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“X-Spurt” Witnesses

Richard H. Underwood†

“[Those Rebs] couldn’t hit an elephant at this dist-. . . [urk!? . . .]”

Major General John “Uncle John” Sedgwick,
an expert, just as he was shot dead west of
Spotsylvania, in May 1864.¹

I. Historical Perspective

Like Rumpole, expert witnesses have been in the courtroom since time immemorial. Several legal scholars claim that the Talmud contains the earliest documented case in which an expert witness’s testimony was of importance,² and I take their word for it. Not surprisingly, this was a divorce case.³ It seems that the husband had trumped up a charge against his wife and had concocted false physical evidence of adultery.⁴ The expert witness debunked the phoney evidence and saved the wife.⁵ Delicacy demands that I exile the details to a footnote.⁶

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1. *THE AMERICAN HERITAGE PICTURE HISTORY OF THE CIVIL WAR* 455 (Richard Ketchum et al. eds., 1960). For another interesting “shooting,” see JOHN A. PAULOS, *A MATHEMATICIAN READS THE NEWSPAPER* 4 (1995) (“[T]hree statisticians . . . took up duck hunting. The first fired and his shot sailed six inches over the duck. Then the second fired and his shot flew six inches below the duck. At this, the third statistician excitedly exclaimed, ‘We got it!’”).

2. See William G. Burd & Madelyn S. Lozano, *Experts: Is the End Near for Their Use*, 59 J. AIR L. & COM. 77, 77 (1993).

3. *Id.*

4. *Id.*

5. *Id.* at 78.

6. The false evidence was egg white. Burd & Lozano, *supra* note 2, at 78. The reader will spot a theme running through the history of false evidence and false witness. Often, the theme has something to do with sex. See, e.g., CAROL A.G. JONES, *EXPERT WITNESSES* (1994)

According to no less an authority than Learned Hand, English law permitted experts to testify on behalf of parties in cases in the seventeenth century.⁷ Among the authorities that the learned judge cites is the report of a 1665 witch trial.⁸ As we shall see later, modern critics of the law of evidence governing the admissibility of expert testimony might like to make something of the nature of the case cited.⁹

In fact, that some of the earliest cases involved the supernatural should come as no surprise. One author has observed that

[b]y the sixteenth century, forensic medicine was becoming an institutionalized activity in several European countries, including predominantly Catholic countries such as France and Italy. The Roman Catholic Church needed medical experts to deal with 'false miracles and those produced by sorcerers' and to test beliefs such as 'bees don't sting virgins.'¹⁰

Meanwhile, on the secular side of the street, the notion that the State should investigate and prosecute crimes also gave impetus to the development of expert testimony, as did the role of the coroner.¹¹ The King could claim the property of a felon, including that of a suicide.¹² Thus, the incentive was provided. "[A] detailed study of the nature of wounds arose from the need to establish how and when they were caused, whether they were fatal, and whether they could have been self-inflicted."¹³ I later discuss the profit motive in detail.

Demand for the modern expert witness really took off when trial by lay jury governed by rules of evidence replaced "[t]rial by a communi-

(collecting early cases in which experts were called to testify on issues of paternity, pregnancy, and childbirth).

7. See Learned Hand, *Historical and Practical Considerations Regarding Expert Testimony*, 15 HARV. L. REV. 40, 45 (1902).

8. *Id.* at 46 (referring to the Witches' Case, or *R. v. Cullender*, 6 Howell State Trials 697 (1665)); see also JONES, *supra* note 5, at 36-38 (discussing this witch trial in some detail).

9. See *infra* notes 19-78 and accompanying text.

10. JONES, *supra* note 5, at 17 (footnote omitted).

11. *Id.* at 18-20.

12. *Id.* at 20.

13. *Id.*; see also MICHAEL M. BADEN WITH JUDITH A. HENNESSEE, *UNNATURAL DEATH: CONFESSIONS OF A MEDICAL EXAMINER* 46 (1989) ("The coroner's office ferreted out suicides and claimed their property for the crown, acting as a sort of primitive royal insurance company to help keep the king solvent.").

ty of witnesses-cum-jurors" and "specialist jurors" sent out to "investigate" and "report back."¹⁴

By replacing a knowledgeable jury with a jury ignorant of the facts, it became necessary to call the evidence of witnesses.

. . . [Now] the law needed the opinion evidence of expert witnesses [because it] had restricted the province of witnesses to evidence of fact because to do otherwise would be to let in a threat to judicial control. To get itself out of this quandary, [the judiciary] devised a deceptively simple solution: it made expert witnesses an exception to the rule forbidding witnesses to give opinion evidence.¹⁵

With the birth of the jury system, things really got going. The medical malpractice expert witness appears in recognizable visage in an English case of 1767,¹⁶ and by the end of the eighteenth century the acceptability of expert testimony in litigation was pretty well settled, in the abstract.¹⁷ Since then, the devil has literally been in the detail.

II. The Trouble With Experts

Mouse: Who are you?

Fox: I'm Robin Hood.

Mouse: You don't look like Robin Hood, but if you say you are then it must be true, because Robin Hood wouldn't tell a lie.¹⁸

The trouble law had with experts worsened when the Federal Rules of Evidence expanded the admissibility of expert opinion evidence.¹⁹

14. JONES, *supra* note 5, at 23, 25.

15. *Id.* at 31, 33. The threat referred to here came in *Bushell's Case*, 22 Car. 2 (1671).

16. *Slater v. Baker & Stapelton*, 95 Eng. Rep. 860 (K.B. 1767). The testimony in this case bore on the standard of care, the need for patient consent, and, arguably, the tort of "experimentation." The surgeon defendant had re-broken the patient's leg (without his consent, by surprise!) to fasten it up in "an heavy steel thing that had teeth." Until that time the leg, which had been set, had been healing properly.

17. *Burd & Lozano*, *supra* note 2, at 80 (citing *Folkes v. Chadd*, 3 Doug. 157 (1782)) (noting that *Folkes* settled the issue). In reality, this case "simply legitimized what was clearly already a long-standing practice." See JONES, *supra* note 5, at 59.

18. This exchange is quoted in Chapter 16 ("Experts and the Law") of C.A.J. COADY, *TESTIMONY: A PHILOSOPHICAL STUDY* 277 (1992). Coady cites his source as a "Warner Brothers Cartoon," but I believe it was a Disney cartoon.

19. See Faust F. Rossi, *Evidence*, LITIG., Fall 1993, at 24.

Rule 702 substituted a "helpfulness" test for the common law test that the subject matter of the testimony be beyond the ken or comprehension of the lay juror.²⁰ The testimony need not be "necessary to a fair resolution of the issues," but need only be "helpful" to the jury.²¹ In its application, the Rule expresses an "institutionalized bias in favor of admissibility that has led one court after another to declare that some of the most bizarre ideas are 'helpful.'"²² This trend has been driven by the engine of personal injury litigation on the civil side of the courthouse. "It is those who are doing the uphill battle that shop around for their experts . . . [and since most are offering "opinion"] . . . you cannot say that they are lying, yet in your heart you know it is so far beyond what is accepted [in the relevant scientific community]."²³ Furthermore, it has become apparent that the liberalizing effect of the Federal Rules has also significantly impacted criminal evidence. Today, prosecutors and defendants rely heavily on exotic expertise if they can pay the price tag. A new brood of "independent" professional witnesses are available and are sophisticated enough to know that they can say almost anything, if the judge will let them, because they "have a Sixth Amendment Right to."²⁴ There seems to be something in this for everyone.

Who is qualified to be an expert, and how reliable must the expert's science, data and methodology be? Many lawyers and judges would probably say that our cartoon excerpt is more than just an amusing parody of the way that expert witnesses are accredited and the admissibility of their testimony is established. They would contend that it is a painfully accurate description of the extent to which many judges have policed expert testimony. The expert says that he is an expert. We let the expert speak to the jury. Given the liberality of the modern rules of evidence, the same critics contend that, once the expert is permitted to speak, it

20. *Id.*

21. James W. McElhaney, *Trial Notebook: Fixing the Expert Mess*, LITIG., Fall 1993, at 53, 55.

22. *Id.* at 55.

23. *Suits, Indictments, Countersuits Spawned by Allegations of False Expert Testimony*, 2 TOXICS L. REP. 47, Apr. 27, 1988, at 1314 (quoting Denver lawyer Douglas Bragg).

24. *Id.*

is all downhill. Unreliable as well as unnecessary expert testimony is admitted into evidence by judges, and this "junk" is credited by juries. The complaints go to the quality and quantity of the testimony, and the underlying assumption is that jurors are unable to tell the false pearls from the real one.²⁵

III. "Standards" for Admissibility

In a way, this liberality is not in the least remarkable. The fundamental rule of Anglo-American evidence law has been this: Evidence is admissible if it is relevant, and relevant evidence is any evidence that makes a material and disputed fact in the case more or less likely to be true.²⁶ The ultimate weight to be given to any piece of evidence has been thought to be a matter for the jury. To be admitted, the evidence need not have very great force in and of itself because proof is cumulative. "A brick is not [and need not be] a wall."²⁷

Why should expert evidence, especially "scientific evidence," be treated any differently? The traditional arguments for treating expert evidence differently are that jurors are overwhelmed and inclined to abdicate their responsibility to the expert, and that jurors cannot evaluate expert testimony, or, at the very least, tend to give it too much weight.

25. See generally Barry J. Brett, *Expanded Use of Expert Witnesses Pose New Problems for Counsel*, NAT'L L.J., Dec. 31, 1979, at 22.

26. Federal Rule of Evidence 401 defines "relevant evidence" as "evidence having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence." A leading case is *People v. Adamson*, 27 Cal. 2d 478, 165 P.2d 3 (1946), *aff'd*, 332 U.S. 46 (1947), a murder case that involved the introduction of portions of women's stockings found in the defendant's possession and under circumstances that the evidence might have been excluded under Rule 403. However, this concept of minimal, logical relevance, is not intuitive. It can also be abused. See, e.g., *Moore v. Illinois*, 408 U.S. 786, 92 S. Ct. 2562, 33 L. Ed. 2d 706 (1972); BOB WOODWARD & SCOTT ARMSTRONG, *THE BRETHREN: INSIDE THE SUPREME COURT* 224-25 (1979) ("clerk and tell" book discussing *Moore v. Illinois*). The prosecutor's flourishing of a 16-gauge shotgun that was not involved in the case was reminiscent of the prosecutorial dramatics in the celebrated Wallace case tried in Birmingham, England, in the 1930's. See JONATHAN GOODMAN, *THE KILLING OF JULIA WALLACE* 170 (1969). The prosecutor flourished an iron bar "like" a poker allegedly used to kill Mrs. Wallace. The theory was that Wallace had disposed of it after doing the crime. *Id.* But the real Wallace fireplace poker was in the fireplace all along. It had been overlooked by police—they had not really expected to find it, and so they did not. It had almost certainly *not* been the murder weapon. *Id.* at 279.

27. John W. Strong, et al. (eds.), *MCCORMICK ON EVIDENCE* § 185, at 339 (4th ed. 1992).

The higher the stakes in the case, the more likely the "appeal to authority" will work. By deferring to the expert, jurors can more easily rationalize a decision; bear, or shuck, the burden of deciding the guilt of a murder defendant; or shift a huge sum of money from a perceived scoundrel to a perceived victim.²⁸ Critics also contend that laypersons accord "honorific status" to the scientist, and accord more weight to his testimony than it may deserve.²⁹ Such weight is undeserved "not just because he may not be a particularly good specimen of 'homo scientificus' but also because what he testifies to may be much more contestable than the deferential lay person is inclined to believe."³⁰ Furthermore, there is that problem of control: the preservation of the "arbitral role" of the court.³¹

For sixty years or so, courts in this country tried to maintain some control by following the "test" announced in *Frye v. United States*,³² an appellate opinion upholding a trial judge's exclusion of blood-pressure "lie detector" evidence. The Court opined:

Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized, and while courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs.

We think the systolic blood pressure deception test has not yet gained such standing and scientific recognition among physiological and psychological authorities as would justify the courts in admitting expert testimony deduced from the discovery, development, and experiments thus far made.³³

28. See Richard H. Underwood, *Logic and the Common Law Trial*, 18 AM. J. TRIAL ADVOC. 151, 166 (1994) (Appeal to Authority).

29. COADY, *supra* note 18, at 280.

30. *Id.* In his classic critique of expert witness evidence, Learned Hand questioned the propriety of expert witness opinion as replacing the jury. He argued that when experts contradict one another (as usual), the jury is back to "square one," and is no better off with the testimony than without it. Hand, *supra* note 7, at 50, 56.

31. COADY, *supra* note 18, at 300.

32. 293 F. 1013 (D.C. Cir. 1923).

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

It is ironic that the evidence excluded in *Frye* was offered by the defense in a murder case, that the defendant was found guilty by the jury and given a life-sentence, but that he was later exonerated and given his freedom. The expert witness was William Marston.

Without arguing the case for the admissibility of polygraph evidence,³⁴ one might protest that a court following the *Frye* precedent is applying a more stringent test than mere "relevance" or "helpfulness." On the other hand, while a threshold test of admissibility requiring general acceptance in the scientific community bows in the direction of the consensus of scientific opinion, the court is allowed to maintain a healthy skepticism toward, and control over, both the bogus and the maverick. Whether one thinks this standard is overly "deferential" (the view of many commentators) depends on one's perspective.

Except in the most spectacular criminal cases—celebrity cases—most scientific evidence is presented by the prosecution. Consequently, it is not surprising that, although there have always been a great number of academic critics of *Frye*, the test was not very unpopular in criminal cases. Perhaps because there are a lot more defense lawyers than there are prosecutors, most of the hostility was directed at the application of *Frye* in civil cases.³⁵ There are a lot of plaintiffs' lawyers, and they are well organized. Their argument was that the courts paid too much deference to the views of the "scientific community" (translation: "the Establishment" or the "Corporate Power Structure"). The popular, and successful, argument has always been that *Frye* might freeze out "that romantic figure . . . wrongly ignored because he is ahead of his time."³⁶ *Frye* was looking "illiberal" in the pejorative sense of the word. It was keeping plaintiffs' cases from getting to juries. Pathetic victims on one side of the scale were pleading that *Frye* was protecting corporate malefactors on the other side. De Morgan's cautionary words do not weigh much in *that* balance.

34. In addition to the policy argument that such expert testimony is "preemptive" of the role of the trier of fact, some of the scientifically trained critics of the polygraph contend that the device is no more reliable than coin-flipping when it comes to courtroom applications. See DAVID T. LYKKEN, *A TREMOR IN THE BLOOD* 224-26 (1981).

35. *But see* Barry C. Scheck, *Expert Testimony*, 11 *TOURO L. REV.* 107 (1994). In this symposium law review issue, Scheck and others express the view—indeed the hope—that *Daubert* will be applied as strictly as *Frye*, to prosecution evidence at least. *Id.* at 141.

36. See COADY, *supra* note 18, at 284.

All the makers of systems who arrange the universe, square the circle, and so forth, not only comfort themselves by thinking of the neglect which Copernicus and other real discoverers met with for a time, but sometimes succeed in making followers. These last forget that for every true improvement which has been for some time unregarded, a thousand absurdities have met that fate permanently.³⁷

Although there were some notable rear guard actions,³⁸ *Frye* continued to lose ground, and finally things came to a head with the case of *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,³⁹ a case involving the "morning sickness" drug Bendectin. Efforts to establish that this drug was teratogenic quickly became a cottage industry, and a team of experts seemed willing to make that case for the plaintiffs.⁴⁰ Criticism of the these experts and the "Bendectin Cases" became the centerpiece of a book by Peter Huber⁴¹ that a very large number of lawyers love to hate.

Scholarly commentary on *Daubert* has likewise become a cottage industry, and it is no wonder. In an article describing the *Daubert* opinion, one popular commentator charged the Justices with "burying their occasional logic in painful prolixity."⁴²

37. See AUGUSTUS DE MORGAN, FORMAL LOGIC: OR, THE CALCULUS OF INFERENCE, NECESSARY AND PROBABLE 276 (1847).

38. See, e.g., *United States v. Downing*, 753 F.2d 1224, *aff'd*, 780 F.2d 1017 (3d Cir. 1985) (holding that Rule 702 permits a defendant to adduce testimony concerning the reliability of eyewitness identification from an expert in the field of human perception and memory).

39. ___ U.S. ___, 113 S. Ct. 2786, 125 L. Ed. 2d 469 (1993). On remand to the Ninth Circuit, the court of appeals reconsidered the district court's grant of summary judgment under the *Daubert* guidelines and affirmed the grant of summary judgment. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 43 F.3d 1311 (9th Cir. 1995). But the beat goes on: A petition for review in the Supreme Court was filed on August 1, 1995. For some interesting perspectives on *Daubert* see Ronald J. Allen, *Expertise and the Daubert Decision*, 84 J. CRIM. L. & CRIMINOLOGY 1157 (1994); Jon T. Powell, Comment, *How to Tell the Truth with Statistics: A New Statistical Approach to the Bendectin Epidemiological Data in the Aftermath of Daubert v. Merrell Dow Pharmaceuticals*, 31 HOUS. L. REV. 1241 (1994).

40. See PETER W. HUBER, GALILEO'S REVENGE: JUNK SCIENCE IN THE COURTROOM (1991).

41. *Id.*

42. McElhaney, *supra* note 21, at 54. All too typical of the Court's opinions was *Gentile v. State Bar of Nevada*, 501 U.S. 1030, 111 S. Ct. 2720, 115 L. Ed. 2d 888 (1991), which, for a time at least, had the effect of calling into question the validity of state ethics rules limiting the extra-judicial comments of counsel. Perhaps this accounts, in part, for some of the control problems in the O.J. Simpson case. In *Gentile*, the nine-member Court produced two separate five-to-four majorities in the same case! The opinion was so confusing that one state bar disciplinary counsel unhappily (but understandably) complained that "[o]ne sort of understands [the opinion] for about five minutes [after reading it] and then it fades away." Don J. DeBene-

Basically, the *Daubert* Court said that *Frye* had not been incorporated into Rule 702, and that "general acceptance" was not a litmus test for, nor lack of "general acceptance" a bar to, the admissibility of an expert's opinion.⁴³ Nevertheless, the Court agreed that the trial judge should act as a "gatekeeper."⁴⁴ In guarding the gate (Horatio at the bridge?), the court must make a determination (Rule 104(a)) that the expert testimony is both reliable and relevant.⁴⁵ By reliable, the Court apparently means that the underlying methodology must be based on "scientific knowledge" rooted in a "valid" methodology; or if the expert testimony is not scientific evidence, it must be consistent with or valid in light of the principles of the discipline the expert is purporting to practice—consider economic testimony as an example. However, "general acceptance" is still an important factor because it is a strong indicator of reliability, and in the absence of "general acceptance" a judge has a right to be skeptical and demand some other evidence of reliability.⁴⁶

One would not have thought that these generalities would be all that controversial, but they are. The "spin doctors" are hard at work. The Federal Judicial Center prepared a *Reference Manual on Scientific Evidence*⁴⁷ to "assist judges in managing expert evidence primarily in cases involving issues of science or technology."⁴⁸ Almost immediately, the *Manual* came under attack by the plaintiff's bar as being too pro-defendant.⁴⁹ From the other side of the field, critics of the tort

dictis, Gentile's *Unanswered Questions*, A.B.A. J., Apr. 1993, at 28, 28 (quoting C. Thomas Vasaly, First Assistant Director of the Minnesota Lawyers Professional Responsibility Board).

43. *Daubert*, 113 S. Ct. at 2794.

44. *Id.* at 2795.

45. *Id.*

46. For arguments in favor of consensus and general acceptance, see Richard Lempert, *Some Caveats Concerning DNA as Criminal Identification Evidence: With Thanks to the Reverend Bayes*, 13 CARDOZO L. REV. 303, 336 (1991); COADY, *supra* note 18, at 282-83. See also ALAN H. CROMER, *UNCOMMON SENSE: THE HERETICAL NATURE OF SCIENCE* (1993). Professor Allen, the John Henry Wigmore Professor of Law at Northwestern University (a certified evidence guru) is on the money when he opines that *Daubert* buried *Frye* and then resurrected it. Allen, *supra* note 39, at 1168. He points out that the Court adopted the Popperian "conception of science," and then promulgated guidelines that, in effect, "restate general acceptance" or "adopt[]" it explicitly." See *id.* at 1168-69.

