that was used, before experts will be allowed to testify about their findings in the absence of a demonstration that their conclusions are in fact based on clearly acceptable scientific methods.

The Fingerprint Analysts

Consider the recent challenges mounted against the "science" of fingerprint analysis (Figure 5-1). With the possible historical exception of mug shot identifications and the recent acceptance of DNA testing technologies, fingerprint comparison is perhaps the most significant and certainly the most frequently used physical evidence and theory for the expert identification of a criminal suspect. It is also quite frequently used as evidence of identification on any number of issues in many civil cases. Because court decisions and revised rules of evidence have established certain new criteria for the acceptance of a field or a technical method as scientific, criminal defense attorneys have for the first time challenged this evidence as not being the least bit scientific. This is a profoundly important issue to the entire criminal justice system. It could also have enormous impact on the conclusive identification of individuals through new biometric authentication techniques.

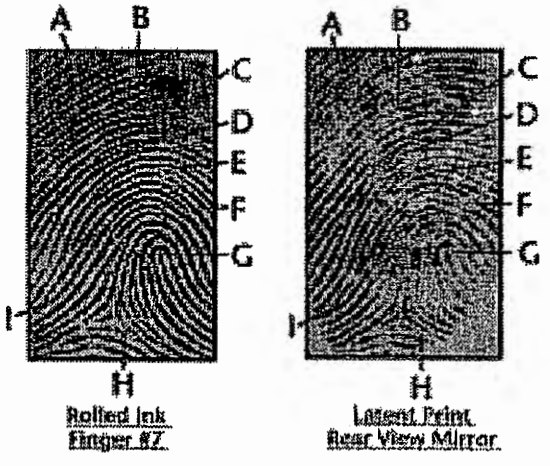

Figure 5-1. *Fingerprint-matching criteria as taught to investigators and forensics experts. (From Keogh, E., "An Overview of the Science of Fingerprints,"* Anil Aggrawal's Internet Journal of Forensic Medicine and Toxicology 2(1). *Accessed July 23, 2002, at* http://anil299.tripod.com/vol_002_no_001/papers/paper005.html.*)*

Relying on the revised criteria, defense attorneys and their experts have begun to systematically challenge the opinion of a "dactyloscopist." Fingerprint experts are no

longer automatically entitled to the presumption that their methods are scientific. Opinions are today being challenged based on unproven and unverifiable "scientific" theories. These theories assert that a properly collected, preserved latent print, when compared with and matched by the expert to a known print of the suspect, is to a scientific probability that of the suspect.[12]

One Court's Changing Attitude about Fingerprint Forensic Evidence

The traditional acceptance of "qualified" fingerprint expert witness opinions about the identity of the maker of fingerprints, based on a comparison of unknown prints with known prints of the individual to be identified or ruled out, has come under attack in state and federal courts throughout the United States since the *Daubert* and *Kumho Tire* decisions.

This move to challenge the "science" of fingerprint identification has pushed law enforcement to take a new and very different approach in the presentation of expert forensic evidence, at least in those courts where the defense attorneys have been paying attention to these new developments. Today, due to these ongoing challenges, the prosecutor is most likely to qualify the expert by asking for an expert opinion based on experience and training. Furthermore, the prosecutor will attempt to demonstrate to the court that the methods of collecting, comparing, and critiquing fingerprint evidence used by the expert are sufficiently sound and repeatable to support the admission of the opinion of that expert. But courts are for the first time beginning to draw some lines between the ability of a trained expert to present the evidence of identity or matching patterns and the ability to offer an expert opinion about how significant that evidence is in relation to an ultimate issue in the case, such as in-court identification of the defendant as the individual who made the prints left at the scene of the crime.

A crisis arises for traditional fingerprint comparison evidence when a properly qualified dactyloscopist is asked to render an expert opinion based on his or her observations as to whether the latent print was made by the same individual who made the known print. (This dactyloscopist has likely testified for years on the assumption that the theory and research behind the comparison of two fingerprints by a qualified expert entitles him or her to answer as a scientist.) The traditional follow-up question from the prosecutor is to ask the expert to opine as to whether or not there is a match "to a scientific certainty" and in accordance with the traditional "scientific" hypothesis of the fingerprint identification field. In effect, the lawyer is asking the expert to render an expert opinion, ostensibly based on scientific methods, that

12. Cole, Simon. *Suspect Identities: A History of Fingerprinting and Criminal Identification.* Cambridge, MA: Harvard University Press, 2001.

identifies the maker of the suspect print as the defendant, to the exclusion of all others. In other words, the guy who is charged is clearly guilty because the expert can identify his fingerprints on the gun and assure the jury that no one else in the world could have left those prints!

