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David S. Caudill

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2007]

LEGAL ETHICS AND SCIENTIFIC TESTIMONY: IN DEFENSE OF
MANUFACTURING UNCERTAINTY, DECONSTRUCTING
EXPERTISE AND OTHER TRIAL STRATEGIES

DAVID S. CAUDILL*

A lawyer acting as an advocate in an adjudicative proceeding has an obligation to present the client's case with persuasive force. Performance of that duty . . . , however, is qualified by the . . . duty of candor to the tribunal. Consequently, although a lawyer . . . is not required . . . to vouch for the evidence submitted in a cause, the lawyer must not allow the tribunal to be misled by . . . evidence that the lawyer knows to be false.¹

SUCH a minimal ethical standard—all evidence that is not known to be false, including evidence reasonably believed to be false,² can be presented—appears appropriate and justifiable in an adversary system. Advocates resolve doubts in favor of their client's accounts of events, offer interpretations of events that serve their client's position and do the best they can under the circumstances to present their client's version of the controverted facts.³ Our comfort with such strategies is consistent with our sense that there usually are two sides to every story, and objective truth is hard to come by. After all, journalists have a perspective in their reporting, historians impose interpretations on historical materials, politicians utilize "spin" and so forth. As to scientific evidence, however, we tend to expect more knowledge and less perspective, interpretation, and spin—a scientific expert is not in the same category as a fallible eyewitness or an interested party telling a story. In principle, then, "falsity" should be more detectable when an expert's opinion is supposed to be based on established methodological conventions and carefully collected data. And if "falsity" is more detectable, then attorneys often know (or should know, such that they may be deemed to know) when their expert's scientific testimony is false and that it cannot be ethically proffered. This line of think-

* J.D., Ph.D., Professor and Arthur M. Goldberg Family Chair in Law, Villanova University School of Law. The author is grateful to Daniel Brewer, 2008 J.D. candidate, for his research assistance, and to Professor Dorothy A. Brown, director of the Frances Lewis Law Center at Washington and Lee University School of Law, for making the Center available for research during the summer of 2006.

1. MODEL RULES OF PROF'L CONDUCT R. 3.3 cmt. 2 (2006).

2. See MODEL RULES OF PROF'L CONDUCT R. 3.3 (a)(3) ("A lawyer may refuse to offer evidence . . . that the lawyer reasonably believes is false," which indirectly confirms that a lawyer *may* offer evidence reasonably believed to be false).

3. See STEVEN LUBET, MODERN TRIAL ADVOCACY: ANALYSIS AND PRACTICE 4-7 (3d ed., 2004).

ing is adopted by those who claim that lawyers who present “junk science” violate the rule prohibiting presentation of false evidence.⁴

In the policy context, where legislation and rule-making often rely on scientific insights, there is a perennial concern that interested parties use and abuse scientific arguments for their political and economic advantage—examples include the strategies of manufacturing uncertainty to curb regulation, of deconstruction of inconvenient scientific evidence and of narrowly defining and then demanding “sound science” as a prerequisite for protective legislation.⁵ There is even concern about the *Daubert*-ization of the regulatory arena—the importation of courtroom guidelines for reliability as a strategy to raise the standard for scientific evidence in policy decisions.⁶ Without entering that fray, I want to consider the reverse phenomenon—the new discourse concerning the use of the strategies mentioned above (manufacturing uncertainty, deconstruction and demands for “sound science”) in the context of litigation. Interestingly, even the so-called *Daubert* motion, challenging expertise prior to trial, can be seen as a questionable trial strategy in some cases. My focus with respect to each of these strategies is whether they serve as examples of unethical conduct. My conclusion, somewhat reluctantly since these strategies are nothing to be proud of, is that they do not. I also conclude, however, that these strategies only work because of, and only in those cases in which judges adopt, an overly idealized vision of the scientific enterprise.