47. REFERENCE MANUAL ON SCIENTIFIC EVIDENCE (Federal Judicial Center 1994).

48. *Id.* at 1.

49. See Ralph A. Taylor, *New Judicial Manual on Scientific Evidence Stirs Controversy*, 20 LITIG. NEWS, Oct. 1994, at 1, 6; Thom Weidlich, *Plaintiffs' Bar Loses Bid To Sway Science*

system are pushing HR 10, the so-called "Common Sense Legal Reforms Act of 1995."⁵⁰ This bill proposes that Rule 702 be amended to add a new subdivision (b), which would require that expert testimony be based on "scientifically valid reasoning" and be "sufficiently reliable so that the probative value of such evidence outweighs the dangers specified in [Federal Rule of Evidence] 403."⁵¹ However, this seemingly innocuous proposal is also under fire from the ABA House of Delegates, and the Litigation Section of the ABA is pressing the argument that the proposed Rule change is inconsistent with the thrust of the *Daubert* opinion, rendering expert testimony "presumptively inadmissible."⁵² A proposed amended Federal Rule of Evidence 702 received a similar hostile reception at public hearings, and was withdrawn.⁵³ The proposed Rule suggested (horrors!) that expert testimony "in the form of opinion or otherwise" may be received if it is found to be "reasonably reliable and will substantially assist the trier of fact."⁵⁴ It is hard to say who is winning this battle.

So the debate goes on. If we are a trial judge or a trial lawyer, we may be forgiven if we still cannot tell what is valid science when we see it. If we cannot defer at least to some extent to the "scientific consensus," then we will continue to bang our heads against what Professor Coady refers to as a "vicious logical regress."⁵⁵ How is the non-expert court, let alone the non-expert jury, supposed to determine the "expert witness's credentials without becoming so expert itself as to render [witness'] expertise unnecessary"?⁵⁶ And how are we to keep jurors from being misled by dubious "evidence"?

Manual, NAT'L L.J., Dec. 26, 1994—Jan. 2, 1995, at A-11. *But see* Mark Curriden, *Plaintiffs' Lawyers Rap Evidence Manual*, A.B.A. J., Mar. 1995, at 20.

50. H.R. 10, 107th Cong., 1st Sess. (1995).

51. *Id.* § 102.

52. 63 LW 2507 (February 21, 1995).

53. Michael Martin, *Admissibility After 'Daubert'*, N.Y.L.J., Aug. 13, 1993, at 3.

54. Proposed Amendments to the Federal Rules of Evidence, 112 S. Ct. 362 (Interim Edition) (1991).

55. COADY, *supra* note 18, at 281.

56. *Id.* at 282.

The *Daubert* opinion gave us some guidelines.⁵⁷ Has the theory or technique been tested?⁵⁸ Can it be tested?⁵⁹ Has it been subjected to peer review and publication?⁶⁰ Do we have any evidence of error with respect to both type and frequency?⁶¹ Are there any standards within the professional peer group?⁶² Finally, is there, in fact, general acceptance of the theory or technique, or only minimal acceptance?⁶³ But the real question remains: Will courts be able to fill the bill as gatekeepers, or will they come to miss *Frye*?⁶⁴

Many argue that a loose standard of admissibility has had additional, negative consequences.⁶⁵ As a general matter, it may be true that "enlightening clarity . . . is to be preferred to an obfuscating precision"—but not necessarily.⁶⁶ All depends on which "side of the v." you find yourself. A battle of experts can be both boring and confusing, and what should be powerful testimony is sometimes lost in the fog of a drawn out presentation.⁶⁷ But this result is not simply a risk for the

57. *Daubert*, 113 S. Ct. 2786.

58. *Id.* at 2796.

59. *Id.*

60. *Id.* at 2797.

61. *Id.*

62. *Daubert*, 113 S. Ct. 2797.

63. *Id.*

64. See David J. Beck et al., *Standards and Procedures for Determining the Admissibility of Expert Evidence After Daubert*, 157 F.R.D. 571, 571 (1994) (arguing that courts that followed *Frye* will get the same results under *Daubert*, that more permissive judges will be tightened up a few clicks by *Daubert*, and that the principles of *Daubert* may limit the admissibility of other "nonscientific" expert advice). Similar predictions are made in Allen, *supra* note 39, at 1173-74.

For a recent case reversing a Jones Act award on the grounds that plaintiff's "expert" had no valid scientific basis for his opinion, see *Cook v. American S.S. Co.*, 53 F.3d 733 (6th Cir. 1995). Several state courts have already rejected *Daubert* and kept *Frye*. See, e.g., *State v. Carter*, 246 Neb. 953, 524 N.W.2d 763 (1994). Some jurisdictions have suggested that defendants may engage in forum shopping to the benefit of *Frye*. See LEXIS/NEXIS Hot Topics, Medical and Health Law, Dec. 14, 1994.

65. See *infra* notes 75-78 and accompanying text.

66. PAULOS, *supra* note 1, at 131 (paraphrasing Bertrand Russell).

67. The O.J. Simpson case comes to mind. But compare *Winans v. New York & Erie R.R.*, 62 U.S. 88, 21 How. 88, 16 L. Ed. 68 (1858).

Experience has shown that opposite opinions of persons professing to be experts may be obtained to any amount; and it often occurs that not only many days, but even weeks, are consumed in cross-examinations, to test the skill or knowledge of such witnesses

presenter. The opposite side is that the unorthodox may be effective. Counsel may be tempted to use cross-examination to draw out the matter, or to introduce his own experts to draw out a case or to inject confusion.⁶⁸ On the one hand, social scientists claim that "lengthening the presentation"⁶⁹ or adding a dose of confusion to the brew⁷⁰ may be a good strategy for the defense in a civil or a criminal case. But there may also be instances in which the possibility arises that the more confusing and esoteric the testimony, "the more authoritative it is likely to appear to the lay person."⁷¹

One of the most interesting sentences in the federal rules governing expert testimony appears at the end of Rule 703, Bases of Opinion Testimony by Experts. Specifically, it states: "If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence."⁷²

Now, it is somewhat obvious that the most highly trained surgeon or scientist relies upon all kinds of data that would not ordinarily be admitted into evidence. The scientific world and scientific training are necessarily alive with hearsay—lectures, books, the collected experience of others over generations. Indeed, this fact is true of most fields of endeavor. Read literally and sensibly, the point of the rule would seem to be that much goes into the formulation of an expert opinion, and that the opinion should be admissible even if some of the facts or data relied upon are not themselves admissible as long as the facts or data are reasonably relied upon.⁷³

and the correctness of their opinions, wasting the time and wearying the patience of both court and jury, and perplexing, instead of elucidating, the questions involved in the issue.

Winans, 62 U.S. at 101.

68. See Burd & Lozano, *supra* note 2, at 96-98; see also Victor Gold, *Covert Advocacy: Reflections on the Use of Psychological Persuasion Techniques in the Courtroom*, 65 N.C. L. REV. 481, 497 (1987).

69. Gold, *supra* note 68, at 497.

70. *Id.* at 496; Burd & Lozano, *supra* note 2, at 92 (citing *Schroeder v. Boeing Commercial Airplane Co.*, 123 F.R.D. 166 (D.N.J. 1988)).

71. COADY, *supra* note 18, at 280.

72. FED. R. EVID. 703 (Bases of Opinion Testimony by Experts).

73. But see PAUL F. ROTHSTEIN, *UNDERSTANDING THE NEW FEDERAL RULES OF EVIDENCE* 82 (1973) (stating that "Rule 703 speaks only to the admissibility of the *opinion* based thereon").

I recall struggling with the rule when I was a young lawyer, and this was the way I read the rule—that even if the underlying facts or data cannot come in, the opinion may come in. I even found one or two cases that said as much.⁷⁴ But I soon learned that this common sense reading of the rule was “wrong.” According to the majority of courts and commentators, the final sentence of Rule 703 says something else entirely. Instead, it says there is some kind of expert witness exception to the ordinary rules of evidence. If an expert says it—if an expert wants to slip it in—then it comes in.⁷⁵

Perhaps there are some limits. Perhaps there are some things rank enough to offend even judicial nostrils. Perhaps her honor will give the jury a limiting instruction. “Ladies and gentlemen of the jury, you may only consider these remarkable and mind-boggling ‘facts’ for the following limited purpose. . . .” That is to say, the evidence is admitted to “explain the basis of the expert’s opinion,” whatever that may mean.⁷⁶

This is a rather large loophole in the rules of evidence. Tricksters do not have to break and enter; they are invited in. One popular evidence teacher states the point as bluntly as it can be stated: “Sometimes lawyers even call expert witnesses to the stand just for the purpose of getting inadmissible evidence before the judge and jury.”⁷⁷ Is this ethical?⁷⁸

IV. Weird Science

“I see nobody on the road,” said Alice. “I only wish I had such eyes,” the King remarked in a fretful tone. “To be able to see Nobody! And

74. See, e.g., *United States v. 319.88 Acres*, 498 F. Supp. 763, 766 (D. Nev. 1980).

75. See *Engebretsen v. Fairchild Aircraft Corp.*, 21 F.3d 721 (6th Cir. 1994); MICHAEL H. GRAHAM, *FEDERAL RULES OF EVIDENCE IN A NUTSHELL* 232 (2d ed. 1987) (“Rule 703 operates as the equivalent of an additional exception to the rule against hearsay”); MICHAEL H. GRAHAM, *HANDBOOK OF FEDERAL EVIDENCE* 641-43 (3d ed. 1991). Fans of the O.J. Simpson case can now see what the persistent lawyer Peter Neufeld was trying to do with previously excluded “letters” on August 7, 1995—trying to enter them into evidence through the backdoor. See also McElhaney, *supra* note 21, at 56.

76. See, e.g., *Engebretsen*, 21 F.3d 729.

77. McElhaney, *supra* note 21, at 56; see also Burd & Lozano, *supra* note 2, at 96-98 (citing cases).

78. See Terry O'Reilly, *Ethics and Experts*, 59 J. AIR L. & COM. 113, 125 (1993) (stating that “[t]here is perhaps no greater opportunity for mischief, and again the courts have done little to patrol this enormous loophole in Rule 703”).

at that distance too! Why, it's as much as *I* can do to see real people, by this light!"⁷⁹

[T]he great[est] fallacy of all . . . [is] . . . the determination to have a particular conclusion, and to find arguments for it. . . . The perpetual and willful fallacy . . . is the determination that all argument shall support, and no argument shall shake, the conclusion.⁸⁰

A growing number of academic lawyers insist that the most important duty of a professor is that he "profess" something.⁸¹ I admit that this contention has some superficial appeal, and it is certainly catchy. More than one member of this school of thought has told me, with an air of pride, that when they wish to write and "profess" something, they write what they think or feel about a subject, and then go to the library and get "what they need" to support their latest passion. As a methodology, this scheme may or may not result in a product having some degree of originality. However, such a methodology may not result in the truth. It is a form of advocacy, which may or may not be a form of scholar-

79. LEWIS CARROLL, *ALICE'S ADVENTURES IN WONDERLAND AND THROUGH THE LOOKING GLASS* 176-77 (Bantam Books 1981). Compare the following exchange between defense attorney Johnny Cochran and detective Tom Lange in *People v. Simpson*:

- Q: [Mr. Cochran] Are footprints, *shoeprints*, sometimes *not visible* to the naked eye, depending on the surface that they are on?
 A: [The Detective] Yes.
 Q: All right. And with regard to the area of the dirt in this case, did you take any photographs or were any photographs taken by you of any *possible shoeprints* that might be in that dirt area that morning?
 A: There were *none there* so there was no reason to take photographs.
 Q: *So you didn't take any photographs*; is that right?
 A: There was *nothing to take photographs of*.
 Q: All right. So that if a particular—if Mr. Goldman's assailant had stepped in the dirt and there were no shoeprints and he left out like you did and walked along that walkway trying to avoid the blood, *there would be no shoeprints for you to see*; isn't that correct?
 A: *I don't know. I saw none* in the dirt.

Examination of Tom Lange at 29, *People v. Simpson* (No. BA 097211) (Mar. 8, 1995) (emphasis added).

80. See DE MORGAN, *supra* note 37, at 264.

81. The basis for this contention is Webster's definition. Actually, the first (Roman) law professors were called *iusuris civilis professores*. WILL DURANT, *CAESAR AND CHRIST* 402 (1944). Will Durant says that the term professor "came from the fact that they were required by law to declare (*profiteri*) their intention of teaching, and to secure a license therefor from the public authority." *Id.*

ship.⁸² It is definitely not the methodology of science. Or is it? Let us suspend judgment for a moment. Fortunately, we are discussing academic law, and not something that really matters.

Law or advocacy, as it is practiced in the courtroom, does matter. More to the point, the quality of "scientific" expert opinion that is offered and received into evidence also matters because it is given so much weight,⁸³ and because it can destroy lives, careers, and fortunes.

There are good reasons why not every ostensibly scientific technique should be recognized as the basis for expert testimony. Because of its apparent objectivity, an opinion that claims a scientific basis is apt to carry undue weight with the trier of fact. In addition, it is difficult to rebut such an opinion except by other experts or by cross-examination based on a thorough acquaintance with the underlying principles. In order to prevent deception or mistake and to allow the possibility of effective response, there must be a demonstrable, objective procedure for reaching the opinion and qualified persons who can either duplicate the result or criticize the means by which it was reached, drawing their own conclusions from the underlying facts.⁸⁴

In the context of litigation, the questions that should be asked in every case are: To what extent is the expert's opinion science, and to what extent is it simply advocacy wearing a mask? What is real science? What should we be looking for? How are we to tell the difference between a scientific expert and just another lawyer writing a brief for a client, while ignoring, denying, or suppressing inconvenient evidence?

82. Compare Paul Johnson's assessment of the work of anthropologist and "lit-crit" Claude Levi-Strauss:

Any evidence, however dubious, is acceptable so long as it fits with his logically-calculated expectations. But wherever the data runs counter to the theory, he either ignores it, or summons up all his rhetorical powers to show why it is inapplicable, irrelevant or false. He is not so much a scientist examining a proposition, as a lawyer working to a brief. . . .

PAUL JOHNSON, *ENEMIES OF SOCIETY* 212 (1977). Levi-Strauss had been a lawyer before he turned to anthropology. *Id.* at 209.

83. See Joseph L. Peterson et al., *The Uses and Effects of Forensic Science in the Adjudication of Felony Cases*, 32 J. FORENSIC SCI. 1730, 1748 (1987).

84. *United States v. Brown*, 557 F.2d 541, 556 (6th Cir. 1977) (quoting *United States v. Baller*, 519 F.2d 463, 466 (4th Cir.), *cert. denied*, 423 U.S. 1019 (1975)). *Accord Sterling v. Velsicol Chemical Corp.*, 855 F.2d 1188, 1208 (6th Cir. 1988).

While the conventional explanation of the scientific method has come under criticism of late,⁸⁵ even the most "progressive" elements of the Academy rely upon it when debunking other sources of method and authority. Here are the views of the National Academy of Science,⁸⁶ "present[ing] the basis for the Academy's position that the teaching of creationism is not an appropriate activity in our public schools."⁸⁷

Scientists operate within a system designed for continuous testing, where corrections and new findings are announced in refereed scientific publications. The task of systematizing and extending the understanding of the universe is advanced by eliminating disproved ideas and by formulating new tests of others until one emerges as the most probable explanation for any given observed phenomenon.

. . . Rigor in the testing of hypotheses is the heart of science. If no verifiable tests can be formulated, the idea is called an *ad hoc* hypothesis—one that is not fruitful. . . .

Creationism reverses the scientific process. It accepts as authoritative a conclusion seen as unalterable and then seeks to support that conclusion by whatever means possible. . . . Scientific interpretations of facts are always provisional and must be testable. . . . In creationism . . . authority and revelation take precedence over evidence. The conclusions of creationism do not change, nor can they be validated when subjected to test by the methods of science. . . . [In science,] investigators claim no final or permanent explanatory truths.⁸⁸

85. Popper's notion that the scientific method can be defined by the criterion of "falsifiability" is a bit pat, and even old hat, to say the least. For sensible criticism see COADY, *supra* note 18, at 285. However, we should be able to agree on that without trashing the scientific method or the more general, logical concept of falsifiability in their entirety. Nowadays it is trendy to ridicule the scientific method or, for that matter, any method at all. See PAUL FEYERABEND, *AGAINST METHOD* (1975). The most recent edition of this, "Outline of an Anarchistic Theory of Knowledge" (the book's subtitle), was recently offered in the Loompanics Limited catalog (modestly billed as the "Best Book Catalog in the World") along with the Uncle Fester classics, HOME WORKSHOP EXPLOSIVES AND SECRETS OF METHAMPHETAMINE MANUFACTURE, Michael Newton's popular BAD GIRLS DO IT!: AN ENCYCLOPEDIA OF FEMALE MURDERERS, and the cerebral Robert Anton Wilson's NATURAL LAW: OR DON'T PUT A RUBBER ON YOUR WILLY. Needless to say, I am being methodically unfair to Feyerabend—making a fallacious argument. But that's okay; I'm a lawyer.

86. The National Academy of Science was established by Abraham Lincoln in 1863. Harvard Law Professor Laurence Tribe was—perhaps still is—a member of the Academy's Advisory Committee. NAT'L ACADEMY OF SCIENCES COMM. ON SCIENCE AND CREATIONISM, SCIENCE AND CREATIONISM: A VIEW FROM THE NATIONAL ACADEMY OF SCIENCES 2, 3 (1984).

87. *Id.* at 8. Needless to say, not all great minds have been so sanguine about scientific progress. "What shall we reape by it," asked Montaigne, "but only that we need not care, which of the two [the Ptolemaic and Copernican systems] it be? And who knoweth whether a hundred years hence a third opinion will rise, which happily shall overthrow these two praecedent?" MARIE BOAS, *THE SCIENTIFIC RENAISSANCE 1450-1630* 104 (1962).

88. SCIENCE AND CREATIONISM, *supra* note 86, at 8, 9, 11.

Personally, I am just old-fashioned enough to agree whole-heartedly with the Academy.⁸⁹ I differ only in the degree to which I believe that there is something unique about science. I would argue, as others have argued, that all rational and critical thinking can and should follow this model. Rational or "Critical Man . . . does not stand or fall by his theories because in a sense he has none, merely working hypotheses."⁹⁰ That is why one should "watch out for" folks who "find [only] what they need" to support their arguments.⁹¹

[T]he true scientist is not a man who looks for evidence to confirm his hypothesis, but one who looks for evidence to disprove it. . . .
 . . . Scientists should publish their hypotheses without fear that their destruction will be a personal disaster. . . .

. . . .
 . . . Falsifiability is the criterion between science and non-science. A genuine scientific theory puts itself continually at risk. . . . Particularly obnoxious are theories which contain built-in defences against refutation.⁹²

One does not have to be a Popperian "reactionary" to appreciate the notion that religious arguments are self-sealing. These arguments contain "built-in defences against refutation."⁹³ Of course, the same can and must be said of secular religions such as Marxism, although countless people who have rejected religion as superstition, among them scientists and academics, have embraced Marxism as scientific.⁹⁴

89. In one book, the authors contend that scientists do not necessarily live by their own standards. WILLIAM BROAD & NICHOLAS WADE, *BETRAYERS OF THE TRUTH: FRAUD AND DECEIT IN THE HALLS OF SCIENCE* (1982). They are as careerist and as subject to financial temptation as others. For example, replication of experiments does not pay, so it is not done. All blessings flow to the "discoverers," so the temptation to smooth out or invent data is irresistible to many. The chances of being challenged or "caught" are slim. *Id.* at 56, 59.

