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CRIMINAL LAW AND PROCEDURE

THE UNFINISHED *Daubert* REVOLUTION

By David E. Bernstein*

The American judiciary traditionally had a laissez-faire approach toward the admissibility of most categories of expert testimony.¹ This approach ended in federal courts when the U.S. Supreme Court adopted a reliability test for the admissibility of expert testimony in a series of three decisions: *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, *General Electric Co. v. Joiner*, and *Kumho Tire Co., Ltd., v. Carmichael*.² An amendment to Federal Rule of Evidence 702 in 2000 then codified a stringent interpretation of the “*Daubert* trilogy.” Many states also have adopted some version of the *Daubert* reliability test.³ Given that expert testimony is crucial to modern civil and criminal litigation, the emergence of the *Daubert*–702 reliability test for expert testimony is probably the most radical, sudden, and consequential change in the modern history of the law of evidence.

Contrary to many early predictions, the consequences of *Daubert* and its progeny have been quite positive. The *Daubert* trilogy has had a particularly dramatic effect on toxic tort litigation in which plaintiffs rely on speculative theories of causation. Amended Rule 702 resolves the controversy over the admissibility of such evidence by stating that expert testimony is admissible only if “the testimony is the product of reliable principles and method” and “the witness has applied the principles and methods reliably to the facts of the case.” Because speculation is by definition unreliable, this standard suggests that speculative testimony by plaintiffs’ experts is not admissible under Rule 702.

As a result, toxic tort litigation based on dubious scientific theories has started to wither. Such legal atrocities as the Bendectin⁴ and breast implant litigation⁵ could not have emerged under the current Rule 702 regime. Moreover, *Daubert* considerations have been critical in uncovering massive fraud in the silicosis litigation, and may yet result in a reining in of the out-of-control asbestos madness.⁶

More generally, courts nationwide are taking seriously their obligation to serve as gatekeepers who filter unsound expert witness testimony in a wide range of areas. Testimony that was routinely admitted before *Daubert*—such as expert testimony by engineers in products liability litigation—is now met with great skepticism in *Daubert* jurisdictions, unless the expert can point to objective support for his claims. Indeed, contrary to pre-*Daubert* practice, all expert testimony, ranging from economics to forensic techniques to psychological testimony, is now scrutinized for reliability before admitted into court. The result has been a significant decline in the presentation of “quackspertise” in the courts.

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Nevertheless, *Daubert* has several significant limitations. First, many state courts have declined to adopt it, and have instead retained more liberal rules of admissibility, some of which amount to a “let-it-all-in” philosophy. Second, some federal judges simply refuse to acknowledge the sea change that has occurred in the law of expert testimony, and continue to rely on older, more inclusionary precedents. Third, *Daubert* has been ineffective in limiting the use of junk science by prosecutors in criminal cases. Finally, *Daubert* is a poor match for certain kinds of expert testimony. Specifically, Rule 702 and the *Daubert* trilogy are ill-equipped to deal with “connoisseur” testimony that arises from a legitimate field of expertise, but whose reliability is ultimately dependent on the personal credibility of the testifying expert. Each of these limitations will be addressed in turn.

I. State Courts’ Failure to Adopt *Daubert*/Rule 702

Plaintiff attorneys, often allied with prosecutors, have fought every effort to adopt the *Daubert* trilogy and amended Rule 702 at the state level. *Daubert* opponents have inertia on their side, and *Daubert*’s reception has been particularly unfriendly in some of the most populous and influential states, such as California, Florida, Illinois, New York, New Jersey, and Pennsylvania.

The result is a hodgepodge. At one extreme, some states such as Wisconsin apply a qualifications-only test, meaning that any marginally qualified expert can testify to just about anything without meaningful judicial oversight.⁷ Most other non-*Daubert* states apply the older *Frye* “general acceptance” test, which requires that expert testimony be generally accepted in the relevant scientific community. Unfortunately, in most jurisdictions *Frye* is not a significant barrier to the admissibility of junk science.

Some courts limit the application of the *Frye* rule to “novel” forms of expertise. Courts in other states have held that *Frye* only applies to “scientific” expertise, and then define such expertise extremely narrowly.