I. THE ETHICS OF PRESENTING AND ATTACKING EXPERT TESTIMONY

In retaining an expert witness, a lawyer should respect the integrity of the expert’s professional practices and procedures, and should refrain from asking or encouraging the expert to violate the integrity of those practices and procedures for purposes of the particular matter for which the expert has been retained.⁷

Some of the rules of professional conduct regarding expert witnesses are straightforward and clear, such as the prohibition against payment of a contingency fee to an expert.⁸ Other rules seem straightforward and

4. For a further discussion of this claim, see *infra* notes 24-26 and accompanying text.

5. For a further discussion of manufacturing uncertainty, the deconstruction of evidence and the demands of sound science, see *infra* notes 39-76 and accompanying text.

6. See Symposium, *Science in the Regulatory Process*, 66 LAW & CONTEMP. PROBS., Autumn 2003, *passim* (discussing extension of *Daubert* into regulatory arena).

7. AMERICAN COLLEGE OF TRIAL LAWYERS, CODE OF PRETRIAL CONDUCT § 11(b) (2002). The Code of Pretrial Conduct “is merely a guide for trial lawyers and should not . . . form the bases for disciplinary proceedings or sanctions not called for under the controlling law.” *Id.* at § 12.

8. See MODEL RULES OF PROF’L CONDUCT R. 3.4 cmt. 3 (“The common law rule in most jurisdictions is that it is improper to pay . . . an expert witness a contingent fee.”).

clear, such as the prohibition against assisting a witness to testify falsely,⁹ but can become murky in practice. Steven Lubet explains:

[T]here may be a temptation to view the expert as simply another member of the team who can be enlisted to provide whatever advocacy is necessary. Thus, it is not unknown for attorneys to attempt to persuade experts to alter the content of their opinions. This is wrong The entire system of expert testimony rests upon the assumption that experts are independent of the retaining attorneys.¹⁰

Immediately, however, Lubet qualifies his remarks, confirming that “it is not unethical to assist an expert to prepare for trial,” which might include advice “to use powerful language, to avoid jargon, to use analogies, to refrain from long narratives, or to use other means that will help her convey her opinion accurately”.¹¹ Such assistance will obviously “alter the content” of the opinion in some sense, but we know what Lubet means—alteration is a matter of degree, and it would be unethical to try to persuade an expert to offer an opinion that is false.

In terms of comparative law, Lubet mentions:

[in] many countries it is considered unethical for a lawyer to even meet alone with a witness prior to the trial, such is the aversion to the possibility for contamination of the testimony. In the United States, however, we take a far different view [—] it is generally considered incompetent for a lawyer to fail to meet with and prepare a witness in advance of . . . testimony¹²

Geoffrey Hazard, for example, notes that in the English system, “the barrister is insulated from the case” by having “no continuing relation with any client,” by using solicitors as intermediaries and by a strong identification “as an officer of the court and as a gatekeeper concerning what kind of evidence will be offered.”¹³ A prominent Australian barrister recently told me that he considered the U.S. practice of rehearsing expert testi-

9. See MODEL RULES OF PROF'L CONDUCT R. 3.4(b).

10. LUBET, *supra* note 3, at 256.

11. *Id.*

12. *Id.* at 78-79.

13. See GEOFFREY C. HAZARD, JR., ETHICS IN THE PRACTICE OF LAW 131 (1978).

[I]t seems evident that if the stakes in a lawsuit are substantial . . . , and if the parties are authorized to give evidence as to what the truth is, the parties will distort their submissions to the maximum extent possible. The artistry and self-consciousness of the distortion will of course vary

There is much ambivalence concerning the advocate's responsibility in this respect. The rules clearly say that . . . the advocate may not assist his client in . . . fabricating or suppressing evidence. In practice, lawyers often wind up violating these rules, some of them quite frequently.

Id. at 130.

mony to be inappropriate.¹⁴ As to preparation of expert reports prior to trial, a 1999 survey of Australian judicial perspectives on expert evidence confirmed that over half of the judges responding to the question of whether lawyers had participated in the composition of reports thought that it happened occasionally (one in five thought it happened often); one judge had “little faith in expert’s reports which are really the work of solicitors/counsel,” while another could not “imagine any other reality in an adversarial system of justice.”¹⁵ Indeed, it is hard to imagine lawyers in the U.S. foregoing active participation in the preparation of expert reports.