90. JOHNSON, *supra* note 82, at 145 (stating that "[t]he correct methodology of science is the correct methodology of civilization, too"). *Id.* at 145. It distresses me to think that science should be considered the least bit heretical. *But see* CROMER, *supra* note 46; ANTHONY FLEW, *THINKING STRAIGHT* 54-55 (1977).

91. JOHNSON, *supra* note 82, at 145.

92. *Id.* at 146-47 (citing KARL R. POPPER, *THE LOGIC OF SCIENTIFIC DISCOVERY* (1959)). For a recent shot at Popper, see Allen, *supra* note 39, at 1168-75.

93. JOHNSON, *supra* note 82, at 147.

94. *See generally id.*

I concede, as I must, that the scientific establishment is telling us to do as scientists say and not as they do as individuals. Falsifiability and objectivity comprise the theoretical or institutional essence of science. But as individuals, scientists often act irrationally. They do not necessarily practice what they preach any more than the rest of us merely human citizens do. When the discovery of "cold-fusion" was prematurely announced not too long ago, a number of scientists rushed into press their confirmations of the experiment.⁹⁵ Other scientists accepted the discovery at face value because the researchers were "good guys" and "respectable" types—criteria that are not entirely relevant.⁹⁶ Obviously, many respectable scientists have been and will be wrong from time to time, and some have turned out to have been cheaters and frauds.⁹⁷

[Marxism is the classic example of a pseudoscience, having] built into it a safety device which in effect transforms it into a closed system, invulnerable on its own terms to any falsification—the true mark . . . of a pseudo-science. The safety device consists in arguing that, since class is the determining factor in society, it also determines intellectual procedures and criteria.

Id. at 194. Compare DURANT, *supra* note 81, at 604n. ("Historically the belief in heaven and the belief in utopia are like compensatory buckets in a well: when one goes down the other comes up. . . . [W]hen, in our eighteenth century, Christian belief weakened, communism reappeared. In this perspective the future of religion is secure.")

95. CROMER, *supra* note 46, at 160.

96. *Id.* I could not believe my ears when former Education Secretary and celebrity moralist William Bennett appeared on a Sunday news program and seemingly accepted, without question, conclusions drawn in RICHARD J. HERRNSTEIN & CHARLES A. MURRAY, *THE BELL CURVE: INTELLIGENCE AND STRUCTURE IN AMERICAN LIFE* (1994), on the ground that one or the other, or both, of the authors is a "respected" scientist or scholar. In light of the abuses that have characterized past research in the field of IQ, one should start out being very suspicious of any conclusions drawn from IQ studies. On the IQ trap and the odd case of Sir Cyril Burt, see BROAD & WADE, *supra* note 89, at 203-11; STEPHEN J. GOULD, *THE MISMEASURE OF MAN* 234-320 (1981). Supporters of Herrnstein and Murray insist that they are not drawing any scientific conclusions relating to the significance of race—although Bennett's comments indicated that he thought they were doing just that. (In fact, they do, as the second step in their analysis). There must be a presumption against the validity of any "scientific" conclusions drawn on the basis of race, if only because race is not a scientific concept. Compare L. LUCA CAVALLI-SFORZA ET AL., *THE HISTORY AND GEOGRAPHY OF HUMAN GENES* (1994). In any event, Herrnstein and Murray spend some time at the beginning of their book rehabilitating Burt—Herrnstein, who died before the book was published, had always been a Burt supporter—and other champions of IQ, and dismiss Burt's critics, contending that their attacks were personal and motivated by professional jealousy and left-wing political ideology. They contend that these attacks unfairly label IQ proponents as racist and right-wing. Some of their critics do hurl epithets, but the insults are reciprocal. Objectivity is often abandoned in practice.

97. See generally BROAD & WADE, *supra* note 89; see also E. MICHAEL JONES, *DEGENERATE MODERNS* (1993) (hammering on such icons as Margaret Meade, Alfred Charles Kinsey, and

The questions that ought to be asked in any particular case are whether the data is good and the methodology sound, not whether the scientist is part of the establishment, or respectable, or likeable. The fallibility and irrationality of individual scientists, particularly when holding forth in areas beyond their expertise, should also be remembered when one of them asserts his political or moral superiority. These are areas in which scientists *qua* scientists have no special expertise or claim to authority.⁹⁸

But let us return to the scientists' criticisms of religion. The scientists tell us that the arguments in support of religious propositions are not grounded in verifiable fact, are illogical, and are self-sealing. If we are to be at all consistent, we must concede that much scientific expert opinion—much litigation science—is based on arguments that are just as speculative, illogical, and just as self-sealing. In short, much scientific expert testimony is just as unscientific.⁹⁹

Perhaps no reported judicial opinion explains more clearly how fallacy can be paraded as science than the findings of fact and conclusion of

Sigmund Freud). For discussions of scientific fraud and misconduct in research see Patricia K. Woolf, *Deception In Scientific Research*, 29 JURIMETRICS 67 (1988); C. Beth Sise, Comment, *Scientific Misconduct in Academia: A Survey and Analysis of Applicable Law*, 28 SAN DIEGO L. REV. 401 (1991); CHARLES BABBAGE, REFLECTIONS ON THE DECLINE OF SCIENCE IN ENGLAND AND ON SOME OF ITS CAUSES (1970). Students of the history of science are familiar with this volume, which was first published in 1830. Babbage described the arts of "trimming" (clipping off observations that deviate far from the mean), "cooking" (selecting only such observations as agree or are agreeable), and "forging" (making stuff up). *Id.* at 177-78. Nowadays Babbage is credited with having invented the computer.

98. See MICHAEL WHEELER, LIES, DAMN LIES, AND STATISTICS: THE MANIPULATION OF PUBLIC OPINION IN AMERICA (1976). See generally JEAN-FRANCOIS REVEL, THE FLIGHT FROM TRUTH: THE REIGN OF DECEIT IN THE AGE OF INFORMATION (1991).

99. On the fallacies of "regulatory science"—the so-called science accepted and acted upon by regulating agencies, see EDITH EFRON, THE APOCALYPTICS: CANCER AND THE BIG LIE: HOW ENVIRONMENTAL POLITICS CONTROLS WHAT WE KNOW ABOUT CANCER (1984). See also JOHNSON, *supra* note 82, at 90-92.

[I]t is characteristic of the ecolobby, as of most irrationalist systems, that when faced with reasoned opposition they constantly discard old arguments and replace them with new ones. Osmosis, of course, is the normal state of invalid theory. . . . [The ecolobby's] whole propaganda consists in the presentation of massive series of detailed figures . . . the use of figures [being] more a form of emotional rhetoric than an exact science.

JOHNSON, *supra* note 82, at 90, 92.

law entered in *Johnston v. United States*.¹⁰⁰ This case involved claims under the Federal Tort Claims Act brought by four employees of an aircraft instrument company. The employees contended their cancers were caused by exposure to minute amounts of ionizing radiation that allegedly came from luminous dials and parts supplied by the United States Government.¹⁰¹ After a lengthy trial in which more than fifty witnesses provided over 5,000 pages of testimony,¹⁰² the trial judge issued scathing findings rejecting the plaintiffs' claims¹⁰³ and excoriating their experts.¹⁰⁴ The bottom line was that no persuasive evidence was offered to support the plaintiffs' claims or their experts' theories.¹⁰⁵ As the court stated,

[i]f this Court were to accept [the experts'] statistical approach to causation, then this Court would have to find that plaintiffs have proven by 63 times certainty that past radiation has caused specific types of cancer which, in fact [the plaintiffs] do not have!

. . . . [T]hese experts' conclusions are not supported by any fact other than that the instruments are coated with a radioactive paint and each plaintiff has cancer.¹⁰⁶

What sort of methodology and argument provoked this reaction from the court? The judge had much to say about the factual basis for the opinions proffered by plaintiffs' experts, their statistical methodology, their treatment of inconvenient data, their responses to devastating criticisms of their data and method, and their motivation.¹⁰⁷

In so far as input, methodology, and handling of data were concerned, the court painted a picture of experts presenting numbers and calculations that only appeared to be scientific—a sort of mathematical rhetoric.¹⁰⁸

100. 597 F. Supp. 374 (D. Kan. 1984).

101. *Johnston*, 597 F. Supp. at 375.

102. *Id.*

103. *Id.* at 434.

104. *Id.* at 415.

105. *Id.*

106. *Johnston*, 597 F. Supp. at 412, 415.

107. *Id.* at 408-18.

108. *Id.* at 394-95.

The experts employed "Statistical Risk Calculations" that provided one expert with a formula for calculating backwards from his desired result—an exercise in "playing with the input numbers until the output [was] what [the] witness wanted."¹⁰⁹ Duly accredited and credible scientists, called by the government, produced radically different results using the same formula.¹¹⁰ Although sporting a "complex mathematical approach," the experts' conclusions were "obviously scientifically flawed and contradicted by both common sense and available factual data."¹¹¹ The court described the experts' opinions on causation as being "based upon this statistical sophistry and mathematical machination."¹¹²

Referring to the available data and studies at hand, the court found the experts to have been aware of findings that were not to their liking—and that they did not include them in their report.¹¹³ The experts were "very adroit at readily discarding any facts which would [have] discredited [ed] their predetermined result."¹¹⁴ According to the court, they exhibited a "deliberate propensity to ignore a large amount of well-established data which negate[d] their arguments, and they [clung] to a small amount of highly questionable data which support[ed] their arguments."¹¹⁵ The court lamented that "[t]his is not the hallmark of the type of objective scientist which a Court can rely upon in a lawsuit. It is the hallmark of a professional witness who is biased toward one side of the case."¹¹⁶

In essence, the judge in *Johnston* complained that the experts science defied "falsifiability" because it was lacking in substance and ever changing: "[T]hey construct their analyses to reach a predetermined result and will readily discard prior statements that do not suit their present argument for the plaintiffs in this case."¹¹⁷ The court accused

109. *Id.* at 394.

110. *Id.* at 412.

111. *Johnston*, 597 F. Supp. at 405.

112. *Id.* at 413.

113. *Id.* at 409.

114. *Id.* at 414.

115. *Id.*

116. *Johnston*, 597 F. Supp. at 414.

117. *Id.*

the experts of being willing to "say and conclude things which, in the Court's view, they would not dare report in a peer-reviewed format."¹¹⁸ To this court, the plaintiff's team represented the

views of an extreme minority of scientists . . . a very small, but yet very vocal, group of scientists . . . that holds views which are not considered credible by the experts in the field. . . . They have chosen to separate themselves by rejecting as reliable authorities the very documents which represent the scientific consensus in this particular field.¹¹⁹

The court noted that "[when one expert was] confronted with clear statements in his book which rule[d out] . . . the facts of this case, [he] either disavow[ed] those statements or he ma[de] a new 'world discovery' to reconcile the conflict."¹²⁰ The court spoke of the experts' "intellectually dishonest invention of arguments to protect their opinions."¹²¹

The court speculated as to what made the experts tick.¹²² It noted that the principal theorist on the plaintiffs' side

has testified under oath on numerous occasions that [the experts who disagreed with him, virtually the entire scientific community] are all biased and that he alone is objective and independent. . . . [He and his teammates] have become advocates for a cause and have therefore departed from the ranks of objective expert witnesses. . . . [One witness went so far as to claim] that he alone is "completely independent" and objective . . . yet [he] is working on about 50 [similar] cases. . . . Indeed, given his \$500.00 per day expert witness fee, one must wonder who is partisan!¹²³

Interestingly, in a subsequent case, a different federal magistrate excluded the testimony of one of the *Johnston* expert witnesses by refusing to admit the testimony into evidence.¹²⁴ As far as this judge was concerned, the expert's views were "debunked to a point where such conclusions . . . are excluded as any reliable source of scientific information."¹²⁵

118. *Id.* at 415.

119. *Id.* at 411.

120. *Id.* at 414.

121. *Johnston*, 597 F. Supp. at 414.

122. *Id.* at 408-18.

123. *Id.* at 410, 411.

124. *Montgomery v. City of Chicago*, 1992 WL 370144 (N.D. Ill. 1992).

125. *Montgomery*, 1992 WL 370144 at *1.

The "field" of clinical ecology provides another good example of weird or "junk" science. The idea behind clinical ecology is that chemicals cause almost every disease or affliction in humans through their impact on the immune system.¹²⁶ Like Marxism, clinical ecology explains everything, and like Creationism it begins and ends with unshakable belief. Dependent on self-sealing rhetoric, proponents of clinical ecology rely on questionable data, if they rely on any data at all. There are no controls, and results are not replicated.¹²⁷ Although some courts reject this pseudo-science,¹²⁸ it will not go away. Will clinical ecology resurface as a science after the decision in *Daubert*?

Important to note is the fact that we are not implying the experts committed perjury in these cases. No matter how odd the opinion and vulnerable the methodology, one assumes that these experts hold honest opinions (for example in *Johnston*). Nevertheless, it is virtually impossible to prove the contrary. Much forensic mischief falls well short of perjury and cannot be deterred by crude criminal sanctions.

This information takes us back to the *Daubert* opinion. How will it be interpreted and applied? What will the state courts do with it? If judges abdicate their responsibilities and accept unorthodox, "junk" science into evidence, then they can hardly fault unsuspecting and unprepared jurors for rendering irrational verdicts.

Now there was there nigh unto the mountains a great herd of swine feeding. And all the devils besought him, saying, Send us into the swine, that we may enter into them. And forthwith Jesus gave them leave. And the unclean spirits went out, and entered into the swine: and the herd ran violently down a steep place into the sea¹²⁹

126. HUBER, *supra* note 40, at 106.

127. HUBER, *supra* note 40, at 106. Compare JOHNSON, *supra* note 82, at 196-97. Johnson states:

[Freudianism] appeals to human minds because it strikes them . . . as a form of archetypal truth. . . . [Freud's] basic concepts were formulated before [the pertinent scientific truths of biology were understood]. . . . Psychoanalysis enshrines elements of truth in a false general theory. . . . But if psychoanalysis is almost entirely barren of true concepts, it displays a terrific facility for explaining things. . . . As with Marxism, it has achieved complete intellectual closure, and once someone allows his mind to get lost in this maze, it is very difficult for him to get out.

JOHNSON, *supra* note 82, at 196-97.

128. See, e.g., *Sterling v. Velsicol Chem. Corp.*, 855 F.2d 1188 (6th Cir. 1988).

129. Mark 5:11-13.

V. The Psychological Sciences

Can you imagine anything more horrible than government by professors!
Georges Sorel (1908)¹³⁰

[I]t is putting a very high price on one's conjectures to roast a man alive for them. . . .¹³¹

While we consider such subjects as exorcism, hunting witches, and bandwagon effects such as those that sealed the fate of the Garasenes swine, we may just as well consider psychology and psychotherapy. Presently, psychologists and psychotherapists are consistently hired as expert witnesses. Those "experts" have had considerable success convincing the rest of us of the unreliability of our own eyes, ears, and memory.

We believe that the appearance of research psychologists as expert witnesses in legal trials should be encouraged. Their testimony can be of value both to establish the "exceptional" circumstances that accompany reliable testimony and to summarize the sources of unreliability in an eyewitness's report.¹³²

Are these experts asking us to question the reliability of some testimony, or are they inviting us to reject all lay testimony? The result seems to be the latter. These experts have worked hard to convince us that, while their testimony is indispensable, lay testimony is unreliable. Making these two propositions co-exist is difficult. Researchers must rely on their own observations, recollections, and veracity, as well as the observations, recollections and veracity of others.¹³³ Putting this

130. JOHN P. DIGGINS, *THE RISE AND FALL OF THE AMERICAN LEFT* 279 (1992). Compare PETER FRANCE, *GREEK AS A TREAT: AN INTRODUCTION TO THE CLASSICS* 103 (1993) ("Perhaps nothing in Athenian democracy is more astonishing to us today than that they should have kept the organization of their lives to such an extent in the hands of the ordinary citizens and away from the experts. . . .").

131. JOHN HALE, *THE CIVILIZATION OF EUROPE IN THE RENAISSANCE* 447 (1994) (quoting Montaigne).

132. MICHAEL J. SAKS & REID HASTIE, *SOCIAL PSYCHOLOGY IN COURT* 191 (1978); see also ELIZABETH LOFTUS & KATHRINE KETCHAM, *WITNESS FOR THE DEFENSE: THE ACCUSED, THE EYEWITNESS, AND THE EXPERT WHO PUTS MEMORY ON TRIAL* (1991).

133. See COADY, *supra* note 18, at 264.

aside, how strong a case do these experts have? How strong is their science? Even if their science and evidence is convincing, how much ground should the courts cede to the experts?

Until recently, courts resisted any perceived academic take over,¹³⁴ and rejected expert testimony that was not grounded in "generally accepted" scientific principles, or that appeared to be offered in whole or in part to attack or bolster the credibility of witnesses.¹³⁵ Jurors were presumed capable of judging the credibility of witnesses and assessing the probability or plausibility of the witnesses' version of the facts.¹³⁶ Courts reluctantly admitted scientific evidence that related to the fallibility of eyewitness testimony, and loathsomely admitted expert testimony on subjects like battered-woman syndrome (BWS), the battering-parent profile, rape-trauma syndrome (RTS), and repressed memory (remembered abuse).¹³⁷ While the latter four types of expert testimony may have some relevance to issues other than credibility,¹³⁸ the fact remains that the message sent to, and probably received by, the jurors is this: The defendant who claims to have been battered, the accuser who charges rape, or the adult who testifies that he is only now able to remember being abused as a child, is telling the truth—that what happened probably happened, and probably happened the way that they say that it happened; or, in the case of the battering-parent profile, that the suspected parent's otherwise plausible explanation of

134. See *State v. Chapple*, 135 Ariz. 281, 660 P.2d 1208 (1993) (Hays, J., concurring in part & dissenting in part).

135. See generally PAUL GIANELLI & EDWARD J. IMWINKELREID, *SCIENTIFIC EVIDENCE* ch. 9 (1986) (supplemented periodically). For the British view, see *Regina v. Turner*, 1975 All E.R. 70 (C.A. 1975).

We do not consider that [*Lowery v. Regina*] is an authority for the proposition that in all cases psychologists and psychiatrists can be called to prove the probability of an accused's veracity. If any such rule was applied in our courts trial by psychiatrists would be likely to take the place of trial by jury and magistrates. We do not find that prospect attractive and the law does not at present provide for it.

Regina, 1971 All E.R. at 75.

136. See generally GIANELLI & IMWINKELRIED, *supra* note 135.

137. *Id.*

138. Some of the other uses are also said to be impermissible "uses." See CHRISTOPHER B. MUELLER & LAIRD C. KIRKPATRICK, *EVIDENCE* § 7.7 (1995) (discussing expert testimony regarding "syndromes").

events, is a lie.¹³⁹ The jurors are being told to accept or reject critical testimony—a version of reality—because an expert who was not a witness to the actual events has taken the stand and said that they should. In a very real sense, the jurors are told how to decide the particular case. Since the adoption of the influential Federal Rules of Evidence, testimony on the “ultimate issue” is permitted (Rule 704), although there has been some backlash. Why all the concern?

In addition to the natural conservatism of judges and lawyers, people have grown increasingly suspicious of the authority of science in general, and the authority of the “social sciences” in particular. Some of this skepticism may be attributed to want of education in the sciences, and some may be attributed to ideological or “new age” hostility to reason and reasoned argument generally.¹⁴⁰ Even so, to many knowledgeable observers who have looked closely at the subject, research in psychology is all too often characterized by questionable methodology, contestable data, and in some cases rather large doses of ideology.¹⁴¹ For their part, psychotherapists are often poorly trained and consequently are capable of doing great harm to their clients.¹⁴² Furthermore, the phoney “united front” that commercial psychology and psychotherapy have sold

139. Compare Charles R. Honts, *Assessing Children's Credibility: Scientific And Legal Issues in 1994*, 70 N.D. L. REV. 879 (1994) (claiming that, while children will lie about important matters, such lies can be scientifically detected by the technique of Statement Validity Assessment, that the test meets the criteria of *Daubert*, and that studies of the technique report “very high accuracy,” approaching one hundred percent).