The Judge Presents His Initial Decision

Since the *Daubert* line of cases, courts have been asked to draw back from the tradition of allowing federal and state fingerprint analysts to render such opinions. Consider the following initial opinion rendered by Federal District Judge J. Pollak (in the Eastern District of Pennsylvania) in *U.S. v. Plaza, Acosta and Rodriguez*, which was decided in January 2002. At issue was whether the classic fingerprint identification methodology, abbreviated as ACE-V (an acronym for analysis, comparison, evaluation, and verification), qualifies as a scientific discipline to the extent that fingerprint examiners can deliver expert opinions regarding the identity of the person who makes a particular fingerprint. Quoting from the court's opinion:

> *Pursuant to the foregoing discussion, it is the court's view that the ACE-V fingerprint identification regime is hard to square with* Daubert.
>
> *The one* Daubert *factor that ACE-V satisfies in significant fashion is the fourth factor: ACE-V has acceptance within the American fingerprint examiner community. But the caveat must be added that, in the court's view, the domain of knowledge occupied by fingerprint examiners should be described, in Rule 702 terms, by the word "technical," rather than by the word "scientific," the word the government deploys.*
>
> *Given that* Kumho Tire *establishes that the* Daubert *analysis is applicable to "technical" as well as "scientific" knowledge, it may be thought that this court's characterization of the knowledge base of fingerprint examiners as "technical" rather than "scientific" is a semantic distinction which is of no practical consequence. However, as discussed above, the court finds that ACE-V does not adequately satisfy the "scientific" criterion of testing (the first* Daubert *factor) or the "scientific" criterion of peer review (the second* Daubert *factor). Further, the court finds that the information of record is unpersuasive, one way or another, as to ACE-V's "scientific" rate of error (the first aspect of* Daubert*'s third factor), and that, at the critical evaluation stage, ACE-V does not operate under uniformly accepted "scientific" standards (the second aspect of* Daubert*'s third factor).*[13]

In the court's initial ruling, things looked pretty gloomy for those relying on the ability of the expert to render an expert opinion about the identity of who may have

13. *United States of America v. Carlos Ivan Llera Plaza, Wilfredo Martinez Acosta, and Victor Rodriguez.* United States District Court for The Eastern District of Pennsylvania: Cr. No. 98-362-10, 11, 12. Decided January 7, 2002. Cited as 179 F. Supp. 2d 492, and also reported at 57 Fed. R. Evid. Ser. 983, and at 2002 WL 27305 (E. D. Pa.).

left the evidentiary prints, based on the traditional way of interpreting fingerprint-based identification in this case. *Daubert* lays out a set of checks that the fingerprint identification methodology must meet, and in the court's initial opinion, the judge found that this technical expertise satisfied only one of those criteria. However the court stopped short of asserting that the failure of the methodology to satisfy the *Daubert* criteria should be used to prevent the admission of fingerprint testimony entirely.

> *Since the court finds that ACE-V does not meet* Daubert*'s testing, peer review, and standards criteria, and that information as to ACE-V's rate of error is in limbo, the expected conclusion would be that the government should be precluded from presenting any fingerprint testimony. But that conclusion—apparently putting at naught a century of judicial acquiescence in fingerprint identification processes—would be unwarrantably heavy-handed. The* Daubert *difficulty with the ACE-V process is by no means total. The difficulty comes into play at the stage at which, as experienced fingerprint specialists Ashbaugh and Meagher themselves acknowledge, the ACE-V process becomes "subjective"—namely, the evaluation stage. By contrast, the antecedent analysis and comparison stages are, according to the testimony, "objective": analysis of the rolled and latent prints and comparison of what the examiner has observed in the two prints. Up to the evaluation stage, the ACE-V fingerprint examiner's testimony is descriptive, not judgmental.*[14]

The court initially agrees with the defense that fingerprint experts should be limited in their opinions about what their forensic methods enable them to conclude.