The ethical rules regarding cross-examination of an opposing expert witness are likewise not particularly clear, even though Steven Lubet claims that “certain ethical principles have developed that circumscribe a lawyer’s use of cross examination.”¹⁶ On the basis of Rule 3.4(e) of the American Bar Association (A.B.A.) Rules, which prohibits alluding “to any matter that the lawyer does not reasonably believe is relevant or that will not be supported by admissible evidence,”¹⁷ Lubet argues that questions must have a “good faith” basis in fact and law.¹⁸ Rule 3.4(e) also prohibits asserting “personal knowledge of facts in issue” or stating “a personal opinion as to the justness of a cause [or] the credibility of a witness,” thus Lubet warns against “Do you know . . . ?” questions. Beyond those guidelines, Lubet goes on to say (without citation) that it “is unethical to ask questions that are intended solely to harass, degrade, or humiliate a witness”¹⁹ Lubet then asks:

To what extent may cross examination be used to discredit the testimony of a witness whom counsel knows to be telling the truth? . . . The rule is less certain in civil cases [than in criminal cases, where a “discrediting cross is an additional safeguard”]. It is clear, however, that a witness cannot be degraded or debased to cast doubt on otherwise unchallenged testimony. On the

14. Conversation with Jeffrey Sher, Q.C., in Melbourne, Austl. (July 13, 2006).

15. See IAN FRECKELTON, PRASUNA REDDY, & HUGH SELBY, AUSTRALIAN JUDICIAL PERSPECTIVES ON EXPERT EVIDENCE: AN EMPIRICAL STUDY 42 (1999). Interestingly, the judges surveyed were divided as to whether involvement by lawyers in expert reports helped or hindered the “weight” of the report. See *id.* (noting 40.22% said process helped, 28.14% said process hindered and 34.64% said it made no difference). The authors of the survey noted that Lord Denning in an English Court of Appeal case, *Whitehouse v. Jordan*, [1980] 1 All E.R. 650, 655 (A.C.), commented:

[The] joint report suffers to my mind from the way it was prepared. It was the result of long conferences between the two professors and counsel in London and it was actually “settled” by counsel. In short, it wears the colour of special pleading rather than an impartial report. Whenever counsel “settles” a document, we know how it goes. “We had better put this in,” “We had better leave this out” and so forth.

Id. at 41.

16. See LUBET, *supra* note 3, at 145.

17. See MODEL RULES OF PROF’L CONDUCT R. 3.4(e).

18. See LUBET, *supra* note 3, at 146.

19. *Id.* at 147.

other hand, true factual information may be used to undermine the credibility of a witness whose testimony is legitimately controverted.²⁰

I suspect that the situations where a cross-examiner knows that an opposing expert is telling the truth, where the expert's testimony is unchallenged, where there is no legitimate controversy and where "degrading" a witness has no purpose other than harassment, are rare. In most situations, therefore, there appears to be no specific ethical restrictions on cross-examination other than the prohibitions against irrelevant (or baseless) questions and offering personal reflections on the testimony.

Finally, the rules regarding an attorney's offer of evidence, and the corresponding duty to "cull inadmissible evidence from the case,"²¹ are particularly problematic. Lubet's analysis is once again both compelling and ambiguous:

There is no question that counsel may offer any evidence that she believes is either clearly or probably admissible. What about evidence that is probably inadmissible?

. . . It is ethical to offer any evidence over which there is a reasonable evidentiary dispute. . . .