140. See generally PAUL GROSS & NORMAN LEVITT, *HIGHER SUPERSTITION: THE ACADEMIC LEFT AND ITS QUARRELS WITH SCIENCE* (1994); CROMER, *supra* note 46. Sometimes what passes for “science” seems “new age.” A recent article notes that “[s]ome of the major insights of psychoanalysis have mutated into one of America’s biggest organized religions—the 12-step program me.” Suzanne Moore, *What's Up Doc?*, *The Guardian*, Feb. 11, 1994, at 16.

141. See *infra* text at notes 147-49 & 166.

142. See Mark Hansen, *Developments: More False Memory Suits Likely*, 80 A.B.A. J. 36 (Aug. 1994). This story reports a \$500,000 verdict against two psychotherapists who the plaintiff alleged had “plant[ed] false memories of childhood sexual abuse in his adult daughter’s mind.” *Id.* The same article reported that a “False Memory Syndrome Foundation” “has heard from more than 13,000 people who claim to be the victims of false accusations of abuse,” and from “more than 160 former patients who since have retracted earlier allegations of abuse.” *Id.* at 36-37. The article cites another recent case holding that parents have standing to sue for malpractice that allegedly has damaged a family relationship. *Id.* at 37 (citing *Sullivan v. Cheshier*, 846 F. Supp. 654 (1994)); see also Christine Gorman, *Memory on Trial*, *TIME*, Apr. 17, 1995, at 54-55.

to the public in general, and to lawyers in particular, has begun to crumble.¹⁴³

However, the material sells. In the latest book lamenting the shortcomings of the jury system, journalist Stephen Adler argues that because jurors often weigh the wrong factors in assessing credibility, social scientists (by this I assume he means psychologists) should either be enlisted to educate juries regarding their task, or that "useful information . . . gleaned from the academic studies . . . [should be] incorporate[d] . . . into . . . [jury] instructions."¹⁴⁴ Regarding the fallibility of *testimony* that lay juries frequently credit, he cites a number of "studies."¹⁴⁵ Adler accepts these "*studies*" without question, as generally accepted science based on sound, methodical research. For example, he contends that "studies show" that "the accuracy of testimony decreases as the stress level of the person at the time of the remembered event increases," that "the presence of a weapon at the crime scene markedly reduces the witness's later ability to say what really happened" due to so-called "weapon focus," and so on.¹⁴⁶

Now, let me make it clear that as a lawyer and teacher of advocacy, I pass such information on to my students—we practice exploiting these points on cross-examination and during closing argument. To that extent, I too have accepted what the "studies show." But then, I am engaged in the practice and teaching of advocacy. When I have my advocate's hat on, I can be brazenly selective, and selectively critical. However, the fact remains that others no less credentialed than the vendors of the conventional psychological wisdom can provide us with "studies" proving that "empirical support for [the stress] hypothesis is dubious,"¹⁴⁷

143. See COADY, *supra* note 18, at 274-75.

144. STEPHEN J. ADLER, *THE JURY* 208-10 (1994). Cf. Jeremy A. Blumenthal, *A Wipe of the Hands, A Lick of the Lips: The Validity of Demeanor Evidence in Assessing Witness Credibility*, 72 NEB. L. REV. 1157, 1161 (1993) (the author stating that he "favor[s] the application of clearly demonstrated, accepted theories of social science when they can reasonably be applied to the . . . judicial process").

145. See ADLER, *supra* note 144, at 209.

146. *Id.*

147. COADY, *supra* note 18, at 274. Coady is a philosopher, but the works he cites are the works of credentialed psychologists. *Id.* at 274-75 n.34, 39. I allude to Coady's sources as critics from within the science, since psychologists and psychotherapists (Freud included) have had a way of insisting (on the basis of fallacy and illogic) that only one who has accepted their premises are in a position to evaluate their views and conclusions.

that "there is virtually no evidence for [the 'weapon focus'] phenomenon."¹⁴⁸ Furthermore, they can tell us that many of the other such lessons have not been replicated,¹⁴⁹ have been flatly contradicted,¹⁵⁰ or can be challenged because of interpretive flaws that are "endemic to the research work in this area."¹⁵¹

[The experts have] had [difficulty] in steering between the Scylla of painful confirmation of the obvious and the Charybdis of exciting revelations that turn out to be fatally ambiguous, empirically suspect, or conceptually flawed. . . . [W]e tend to get conclusions which can provide some useful input to policy makers . . . but [the use of these conclusions] in the courts as evidence is likely to be much less helpful, partly because there is so little understanding of any mechanisms involved in the gross regularities observed and statistics recorded. . . . When one considers the tendency that experts have, even in disciplines much less value-oriented than [the social sciences] (such as forensic medicine), to take a stand on the moral and social issues involved in the case and to let that stand influence their evidence, one can only view with dismay any suggestion that evidence from the human and social sciences be admissible [evidence] as to human nature.¹⁵²

A widely published critic of psychoanalysis argues that it is really a "pseudoscience" because of

For articles for and against eyewitness, battered woman syndrome, battering parent profile, and rape trauma syndrome testimony see GIANELLI & IMWINKELREID, *supra* note 135. See also David Faigman, *Essay: Mapping the Labyrinth of Scientific Evidence*, 46 HASTINGS L.J. 555, 571 (1995); David L. Faigman, Note, *The Battered Woman Syndrome and Self-Defense: A Legal and Empirical Dissent*, 72 VA. L. REV. 619 (1986) (questioning the quality of research offered in support of a "battered woman syndrome").

148. COADY, *supra* note 18, at 275.

149. *Id.*

150. *Id.*

151. *Id.* at 273.

152. *Id.* at 302-03 (citation omitted). Along with sociology, psychology has been labeled one of the "immature and ineffective sciences." JOHNSON, *supra* note 82, at 156. Such "weak sciences," say the critics: (1) lack "an agreed theoretical base"; (2) "the basic materials of such sciences consist of intuitive generalities which are presented as empirical laws"; (3) they are characterized by a "succession of 'leading schools', each moving from manifesto to obscurity"; and (4) are noted for the "sinister stability of the[ir] founding fathers." *Id.* at 156-57 (citing, among other authorities, THOMAS S. KUHN, *THE STRUCTURE OF SCIENTIFIC REVOLUTIONS* (1962)). On the latter point, see the particularly savage critique of the cult by Michael Jones. See generally JONES, *supra* note 97. For an early attack on the methodology, see John H. Wigmore, *Professor Muensterberg and the Psychology of Testimony*, 3 ILL. L. REV. 399 (1909).

its cult of the founder's personality; its casually anecdotal approach to corroboration; its cavalier dismissal of its most besetting epistemic problem, that of suggestion; its habitual confusion of speculation with fact; its penchant for generalizing from a small number of imperfectly examined instances; its proliferation of theoretical entities bearing no testable referents; its lack of vigilance against self-contradiction; its selective reporting of raw data to fit the latest theoretical enthusiasm; its ambiguities and exit clauses, allowing negative results to be counted as positive ones; its indifference to rival explanations and to mainstream science; its absence of any specified means for preferring one interpretation to another; its insistence that only the initiated are entitled to criticize; and its stigmatizing of disagreement as "resistance," along with the corollary that, as Freud put it, all such resistance constitutes "actual evidence in favour of the correctness" of the theory . . . ; and its narcissistic faith that, again in Freud's words, "applications of analysis are always confirmations of it as well."¹⁵³

"[T]he trouble with these weak sciences," writes Paul Johnson, "is that they feel they have to stand comparison with established ones . . . pretending to be mature. . . . Worse still, such sciences are tempted to legitimize themselves by taking on practical work."¹⁵⁴ I fear that the practical work, in and out of court, threatens to affect us all for the worse, and I am not alone. One researcher tells us that the experts who exhibit "poor performance" are those whose "domains" involve "dynamic human behavior." They include "[c]linical [p]sychologists; [p]sychiatrists; [c]ourt [j]udges; . . . [b]ehavioral researche[r]s; [c]ounselors; . . . [p]arole officers; [and s]tock brokers."¹⁵⁵ Why anyone is surprised by the list is surprising to me.

153. Frederick Crews, *The Unknown Freud*, N.Y. REV. BOOKS, Nov. 18, 1993, at 62-63 n.20. Similar reservations about the scientific status of psychoanalysis are expressed in ANTHONY FLEW, *THINKING STRAIGHT* 55 (1977). For his part, Crews started out a Freudian, only to end up an anti-Freudian. See generally FREDERICK CREWS, *THE SINS OF THE FATHERS* (1966); FREDERICK CREWS, *SKEPTICAL ENGAGEMENTS* (1986). As for the inevitable counterattack on Crews, see Eli Zaretsky, Tikkun, May 1994, at 65. As far as Zaretsky is concerned, "[t]he current attacks on Freud are continuous with the attack on the Left that began with the election of Richard Nixon in 1968 and has dominated American political discourse ever since." *Id.* The same author observes that "[t]he weakest point of Marx was his claim that his conclusion could translate into politics in a direct manner." *Id.* This strikes me as *ad hominem*, but the logic of Marx may still appeal to some.

154. JOHNSON, *supra* note 82, at 157.

155. Anne W. Martin, *Expert-Novice Differences and Implications for Choice of Bench Versus Jury Trial*, 13 CARDOZO L. REV. 575, 577 (1991) (discussing the work reported in Shanteau, *The Psychology of Experts: An Alternative View*, in ORGANIZATIONAL BEHAVIOR AND HUMAN DECISION PROCESSES (1991)).

The danger posed by the witness of the social sciences is becoming all too clear, even to members of the club. In *The Myth of Repressed Memory: False Memories and Allegations of Sexual Abuse*, psychologists and "memory experts" Elizabeth Loftus and Katherine Ketcham have challenged the "theory" of repressed memory.¹⁵⁶ Throughout this work, Loftus and Ketcham quote lines from Arthur Miller's play *The Crucible*. The reader will recall that the play told the story of the Salem Witch Trials.¹⁵⁷ The most apt quotation is taken from John Proctor's defense of his wife, who has been accused by the witch-hunters of hiding poppets (voodoo dolls) in their house. Proctor's insistence that his wife "never kept no puppets" is met with the response that the poppets could have been "hid where no one ever saw them."¹⁵⁸

John Proctor: There might also be a dragon with five legs in my house, but no one has ever seen it.

Reverend Parris: We are here, Your Honor, precisely to discover what no one has ever seen.¹⁵⁹

What poor Proctor is banging his head against is a classic example of non-science and non-sense, of *argumentum ad ignorantium*. "There must be ghosts because no one has ever been able to prove that there aren't any."¹⁶⁰ This is the quality of reasoning that is at the core of

156. See ELIZABETH LOFTUS & KATHERINE KETCHAM, *THE MYTH OF REPRESSED MEMORY: FALSE MEMORIES AND ALLEGATIONS OF SEXUAL ABUSE* 3, 8, 20, 31, 150, 227, 263 (1994).

157. It is commonly suggested that the play is "about" the antics of the House Un-American Activities Committee (HUAC). See Richard Watts, Jr., "Introduction" to the play in the Bantam edition, *supra* note 21, at vii-viii. I was intrigued when I ran across Walter Goodman's observation that when Miller was called before the Committee he was "decently annoyed at the uses to which the Communists had put his play about witch hunting in Salem, *The Crucible* (Howard Fast interpreted it as a statement on the Rosenberg case)." WALTER GOODMAN, *THE COMMITTEE* 392 (1968). I will leave the Rosenberg case alone.

158. ARTHUR MILLER, *THE CRUCIBLE* 103, 104 (1955).

159. *Id.* at 104.

160. See Underwood, *supra* note 28, at 72. In the actual trials at Salem the magistrates accepted

the premise that the devil cannot assume the "shape" of an innocent person, the admission of the so-called "spectral evidence." Thanks to this arrangement, hallucinations, dreams, and mere fancies would be accepted in court as factual proof not of the psychological condition of the accuser but of the behavior of the accused. This was, as many good men and women were to discover, the sort of proof against which there is no disproof.

this latest offering from the witness of psychology. Yet this science has sent people to jail, and even convinced some of them that they committed acts that they probably did not commit!¹⁶¹ Loftus and Ketcham quote from a journal devoted to the "repressed-memory" problem: "In a psychotherapeutically inspired double bind typical of our times, denial itself is evidence of denial, the pathological indicator that makes declarations of innocence virtual proof of guilt."¹⁶²

This is a "Catch-22."

Again, the jurors are being told whom to believe. Especially in cases in which little or no corroborative evidence exists, jurors are being told how they should decide the case.

There are those who will contest this point. They will argue that the experts will not actually be permitted to give an opinion that a particular memory of an event is a repressed memory, or that the memory is a true or a false one—that is, that the event actually happened. The expert testimony is only supposed to give the jurors the "tools" they need to assess credibility.¹⁶³ But the zealots promoting the repressed

MARION L. STARKEY, *THE DEVIL IN MASSACHUSETTS: A MODERN INQUIRY INTO THE SALEM WITCH TRIALS* 37 (1949).

161. Cf. STARKEY, *supra* note 160, at 191, 193 (describing women accused of witchcraft who were "convinced" of their guilt).

It was not uncommon for some of [those accused of witchcraft] to agree after so dramatic a demonstration that they must indeed have been practicing witchcraft; *the difficulty was to remember how and when*. . . . Accused women . . . who refused to confess were relentlessly pressed to do so by their next-of-kin. Sometimes this was because their husbands . . . "did break charity with their dear wives," aghast to find themselves mated with monsters.

Id. at 191, 193 (emphasis added). All this sounds strangely familiar.

162. LOFTUS & KETCHAM, *supra* note 154, at 102 (emphasis omitted) (quoting the *Family Therapy Networker*, Sept./Oct. 1993).

163. Cf. SAKS & HASTIE, *supra* note 132, at 191.

We think that the task of a psychological expert, called to the witness stand to testify on eyewitness reliability, is to summarize the relevant scientific facts. This testimony would include a few remarks on the scientific method, a description of the relevant experimental paradigms, and a list of the specific empirical results obtained with these methods. The jury or judge would then decide the extent to which these facts apply to the particular circumstances of the legal case and draw the appropriate conclusions about the case.

Id. But see Victor Barall, *Thanks for the Memories: Criminal Law and the Psychology of Memory*, 59 BROOK. L. REV. 1473, 1486-87 (1994) (reviewing HARRY N. MACLEAN, *ONCE UPON A TIME: A TRUE STORY OF MEMORY, MURDER, AND THE LAW* (1993)).

memory theory believe they can tell if the memory is true, and if the repressed event happened; and they get that message across.¹⁶⁴

The ultimate irony is that the jurors are usually left in the position of having to choose between two contending experts. When jurors confront this situation, they probably employ the same criteria they use in assessing the credibility of other witnesses. That is, jurors tend to pick the expert who puts on the best show, or the one who is most likeable.¹⁶⁵ We heard professional commentary to this effect, *ad nauseum*, during the O.J. Simpson trial—this expert was “humble,” and that expert was “arrogant,” and “this likeable expert will give jurors who want to acquit O.J. what they need.” Or perhaps jurors will pick the one who comes across as the most confident (the best actor?).¹⁶⁶ Perhaps we should add another round of experts to expertly assess the

164. See Barall, *supra* note 163, at 1486-87, 1491-92, 1493-94. See generally Honts, *supra* note 139 (presenting the argument that one type of analysis, Statement Validity Assessment, is scientific, testable and tested, and consistent with the *Daubert* criteria).

165. Barall, *supra* note 163, at 1494; see also Allen, *supra* note 39, at 1175. Allen says that

[j]urors or judges who cannot understand the reasoning of a witness can only accept or reject the witness' conclusions, but neither acceptance nor rejection will occur rationally. The choice will not be made because a fact finder understands the reasoning and sees either its cogency or its flaws; it will be made for some other reason.

Allen, *supra* note 39, at 1175. And the set of “some other reasons” is, from the point of view of the laws aspiration, filled with unsavory characters.

Since no one knows exactly how far judges and juries base their decisions upon legal reasoning and technical issues, credibility indices are actively sought as a guide to whether the judge liked the expert's evidence. The upshot of these signs of credibility is an ideal type of the good and the bad expert witness. . . . [W]itness impact is hindered by their being overly talkative, making too many qualifications, being slow or argumentative and therefore unconvincing, being too dramatic and therefore seeming phoney, and using unfamiliar jargon intended to make an impression, but which comes across as insincere. Witnesses who use hypercorrect speech are stilted and unconvincing witnesses. Some witnesses are too short-winded, others are too opinionated, antagonistic, and chronic qualifiers. The expert, if he is to be credible, must be none of these. He must have that air of unqualified certainty which comes of having a full grasp of the case, even though he may in fact have a very partial picture. As one barrister said, “*Very persuasive men may on occasion be preferred to one who is right.*”

Id. (emphasis added) (footnote omitted). Cf. Underwood, *supra* note 28; JONES, *supra* note 5, at 148-49.

166. Have not the psychologists told us that confidence is an unreliable indicator when it comes to assessing the credibility of eyewitnesses?

credibility of the experts. Expert testimony could become a real growth industry.¹⁶⁷

Even more disconcerting than the increasing acceptance of the expert testimony of credentialed psychologists is the willingness of courts to admit the opinions of others less qualified. For example, a frustrated Justice of the Supreme Court of Appeals of West Virginia was moved to issue a scathing rebuke to his colleagues when they admitted the testimony of a "rape counselor expert" who opined that the behavior of the victims was "consistent" with having been sexually assaulted.¹⁶⁸ According to the dissenting justice's reading of the record, the expert had only a bachelors degree, and she did not

inquire into the children's backgrounds concerning other possible causes for their behavior; she did not talk to their teachers; and she did not talk to anyone who knew them before the assaults. She also testified that in her line of work she is basically an advocate for victims. . . . [The witness] admit[ted] that she is not neutral. Further, she is not a trained psychologist or psychiatrist.¹⁶⁹

According to Loftus and Ketcham, the advocates of "repressed memory" do not offer scientific evidence for their claims.¹⁷⁰ They do not rely on scientific methods. Indeed, they deny the value of, and are hostile to, testing and experimentation, which might result in further victimization. They do not even feign scientific objectivity. Their arguments are as self-sealing as those advanced by the theologian and creationist. They serve up large doses of *ad hominem* to doubters. Says psychologist Loftus of the attacks upon her for challenging the therapists, "I had to keep repeating . . . to myself [reminding myself?]

167. See *People v. Enis*, 139 Ill. 2d 264, 289, 564 N.E.2d 1155, 1165 (1990) (admitting "eyewitness" expert could lead to "use of experts to testify as to the unreliability of expert testimony"), *cert. denied*, 116 S. Ct. 94 (1995); see also MUELLER & KIRKPATRICK, *supra* note 138, at 600; Burd & Lozano, *supra* note 2, at 77, 97 nn.94-95 (citing cases in which experts have testified as to the truthfulness of other witnesses, such as *United States v. Sorondo*, 845 F.2d 945 (11th Cir. 1988) (criminal case), and *Carver v. Orange County*, 444 So. 2d 452 (Fla. App. 1983) (civil case)).

168. *State v. Delhaney*, 187 W. Va. 232, 218, 417 S.E.2d 903, 909 (1992) (Neely, J., dissenting); see also *Wilt v. Buracker*, 191 W. Va. 39, 53, 443 S.E.2d 196, 210 (Neely, J., concurring), *cert. denied*, 114 S. Ct. 2137 (1994).

169. *Delhaney*, 417 S.E.2d at 909.