The Kansas Supreme Court⁸ even held that a physician’s testimony—claiming that ingestion of the drug Parlodel caused a woman’s death—was exempt from *Frye* because it was not based on scientific evidence but was instead his “pure opinion.” This peculiar outcome seems to suggest that the less objective the basis for an expert’s scientific opinion, the less judicial scrutiny it should receive!

Even when courts do apply *Frye*, experts can usually evade the rule by claiming reliance on a “generally accepted” scientific methodology (such as high-dose animal studies to find suspected carcinogens) and then using it in a generally unaccepted way (extrapolating from the results of such a study to proving cancer causation in a human exposed to a much lower dose). In contrast, under Rule 702, federal judges are required to ensure that the expert “has applied the principles and methods reliably to the facts of the case.”

As a result of state courts' failure to embrace *Daubert*, plaintiff attorneys with dubious claims are engaging in heroic efforts to avoid diversity jurisdiction and bring their claims in state rather than federal court. If state courts want to avoid becoming the dumping ground for junk science and quackspertise, they need to either enforce a stricter version of the *Frye* test, or, better yet, adopt amended Rule 702. It is particularly unfortunate that prosecutors have been the leading opponents of adoption of Rule 702. For reasons discussed below in Part III, prosecutors are probably exaggerating how much practical effect Rule 702 would have on prosecutions. But, to the extent Rule 702 would exclude bad expert testimony in criminal cases, prosecutors should be supportive of that goal. Relying on junk science may occasionally help prosecutors secure a conviction, but securing convictions based on quackspertise is hardly the way to promote justice.

II. Federal Judges' Refusal to Follow Rule 702

Some federal judges, whether out of ignorance, poor briefing by the parties, or willful defiance, refuse to apply, or fail to apply, amended Rule 702 to contested expert evidence. Consider, just as an example,⁹ one recent Federal Circuit opinion, *Liquid Dynamics Corp. v. Vaughan Co., Inc.*¹⁰

The *Liquid Dynamics Corp.* court cited the 1993 *Daubert* opinion as the last word on the admissibility of expert testimony. Meanwhile, the Court ignored the text of amended Rule 702, and ignored the later cases in the *Daubert* trilogy. As a result, the court concluded that the objection that an expert "used the wrong equations to run his... analysis of the engine's aerodynamic properties" goes to weight, not admissibility. Yet Rule 702, as amended, specifically states that expert testimony is only admissible if "the witness has applied the principles and methods *reliably* to the facts of the case."

Relatedly, *Liquid Dynamics Corp.* cited *Daubert* for the proposition that "the focus of a court's inquiry into the relevance and reliability of scientific evidence 'must be solely on principles and methodology, not on the conclusions that they generate.'" The court failed to recognize however, that amended Rule 702 requires that judges scrutinize an expert's reasoning process. Moreover, the 1997 *Joiner* case stated that "conclusions and methodology are not entirely distinct from one another," and that courts could reject testimony even when based on what, in general, may be a reliable methodology, if it was misused in a particular case.

Liquid Dynamics Corp. also relied on a 1986 Eighth Circuit opinion for the proposition that as a general matter inadequacies in expert testimony, especially if they can be vigorously contested at trial, are a matter of weight, not admissibility. In terms of the evolution of federal expert evidence law, 1986, seven years before *Daubert*, might as well be 1800.

A similar scenario arose in a federal district court in *Riley v. Target Corp.*¹¹ in 2006. In *Riley*, the defendant challenged the admissibility of the plaintiffs' physician's "differential diagnosis"¹² under Rule 702. The court found that the methodology of differential diagnosis is a generally reliable one. It then added that any weaknesses in how the expert extrapolated from the differential diagnosis go to the weight of his testimony, not its admissibility.

The court's holding directly contradicts the language of amended Rule 702, as well as the Supreme Court's *Joiner* opinion. To justify its ruling, *Riley* cited a pre-*Joiner* 1995 circuit court case for the proposition that "[f]aults in an expert's use of differential etiology as a methodology or lack of textual authority for his opinion go to the weight, not the admissibility, of his testimony." Even worse, the court, directly contradicting *Daubert*, much less amended Rule 702, contended that "[o]nly if an expert's opinion is 'so fundamentally unsupported that it can offer no assistance to the jury' must such testimony be excluded." The supporting precedent quoted by the court originated in a pre-*Daubert* case from 1988.