. . . A corollary . . . is the obligation to refrain from offering evidence for which there is no reasonable basis. [Under Rule 3.4(e),] the adversary system does not extend so far as to allow the intentional use of improper evidence

When does counsel have a reasonable belief as to the admissibility of evidence? This determination lies within the thought processes of the individual lawyer²²

Whether by alluding "to any matter that will not be supported by admissible evidence" (Rule 3.4(e)), by presenting evidence known to be false (Rule 3.3(a)(3)) or by making frivolous claims or contentions (Rule 3.1), an attorney can violate the ethical rules, but the prerequisites are, respectively, no reasonable belief in admissibility, personal knowledge of falsity and no good faith basis at all for a claim or contention. With respect to scientific testimony, unless an attorney's expert states that his or her testimony will be absolutely erroneous, it is difficult to see how these rules can be violated in practice.²³

20. *Id.*

21. *See id.* at 294.

22. *Id.* at 294-95.

23. I do offer examples of violations in David S. Caudill, *Advocacy, Witnesses, and the Limits of Scientific Knowledge: Is there an Ethical Duty to Evaluate Your Expert's Testimony?*, 39 IDAHO L. REV. 341, 345-47 (2003) (noting that where expert testifies differently in different trials or where expert suddenly changes mind to help client, counsel is alerted to falsity).

Some, however, would disagree. One commentator argued that Rule 3.4's prohibition against falsifying evidence "forbids an attorney to permit an expert witness to testify as an expert in a field that is not scientifically valid."²⁴ I suppose that is true with respect to sorcery, alchemy or astrology, but the idea that counsel recognizes scientific validity is troubling to me. Likewise, I am troubled by Dick Thornburgh's argument that "it is unethical lawyers who are largely to blame for 'junk science:'"

It is clear that the lawyer *does* have a duty to determine whether he believes expert testimony will be admissible before trying to introduce such evidence in court To be an effective advocate, the lawyer must . . . test the accuracy and reliability of . . . expert testimony . . . he wishes to introduce.²⁵

My problem with Thornburgh's otherwise compelling argument is that Rule 3.3 already permits an attorney to offer evidence that is reasonably believed (but not *known*) to be false, which by definition is neither accurate nor reliable. The commentary following Rule 3.3 is clear that an attorney does not vouch for submitted evidence, but that is precisely what Thornburgh asks attorneys to do. Knowing that Rule 3.3 provides no basis for his argument, Thornburgh turns to Rule 3.1 (prohibiting frivolous claims and contentions) and characterizes the introduction of expert testimony as a claim or contention of law (as to admissibility) and fact (as to reliability). Again, Rule 3.1 does not require a belief that one will prevail or that facts be fully substantiated, but that is precisely what Thornburgh requires. The disconnect between Thornburgh's thesis and the rules of professional conduct has its source in the popular perception that when two scientific experts disagree, one is a junk scientist and one is telling the truth. Rather than seeing theories in conflict, Thornburgh sees junk science in conflict with genuine science, and asks why attorneys do not simply admit it if they are peddling junk science. His well-worn proposal for court-appointed experts, to ensure neutral and disinterested expertise, betrays an idealized view of "science as a reservoir of determinable facts."²⁶

A similar analysis is offered by Professors Fred Zacharias and Bruce Green in their article entitled *Reconceptualizing Advocacy Ethics*.²⁷ The authors explore the persistent tension between two competing views of advocacy—namely the advocate as a hired gun entirely devoted to the client, versus the advocate as guided by personal conscience and moral self-re-

24. Justin P. Murphy, Note, *Expert Witnesses at Trial: Where are the Ethics?*, 14 GEO. J. LEGAL ETHICS 217, 230 (2000).

25. Dick Thornburgh, *Junk Science—The Lawyer's Ethical Responsibilities*, 25 FORDHAM URB. L.J. 449, 449, 462 (1998).

26. See SHEILA JASANOFF, *SCIENCE AT THE BAR: LAW, SCIENCE, AND TECHNOLOGY IN AMERICA* 211 (1995).

27. See Fred C. Zacharias & Bruce A. Green, *Reconceptualizing Advocacy Ethics*, 74 GEO. WASH. L. REV. 1 (2005) (discussing tension between competing views of advocacy).