170. LOFTUS & KETCHAM, *supra* note 156, at 214-19.

. . . [t]his is a debate about memory, it's not about ideology; this is about memory, memory, memory. . . ."¹⁷¹

VI. Motivation: Ethical Considerations

[During the great witch craze in fifteenth to seventeenth century Europe] . . . [c]onsiderable enthusiasm for witch-hunting could be built up among local officials, since they were empowered to confiscate the entire estate of any person condemned for witchcraft.¹⁷²

"My professional charges are upon a fixed scale," said Holmes coldly. "I do not vary them, save when I remit them altogether."¹⁷³

Experts should not be permitted to operate as bounty hunters. Nor, in an ideal world, should the expert witness be "for sale." Of course, by now even the cattle in the fields know that experts *are* for sale. However, the image of the expert as a "hired gun" is hardly new. Professor Mohr tells the tale.¹⁷⁴ In 1871 Elizabeth Wharton of Baltimore, Maryland, the widow of a military man and a member of the social set, was tried and acquitted for the poisoning of her confidant and financial advisor, General W. Scott Ketchum.¹⁷⁵ The motive was money.¹⁷⁶ However, the defense was able to buy a spectacular array of medical witnesses to attack the prosecuting expert,¹⁷⁷ and to successfully portray the case as something of a "rush to judgment" by a Baltimore

171. *Id.* at 213 (emphasis omitted); see also David Ross, Understanding the Child Witness: Implications for Investigating Child Abuse (Video—California Legal Education Services). This video seminar for lawyers illustrates how the testimony of the child witness can be affected by irresponsible interviewers. Ross also examines repressed memory theory, and argues that the theory is being incorporated into law before it has been shown to have sufficient empirical basis. Like other critics of repressed memory theory, he argues that the techniques that are used to elicit a "repressed memory" can instead implant a false memory.

172. See MARVIN HARRIS, *COWS, PIGS, WARS AND WITCHES: THE RIDDLES OF CULTURE* 207, 215 (1974).

173. SIR ARTHUR CONAN DOYLE, *Thor Bridge*, in *THE CASE-BOOK OF SHERLOCK HOLMES* 29 (Oxford Univ. Press 1994).

174. See JAMES C. MOHR, *DOCTORS AND THE LAW: MEDICAL JURISPRUDENCE IN NINETEENTH-CENTURY AMERICA 187-96* (1993).

175. *Id.* at 187, 192.

176. *Id.* at 187.

177. *Id.* at 191-95.

law enforcement establishment led by an officer "who, like all of his class, was eager to bag his game."¹⁷⁸ This story has a familiar ring.

By the time of the Wharton trial, public opinion was already turning against expert witnesses, and Bar Associations were heard to complain of a growing cottage industry and a society of professional witnesses.¹⁷⁹ Lawyer Tutt described the dirty dealings between his unscrupulous senior partner and a gang of psychiatric highbinders:

"I don't see why it's any worse in principle for us than for you," retorted [the expert witness] coolly. "If it's ethical for a lawyer to take a contingent fee, why shouldn't it be for a doctor?" . . . "It's agreed, then, that if the will is denied probate, [your expert witnesses] are to receive collectively a sum equal to fifteen per cent of [the lawyers'] gross fee, without any deduction for expenses?" "Correct!" replied [the senior lawyer]. "It's a bargain!" . . . "Want to look at the hypothetical [question you will be asked to testify to]?" inquired [the senior lawyer], patting his breast-pocket. "No, not now!" [the expert witness] waved the suggestion aside as unimportant. . . . I could not believe that I had heard truly. Was this freebooter in broadcloth and white linen, who had just sold himself and his band [of supporting expert witnesses] for a contingent interest in the swag, about to instruct them how to perpetrate the crime and dispose of the body? In what way did the present proceeding differ from the hiring of a mob of gangsters to commit a robbery? In none, essentially, save that these were soft-voiced crooks who took no chances of putting their heads in a noose, and, instead of wearing black masks, disguised themselves as learned men. What was this but one more instance of the universal truth that what passes for respectability is often nothing but crime in a clean collar?¹⁸⁰

Today the sheer volume of the piece work has caused the walls of the cottage to bulge and burst. Examine a copy of *Trial* magazine,¹⁸¹ and you will find page after page of advertisements purchased by professional witnesses seeking work. And the contingency fee issue has not gone away. Indeed, it has even turned up on the criminal side of the street.¹⁸² Of course, this is not surprising in a system that gives

178. *Id.* at 191.

179. *See id.* at 199.

180. YANKEE LAWYER: THE AUTOBIOGRAPHY OF EPHRAIM TUTT 182-85 (1943).

181. *Trial Magazine* is published by the Association of Trial Lawyers of America.

182. *See United States v. Solorio*, 53 F.3d 341 (9th Cir. 1995) (dealing with a sting operation that employed an informer under a contingent fee arrangement that gave the informer incentives

law enforcement agencies a direct interest in whatever they can seize in their war on drugs, or war on whatever else. Holmes would be scandalized.

Even without contingency fees, many social scientists, psychologists, and other assorted behaviorists are ready to drop even the pretense of objectivity, and justify the expert witness as advocate. It is an *adversary system*, they say, so why should the lawyers have all the fun and profit? "Each individual [psychologist] can decide what strategy best suits him or her, and let the survival of the fittest expert prevail."¹⁸³

The truly qualified expert who has become an advocate is uncontrollable, particularly if he or she is a disciple of Dr. Loftus. Although good preparation can snare an expert with prior inconsistent testimony, the truth is that these moments are rare. The [truly] skilled expert . . . does not step blindly into falsity. All he has to do is champion a minority opinion, sliding glibly through cross-examination with semantic shields. The words "not necessarily" should probably be inscribed on every expert's tombstone.¹⁸⁴

The American Bar Association did not help matters much when it released an informal opinion in 1976 that approved of the lawyer recommending to the client the use of a medical-legal consultant on a contingent fee basis.¹⁸⁵ It did not take long for the experts to begin lobbying (a polite word for everything from inquiries to threats of litigation) state bar committees for similar blessings.¹⁸⁶ The adoption of the Model Rules of Professional Conduct did not help. Rule 3.4(b) says only that a lawyer shall not "offer an inducement to a witness that is prohibited by law,"¹⁸⁷ although a Comment to the Rule conceded that "[t]he common law rule in most jurisdictions is that . . . it is improper

to fabricate evidence, said to involve "outrageous government conduct" in violation of the Fifth Amendment Due Process Clause).

183. O'Reilly, *supra* note 78, at 117 (quoting Elizabeth F. Loftus, *Experimental Psychologist as Advocate or Impartial Educator*, 10 LAW & HUMAN BEHAVIOR 63, 71 (1986)). O'Reilly seems genuinely shocked by "forensic social science" and an adversary model for the behavioral expert. *Id.* at 114-19.

184. O'Reilly, *supra* note 78, at 119.

185. ABA Comm. on Ethics and Professional Responsibility, Informal Op. 1375 (1976).

186. For a state bar opinion rejecting such overtures see Kentucky Bar Op. E-276 (1983).

187. MODEL RULES OF PROFESSIONAL CONDUCT Rule 3.4(b) (1993).

to pay an expert witness a contingent fee."¹⁸⁸ In 1987 the ABA Committee essentially took it all back with the release of Formal Opinion 87-354, which finally conceded that contingency fees for expert witnesses might be an "improper inducement," might impede the lawyer's ability to exercise "independent judgment," and might raise "possible questions of champerty."¹⁸⁹ The 1976 informal opinion was "withdrawn." It is of interest that the American Medical Association (in this context a source that is not exactly disinterested) had issued a similar opinion on the issue of contingent physician's fees.¹⁹⁰

If a physician's fee for medical service is contingent on the successful outcome of a claim, . . . there is the ever-present danger that the physician may become less of a healer and more of an advocate. . . . Accordingly, a physician's fee for medical services should be based on the value of the service provided by the physician to the patient and not on the uncertain outcome of a contingency that does not in any way relate to the value of the medical service.¹⁹¹

Today, medical experts in civil (tort) cases can do well even without contingency fee contracts or "bonuses." During a recent lawsuit in Louisville, Kentucky against the manufacturers of Prozac, the psychiatric expert witnesses for the plaintiff and the defendant were each paid between \$40,000 and \$50,000 for their work.¹⁹² The lawsuit was brought by the survivors of eight people who were killed, and by twelve people who were wounded, by the assault-rifle toting Joseph Wesbecker, in a shooting spree at Standard Gravure Co. on September 14, 1989.¹⁹³ The plaintiffs contended that the shooting was caused by Wesbecker's use of Prozac.¹⁹⁴ And in the O.J. Simpson case, former New York

188. MODEL RULES OF PROFESSIONAL CONDUCT Rule 3.4(b) cmt. 3 (1993).

189. ABA Comm. on Ethics and Professional Responsibility, Formal Op. 87-354 (1987); see also *Person v. Association of the Bar of New York*, 554 F.2d 534 (DR 7-109(C), which prohibited contingent fees for experts, held to be constitutional), *cert. denied*, 434 U.S. 924 (1977); *Dupree v. Malpractice Research, Inc.*, 179 Mich. App. 254, 445 N.W.2d 498 (1989) (holding a contract with expert witness broker on contingency fee basis void on public policy grounds).

190. CODES OF PROFESSIONAL RESPONSIBILITY 304 (Rena Gorlin ed., 3d ed. 1994).

191. *Id.*

192. Leslie Scanlon, *Witness says 'Life Patterns' Led Wesbecker to Kill*, THE COURIER-JOURNAL, Dec. 2, 1994, at B3.

193. *Id.*

194. *Id.*

City Medical Examiner and now freelancing Dr. Michael Baden testified that as of the first day of cross-examination he had billed in excess of \$100,000.¹⁹⁵ This is not "chump change"—not even in Los Angeles.

Ironically, the greatest fight in medical jurisprudence in the mid-nineteenth century may have been fought over the right of medical professionals to any compensation for time spent in the courts and in public inquiries when called on behalf of the state. Prosecutors and judges seized physicians' professional knowledge, their capital in business, with the subpoena and scourged resistors with the lash of the contempt power.¹⁹⁶ A hint of the same sort of legal imperialism can be found in a 1993 amendment to Federal Rule of Civil Procedure 45(c)(3)(B)(ii).¹⁹⁷

VII. Forensic Medicine

"There is nothing more deceptive than an obvious fact," [Holmes] answered, laughing.¹⁹⁸

Since the earliest days of the American republic, conscientious members of the medical profession have tried to contribute to the truth-finding process.¹⁹⁹ Indeed, American physicians were pioneers in the field of forensic medicine and medical jurisprudence.²⁰⁰

195. Tim Rutten & Jim Newton, *Pathologist for Defense Rebutts Work by Coroner; Simpson Trial: Baden Questions Procedures and Findings About Timing and Method of Murders*, L.A. TIMES, Aug. 11, 1995, at B1.

196. See, e.g., MOHR, *supra* note 174, at 201.

197. See FED. R. CIV. P. 45(c)(3)(B)(ii) (purporting to authorize a lawyer in a civil case to subpoena the testimony of an expert, although the lawyer has not retained that expert. The court may move to quash or modify the subpoena and request that the expert be "reasonably compensated"). Cf. *Mount Sinai Sch. of Medicine v. American Tobacco Co.*, 880 F.2d 1520 (2d Cir. 1989) (compelling researchers who had not been part of the litigation to turn over their "raw data" to the defendant on the ground that the plaintiff's compensated expert relied on their published findings). The notion seems to be that the academic, the scientist, and the medical researcher are public utilities at the service of the lawyer and his client. Granted, the new Rule contains a provision for some compensation, but it does not recognize other important interests that might be at stake.

198. SIR ARTHUR CONAN DOYLE, *The Boscombe Valley Mystery*, in *THE ADVENTURES OF SHERLOCK HOLMES* 65 (Tom Doherty Assocs. 1988).

199. See generally MOHR, *supra* note 174.

200. See generally *id.*

Alas, all too often good intentions, and in a distressing number of cases even good instincts and good science, have gone for naught. The history of forensic medicine provides us with many examples of the truthful witness vilified and the false witness exalted. As we watch the television news coverage of the latest celebrity murder, as we listen to the blow by blow commentary, and as we watch counsel for the defense castigating the coroner or medical examiner for botching the case, we would do well to keep this in mind.

The 1869 trial of twenty-seven-year-old Dr. Paul Schoeppe for the murder of elderly Maria Stennecke is a fascinating case in point.²⁰¹ Stennecke was a spinster nearly seventy years of age when she struck up a relationship with Schoeppe, a German immigrant and newcomer to the community.²⁰² When Stennecke died in 1869, Schoeppe produced a will naming him as her sole beneficiary.²⁰³ This will differed radically from an earlier will, and by every appearance it was a rather clumsy forgery.²⁰⁴ Gossip solidified into suspicion when Schoeppe began asking questions "about how long after burial various substances might still be detected."²⁰⁵ Schoeppe was indicted, and the body was exhumed for autopsy.²⁰⁶ The deceased's stomach was removed and sent to Professor William Aiken of the University of Maryland, a teacher of medical chemistry.²⁰⁷ Aiken satisfied himself that Stennecke had died of prussic (hydrocyanic) acid poisoning.²⁰⁸ Schoeppe had purchased a quantity of the poison shortly before Stennecke's death.²⁰⁹ The prosecutor had a case.²¹⁰

This case is all the more fascinating because, even in these early days, the defendant's fortunes turned on a battle of experts as well as

201. *Id.* at 180-87.

202. *Id.* at 180.

203. *Id.* at 180-81.

204. MOHR, *supra* note 174, at 181.

205. *Id.* at 182.

206. *Id.*

207. *Id.*

208. *Id.*

209. MOHR, *supra* note 174, at 182.

210. *Id.*

the ebb and flow of popular prejudice. Aiken's procedures left something to be desired, and provided opportunities for the defense lawyers, who relied upon the services of Dr. T.G. Wormley of the faculty of Starling Medical College in Columbus, Ohio.²¹¹ The jury sided with Aiken and voted to convict, but sufficient doubts were raised so as to arouse the attention of other physicians.²¹² For a variety of reasons, among them professional self-interest, Aiken became a target.²¹³ Whether or not Schoeppe was one of the guild, the case had not been air-tight, and a mid-century malpractice crisis inclined physicians to rally behind Schoeppe as the aggrieved party.²¹⁴ "[P]hysicians were reluctant to support murder charges associated with the loss of a patient unless the evidence was absolutely iron-clad,"²¹⁵ and experts from as far away as Yale and Harvard began to second guess poor Aiken and bombard the Pennsylvania Governor for a pardon or, at the very least, a new trial.²¹⁶ More effective pressure was brought to bear by the sizable German population of the Commonwealth.²¹⁷ The Pennsylvania Supreme Court did not succumb to popular pressure and affirmed Schoeppe's conviction.²¹⁸ But the legislature passed a remarkable law authorizing a second trial before a new judge.²¹⁹ Aiken's testimony was severely limited in the rematch, and he lost the second battle of the experts.²²⁰ The prosecutor's forensic expert was "mugged" by a gang of his own professional colleagues.²²¹

Schoeppe was acquitted and his death warrant was lifted.²²² Like many a latter day scoundrel or political cat-burglar, he immediately

211. *Id.*

212. *Id.* at 182-83.

213. *Id.* at 183.

214. MOHR, *supra* note 174, at 183.

215. *Id.*

216. *Id.* at 184.

217. *Id.*

218. *Id.* at 185.

219. MOHR, *supra* note 174, at 185.

220. *Id.*

221. *Id.*

222. *Id.* at 185-86.

took to the lecture circuit.²²³ Schoeppe also continued to press his claim under the disputed will.²²⁴ Perhaps Schoeppe should have kept a lower profile. Nevertheless, the reversal of his fortune was short-lived. He was arrested for another forgery in Illinois, and soon it was discovered that he had fled his native Prussia after being convicted of a similar offense.²²⁵ His medical credentials turned out to be fraudulent as well.²²⁶

Not only was Herr Doctor Schoeppe undone in the end, but so were all the experts. Aiken had been beaten down by his peers, who in turn "ended up after the fact looking like obfuscators and defenders of one of their own rather than champions of justice."²²⁷ This historical footnote is offered to keep things in perspective, not to suggest that medical witnesses for the prosecution are always pure.

Professor of Law and forensic scientist Andre Moenssens recently offered a list of nine reasons to be cautious in accepting medical and other scientific evidence in criminal cases.²²⁸ These reasons provide a nice checklist for the cross-examiner. First of all, many, if not most, expert witnesses are technicians—mere "bench operators" who have only a limited understanding of the theory and instrumentation that they are trying to apply.²²⁹ Second, most forensic laboratories are owned or controlled by the state and have a pro-prosecution bias.²³⁰ This fact has been noted in Great Britain as well as in the United States.²³¹ Third, experts regularly stray beyond their expertise when giving testimony and are seldom challenged when they do.²³² As an example,

223. *Id.* at 186.

224. MOHR, *supra* note 174, at 186.

225. *Id.*

226. *Id.*

227. *Id.* at 187.

228. Andre Moenssens, *Novel Scientific Evidence In Criminal Cases: Some Words of Caution*, 84 J. CRIM. L. & CRIMINOLOGY 1 (1993).

229. *Id.* at 5-6.

230. *Id.* at 6-7.

231. See JONES, *supra* note 5, at 194-95. For an interesting decision that held that an independent forensic pathologist had to be appointed to assist an indigent murder defendant, see *Rey v. State*, 897 S.W.2d 333 (Tex. Crim. App. 1995).

232. Moenssens, *supra* note 228, at 7-9.

Professor Moenssens cites a case in which a pathologist was permitted to testify, or guess, at the caliber of a bullet from the examination of a wound, although there was no showing that the pathologist had any training in firearms or other basis for giving the opinion.²³³ This type of situation is not unusual. Moenssens suggests that most lawyers and judges are too scientifically illiterate to mount meaningful challenges to these experts' testimony, even when that testimony strays.²³⁴ "[W]hen it [comes] to . . . scientific and mathematical testimony, the adversary system ceas[es] to exist and the evidence [is] not challenged. The cross-examination of the forensic scientist [may be] without point."²³⁵ This point relates back to the second point, too, because

[t]he problem in criminal cases . . . is that the *prosecution*, unlike the defendant, has ready access to expert witnesses and fabulous laboratory facilities. Thus, a surprising number of novel techniques gain admissibility without the presentation of defense expert testimony because a criminal defendant often cannot afford to hire even a good Zulu witch doctor, whose fees and travel costs would exceed guidelines for such things.²³⁶

The fourth reason for caution is that experts often lie about their credentials and get away with it.²³⁷ Fifth, crime laboratories may not be very good at what they do.²³⁸ Studies of the accuracy of forensic laboratories have documented error rates as high as seventy and seventy-

233. *Id.* at 8, 21 n.22 (citing *Lee v. State*, 661 P.2d 1345, 1354 (Okla. Crim. App. 1983)).

234. *Id.* at 10.

235. Randolph Jonakait, *Stories, Forensic Science, and Improved Verdicts*, 13 CARDOZO L. REV. 343, 348 (1991).

236. *Wilt v. Buracker*, 191 W. Va. 39, 54, 443 S.E.2d 196, 211 (1993) (Neely, J., concurring) (emphasis added), *cert. denied*, 114 S. Ct. 2137 (1994).

237. Moenssens, *supra* note 228, at 9-10. Professor Moenssens cites a number of cases in which "experts" with phony credentials testified in high profile cases like the Ted Bundy prosecution and the Love Canal litigation (for the government). *Id.* at 21 n.28 (citing James Starrs, *Mountebanks Among Forensic Scientists*, 2 FORENSIC SCIENCE HANDBOOK (Richard Saferstein ed., 1988) as "a veritable catalogue of some clearly documented cases including FBI and police crime laboratory 'experts'"). Dr. Michael Baden describes how one of the prosecution's experts in the second Claus Von Bulow trial tripped over his own resume. BADEN WITH HENNESSEE, *supra* note 13, at 192-93. Reference is made to the perjury of an expert witness in the Kentucky case of *Skaggs v. Commonwealth*, 803 S.W.2d 573 (Ky. 1990), *cert. denied*, 502 U.S. 844 (1991).

238. Moenssens, *supra* note 228, at 10-12.

seven per cent.²³⁹ These laboratories may lack trained personnel, particularly when it comes to the latest and hottest technologies. The sixth reason cited by Professor Moenssens, and in my view the most important given the appearance of theoretically solid techniques such as DNA "fingerprinting," is that human error is "a more important factor than [was] previously suspected."²⁴⁰ A seventh reason is that some experts manufacture evidence and commit willful perjury.²⁴¹ This reason is discussed in more detail later. The eighth reason is that many of the new techniques yield results that require, or at least invite, further statistical analysis.²⁴² The forensic technician who is qualified to conduct a test or procedure may not be sufficiently trained in statistics to properly evaluate the significance of the results. Forensic witnesses often give misleading testimony. Finally, for his ninth reason for "caution," Professor Moenssens argues that in many cases computers are really doing the analysis by running programs developed outside of the laboratory and using data bases compiled elsewhere.²⁴³ Who is really doing the analysis?