To the extent that courts such as the two discussed above are failing to apply modern rules for the admissibility of expert evidence out of ignorance, it behooves attorneys arguing before them to do a better job of informing them about Rule 702. Various judicial education projects could also, apparently, be doing a better job at disseminating information about *Daubert* and its progeny. To the extent this judicial misfeasance is willful, an obvious solution is for higher courts and colleagues to police judges who refuse to follow the law. Legal scholars and commentators should also criticize such judges, constructively.

III. The Impotence of Rule 702 With Regard to Forensic Science

Forensic science is important evidence in a very large fraction of criminal law cases. Unfortunately, as various scandals suggest and various studies conclude, too often forensic scientists present unreliable or biased testimony.¹³

One problem is that many frequently used forensic techniques have not been proven reliable and have high rates of error when tested. And even when forensic experts use reliable techniques, testimony based on these techniques is often flawed. A recent article neatly summarizes several reasons forensic testimony is so problematic:¹⁴

- Each jurisdiction typically has just one forensic laboratory; the absence of competition reduces the incentive to perform well.¹⁵
- Forensic labs are usually attached to police departments and therefore depend on the police department for their budgets, which naturally leads to a desire to please the police, even at the cost of honesty and thoroughness.¹⁶
- Quality control is weak at most forensic labs.¹⁷
- Forensic scientists often know what result they are "supposed" to reach, which can lead to an unconscious bias in interpretations of test results, or even conscious fraud.¹⁸
- The scientist who performs a particular test typically also interprets the results of the test, reducing the odds that anomalies will be discovered.¹⁹

In short, even when forensic scientists are using reliable techniques, forensic science testimony is subject to significant unconscious bias by experts seeking to help their bosses, the prosecutors. Moreover, the structure of the forensic science system means that such bias, or even outright fraud, is likely to go undiscovered.

Rule 702 and the *Daubert* trilogy's solution to these problems is to provide a reliability test for all expert testimony, including forensic testimony. Enforced strictly and universally, this test would dramatically improve the quality of expert forensic testimony. In practice, however, defense attorneys are rarely successful at challenging the admissibility of prosecution forensic science. The problem is not simply that courts are too inclined to admit prosecution testimony (though perhaps they are). Rather, defense attorneys often fail to challenge the admissibility of questionable testimony to begin with.

The effectiveness of Rule 702 depends on enforcement by competent attorneys willing and able to expend sufficient time and resources to challenge unreliable testimony. Unfortunately, defense attorneys rarely meet this ideal. Public defenders, for example, are frequently "inexperienced, overworked, and underpaid."²⁰ These attorneys often do not have the resources to investigate, much less challenge, forensic testimony proffered by the prosecution. Court-appointed defense attorneys also operate under severe resource constraints if they seek to challenge the prosecution's expert testimony.

To make matters even more unbalanced, most forensic scientists are affiliated with crime labs controlled by the prosecution and are prohibited from assisting defendants.²¹ As Peter Neufield concludes, "If no one challenges the speculative science or scientist, there is nothing for a gatekeeper to tend to. Thus, the principal failing of *Daubert* is its misplaced reliance [in the context of forensic science] on a robust adversarial system to expose bad science."²²

Unfortunately, there are no easy fixes to the problem of quackspertise in forensic science testimony—the entire system needs an overhaul. (For those interested in the possibilities for reform, two good sources for proposals are Paul C. Giannelli's article "Wrongful Convictions and Forensic Science" in the *North Carolina Law Review* (2007), and Roger Koppl's "How to Improve Forensic Science" in the *European Journal of Law & Economics* (2005). The latter article relies on sound economic reasoning in its reform proposals.)