straint—neither of which is ever fully embraced by the legal profession.²⁸ Rather than conceiving professional regulation as a mere compromise of the two, Zacharias and Green argue that a coherent conception of advocacy ethics is reflected in professional regulation of attorneys, *and* that it has its origins in the mid-nineteenth century views of John Bannister Gibson, a chief justice of the Pennsylvania Supreme Court.²⁹ Justice Gibson’s seemingly archaic notions of “professional conscience,” lawyers’ obligations to pursue appropriate goals, lawyers’ personal rights and systemic imperatives toward maintaining public respect for lawyers arguably anticipated and justify contemporary limits on advocacy.³⁰

Zacharias and Green distinguish between “relatively clear, categorical” professional obligations (e.g., avoiding fraud or frivolous claims) and discretionary rules (e.g., an advocate may refrain from offering testimony believed but not known to be false).³¹ As to the second category, the prevalent view is

that lawyers are meant to have unbridled discretion . . . , as a matter of personal conscience[, and] it does not matter what choice the lawyer makes. The alternative [view], which reflects Justice Gibson’s conception, is that the rules presuppose that lawyers will exercise professional conscience. . . . [and] strive to strike an appropriate balance between the competing interests If a lawyer fails to exercise this professional conscience, he abuses his discretion.³²

Zacharias and Green offer as an example (of discretion requiring the exercise of professional conscience) a “lawyers’ discretion regarding the introduction of seemingly false testimony.”³³ That is a situation

28. *See id.* at 2-4 (stating that “hired gun” conception is arguably dominant).

29. *See id.* at 4-5 (noting that Gibson believed “an advocate was required to behave with all due fidelity to the court as well as the client”). The authors focus their analysis on Justice Gibson’s opinion in *Rush v. Cavanaugh*, 2 Pa. 187 (1845), a slander suit brought by lawyer Rush against his former client Cavanaugh for calling Rush a “cheat.” Rush had undertaken a prosecution (on Cavanaugh’s behalf) for forgery, but Rush withdrew the charge *and* insisted he was entitled to compensation. A jury found for Rush, and in upholding the verdict, Justice Gibson held that Rush’s conduct was entirely proper—Rush had withdrawn the forgery charge once Rush was persuaded that the forgery accusation was false: “The high and honourable office of a counsel would be degraded . . . were he compelled to do the biddings of his client against the dictates of his conscience.” *Rush*, 2 Pa. at 189.

30. Zacharias & Green, *supra* note 27, at 36.

31. *See id.* at 51.

32. *Id.* at 52. The authors note that complete personal discretion is sometimes allowed, such as the rule permitting (but not requiring) a lawyer for an indigent client to pay for court costs—the “permanent interests at stake are those of the lawyers,” and “public interests and client rights do not have a strong claim.” *Id.* at 53.

33. *Id.*

where the most compelling interests are those of the public and the client, and where those interests are at odds. It would be anomalous to conclude that the existence of this tension justifies authorizing lawyers to resolve the tension without reference to the underlying interests of the public or the client, based on the lawyer's own interests, beliefs, or values.³⁴

While some provisions of the ethical code contemplate recourse to personal discretion, such as the discretion to refuse representation, others require a professional, considered decision in light of the multiple interests that lawyers serve.³⁵ Therefore,

a lawyer should not adopt a policy of introducing into evidence all helpful testimony unless he is certain that it is false. The rule permitting the lawyer to refuse to introduce potentially false evidence imposes a professional obligation on the lawyer to consider how likely the testimony is to be false, the impact of the testimony on the fact finder, and the impact on the client's rights if the testimony is withheld.³⁶

A lawyer preparing to introduce shaky expert testimony might first stop to consider the likelihood of its falsity. Such an obligation is already implied by the language of the rule regarding evidence "reasonably believed" (but not *known*) to be false³⁷—the lawyer's doubt must be reasonable, and lawyers cannot rely on blissful ignorance that could easily be corrected.³⁸ Likewise, the lawyer might stop to consider the impact of the testimony on the fact-finder. But the prohibition against misleading the tribunal is limited to evidence *known* to be false—to worry about misleading the jury with shaky evidence would place the attorney in a policing role reminiscent of Thornburgh's proposal, an expansion that perhaps Zacharias and Green would like to see. The third consideration, however, regarding the impact on the client's rights if the testimony is withheld, may put the attorney back in the position of offering shaky expert testimony that is important for the client's cause, with the added benefit of having made a professional, considered exercise of discretion consistent with advocacy ethics. In the end, at least with respect to expert testimony, it is not clear that Zacharias and Green would be satisfied with professional discretion that allowed attorneys to give more weight to clients' interests over public interests.