The following are a few of the more spectacular examples of "junk" forensic science that prove the professor's points. In *United States v. Ferri*,²⁴⁴ the prosecutor wanted to link a pair of shoes found at the scene of the crime to the defendant.²⁴⁵ The prosecutor called a forensic anthropologist to the stand.²⁴⁶ This expert testified that she was able to compare the "in-shoe" impressions of shoes previously worn by the defendant to the "in-shoe" impressions in the shoes found at the crime

239. See, e.g., Richard Lempert, *Some Caveats Concerning DNA As Criminal Identification Evidence: With Thanks to the Reverend Bayes*, 13 CARDOZO L. REV. 303, 324 (1991).

240. Moenssens, *supra* note 228, at 12-15; see also Jonakait, *supra* note 235, at 349. An example of error in statistical calculation was spread before us in the O.J. Simpson case, when Dr. Bruce Weir, a blue-ribbon statistician and geneticist (tenured, and endowed in some fashion) was forced to admit that some of his calculations (not critical, except perhaps in the minds of the jurors) were not totally accurate. He tried his best to blame it on his computer program—or Mr. Babbage, perhaps. Transcript of proceedings, Friday, June 23, 1995.

241. Moenssens, *supra* note 228, at 15-18.

242. *Id.* at 18-20.

243. *Id.* at 20-21.

244. 778 F.2d 985 (3d Cir. 1985), *cert. denied*, 476 U.S. 1172 (1986).

245. *Ferri*, 778 F.2d at 988.

246. *Id.*

scene.²⁴⁷ Needless to say her opinion was—"same feet."²⁴⁸ The testimony was admitted, the defendant was convicted, and the judge's ruling was affirmed on appeal.²⁴⁹ This same expert later gave an opinion that, based on her examination of a human footprint, the print was made by a prehistoric woman who was five and a half months pregnant at the time she made the impression!²⁵⁰ Some expert!

In *Hooten v. State*,²⁵¹ a case cited by Professor Moenssens, a graphologist²⁵² was permitted to testify as a questioned documents examiner.²⁵³ By her own admission, the witness had never "bothered to read any books on forensic document work, said she did not intend to, and already knew all she needed to know."²⁵⁴

Perhaps the most chilling example of "junk" is provided by the infamous Dr. James Grigson, whose metier has been the giving of psychiatric testimony as to the future dangerous propensities of defendants in death penalty cases. Commentators have suggested that this sort of prediction is "so lacking in reliability that it is unethical."²⁵⁵ The American Psychiatric Association has reportedly reprimanded Grigson for claiming 100% accuracy even in cases in which he made no examination of the defendant.²⁵⁶ The reader may recall that Grigson's testimony was attacked in the popular documentary "The Thin Blue Line," which told of the railroading of Randall Adams on a charge of murdering a

247. *Id.*

248. *Id.*

249. *Id.*

250. See Mark Hansen, *Believe it or Not*, 79 A.B.A. J. 64 (June 1993); see also discussion at *infra* note 361 (discussing *Buckley v. Fitzsimmons*, 20 F.3d 789 (7th Cir. 1994)). Richard Nixon, a true authority on shifty witnesses, made an observation that seems to fit here: "[T]hose who are lying or trying to cover up something generally make a common mistake—they tend to overact, to overstate their case." STEPHEN AMBROSE, *NIXON: THE EDUCATION OF A POLITICIAN 1913-1962* 172 (1987). At the time, Nixon was referring to Alger Hiss. *Id.* But, what comes around goes around.

251. 492 So. 2d 948 (Miss. 1986).

252. One who purports to find evidence of a person's character in his handwriting.

253. *Hooten*, 492 So. 2d at 948.

254. *Id.* at 958 n.3.

255. Paul C. Giannelli, "Junk Science": *The Criminal Cases*, 84 J. CRIM. L. & CRIMINOLOGY 105, 114 (1993).

256. *Id.* at 115.

police officer in Dallas, Texas.²⁵⁷ Unfortunately, the United States Supreme Court has let such testimony pass.²⁵⁸ "We are not persuaded that such testimony is almost entirely unreliable. . . . [N]either petitioner nor the Association suggests that psychiatrists are always wrong with respect to future dangerousness, only most of the time."²⁵⁹ Now there is a standard for the admissibility of "scientific" evidence!²⁶⁰

Insofar as probabilities evidence²⁶¹ is concerned, we may also have to contend with what can only be deliberately misleading arguments as to the significance of the "numbers." Blood and fluid, DNA, and hair and fiber evidence is now common in criminal cases. Such evidence is sometimes referred to as "associative" evidence. The evidence is offered because it shows some kind of a "match" between some characteristic of the perpetrator and some characteristic of the defendant. The prosecutor and defendant frequently express radically different views as to the importance of the incidence rate of the match. The following argument provides an example of the "Prosecutor's fallacy": "The defendant and the perpetrator match on a blood type found in 10% of the population . . . [the prosecutor argues] that there is a 10% chance the defendant would have this blood type if he were innocent and therefore . . . there is a 90% chance he is guilty."²⁶² This is fallacious

257. *Id.*

258. *Id.*

259. *Barefoot v. Estelle*, 463 U.S. 880, 899, 901, 103 S. Ct. 3383, 3398, 3398, 77 L. Ed. 2d 1090, 1108, 1109 (1983).

260. Apologists argue that the Court was talking about a constitutional standard, and "was not determining the appropriate evidentiary standard for admitting such evidence." Lempert, *supra* note 46, at 341 n.108. It is also possible that someone on the court has a sense of humor; but this is not very likely.

261. For more than you need or want to know about probabilities evidence and related techniques such as DNA "fingerprinting" see Symposium, *Decision and Inference in Litigation*, 13 CARDOZO L. REV. 253-1079 (1991). For elementary introductions to the forensic sciences, see RICHARD SAFERSTEIN, *CRIMINALISTICS: AN INTRODUCTION TO FORENSIC SCIENCE* (5th ed. 1995); JON ZONDERMAN, *BEYOND THE CRIME LAB: THE NEW SCIENCE OF INVESTIGATION* (1990); BADEN WITH HENNESSEE, *supra* note 13. See generally WILLIAM ECKERT, *INTRODUCTION TO FORENSIC SCIENCES* (1996); WILLIAM ECKERT & STUART JAMES, *INTERPRETATION OF BLOODSTAIN EVIDENCE AT CRIME SCENES* (1989); BARRY A.J. FISHER, *TECHNIQUES OF CRIME SCENE INVESTIGATION* (5th ed. 1992); VERNON GEBERTH, *PRACTICAL HOMICIDE INVESTIGATION* (2d ed. 1990). The last four books were used in the O.J. Simpson trial.

262. William C. Thompson & Edward L. Schumann, *Interpretation of Statistical Evidence in Criminal Trials: The Prosecutor's Fallacy and the Defense Attorney's Fallacy*, 11 LAW & HUMAN BEHAVIOR 167, 170 (1987).

reasoning because the argument considers only the associative evidence.²⁶³ If the prior probability is low that the defendant is the perpetrator (if the case is otherwise very weak), then the associative evidence may not be nearly so significant.²⁶⁴ But the prosecutor wants to mislead the jury—to convince the jurors “that they can convict, secure in the knowledge that error is humanly impossible.”²⁶⁵

On the “other side of the v.” we encounter the “Defense Attorney’s Fallacy.” The defense argument is that even if the blood type were possessed by only one percent of the population, then “in a city of [one] million there would be approximately 10,000 people with this blood type” and that the associative evidence is of little value.²⁶⁶ This argument is based on the fact that “the defendant and the perpetrator both

263. See *id.* at 170; see also Bernard Robertson & G.A. Vignaux, *Expert Evidence: Law, Practice and Probability*, 12 OXFORD J.L. STUD. 392 (1992) (reviewing TRISTRAM HODGKINSON, *EXPERT EVIDENCE: LAW AND PRACTICE* (1990) and discussing British cases relating to these “fallacies”).

264. This analysis has something to do with Bayes Theorem, which was developed by Rev. Thomas Bayes (1744-1809). If statistics make your head hurt, see LARRY GONICK & WOOLLCOT SMITH, *THE CARTOON GUIDE TO STATISTICS* (1993). See also JAMES BROOK, *A LAWYER’S GUIDE TO PROBABILITY AND STATISTICS* (1990).

265. Moenssens, *supra* note 228, at 20; see also Jonakait, *supra* note 235, at 345-46. Here is another spin:

A fingerprint or DNA fragment from the scene of a murder matches that of Mr. Smith. Newspaper headlines proclaim that the probability of a match with an innocent person is one in a million, let’s say. Yet the more relevant conditional probability is the likelihood that a person is innocent given that his or her prints match the sample from the crime scene.

Let’s get numerical. Imagine that this crime was committed in a city of approximately two million people. The year is 2001 and all the city’s residents have records of their DNA or fingerprints on file. Assume further that three residents of the city have prints that closely match those at the murder scene; in practice, such prints are always a bit hazy and subject to interpretation. Two of these three people are innocent, the third guilty. Thus the conditional probability of a print match, given that a person is innocent, is two out of two million or, equivalently, one in a million. By contrast, the conditional probability that a person is innocent, given that his prints match those at the crime scene, is two in three; this latter probability constitutes more than reasonable doubt. Circumstantial evidence or motive should therefore always be sought to bolster forensic evidence.

PAULOS, *supra* note 1, at 72-73 (emphasis omitted). That is, we must look at all of the evidence, and not the individual pieces of associative evidence. Of course, the defense strategy is to get the jurors to focus on each piece of evidence in isolation.

266. Thompson & Schumann, *supra* note 262, at 171.

belong to such a large group."²⁶⁷ This argument flooded the airways during the early coverage of the O.J. Simpson case, with the defense lawyers and television "experts" arguing that certain matching blood evidence still left the court with a "football stadium" full of suspects. Leaving aside the fact that the argument ignored all of the women, children and huge number of other unlikely candidates that might have been sitting in this statistical "pleasure dome," the defense argument also disregarded all the other evidence in the case pointing in Simpson's direction. This is the way that a jury can be led to undervalue very strong circumstantial evidence.

One of the most interesting aspects of the "junk science" debate is the manner in which some of the really "screwball" evidence still gets admitted, while theoretically sound scientific evidence is excluded. DNA evidence is a case in point. Like any other scientific evidence, DNA evidence can be "faked" or "cooked." Legitimate questions may be raised in any given case about the statistical base that the testifying expert is using to draw conclusions about the strength of the DNA match.²⁶⁸ But the fact is that if the tests are run properly, the results are always highly probative—certainly more compelling than other types of "evidence" that are now routinely admitted in both civil and criminal cases.²⁶⁹ Granted, there may be risks of overestimation or overvaluation,

267. Cf. *id.* (citing *People v. Robinson*, 265 N.E.2d 543, 317 N.Y.S.2d 19 (1970), in which even some appellate judges were taken in by the "Defense Lawyer's Fallacy"). Of course, many odd arguments were made in the O.J. Simpson case. At one point the defense made the following statistical argument for the exclusion of evidence relating to past wife-beating: if there are 2,000,000 wife-beating incidents in the United States annually, and only 2,000 Americans are murdered by their spouses, then the chance that a wife-beater will murder his wife are 1-in-1,000. Therefore, evidence of wife-beating has almost non-probative value and should be excluded because the prejudicial effect of its admission (risk of jury misuse or overvaluing of it?) greatly outweighs its probative value. Now there may be reasons to exclude such evidence, but the defendant's statistical brief is bogus. Nicole Brown Simpson was murdered. Therefore, the meaningful statistical question is this: Given the fact that she was one of 2,000 annual victims, what are the odds that she was killed by her battering spouse? "Of the 2,000 such victims per year, one would think that the overwhelming proportion—90% to 99%—are murdered by those who abused them." Thomas Hazlett, *Criminal Justice*, REASON, June 1995, at 58.

268. For an update of the status of DNA testing and accompanying statistical analysis across the country, see Kathleen W. Berdan, Comment, *The Admissibility of DNA Evidence: Minnesota No Longer Stands Alone*, 20 WM. MITCHELL L. REV. 1063 (1994).

269. It seems to me that DNA evidence is much more scientific and reliable than the witness of psychology; it is certainly more probative than the stocking top in *People v. Adamson*, 165

but these risks can be dealt with short of excluding DNA evidence as "unreliable." If it is admitted, the opponent can find a "likeable" or "humble" expert to testify "generally" about abstract contamination or statistical error rates, suggesting that possibly something might arguably be amiss.

I am just old enough to remember stories about how paternity cases were tried in rural Kentucky and Ohio (and may still be for all I know). The prosecutor in the case would introduce the relatively primitive blood typing evidence of the day, and then cap it all off with a display of the infant so that the jury could compare the child's "settled features" with the defendant's features. Objection overruled! The threshold of admissibility in criminal cases has been no more demanding. "A brick is not a wall."²⁷⁰ After the prosecution had finished, the defense lawyer would get down to business. He had invariably subpoenaed a number of youths (selected at random?) with no expectation that they would appear, and would then make a great show of calling out their names in the presence of the jury. After each unsuccessful effort to locate the witness, the cagey lawyer would "comment" that "if [he] were that young fella, [he] wouldn't come to court either." We can *all* agree that this is no "search for truth."

But relatively few realize that what we have right now is a system that admits in prosecution evidence that is very often of questionable probative value (handwriting, bite-mark and psychiatric opinion, for example). Some cases, however, may exclude highly probative and scientifically sensible prosecution DNA evidence because, when considered in isolation without regard to the other evidence, it is said to be less than 100% conclusive.²⁷¹ Furthermore, these cases may admit

P.2d 3 (Cal. 1946), or the shotgun in *Moore v. Illinois*, 408 U.S. 786, 92 S. Ct. 2562, 33 L. Ed. 2d 706 (1972), discussed *supra* at note 26. But then, I am not a judge, let alone a Justice of the United States Supreme Court.

270. See *supra* note 27.

271. See Michael Saks & Jonathan Koehler, *What DNA "Fingerprinting" Can Teach the Law About the Rest of Forensic Science*, 13 CARDOZO L. REV. 361, 362 (1991). Saks and Koehler state that "[t]he ironic result [of attacks on DNA evidence and a review of it by the National Academy of Sciences] is that more is known about the strengths and weaknesses of DNA fingerprinting evidence than about most of the other, older, and more widely used forms of forensic science evidence." *Id.* at 362. Elsewhere, the same authors cite data indicating that forensic document examiners reach the correct result in 45% of the cases, with partial or complete errors in 36% of the cases, and are unable to draw a conclusion in 19% of the

defense DNA evidence (in actions for post-conviction relief) in circumstances indicative of a false negative.²⁷² An argument case can be made that an honest dose of *Daubert* would keep out a lot of "bite-markology" and graphology opinion, not to mention a lot of the psychological "repressed memory" and "syndrome" clutter.²⁷³

VIII. Prosecutors and Experts

"I could hardly imagine a more damning case," I remarked. "If ever circumstantial evidence pointed to a criminal it does so here."

"Circumstantial evidence is a very tricky thing," answered Holmes thoughtfully. "It may seem to point very straight to one thing, but if you shift your own point of view a little, you may find it pointing in an equally uncompromising manner to something entirely different."²⁷⁴

What do the ABA Standards for the Prosecution Function have to say about the relationship between the prosecutor and the expert witness?

3-3.3. Relations with expert witnesses

(a) A prosecutor who engages an expert for an opinion should respect the independence of the expert and should not seek to dictate the formation of the expert's opinion on the subject. To the extent necessary, the prosecutor should explain to the expert his or her role in the trial as an impartial expert called to aid the fact finders and the manner in which the examination of witnesses is conducted.

cases. *Id.* at 372 n.30. Can they beat coin flipping? Can they beat the S&P? Do you want them to manage your retirement funds? They seem to be managing my retirement funds.

272. Acquittals based on DNA evidence are probably justified—no pun intended—although one wonders if degradation of the sample, or some extremely odd scenario, might result in the release of the guilty. See Lempert, *supra* note 46, at 316-17. Lempert offers the most bizarre hypothetical yet: a rape victim might have unprotected consensual sex, and then be raped by someone who wore a condom (a considerate rapist). Lempert, *supra* note 38, at 341 n.34.

273. Cf. Scheck, *supra* note 35, at 5, 7 (arguing for exclusion of the lot). See *United States v. Rincon*, 28 F.3d 921 (9th Cir. 1994) (excluding expert testimony regarding eyewitnesses under *Daubert*). "There is a great deal of suggestibility and there is also a demonstrated significant degree of confabulation. . . . With any psychotherapist, there is this incredible degree of trust and relaxation that it opens the way, it has been demonstrated, for extreme suggestibility for confabulation." Gary Shaw, *Trances, Trials, and Tribulations*, 11 *TOURO L. REV.* 145, 166 (1994); see also Thom Wedlich, *Repressed Memories: Unreliable?—Judges in Four Cases Reject Them Before Trials Start*, *NAT'L L.J.*, June 12, 1995, at A-7, col. 1.

274. DOYLE, *supra* note 198, at 65.

(b) A prosecutor should not pay an excessive fee for the purpose of influencing the expert's testimony or to fix the amount of the fee contingent upon the testimony the expert will give or the result in the case.²⁷⁵

The truth is that the prosecutor and the expert more closely resemble the Cisco Kid and Pancho.²⁷⁶ Consider the revelations of former medical examiner and now O.J. Simpson consultant Dr. Michael Baden:

I envisioned the office as independent, scientific, apolitical. Pure. Robert Morgenthau, the district attorney of Manhattan, saw it as an arm of the DA's office, with a malleable ME doing his bidding. But if the DA needs a rape in order to prosecute, should the ME somehow find evidence consistent with a rape? . . . What is really wanted is an elastic man, one who will stretch and bend his findings to suit the DA's needs and the political climate. Truth and excellence play no part in this arrangement. Numbers are what count, getting convictions for the DA, and the ME's office exists for that purpose.²⁷⁷

This is not especially an American phenomenon. Analyzing the methods of the Home Office Forensic Science Service, Professor Carol Jones complains that the pathologist "may be seen as a hired gun of the State . . . [w]orking alongside the police [pathologists] become imbued with police culture."²⁷⁸ She makes these additional observations, which I have taken out of order, though not out of context, and rearranged to make my point. Jones points out that "[f]orensic science . . . contributes less to catching criminals than to the assembly of evidence against known [or at least strongly suspected] perpetrators."²⁷⁹ It is "brought to bear mainly in order to assemble a case against a known suspect rather than to sift out cunningly clever criminals from the population at large."²⁸⁰ It is less an "aid to detection" than it is an "arm of convic-

275. ABA Standards for Criminal Justice, Standard 3-3.3 (3d ed. 1993).

276. *Cecil v. Gibson*, 37 Ill. App. 3d 710, 711, 346 N.E.2d 448, 449 (1976). This is my favorite slam, but it got the case reversed.

277. BADEN WITH HENNESSEE, *supra* note 13, at 55.

278. JONES, *supra* note 5, at 194-95, 197.

279. *Id.* at 211. For examples of early works on forensic medicine, see GIOVAN BATTISTA CODRONCHI, *METHODUS TESTIFICANDI* (Frankfurt, 1597) (the first important work); ANTOINE LOUIS, *MEMOIRE SUR UNE QUESTION ANATOMIQUE RELATIVE A LA JURISPRUDENCE* (Paris, 1763) (differential signs in cases of murder and suicide).

280. JONES, *supra* note 5, at 212. *But see* David Schum & Peter Tillers, *Marshalling Evidence for Adversary Litigation*, 13 CARDOZO L. REV. 657, 709 (1991) (making the point that scientific,

tion"²⁸¹ and "[o]nce the police choose their case, they are not interested in knowing about all likely interpretations, but the one which best fits."²⁸² They may even "pre-select the materials which they wish to be forensically examined" or "keep back other materials which they do not wish to be examined."²⁸³ Along the same lines, she contends that [pathologists] "do not extract from the scene all that it may yield, but only that which is needed in order to construct a particular case."²⁸⁴ "The selections which inform the expert's work are essentially based in the adversarial process."²⁸⁵ Ultimately, the lawyers take over and run the adversarial process.