> *Accordingly, this court will permit the government to present testimony by fingerprint examiners who, suitably qualified as "expert" examiners by virtue of training and experience, may (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 thereof 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. What such expert witnesses will not be permitted to do is to present "evaluation" testimony as to their "opinion" (Rule 702) that a particular latent print is in fact the print of a particular person. The defendants will be permitted to present their own fingerprint experts to counter the government's fingerprint testimony, but defense experts will also be precluded from presenting "evaluation" testimony. Government counsel and defense counsel will, in closing arguments, be free to argue to the jury that, on the basis of the jury's observation of a particular latent print and a particular rolled print, the jury may find the existence, or the non-existence, of a match between the prints.*[15]

14. *U.S. v. Plaza, Acosta and Rodriguez,* January 2002.

15. *U.S. v. Plaza, Acosta and Rodriguez.* January 2002.

In reaching its initial decision (limiting the expert to simply describing the comparisons without making a positive identification of the defendant if the expert found that the prints match), the court alludes to taking its cue from a previous case involving an analogous forensic discipline, handwriting analysis. Note the court's systematic consideration of the *Daubert* and *Kumho Tire* criteria in this initial opinion.

> *In arriving at this disposition of the competing government and defense motions and supporting memoranda, this court has derived substantial assistance from the thoughtful approach taken by Judge Gertner, of the District of Massachusetts, in dealing with the comparable problem of handwriting evidence. In* United States v. Hines, *55 F. Supp. 2d 62 (D. Mass. 1999), Judge Gertner wrote as follows:*
>
> *"The Harrison [Diana Harrison, an FBI document examiner] testimony may be divided into two parts: Part 1 is Harrison's testimony with respect to similarities between the known handwriting of Hines, and the robbery note. Part 2 is Harrison's testimony with respect to the author of the note, that the author of the robbery note was indeed Hines.*
>
> *When a lay witness, the girlfriend of the defendant for example, says 'this is my boyfriend's writing,' her conclusion is based on having been exposed to her paramour's handwriting countless times. Without a lay witness with that kind of expertise, the government is obliged to offer the testimony of 'experts' who have looked at, and studied handwriting for years. These are, essentially, 'observational' experts, taxonomists—arguably qualified because they have seen so many examples over so long. It is not traditional, experimental science, to be sure, but* Kumho *'s gloss on* Daubert *suggests this is not necessary. I conclude that Harrison can testify to the ways in which she has found Hines' known handwriting similar to or dissimilar from the handwriting of the robbery note; part 1 of her testimony.*
>
> *Part 2 of the Harrison testimony is, however, problematic. There is no data that suggests that handwriting analysts can say, like DNA experts, that this person is 'the' author of the document. There are no meaningful, and accepted validity studies in the field. No one has shown me Harrison's error rate, the times she has been right, and the times she has been wrong. There is no academic field known as handwriting analysis. This is a 'field' that has little efficacy outside of a courtroom. There are no peer reviews of it. Nor can one compare the opinion reached by an examiner with a standard protocol subject to validity testing, since there are no recognized standards. There is no agreement as to how many similarities it takes to declare a match, or how many differences it takes to rule it out.*
>
> *I find Harrison's testimony meets Fed. R. Evid. 702's requirements to the extent that she restricts her testimony to similarities or dissimilarities between the known exemplars and the robbery note. However, she may not render an ultimate conclusion on who penned the unknown writing."*
>
> *For the foregoing reasons:*
>
> *A. This court will take judicial notice of the uniqueness and permanence of fingerprints.*

B. The parties will be able to present expert fingerprint testimony (1) describing how any latent and rolled prints at issue in this case were obtained, (2) identifying, and placing before the jury, such fingerprints and any necessary magnifications, and (3) pointing out any observed similarities and differences between a particular latent print and a particular rolled print alleged by the government to be attributable to the same persons. But the parties will not be permitted to present testimony expressing an opinion of an expert witness that a particular latent print matches, or does not match, the rolled print of a particular person and hence is, or is not, the fingerprint of that person.[16]

On Further Reflection, the Judge Changes His Mind

What happened approximately two months after the court rendered its opinion is remarkable in a number of ways. Because the initial well-reasoned opinion was a distinct departure from the practice of state and federal courts for over a century, there was a great deal riding on the precedential value of such an opinion for both defendants and prosecutors. Accordingly, the government immediately filed a motion requesting a rehearing, in part because of the dramatic difference that such a precedent would make on the investigation and prosecution of criminal cases throughout the criminal justice system. The court granted the motion for a rehearing and agreed to allow both the government and the defense to supplement the record with additional evidence and additional testimony from expert witnesses in reviewing the initial decision the court had made in the case.