IV. *Daubert* and "Connoisseur" Testimony

A great deal of expert testimony in American courts is based solely on an expert's experience and training, what I call connoisseur testimony. The most significant feature of connoisseur testimony is that it has no *objective* basis, and, given selection bias (i.e., that parties only hire expert witnesses whom they know agree with their position in the case), the underlying reliability of connoisseur testimony in any given case is completely opaque. Unless a connoisseur expert is intentionally lying, cross-examination is unlikely to reveal any flaws in the expert's testimony.

Enforcement of Rule 702's reliability requirement for connoisseur testimony involves three steps. The first is to determine whether *anyone* can do what the expert purports to be able to do.²³ Second, just because the field of expertise is legitimate does not mean that the expert in question is competent. There are at least three ways a court can ensure that an expert can reliably do what she claims to be able to do.²⁴ First, the court can require the expert to prove her ability. Second, if a private company hires someone to perform the

task at issue, that should create at least a presumption that the expert is competent. Finally, the expert can present the results of reliable proficiency tests she has completed.

The third and most problematic issue faced by courts charged with enforcing Rule 702 is the requirement that an expert relies on "sufficient facts or data" and "appl[ies] the principles and methods reliably to the facts of the case."²⁵ Given that connoisseur experts inherently rely on their training and experience, they are incapable of presenting any "facts or data" to the court or showing the court how they reliably applied any principle or method to the facts of the case. To illustrate, Professor David Crump suggests a hypothetical dialogue with a perfume-sniffing expert based on the Rule 702 standard:

Q: Mr. Perfume Sniffer, the Supreme Court says that I must first ask you whether (1) your testimony identifying perfumes by the nasal method is based upon "sufficient facts or data."

A: Well, I sniffed the perfume. Is that "sufficient facts or data?"

Q: And (2) I have to ask you whether your testimony is the product of "reliable principles and methods."

A: Look, I smelled Chanel No. 5. I know I smelled Chanel No. 5.

Q: And did you "apply the principles and methods reliably to the facts of the case?"

A: I used my nose. That's all I can do.²⁶

As this example illustrates, contrary to the requirements of Rule 702, most connoisseurs cannot explain how their "experience is reliably applied to the facts" in any given case; instead, they implicitly need the presiding judge to simply take their word for it. Rule 702, however, forbids a judge to do so.

Not surprisingly, many courts have not fully assimilated Rule 702's requirements into their assessment of the admissibility of connoisseur testimony. The Rule requires an extremely dramatic shift from the previous practice of routinely allowing qualified connoisseurs to testify to essentially banning all testimony by adversarial connoisseur experts. Eventually, however, the text of the rule will prevail over courts' inertia, and courts will increasingly exclude connoisseur testimony.

Yet to the extent that connoisseurs can provide reliable, useful information to the jury, completely banning their testimony is almost as foolish as simply allowing a battle of the experts with no objective way for the trier of fact to determine who is correct. Rather, connoisseur testimony is a perfect arena for judges to use their power under Federal Rule of Evidence 706 (and state equivalents) to appoint nonpartisan experts. If five nonpartisan expert perfume-sniffers agree that the scent at issue is Chanel No. 5, that information would be extremely useful to the jury.

CONCLUSION

The "*Daubert* Revolution" has dramatically cut down on the use of junk science in federal court, especially in toxic torts and products liability cases. Unfortunately, however, the *Daubert* trilogy and Rule 702 are still the minority rule in the states, some federal judges ignore the reliability requirements *Daubert* imposes on them, *Daubert* has not done much to alleviate the problem of forensic science quackspertise, and *Daubert* is ill-suited to dealing with problems attendant to

“connoisseur experts.” These problems demand resolution before one can conclude that the *Daubert* revolution is complete.