Let us put aside the more sinister possibilities suggested by Professor Jones' observations and consider the hum-drum. Virtually every day, in every court in the land, questions are put to experts (for the defense as well as for the prosecution) that invite or allow experts to "fudge." Elsewhere I have noted that jurors can be misled into believing that a suggestion that something is "possible" (and favorable to the proponent's theory of the case) or "consistent" (with the proponent's theory) is the equivalent of proof—even proof beyond a reasonable doubt.²⁸⁶

or "Baconian," hypothesis testing is not the stuff of police work, except on the rare occasion "when [the police] have formed an intuitive judgment that someone seen near the scene of a crime was *not* involved, and they call upon him or her to come forward in order to be eliminated from the enquiry" (emphasis added)).

281. JONES, *supra* note 5, at 211.

282. *Id.* at 213. Cf. GOODMAN, *supra* note 26, at 279.

The investigating officers on the case were far too eager to jump to conclusions first and to try to collect evidence in support of the conclusions afterwards. It would seem that, in much the same way as they decided upon Wallace's guilt and then concentrated all their energies upon looking for facts to confirm this impression, they decided that, since the iron bar [supposedly used to tend the fire, and supposedly used to kill Mrs. Wallace] was not visible, it was not there [in the hearth—actually it was there all along] . . . and if it was not there it was the murder weapon [the murderer took with him and disposed of] . . . and if it was the murder weapon Wallace must have taken it with him when he left the house, otherwise it would be visible. *Reductio ad absurdum*. It was this sort of logic that caused an innocent man to be arrested; to be convicted; to come within a hair's breadth of having his neck broken within a hangman's noose.

GOODMAN, *supra* note 26, at 279.

283. JONES, *supra* note 5, at 217.

284. *Id.* at 198.

285. *Id.* at 213.

286. See Underwood, *supra* note 28, at 173-74. Consider the testimony of FBI Agent Martz in the O.J. Simpson case from a defense perspective. Jim Newton & Tim Rutten, *Stain's Not*

“‘Consistent with’ is one of those catch-all phrases that means something could be possible. It is used a lot in our profession, especially on the witness stand when evidence can be interpreted in more than one way.”²⁸⁷ Such phraseology has perpetuated many a conspiracy theory²⁸⁸ and has played a role in such notorious cases as that of Sacco

From Preserved Blood, Simpson Jury Told, L.A. TIMES, July 26, 1995, A1. Judge Lance Ito let the defense put this baffled witness on the stand and ask him leading questions. *See id.* Martz was adamant that his tests of blood found at the crime scene and at Simpson's home did not contain EDTA, a preservative contained in test tubes to preserve blood samples. *See id.* However, he did agree at one point that one factor taken in isolation was “consistent” with EDTA. *See id.* This point was seized upon by the defense as proof that EDTA was there—the very fact denied by the only witness who tested the blood based on the full spectrum of relevant factors. *See id.* This was then equated with proof of a police conspiracy—that blood drawn and stored in test tube(s) after the murder was later “planted” on items of clothing. *See id.* All that was needed was a “blood spatter” expert (who did not testify about “spatter” after all) and a forensic chemist (who did not test the blood) who was willing to round out the defense brief by “reinterpreting” Martz's results. *See id.* Martz was understandably put out. *See id.* The defense continued to present expert “evidence” “consistent with” various speculative scenarios during the testimony of Dr. Henry Lee, Director of the Connecticut State Forensics Laboratory and part-time freelancer. Jim Newton & Henry Weinstein, *Blood-Pattern Expert Bolsters Defense Simpson Trial: A Second Set of Shoes Could Have Left Marks, Scientist Says*, L.A. TIMES, Aug. 24, 1995, at A1. This was met by the prosecution in rebuttal on September 15, 1995 when it was pointed out that the possibility that Dr. Lee could not exclude—a (shoe?) “imprint”—was in fact a tool mark left on concrete when the walkway was built or, in another case, a print left in the “tile” concrete when it was originally poured. *See id.* These points were made during testimony by a special FBI agent who authored a book on the subject. WILLIAM BODIAK, *FOOTWEAR IMPRESSION EVIDENCE* (1990). But the damage had been done. Speculative possibilities have a way of becoming “[un]reasonable doubts.” Henry Weinstein & Tim Rutten, *FBI Agent Says Simpson Defense Expert Lee Erred*, L.A. TIMES, Sept. 16, 1995, at A1. Dr. Lee's own rebuttal consisted of a news conference in which he issued a rather testy pronouncement that the trial had become a “game,” that his testimony had been misunderstood, and that he would not “voluntarily” provide further testimony for the defense. *See id.* But the red herrings continued to swim into the case as the defense attempted to introduce the testimony of a disgruntled FBI chemist who was willing to allege that Agent Martz may have shaded testimony in one or more other cases. *See* Henry Weinstein & Tim Rutten, *Defense Hopes FBI Agent Can Blunt Expert's Testimony*, L.A. TIMES, Sept. 14, 1995, at A17 (stating, “Whitehurst, the mystery witness Simpson's team now wants to call, does not allege that Martz did anything wrong in the Simpson case”).

287. BADEN WITH HENNESSEE, *supra* note 13, at 22.

288. *Id.* at 22. Baden relates his experiences working with the House Committee on Assassinations during the late 1970s. The Committee's Chief Counsel was convinced that there was a conspiracy in the Kennedy assassination, that the Mafia was involved, and that someone had shot at the President from the “grassy knoll.” *Id.* at 20-22. His principle ammunition for this theory was a tape recording inadvertently made by a Dallas motorcycle cop. *Id.* He managed to find some “acoustics experts” who could hear on the tape one or more additional shots being fired. *Id.* No one else was able to hear them, but the thought was that there had to be an additional shooter if there were, in fact, that many shots in the critical time frame. *Id.* The experts claimed that they could tell from the analysis of “sound vectors” and the like

and Vanzetti.²⁸⁹ Captain William Proctor, the ballistics expert, testified as follows:

Q: "Have you an opinion as to whether bullet 3 was fired from the Colt automatic which is in evidence [Sacco's pistol]?"

A: "I have."

Q: "And what is your opinion?"

A: "My opinion is that it is consistent with being fired by that pistol."²⁹⁰

Judge Thayer took the bait and in his summation virtually told the jurors that the expert evidence meant that "it was his [Sacco's] pistol that fired the bullet that caused the death of Berardelli."²⁹¹ To this effect, "the Commonwealth introduced the testimony of two witnesses, Messrs. Proctor and Van Amburgh."²⁹² Later, Proctor gave an affidavit that he was never able to find any convincing evidence to support Van Amburgh's opinion that the bullet was marked with scratches to prove that it went through Sacco's pistol.²⁹³ He also stated that he told the district attorney that he would answer "no" if he were asked if he had found any such "affirmative" evidence, but was not asked that question.²⁹⁴

that one or more shots had come from the grassy knoll. *Id.* Baden was asked to testify that the forensic medical evidence was "consistent" with the acoustics theory. *Id.* Baden says that he was convinced that there was nothing to the theory, and he was not called to testify on the particular point. *Id.* The questionable theory carried the day. *Id.* It seems to me that the prosecution in the O.J. Simpson case might have used that anecdote to their advantage.

289. *Commonwealth v. Sacco*, 261 Mass. 12, 158 N.E. 167, *cert. dismissed*, 275 U.S. 574 (1927).

290. HERBERT B. EHLMANN, *THE CASE THAT WILL NOT DIE: COMMONWEALTH V. SACCO AND VANZETTI* 266 (1969) (citing the *HOLT RECORD* vol. IV, 3641, 3643).

291. *Id.* at 268 (citing the *HOLT RECORD*, vol. III, 3422).

292. *Id.*

293. See EHLMANN, *supra* note 290, at 270; FELIX FRANKFURTER, *THE CASE OF SACCO AND VANZETTI: A CRITICAL ANALYSIS FOR LAWYERS AND LAYMEN* 77, 78-79 (1927) (Universal Library ed. 1962); see also BRIAN JACKSON, *THE BLACK FLAG: A LOOK BACK AT THE STRANGE CASE OF NICOLA SACCO AND BARTOLOMEO VANZETTI* 22-23, 54, 107 (1981).

294. Jackson, *supra* note 293, at 54. On the other hand, tests run in 1961 suggest that the bullet was fired through Sacco's gun, if we assume that the gun and the bullets tested were the originals! *Id.* at 107, 132. This supports the theory held by some that Sacco was guilty but Vanzetti was not. In any event, the trial was not fair "by today's standards." Massachusetts Governor Michael Dukakis' Proclamation of August 23, 1977, "intending to remove any stigma and disgrace from Sacco and Vanzetti," stated that this was a case in which the prosecution

Baden provides an excellent (precisely because it is somewhat mundane) example of how coaching and clever questioning by a prosecutor might mislead jurors, and invite them to draw false inferences.²⁹⁵

[T]he assistant DA, who was on his first homicide case, thought it was a rape and also thought the jury would be more likely to convict if it was. . . . [But the facts ruled out rape]. At [the] trial for murder, the prosecution asked [the ME] if her findings were "consistent with" rape. She said yes. [The] defense lawyer didn't have the presence of mind to ask her if her findings were also consistent with its not being rape [for example, the victim's hymen was intact]. [The defendant] was convicted and put away.²⁹⁶

Professor Jones discusses a number of celebrated British cases that raise questions about the relationship between the prosecutor and the state's expert. These cases include the "IRA Bombing Cases,"²⁹⁷ the case of the "Guilford Four,"²⁹⁸ the "Maguire Seven,"²⁹⁹ and the "Birmingham Six."³⁰⁰ I discuss several of the less celebrated cases in her collection herein.

In the *Confait* case, three boys were convicted. One was convicted of murder, one was convicted of manslaughter, and all three were convicted of arson for setting fire to the deceased, Maxwell Confait's, house.³⁰¹ The convictions were quashed in 1975.³⁰² One of the problems with the case, which was explored in the Fisher Inquiry of

knowingly used false testimony [Proctor's] in violation of *Napue v. Illinois*, 360 U.S. 264, 79 S. Ct. 1173, 3 L. Ed. 2d 1217 (1959), the ABA Code of Professional Conduct, and the ABA Standards Relating to the Administration of Criminal Justice, with particular reference to Standard 3.3. *Id.* at 185-87.

295. See BADEN WITH HENNESSEE, *supra* note 13, at 60-61.

296. *Id.* This type of testimony can obviously be very useful to the defense in criminal cases, which deal in "possibilities." See Underwood, *supra* note 28, at 173. For example, in the "preppie murder" case, in which the defendant Chambers claimed that he killed his girlfriend accidentally during "rough sex," defense counsel was able to recruit a Los Angeles medical examiner to testify that the defendant's account was "consistent" with the victim's injuries. See Marcia Chambers, *Experts Need To Put Their House In Order*, NAT'L L.J., Apr. 18, 1988, at 13.

297. JONES, *supra* note 5, at 250-51.

298. *Id.* at 251-52.

299. *Id.* at 252-60.

300. *Id.* at 261-68.

301. *Id.* at 225.

302. JONES, *supra* note 5, at 225.

1977, was the way the prosecution got its expert witness to stretch the period during which death could have occurred in order to overcome an alibi defense.³⁰³ The pathologist originally put the time of death at 6:30 p.m., roughly nine hours before he had been called to the scene of the crime.³⁰⁴ By the time he had started the post-mortem at 6:30 a.m., *rigor mortis* was complete, "which suggested death twelve hours earlier."³⁰⁵ One of the boys had an alibi that covered the period during which the pathologist estimated that the victim probably died.³⁰⁶ The prosecutor, identified by Jones as a Richard Du Cann,³⁰⁷ having conferred with the pathologist and asked him questions about ways in which the period for the time of death could be extended after midnight, introduced evidence that "overstated the uncertainty of the estimates of the time of death, and which over-rode the actual estimates which [the pathologists gave]."³⁰⁸ In the final argument to the jury, the prosecution suggested that death had occurred after midnight.³⁰⁹ "The prosecution had, therefore, not only censored certain facts, but it had also deliberately rendered some facts indeterminate in order to obtain a conviction."³¹⁰ Actually, Jones attempted to prove that the pathologist was not given all of the evidence he needed, and to that extent the case was one which might be characterized by insufficient "closeness" between the prosecutor and the expert.³¹¹ She also points out that the pathologist's examination of the victim was somewhat "structured."³¹² Because the police had apparently informed him that Confait was a known homosexual, and that they suspected that he had been engaged in homosexual intercourse shortly before death, the pathologist had not

303. *Id.* at 225-26.

304. *Id.* at 226.

305. *Id.* Cf. BADEN WITH HENNESSEE, *supra* note 13, at 37 (stating that "[r]igor mortis begins to show two hours after death and takes twelve hours to peak").

306. JONES, *supra* note 5, at 225.

307. *Id.* at 226.

308. *Id.*

309. *Id.*

310. *Id.* at 226-27.

311. JONES, *supra* note 5, at 229.

312. *Id.*

taken the rectal temperature of the body.³¹³ The best way to determine the time of death is by considering such temperature, or algor mortis.³¹⁴ As a general rule, body temperature drops about one degree each hour after death.³¹⁵ But a pathologist will not take a rectal temperature under the circumstances suggested here.³¹⁶

Even more interesting are what Jones calls the Dr. Clift Cases, particularly *Preece v. HM Advocate*,³¹⁷ which superficially looks like an American case discussed in a later section in connection with the saga of West Virginia State Police Officer Fred Zain. Preece had been convicted of the strangulation murder of Helen Wills.³¹⁸ The prosecution theory was that Preece had sex with Wills in the cab of his truck and had killed her during or after the act.³¹⁹ The case consisted of fibers found in the truck bearing similarities to fibers in Wills' coat, a brown hair on her coat that was similar to Preece's, and blood-semen evidence.³²⁰ Semen stains found on the victim indicated a type A secretor.³²¹ Preece was a type A secretor.³²² However, the Crown's expert, Dr. Clift, did not reveal to the Court that the victim was also type A, with a one-in-three chance of being a secretor—plenty of "reasonable doubt."³²³ Clift's testimony was not exactly the whole truth. Preece was only one of a number of cases in which Clift's work was reviewed, questioned, and in some cases condemned as unsatisfactory.³²⁴

313. *Id.* at 228-29.

314. *Id.* at 228.

315. *See* BADEN WITH HENNESSEE, *supra* note 13, at 38.

316. JONES, *supra* note 5, at 228-29. The pathologist could have, but did not, take the body temperature through the abdomen. *Id.* at 229.

317. CRIM. L. REV. 783-5 (1981) (High Court of Justiciary, Edinburgh); *see* JONES, *supra* note 5, at 230-37.

318. JONES, *supra* note 5, at 230.

319. *Id.*

320. *Id.*

321. *Id.*

322. *Id.*

323. *See* JONES, *supra* note 5, at 230. Actually, what is more odd is the fact that an appointed defense expert later admitted that he had known that the victim was a type A, and probably a secretor, but that the defense counsel had not asked him to give evidence on that point! *Id.* at 235-36.

324. JONES, *supra* note 5, at 246-47.

Clift was retired, and of 1,500 of his cases that were reviewed, 129 in detail, sixteen were returned to the court of appeal.³²⁵ But only eleven cases were actually reviewed by the court of appeals, and only four convictions were ultimately reversed.³²⁶ The results of the investigation were troubling, but otherwise hard to characterize.³²⁷

Clearly, even a well intentioned expert employing good science can be a problem when he is in the hands of a prosecution team that is willing to withhold evidence. I went to law school after a too lengthy stint in the army, and one of the cases that I remember studying in Evidence was *United States v. Stifel*,³²⁸ a federal appellate decision approving the admission of Neutron Activation Analysis (NAA).³²⁹ Stifel had been convicted of sending a bomb to and killing one Daniel Ronc. ³³⁰ The prosecutor's theory was that Stifel, age 21, had been "jilted" by his girlfriend, Cheryl Jones, who then became engaged to Ronc, age 24.³³¹ The bomb, which had been contained in a cardboard mailing tube, was delivered to the home of Daniel Ronc's mother.³³² The bomb exploded and killed Daniel when he unscrewed a metal lid on the end.³³³

At Stifel's trial, it was assumed that the container had been addressed to Daniel Ronc, although the mailman who testified to the fact was uncertain.³³⁴ Circumstantial evidence suggested that Stifel might have had some knowledge of bombmaking, but the really significant evidence against him came in the form of expert testimony.³³⁵ Stifel worked at Proctor & Gamble (P&G) in Cincinnati, Ohio for a period before

325. *Id.*

326. *Id.*

327. *Id.* at 247-48.

328. 433 F.2d 431 (6th Cir. 1970).

329. *Stifel*, 433 F.2d at 435.

330. *Id.* at 431.

331. *Id.* at 432.

332. *Id.*

333. *Id.*

334. *United States v. Stifel*, 594 F. Supp. 1525, 1529 (N.D. Ohio 1984). The prosecution was unable to prove this fact because the address label had been destroyed along with the rest of the bomb. *Id.* at 1529.

335. *Stifel*, 433 F.2d at 434.

and after the bombing.³³⁶ A storeroom no more than 100 feet from his work area contained mailing labels, cardboard tubes, and metal lids of the type used in constructing the bomb.³³⁷ Government experts testified that these materials were “microscopically similar” to [consistent with?] fragments found at the scene of the bombing.³³⁸ Expert James Scott also testified that NAA analysis proved that the fragments of metal, tape, and mailing label were of the same type and manufacture as those taken from the P&G storeroom.³³⁹ Indeed, he testified that tape and metal in the storeroom were from the same batch as fragments of tape and metal recovered from the bomb scene, and that particular batch of tape had only been distributed to two businesses: P&G and another Cincinnati company!³⁴⁰ Questioning of Cheryl Jones also left the impression that Stifel had in some way made some threats to kill Ronc.³⁴¹ The prosecutor’s summation stressed that Stifel was the only person who could have committed the crime, and comments made to the jury by the judge when the jurors initially announced that they were deadlocked emphasized that, in the court’s opinion, “no more or clearer evidence could be produced on behalf of either side.”³⁴²

Stifel was convicted in 1969 and served his sentence from 1969 until he was paroled in 1980.³⁴³ He had filed an action to vacate, set aside, or correct his sentence under 28 U.S.C. § 2255 in 1977, and had also sought information through the Freedom of Information Act (FOI), 5 U.S.C. § 552.³⁴⁴ The government resisted the FOI request for over a year but finally coughed up 1,800 pages of information that suggested the prosecution had suppressed key evidence and may have knowingly

336. *Id.*

337. *Id.*

338. *Id.*

339. *Id.* at 436.

340. *Stifel*, 594 F. Supp. at 1531.

341. *Stifel*, 433 F.2d at 433. Jones testified that Stifel had told her over the telephone that he had been on his way to Columbus to shoot her and whoever she was with. *Id.* However, he told her that the authorities had picked him up while he was en route. *Id.*

342. *Stifel*, 594 F. Supp. at 1531.

343. *Id.* at 1528.