For the beginning expert, the comparison of the initial opinion of this highly respected federal judge with his own subsequent reversal of that opinion should impress the reader with the importance of particular experts and their testimony on the ultimate outcome of difficult decisions. The point of covering these two opinions, coming to such different conclusions about the admissibility of crucial expert testimony in a criminal case, is to demonstrate something about the process that thoughtful judges and jurors go through when attempting to grasp the complexities of what experts have to say about important technical or scientific issues that relate to the evidence to be considered in the case. These two different results make it even more obvious how important it is to determine whether an expert will be allowed to say things like, "The defendant made the prints at the scene of the crime," as opposed to being limited to saying only that the known print has these characteristics and the unknown print has those characteristics, leaving it up to the jurors to decide whether they think the defendant did or did not make the prints. For IT experts, a similar situation exists when an expert is asked whether he or she thinks that the person sitting at the com-

16. *U.S. v. Plaza, Acosta and Rodriguez*, January 2002.

puter with a certain address and phone connection sent the virus or worm to the victim's system. Following the reasoning of the court's initial ruling in the fingerprint case, the IT expert would be allowed to testify only that he or she found certain evidence on the first computer and certain other evidence on the target system.

After hearing from additional experienced experts who could persuade with authority, from both the government and the defense (and after taking account of another legal system's experience with and endorsement of the same method that was used in this case), the court became convinced that, at least for FBI trained and experienced experts, the criteria established by the gatekeeping decisions were adequately met by the techniques that these particular expert examiners used in this case.

In other words, what had led the judge to doubt those methods and to limit the FBI expert's testimony in the first opinion was more than overcome by the additional evidence and persuasiveness of the new experts produced at the second hearing. The totality of the evidence before the court persuaded the judge that the *Daubert* and *Kumho Tire* standards had been met by the use of the methods approved by British courts for many years, so long as those methods were applied by FBI qualified experts. This still leaves open the question of what standards of other experts who are not trained by the FBI will be accepted by other courts, if and when their use of similar or other fingerprint identification and comparison methods are offered and challenged.

Here in the court's own words are the concluding sections of the second opinion.

> *(iii) In the January 7 opinion, the aspect of the Daubert inquiry into "the existence and maintenance of standards controlling the technique's operation," . . . that was of greatest concern was the acknowledged subjectivity of the fingerprint examiner's stated opinion that a latent print and a known exemplar are both attributable to the same person. Government witnesses Meagher and Ashbaugh both described the "match" opinion as "subjective," and defense witness Dr. David Stoney agreed. I concluded that "[w]ith such a high degree of subjectivity, it is difficult to see how fingerprint identification—the matching of a latent print to a known print—is controlled by any clearly describable set of standards to which most examiners prescribe." On further reflection, I disagree with myself. I think my assessment stopped with the word "subjective" when I should have gone on to focus on the process the word describes. There are, to be sure, situations in which the subjectiveness of an opinion properly gives rise to reservations about the opinion's reliability. . . . But there are many situations in which an expert's manifestly subjective opinion (an opinion based, as Sergeant Ashbaugh said of the opinions of fingerprint examiners, on "one's personal knowledge, ability and experience") is regarded as admissible evidence in an American courtroom: a forensic engineer's testimony that a bottom-fire nailer's defective design caused an unintended "double-fire," resulting in injury to the plaintiff,* Lauzon v. Senco Products, *270 F.3d 681 (8th cir. 2001); an electrical engineer's testimony that fire in a clothes drier was caused by a thermostat malfunction,* Maryland Casualty Co. v. Therm-O-Disc, *137 F.3d 780 (4th Cir., 1998);*

a marketing researcher's testimony as to consumer interpretations of advertising claims, the testimony being based on a market survey of consumers, Southard Sod Farms v. Stover Seed Co., *108 F.3d 1134 (9th Cir., 1997) . . . . In each instance the expert is operating within a vocational framework that may have numerous objective components, but the expert's ultimate opining is likely to depend in some measure on experiential factors that transcend precise measurement and quantification. As compared with the degree of subjectiveness inherent in one or more of the foregoing examples of expert opinion testimony, the subjective ingredients of opinion testimony presented by a competent fingerprint examiner appear to be of substantially more restricted compass. The defined characteristics of such testimony are illumined by the following exchange in the House of Lords on March 11, 2002:*