Endnotes

- 1 See DAVID H. KAYE ET AL., *THE NEW WIGMORE: EXPERT EVIDENCE* § 1.1, at 2 (2004) (describing the pre-*Daubert* rules for the admissibility of expert testimony).
- 2 *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579 (1993); *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137 (1999); *Gen. Elec. Co. v. Joiner*, 522 U.S. 136 (1997).
- 3 David E. Bernstein & Jeffrey D. Jackson, *The Daubert Trilogy in the States*, 44 *JURIMETRICS J.* 351, 357–61 (2004).
- 4 See David E. Bernstein, *Learning the Wrong Lessons from an American Tragedy*, 104 *Mich. L. Rev.* 1961 (2006).
- 5 See David E. Bernstein, *The Breast Implant Fiasco*, 87 *CALIF. L. REV.* 457 (1999).
- 6 See David E. Bernstein, *Keeping Junk Science Out of Asbestos Litigation*, 31 *PEPP. L. REV.* 11 (2003); Lester Brickman, *Disparities Between Asbestosis and Silicosis Claims Generated by Litigation Screenings and Clinical Studies*, 29 *CARDOZO L. REV.* 513 (2007).
- 7 *Conley Publ'g Group Ltd. v. Journal Communications Inc.*, 665 N.W.2d 879, 892 (Wis. 2003).
- 8 *Kuhn v. Sandoz Pharms. Corp.*, 14 P.3d 1170 (Kan. 2000).
- 9 To take another example, A federal district court recently wrote, “Rule 702 of the Federal Rules of Evidence, as discussed and interpreted by the Supreme Court in *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993) and *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 119 S.Ct. 1167, 143 L.Ed.2d 238 (1999).” It would have been pretty difficult for the Supreme to have discussed and interpreted current Rule 702 in these cases, because they were all decided before current Rule 702 existed.
- 10 *Liquid Dynamics Corp. v. Vaughan Co., Inc.*, 449 F.3d 1209 (Fed. Cir. 2006).
- 11 2006 WL 1028773, slip op. (E.D. Ark. Apr. 13, 2006).
- 12 Really, differential etiology.
- 13 See generally Craig M. Cooley, *Reforming the Forensic Science Community to Avert the Ultimate Injustice*, 15 *STAN. L. & POL'Y REV.* 381 (2004); Paul C. Giannelli, *The Abuse of Scientific Evidence in Criminal Cases: The Need for Independent Crime Laboratories*, 4 *VA. J. SOC. POL'Y & L.* 439 (1997); Paul C. Giannelli, *Fabricated Reports*, 16 *CRIM. JUST.* 49 (2002); Randolph N. Jonakait, *Forensic Science: The Need for Regulation*, 4 *HARV. J.L. & TECH.* 109 (1991); Jennifer L. Mnookin, *Scripting Expertise: The History of Handwriting Identification Evidence and the Judicial Construction of Reliability*, 87 *VA. L. REV.* 1723, 1725 (2001); Barry C. Scheck, *New Hope for Forensic Science Quality*, *CHAMPION*, March 2005, at 4.
- 14 Roger Koppl, *How to Improve Forensic Science*, 20 *EUR. J.L. & ECON.* 255 (2005).
- 15 *Id.*
- 16 *Id.* 260–62.
- 17 *Id.* at 266–71.
- 18 *Id.* at 257.
- 19 *Id.* at 257, 262–64.
- 20 Samuel R. Gross & Jennifer L. Mnookin, *Expert Information and Expert Evidence: A Preliminary Taxonomy*, 34 *SETON HALL L. REV.* 141, 157 (2003)
- 21 Henry Lee, *Forensic Science and the Law*, 25 *CONN. L. REV.* 1117, 1124 (1993).
- 22 Peter J. Neufeld, *The (Near) Irrelevance of Daubert to Criminal Justice and Some Suggestions for Reform*, 95 *AM. J. PUB. HEALTH* S107, S110 (2005).

23 See David L. Faigman, *Embracing the Darkness: Loperquist v. McVey and the Doctrine of Ignorance of Science Is an Excuse*, 33 *ARIZ. ST. L.J.* 87, 91 (2001).

24 See *United States v. Santiago*, 199 F. Supp. 2d 101, 112 (S.D.N.Y. 2002) (stating that before the court would admit evidence by a proffered expert about a match between a bullet and a gun, it needed to know how often the expert’s “identifications have been wrong in the past”).

25 *FED. R. EVID.* 702.

26 David Crump, *The Trouble with Daubert-Kumho: Reconsidering the Supreme Court’s Philosophy of Science*, 68 *MO. L. REV.* 1, 16 (2003).