344. *Id.*

presented perjured testimony.³⁴⁵ In 1984 a district court judge vacated the conviction.³⁴⁶ Insofar as the "suppressed evidence" allegations were concerned, the court concluded that the government withheld evidence that the real killer may have been Daniel Ronec's father, Andrew, who spelled his name Hronec or Roen.³⁴⁷ Indeed, the evidence against this rather violent-tempered individual and his threats against his ex-wife (Daniel's mother) was relatively compelling when compared to the thin circumstantial case against Stifel.³⁴⁸ The evidence further showed that the government had not turned over statements by Cheryl Jones in which she had strongly stated that she had no reason to suspect Stifel and that he had never made any threats against Ronec.³⁴⁹

Furthermore, while the government's glittering array of incriminating facts had included a mail order catalog found in Stifel's room which offered for sale a switch like that used in the manufacture of the bomb,³⁵⁰ the government did not reveal that all leads had been exhausted and that there was no evidence that Stifel had ever made such a purchase from the catalog, or from any other source.³⁵¹ The jury was permitted to draw the false inference that he had purchased a switch from the catalog. The judge concluded that the Scott testimony was not perjury because "it was not false or materially misleading. . . . [T]he answers given by Scott were responsive to the questions asked and . . . Scott believed to a reasonable scientific certainty that the bomb scene and the P&G tapes were from the same batch."³⁵² On the other hand, the court did conclude that the undisclosed results of certain tests performed by Scott on tape obtained from another source could have been used to "further impeach the credibility of Scott's scientific methods."³⁵³

345. *Id.*

346. *Id.*

347. *Stifel*, 594 F. Supp. at 1531.

348. *Id.* at 1532.

349. *Id.*

350. *Id.* at 1535.

351. *Id.* at 1532.

352. *Stifel*, 594 F. Supp. at 1542-43 (footnote omitted).

353. *Id.* at 1543.

Stifel's conviction was vacated, and he went on to obtain a law degree.³⁵⁴ While he was in law school he won a moot court (appellate argument) competition arguing for the admissibility of expert testimony regarding the rape trauma syndrome!³⁵⁵ What Dr. Watson once said of another case seems to fit, in an odd sort of way: "The crime was of interest in itself, but that interest was as nothing to me compared to the inconceivable sequel. . . ."³⁵⁶

Of particular interest is a new opinion in the never ending case of *Buckley v. Fitzsimmons*.³⁵⁷ In this case, Stephen Buckley, a murder defendant, brought a federal civil rights action (42 U.S.C. § 1983) for monetary damages against his prosecutors and others.³⁵⁸ He alleged that the prosecutors "coerced" others to falsely finger him, paid them for false statements incriminating him, and also shopped around until they could find an expert who was willing to support the false theory that a footprint on the victim's door matched a pair of boots that Buckley had voluntarily provided to investigators.³⁵⁹ The prosecutor's expert was an anthropologist who proved to be a "controversial witness"—an expert whom we have already noted is famous for her opinion regarding the footprints of a prehistoric woman.³⁶⁰

Buckley may become the "Bleak House" of 1983 litigation, as it has kept running up and down the hierarchy of federal courts.³⁶¹ In the

354. See JACK WEINSTEIN ET AL., *CASES & MATERIALS ON EVIDENCE* 386 (8th ed. 1988).

355. See *id.*

356. SIR ARTHUR CONAN DOYLE, *The Adventure of the Empty House*, in *THE RETURN OF SHERLOCK HOLMES* 11 (The Reader's Digest Ass'n, Inc. 1991).

357. 509 U.S. ___, 113 S. Ct. 2606, 125 L. Ed. 2d 209 (1993).

358. *Buckley*, 113 S. Ct. at 2609.

359. *Id.* at 2610.

360. See discussion *supra* note 248.

361. *Buckley v. Fitzsimmons*, 20 F.3d 789 (7th Cir. 1994). The district court's judgment in favor of Buckley's prosecutors went to the Court of Appeals, which affirmed in part, vacated in part, and remanded. *Buckley v. Fitzsimmons*, 919 F.2d 1230 (7th Cir. 1990). This decision was appealed to the United States Supreme Court, which vacated the decision and remanded the case to the Court of Appeals, which affirmed and modified. *Buckley v. Fitzsimmons*, 502 U.S. 801, 112 S. Ct. 40, 116 L. Ed. 2d 19 (1991), *aff'd*, 952 F.2d 965 (7th Cir. 1992). This decision was again taken to the Supreme Court, which reversed and remanded, so that the appellate court could issue this opinion. *Buckley v. Fitzsimmons*, ___ U.S. ___, 113 S. Ct. 53, 121 L. Ed. 2d 23 (1992). This history of the case is taken from the headnotes in *Fitzsimmons*, 20 F.3d 789. It appears that the Supreme Court had reversed the Seventh Circuit's opinion

latest opinion issued by a panel of the Seventh Circuit, the majority gave the claims rather short shrift, noting, *inter alia*, that

[t]he exchange of money for information may be a regrettable way of securing evidence, but it is common. So too with promises to go easy. . . . [But] . . . this practice . . . [does not] violate[] the Constitution. Concealing the payments at trial would have violated his rights; a defendant is entitled to know what the prosecutor paid for a statement (whether in cash or in lenience and related promises) so that he may expose to the jury the witness's shortcomings and bias. . . . Buckley does not allege concealment at trial, which would in any event be comfortably within the scope of absolute prosecutorial immunity. . . . Coercing witnesses to speak rather than loosening their tongues by promises of reward, is a genuine constitutional wrong, but the persons aggrieved would be Cruz and Hernandez rather than Buckley. . . . [Insofar as the allegedly false expert testimony is concerned,] . . . because the prosecutors obtained Robbins's assessment of the footprint during the investigatory rather than [during the] prosecutorial stage of the case, they are not entitled to absolute prosecutorial immunity. . . . [But] [n]either shopping for a favorable witness nor hiring a practitioner of junk science is actionable, although it may lead to devastating cross-examination if the judge permits the witness to testify. . . . The prosecutor's discussions with Robbins did not injure Buckley; only the decision to file charges and proffer her testimony, coupled with the judge's decision that she was qualified to offer expert testimony, did so. . . . A person aggrieved by proposed expert testimony may ask the judge to exclude it, and may appeal from an adverse judgment, but may not collect damages from the lawyers who recruited the witness.³⁶²

A dissenting judge argued that the gist of the complaint was that the prosecutors had "manufactured the footprint evidence" and had "suborned perjury," and that the injury allegedly caused by this misconduct was an unnecessary and unjustified indictment and possibly a trial.³⁶³ This, reasoned the judge, *cannot sensibly be considered advocacy*, and cannot justly be cloaked in prosecutorial immunity.³⁶⁴

at 113 S. Ct. 2606 and remanded. See *Buckley v. Fitzsimmons*, ___ U.S. ___, 113 S. Ct. 2606, 125 L. Ed. 2d 209 (1993), 61 U.S.L.W. 4713. A motion for rehearing en banc was denied by the Seventh Circuit on June 7, 1994, 1994 U.S. App. LEXIS 13888.

362. *Buckley*, 20 F.3d at 794-96.

363. *Id.* at 800.

364. *Id.*

IX. Perjury, False Statements, and the Threat of "Malpractice"

Only a few years ago the conventional wisdom held that it would be extremely unlikely that an expert witness would ever be convicted of perjury. To be sure, an expert might be embarrassed for holding to a foolish and unsubstantiated opinion; and every once in a while an expert—maybe even a complete imposter—was caught lying about his credentials.³⁶⁵ But it was rare for an expert to be charged with perjury and rarer still for an expert to be convicted of perjury because he gave an opinion that was not honestly held.³⁶⁶ But the high stakes of toxic tort, drug liability, and medical devices litigation has spawned a lot of charges, if no convictions.³⁶⁷ In one celebrated case involving the Dalkon Shield, IUD, a defense expert was indicted for perjury after a panel of Eleventh Circuit Court of Appeals judges overturned a defense verdict on the ground that the expert had, in their view, testified falsely about having performed certain experiments.³⁶⁸ However, the expert was acquitted, and the appellate court thereafter vacated its earlier opinion

365. See, e.g., *Trapp v. American Trading & Production Corp.*, 414 N.Y.S.2d 11, 12 (N.Y. Sup. Ct. 1979). See also *Witness's False Credentials Nix Punitive Damages Award*, NAT'L L.J., Feb. 29, 1988, at 48 (reporting that the Eleventh Circuit vacated an arbitrator's award of punitive damages against a securities firm on the ground that the customers' expert had presented false credentials).

366. See, e.g., *State v. Sullivan*, 24 N.J. 18, 130 A.2d 610 (1957). *Sullivan* is frequently cited as the rare case in which an expert was convicted of perjury. On the other hand, this case is a troubling one in which the perjurious testimony was elicited in a free-for-all of cross and redirect examination. See *State v. Cooper*, 2 N.J. 540, 67 A.2d 298 (1949). The hearing in which the testimony was given was the second trial of the "Trenton Six." See *id.* The theory of the prosecution was that Dr. Sullivan, who had been called by the state to testify as to the voluntariness of the defendants' confessions, had

after the first trial [which resulted in a conviction that was later reversed] . . . directed himself toward securing freedom for the murder defendants and to this end willfully falsified his testimony at the second trial in attempting to establish that the defendants were incompetent at the time they had executed their respective confessions.

Sullivan, 130 A.2d at 613. See generally Annotation, *Statement of Belief or Opinion as Perjury*, 66 A.L.R.2d 791 (1959).

367. See generally *Suits, Indictments, Countersuits Spawnd By Allegations of False Expert Testimony*, 2 BNA Toxics L. Rep. 47, Apr. 27, 1988, at 1314.

368. See *Harre v. A.H. Robbins Co.*, 750 F.2d 1501 (11th Cir. 1985).

and remanded the matter to the trial court for further proceedings.³⁶⁹ In a rarely publicized case, lawyers from the United States Justice Department were sanctioned—fined—for obstructing their opponent's efforts to uncover perjury by a EPA on-site coordinator in an environmental "Superfund" case!³⁷⁰ The court described the culprit as "a man who has misrepresented his academic credentials and achievements throughout his career and subsequent to this case was convicted of perjury, specifically making material false declarations in violation of 18 U.S.C. § 1623."³⁷¹

The ground has gotten bloody of late with judges, lawyers, and experts trading blows;³⁷² lawyers and experts squabbling and pointing fingers in the wake of courtroom disasters;³⁷³ and experts striking back with defamation suits.³⁷⁴ Will there be changes, as scientific evidence comes under a greater degree of scrutiny, particularly in criminal cases?

In 1987, Glen Woodall was convicted in West Virginia for multiple offenses including rape.³⁷⁵ The conviction was procured largely on the strength of the testimony of Officer Fred Zain, a forensic scientist working for the West Virginia State Police.³⁷⁶ Zain opined that semen recovered from the victims yielded blood traits that were identical to Woodall's and that these traits would occur in only six out of 10,000 males in West Virginia.³⁷⁷ The conviction was affirmed by the Supreme Court of Appeals in 1989,³⁷⁸ but was ultimately overturned in 1992 when DNA testing proved that he could not have been the perpetrator.³⁷⁹

369. See *Harre v. A.H. Robbins Co.*, 866 F.2d 1303 (11th Cir. 1989).

370. See *United States v. Shaffer Equip. Co.*, 158 F.R.D. 80 (S.D. W. Va. 1994).

371. *Id.* at 84.

372. E.g., *Graham v. Wyeth Labs.*, 760 F. Supp. 1410 (D. Kan. 1991) (involving an effort to disqualify Judge Kelly before retrial of case pursuant to 28 U.S.C. § 455(a)).

373. See *Mill Owner Estimates Cleanup at \$40 Million After Judge Decides Former Owner's Liability*, BNA Toxics Law Daily, Aug. 1, 1991, at 5.

374. On litigation between William McBride, Science Magazine, Merrell Dow Pharmaceuticals, and others see *McBride v. Merrell Dow Pharmaceuticals, Inc.*, 800 F.2d 1208 (1986).

375. See *State v. Woodall*, 182 W. Va. 15, 385 S.E.2d 253 (1989).

376. See *Woodall*, 385 S.E.2d at 256-59.

377. *Id.* at 261.

378. *Id.* at 265.

379. *In re Investigation of W. Va. State Police Crime Lab., Serology Div.*, 190 W. Va. 321, 329, 438 S.E.2d 501, 509 (1993).

Civil litigation initiated by Woodall after his release resulted in a \$1 million settlement. It also led to an investigation of Zain and of his work as Chief of Serology at the State Police Crime Laboratory.³⁸⁰ This investigation not only generated a report that painted a picture of Professor Moenssens' worst case scenario, but also led to a criminal referral to the United States Attorney.³⁸¹

According to the report, the operating procedures of the serology laboratory were deficient in the following particulars:

[1] no written documentation of testing methodology; [2] no written quality assurance program; [3] no written internal or external auditing procedures; [4] no routine proficiency testing of laboratory technicians; [5] no technical review of work product; [6] no written documentation of instrument maintenance and calibration; [7] no written testing procedures manual; [there was] [8] [a] failure to follow generally-accepted scientific testing standards with respect to certain tests; [9] inadequate record-keeping; and [10] [a] failure to conduct collateral testing.³⁸²

These deficiencies "undoubtedly contributed to an environment within which Zain's misconduct escaped detection."³⁸³ The specific acts of misconduct by the "pro-prosecution" Zain were enumerated as follows:

[1] overstating the strength of results; [2] overstating the frequency of genetic matches on individual pieces of evidence; [3] misreporting the frequency of genetic matches on multiple pieces of evidence; [4] reporting that multiple items had been tested, when only a single item had been tested; [5] reporting inconclusive results as conclusive; [6] repeatedly altering laboratory records; [7] grouping results to create the erroneous impression that genetic markers had been obtained from all samples tested; [8] failing to report conflicting results; [9] failing to conduct or to report conducting additional testing to resolve conflicting results; [10] implying a match with a suspect when testing supported only a match with the victim; and [11] reporting scientifically impossible or improbable results.³⁸⁴

380. See *In re Investigation*, 438 S.E.2d at 501-20.

381. *Id.* at 501.

382. *Id.* at 504.

383. *Id.* at 517. At the time of this writing Zain still faces trials in Texas and West Virginia. See *Texas Lawyer*, Apr. 3, 1995, at 2.

384. *In re Investigation*, 438 S.E.2d at 516.

The report provides details on a number of suspicious cases, among them the rape conviction in *State v. Davis*,³⁸⁵ which was affirmed in a reported 1988 opinion of the high court. According to that opinion, both the defendant and the victim of the rape had type O blood.³⁸⁶ Vaginal swabs taken from the victim showed seminal fluid containing the characteristics of both type A and type O blood.³⁸⁷ The defendant's expert, a clinical pathologist (a doctor), testified that seminal stains on exhibits found at the crime scene exhibited type A characteristics.³⁸⁸ If this expert had been credited, the jury could only have concluded that the defendant was not the perpetrator. Zain effectively countered this defense evidence by opining that

his testing of unstained areas of the exhibits also revealed type A characteristics, leading him to conclude that the presence of those characteristics in the seminal stains was the result of a false reading due to bacterial contamination and that the genetic markers found in the seminal stains were not inconsistent with those found in the appellant's blood.³⁸⁹

This was good enough for the jury, and was good enough for the appellate court, which could "find no manifest inadequacy in the evidence which would warrant . . . reversal of the conviction. . . ."³⁹⁰ The investigative report of Zain's misconduct notes that there was "no satisfactory foundation for [Zain's] opinion . . . in the laboratory records [or] the transcript of testimony."³⁹¹

Long before the completion of the court ordered investigation of the crime lab, Zain had left for a new job in Texas. The controversy followed him. Now it seems that he will be prosecuted for perjury:

On July 22, Zain was indicted on three counts of perjury in West Virginia. . . . Four days later, he was indicted on perjury, record-tampering and evidence-fabricating in Texas. . . . In West Virginia, Zain is accused

385. 180 W. Va. 357, 376 S.E.2d 563 (1988).

386. *Davis*, 376 S.E.2d at 567.

387. *Id.*

388. *Id.*

389. *Id.*

390. *Id.* at 568.

391. *In re Investigation*, 438 S.E.2d at 516.

of lying about his academic credentials, his fees and a test he said he had performed on evidence found at the scene of a 1989 double murder. . . . In Texas, he is charged with falsifying the results of a DNA test to implicate a suspect in a 1990 rape case.³⁹²

The Zain case is not unique. In Texas, Ralph Erdmann, a pathologist for forty-two counties, recently pled no contest to charges that he faked autopsies.³⁹³ This has apparently thrown doubt on convictions in as many as twenty capital cases in which he gave testimony.³⁹⁴ Erdmann was convicted and given ten years probation.³⁹⁵ At least one capital case in which he gave evidence has been reversed.³⁹⁶ In addition, Andre Moenssens alludes to a rogue's gallery that includes a police lieutenant who faked fingerprints,³⁹⁷ an FBI agent who lied about his credentials and committed perjury about tests he never conducted, and a laboratory that faked results.³⁹⁸

Some suggest that a civil lawsuit might straighten out these experts. On the other hand, as we saw in *Buckley*, expert witnesses and their lawyers have traditionally been given immunity for testimony presented in court.³⁹⁹ There have been some inroads when the expert's own

392. Mark Hansen, *Police Serologist Accused of Perjury*, 80 A.B.A. J. Sept. 1994, at 39.

393. Don DeBenedictis, *Off-Target Opinions*, 80 A.B.A. J., Nov. 1994, at 76, 77.

394. *Id.*

395. Gary Taylor, *Fake Evidence Becomes Real Problem*, NAT'L L.J., Oct. 9, 1995, at A28.

396. *Rey v. State*, 897 S.W.2d 333 (Tex. Crim. App. 1995).

397. Moenssens, *supra* note 228, at 1. Another curious book claims that fingerprints can be faked with the aid of a copier:

The toner clings to the image on an electrostatic drum, and a heating element fuses the toner to the paper. The trick is to place a suspect's fingerprint card on the platen and make a copy of it, but with the heater disconnected. This leaves a non-fused image on the paper copy, and it's possible to "lift" one of the non-fused fingerprint images with tape.

BART ROMMEL, *DIRTY TRICKS COPS USE (AND WHY THEY USE THEM)* 120 (1993). Another author alludes to fingerprint faking by a New York state trooper. Taylor, *supra* note 395, at A28.

398. See Moenssens, *supra* note 228, at 16.

399. See *Bruce v. Byrne-Stevens Assoc. Eng'rs*, 113 Wash. 2d 123, 776 P.2d 666 (1989). See *supra* notes 357-64 (discussing *Buckley v. Fitzsimmons*, 20 F.3d 789 (7th Cir. 1994)). But compare *Murphy v. Mathews*, 841 S.W.2d 671 (1992) (malpractice case allowing damages against an expert witness for negligence in miscalculating a damage claim on the theory that the work did not involve testimony but rather pretrial litigation support services); Chandler

client has sued the expert,⁴⁰⁰ but it seems unlikely that many courts will permit an opposing party to sue an expert hired by the other side.⁴⁰¹

v. United States, 875 F. Supp. 1250 (N.D. Tex. 1994). In *Chandler*, two government employees who had been wrongfully charged with perjury (18 U.S.C. § 1623) and obstruction of justice (18 U.S.C. § 1512) sued the Government under the Federal Tort Claims Act (FTCA) for malicious prosecution, attributable to the misconduct of an Assistant United States Attorney (AUSA) and a GSA investigator. *Chandler*, 875 F. Supp. at 1250. Although the court criticized the AUSA (the prosecution) for a lack of investigation and oversight, these deficiencies were held not to be actionable because of the "discretionary function exception" to the FTCA. *Id.* at 1253. However, the Government was held liable on the theory that the AUSA's lapse permitted the GSA investigator to "play an inflated role in the prosecution" and "present as fact his own biased assumptions." *Id.* Critical to the decision was what the court characterized as "the investigator's intentionally false, misleading and incomplete testimony to the grand jury" that indicted the plaintiffs. *Id.*

400. See *DeBenedictis*, *supra* note 393, at 79 (discussing *Mattco Forge Inc. v. Arthur Young & Co.*, 5 Cal. App. 4th 392 (1992)).

401. Cf. *Brisco v. La Hue*, 460 U.S. 325, 369, 103 S. Ct. 1108, 1133, 75 L. Ed. 2d 96, 129 (1983) (holding that a police officer who committed perjury is immune in suits brought pursuant to 42 U.S.C. § 1983) and *Buckley v. Fitzsimmons*, 20 F.3d 789 (7th Cir. 1994) with *Panitz v. Behrend*, 429 Pa. Super. 273, 632 A.2d 562 (1993) (discussed in *De Benedictis* *supra* note 393, at 77, which stated that a disappointed plaintiff would not have a case against its own expert if the expert only told the truth).