"Lord Lester of Herne Hill asked Her Majesty's Government:

"Further to the Written Answers by Lord Rooker on 25 February (WA 172-73), what are the objective criteria and prescribed verification procedures for fingerprint identification used in evidence in criminal trials. [HL3041]

"Lord Rooker: To determine whether or not a crime scene mark and a fingerprint impression have been made by the same person, the fingerprint examiner must carry out a process of analysis, comparison and evaluation by determining whether in each impression friction ridge features are of a compatible type; they are in the same relative positions to each other in the ridge structure; they are in the same sequence; there is sufficient quantitative and qualitative detail in each in agreement; and there are any areas of apparent or real discrepancy. The examiner must address all these issues before declaring that both mark and impression have been made by the same person.

"The next stage is verification. The examiner's conclusion must be verified independently by two other officers who must both be fingerprint experts. Any mark/impression identification notified to investigating officers and presented in court will have, and must have, been subject to the above procedures."

In sum, contrary to the view expressed in my January 7 opinion, I am now persuaded that the standards which control the opining of a competent fingerprint examiner are sufficiently widely agreed upon to satisfy Daubert's requirements.

(3) Completing the Daubert/Kumho Tire Assessment

Having re-reviewed the applicability of the Daubert *factors through the prism of* Kumho Tire, *I conclude that the one* Daubert *factor which is both pertinent and unsatisfied is the first factor—"testing."* Kumho Tire, *as I have noted above, instructs district courts to "consider the specific factors identified in* Daubert *where they are reasonable measures of the reliability of expert testimony." . . . Scientific tests of ACE-V—i.e., tests in the* Daubert *sense—would clearly aid in measuring ACE-V's reliability. But, as of today, no such tests are in hand. The question, then, is whether, in the absence of such tests, a court should conclude that the ACE-V fingerprint identification system, as practiced by certified FBI fingerprint examiners, has too great a likelihood of producing erroneous results to be admissible as evidence in a courtroom setting. There are respected authorities who, it appears, would render such a verdict.*

In a recent OpEd piece in The New York Times, *Peter Neufeld and Barry Scheck, who direct Cardozo Law School's Innocence Project, have this to say:*

"No one doubts that fingerprints can, and do, serve as a highly discriminating identifier, and digital photographic enhancement and computer databases now promise to make fingerprint identification more useful than ever before. But to what degree incomplete and imperfect fingerprints can be reliably used to identify individuals requires more scientific examination. . . . Forensic science has rarely been subjected to the kind of scrutiny and independent verification applied to other fields of applied and medical science. Instead, analysts testifying in courts about fingerprint analysis, bite marks, handwriting comparisons and the like have often argued that in their field the courtroom itself provided the test. . . . As the National Institutes of Health finance basic scientific research, the National Institute of Justice should put money into verification and validation before a technique of identification is admitted into court." . . .

As explained in Part II of this opinion, I have found, on the record before me, that there is no evidence that certified FBI fingerprint examiners present erroneous identification testimony, and, as a corollary, that there is no evidence that the rate of error of certified FBI fingerprint examiners is unacceptably high. With those findings in mind, I am not persuaded that courts should defer admission of testimony with respect to fingerprinting—which Professors Neufeld and Scheck term "[t]he bedrock forensic identifier of the 20th century"—until academic investigators financed by the National Institute of Justice have made substantial headway on a "verification and validation" research agenda. For the National Institute of Justice, or other institutions both public and private, to sponsor such research would be all to the good. But to postpone present in-court utilization of this "bedrock forensic identifier" pending such research would be to make the best the enemy of the good.

IV

English and American trial courts have accepted fingerprint identification testimony for almost a century. The first English appellate endorsement of fingerprint identification testimony was the 1906 opinion in Rex v. Castleton, *3 Cr. App. R. 74. In 1906 and 1908, Sergeant Joseph Faurot, a New York City detective who had in 1904 been posted to Scotland Yard to learn about fingerprinting, used his new training to break open two celebrated cases: in each instance fingerprint identification led the suspect to confess . . .—important early indices of the reliability of fingerprint identification techniques when responsibly practiced. The first American court of last resort to consider the admissibility of such evidence was the Illinois Supreme Court: in* People v. Jennings, *96 N.E. 1077 (1911), the court concluded that such evidence was admissible and affirmed appellant's murder conviction. The identification testimony in* Jennings *came from William M. Evans and Michael P. Evans of the Chicago Police Department's Bureau of Identification; Inspector Edward Foster of the Dominion Police in Ottawa, who "had studied the subject at Scotland Yard"; and Mary E. Holland, who "began investigation of finger print impressions in 1904,*

studied at Scotland Yard in 1908, passed an examination on the subject, and started the first bureau of identification in this country for the United States government at Washington." Id. at 1082. The court ruled:

"From the evidence in this record we are disposed to hold that the classification of finger print impressions and their method of identification is a science requiring study. While some of the reasons which guide an expert to his conclusions are such as may be weighed by any intelligent person with good eyesight from such exhibits as we have here in the record, after being pointed out to him by one versed in the study of finger prints, the evidence in question does not come within the common experience of all men of common education in the ordinary walks of life, and therefore the court and jury were properly aided by witnesses of peculiar and special experience on this subject. Id. at 1083.

"The Jennings *opinion and Sergent Faurot's cases illustrate the extent to which American fingerprint identification programs depended, in their infancy, on lessons learned from Scotland Yard." . . .*

In due course—as much of the testimony of Stephen Meagher, David Ashbaugh and Allan Bayle, and also the pronouncements of the Court of Appeal in Buckley and of Lord Rooker in the House of Lords, suggest—the techniques of North American fingerprint identification specialists appear to have reached a level of sophistication paralleling that of their English counterparts.

The opinion of the Court of Appeals in Buckley adumbrated the fingerprint identification regime which Her Majesty's Government has now put into force—an ACE-V regime which, stripped of any required minimum number of Galton points, corresponds almost exactly with the ACE-V procedures followed by the FBI. . . . It is to be expected that English trial judges, in accordance with Buckley, (1) will require a showing (or an agreement of the parties) that (a) a fingerprint examiner called as an expert witness is properly credentialed and (b) any prints presented in evidence will, at least arguably, possess the characteristics referred to by Lord Rooker as predicates for determining the existence, or the non-existence, of a match; and (2) will, subject to such a showing (or agreement of the parties), permit the examiner to give testimony before the fact-finder. The ACE-V regime that is sufficiently reliable for an English court is, I conclude, a regime whose reliability should, subject to a similar measure of trial court oversight, be regarded by the federal courts of the United States as satisfying the requirements of Rule 702 as the Supreme Court has explicated that rule in Daubert *and* Kumho Tire.

Conclusion

Motions for reconsideration are not favorites of the law. It is an important feature of a judge's job to arrive at a decision and then move on to the next issue to be decided, whether in the pending case or the case next to be addressed on the judge's docket. This judicial convention has special force for trial judges, for if a trial judge's ruling is mistaken it can, and if need arises will, be corrected on appeal. But there are occasions when a motion for reconsideration has its uses. This is such an occasion.

By agreeing to reconsider my prior ruling, I had the opportunity to acquire information not previously presented, or that I had not fully digested, on the record made in another courtroom more than two years ago. Through the efforts of government counsel, Stephen Meagher, heretofore a name in a transcript, became a real person, and through his live testimony I was able to get a substantially more rounded picture of the procedure—the FBI's ACE-V process of fingerprint identification—whose degree of reliability for expert evidentiary purposes it is my responsibility to determine. And, through the efforts of defense counsel, I had the opportunity to learn from Allan Bayle, a senior English fingerprint specialist, that one aspect of the FBI's system—the annual proficiency testing of FBI fingerprint examiners—may have shortcomings. But I also learned from Allan Bayle's testimony two more important truths: namely, that the ACE-V process employed by New Scotland Yard is essentially indistinguishable from the FBI's ACE-V process, and that this formidably knowledgeable and experienced veteran of the Yard—the legendary and actual source of the systematic and comprehensive utilization of fingerprint identification as an instrument of law enforcement—believes in ACE-V without reservation. Reopening the record also led me to educate myself about the legal framework with respect to the receipt in evidence of expert fingerprint identification testimony that has just been put into effect in England by Her Majesty's Government. That new legal framework—which departs very significantly from the regime I had read about in the Mitchell record—turns out to be substantially the same as the legal framework that our government, in the case at bar, has contended is appropriate for FBI fingerprint identification evidence.

Based on the foregoing considerations, I have concluded that arrangements which, subject to careful trial court oversight, are felt to be sufficiently reliable in England, ought likewise to be found sufficiently reliable in the federal courts of the United States, subject to similar measures of trial court oversight. In short, I have changed my mind. "Wisdom too often never comes, and so"—as Justice Frankfurter admonished himself and every judge—"one ought not to reject it merely because it comes late." Henslee v. Union Planters Bank, *335 U.S. 595, 600 (1949) (Frankfurter, J., dissenting); cf.*, Wolf v. Colorado, *338 U.S. 25, 47 (1949) (Rutledge, J., dissenting).*

Accordingly, in an order filed today accompanying this opinion, this court GRANTS the government's motion for reconsideration of the January 7 order; VACATES the January 7 order; DENIES the defendants' Motion to Preclude the United States from Introducing Latent Fingerprint Evidence; and GRANTS the government's Motion in Limine to Admit Latent Prints.

At the upcoming trial, the presentation of expert fingerprint testimony by the government, and the presentation of countering expert fingerprint testimony by any of the defendants . . . will be subject to the court's oversight prior to presentation of such testimony before the jury, with a view to insuring that any proposed expert witness possesses the appropriate expert qualifications and that fingerprints offered in evi-

dence will be of a quality arguably susceptible of responsible analysis, comparison and evaluation.[17]

Scientific Methods Are No Guarantee

Broad-based challenges to the tradition of assuming that an experienced expert in a particular forensic detection and identification field like fingerprint comparisons will be allowed without objection to testify as to his or her expert opinion will continue. More scientifically reliable forensic identification methods will still be countered by attacking the competence and credibility of the forensic evidence handlers over the length and breadth of the chain of custody of the evidence. Indeed, this strategy was used to great success by the O. J. Simpson defense team. At the time of Simpson's trial, there was no good way to challenge the scientific basis for establishing identity by an accurate DNA analysis. Therefore, the defense chose not to challenge the DNA evidence on the basis of whether the DNA of the samples matched that of Simpson. Unlike the current turmoil about fingerprint comparison techniques, DNA analysis appears by consensus to be amply based on very strong scientific research and valid statistical methods.

The members of the Simpson legal "Dream Team" simply accepted the science of DNA identification and the probabilities that essentially excluded all but the defendant as the source of the blood found at the murder scene and at his home. They assumed the certainty of the DNA analysis, and then focused on casting reasonable doubt on the evidence collection and comparison procedures that were used. The doubts created about the motives and credibility of law enforcement forensic experts and evidence handlers in the field served as the foundation of the defense's claim that the defendant was being framed by racist Los Angeles police investigators. This claim became the core defense and the major thrust of the case in the cross-examination of the State's expert witnesses, ultimately leading to Simpson's acquittal.

Thus, it seems that forensics in general faces challenges from two directions. One set of challenges comes from the *Daubert* and *Kumho Tire* scientific method series of hurdles erected by the Supreme Court to test expert witnesses and their methods and opinions. When the tools and techniques are sufficiently sophisticated and authenticated to pass the Supreme Court test for scientific reliability, the experts are still

17. *United States of America v. Carlos Ivan Llera Plaza, Wilfredo Martinez Acosta, and Victor Rodriguez.* Nos. Cr. 98-362-10, 98-362-11, 98-362-12, decided on March 13, 2002. The opinion is cited as 188 F. Supp. 2d 549, and also reported at 58 Federal Rules of Evidence Service 1. The entire opinion is included in Appendix A.