34. *Id.*

35. *See id.* at 54-55 (noting modern codes identify both personal and professional discretion).

36. *Id.* at 56.

37. Caudill, *supra* note 23, at 344-48.

38. For a further discussion of the A.B.A.'s Model Rule 3.3, see *supra* notes 1-2 and accompanying text.

With the foregoing ethical guidelines and arguments in mind, I turn next to an ethical evaluation of four questionable trial strategies: (1) manufacturing uncertainty; (2) deconstructing evidence; (3) demanding “sound science;” and (4) abuse of the *Daubert* motion.

II. IN [RELUCTANT] DEFENSE OF [QUESTIONABLE] TRIAL STRATEGIES

A. *Manufacturing Uncertainty*

Ironically, science may be its own worst enemy when it comes to *Daubert*, [epidemiologist David M.] Michaels observes. Scientists love to keep questioning things, and that inquisitiveness makes judges nervous. “You can manufacture uncertainty because scientists don’t always agree,” he explains. “Lawyers take differences among scientist and magnify them, and as long as there is any sort of disagreement, the case does not move forward.”³⁹

The discourse concerning “manufactured uncertainty” is usually associated with the regulatory arena. David Michaels and Celeste Monforton, for example, observe that when new health and environmental “regulations are being considered, opponents raise the issue of scientific uncertainty no matter how powerful or conclusive the evidence.”⁴⁰ The authors offer examples, beginning with the aspirin industry’s delay in providing warning labels advising parents of the risk of Reye’s Syndrome, despite the publication of four studies that led the Centers for Disease Control to issue an alert of that risk to the medical community:

Although the four studies were enough for the CDC to issue warnings, the industry raised 17 specific “flaws” in the studies and insisted that more reliable studies were needed

The aspirin manufactures did not invent the strategy of questioning the underlying science in order to prevent regulation; it had been successfully employed for decades by polluters and producers of hazardous products. The strategy has now become . . . common⁴¹

Other examples include the tobacco industry’s promotion of “doubt and uncertainty” regarding the risks of lung cancer, heart disease and environmental tobacco smoke,⁴² and opposition to Occupational Safety and

39. Peg Brickley, *Science v. Law: A Decade-Old Rule on Scientific Evidence Comes Under Fire*, SCI. AM., Dec. 2003, at 32.

40. David Michaels & Celeste Monforton, *Manufacturing Uncertainty: Contested Science and the Protection of the Public’s Health and Environment*, 95 AM. J. PUB. HEALTH S39, S39 (Supp. July 2005).

41. *Id.*

42. *Id.* at S40. “The tobacco industry’s goal was to promote scientific uncertainty The tobacco industry recognized the value of magnifying the debate in the scientific community on the cause-and-effect relationship between smoking and lung cancer.”

Health Administration regulations by employers (and their trade associations) on the basis that

the human data are not representative, the animal data are not relevant, or the exposure data are incomplete or not reliable. These assertions were often accompanied by the declaration that more research is needed before protective action is justified.⁴³

The authors conclude that “those charged with protecting the public’s health [should] recognize that the desire for absolute scientific certainty is both counter-productive and futile.”⁴⁴

Michaels and Monforton do not, however, limit their concerns with “manufacturing uncertainty” to the federal rulemaking arena; the strategy of “magnifying and exploiting uncertainties” is now applied in the context of litigation, “constraining the ability of the judicial [system] to address issues of . . . victim compensation.”⁴⁵ The authors blame *Daubert*, in particular, for allowing judges to demand “a level of certainty that [is] virtually impossible to provide.”⁴⁶

It bears mention that Michaels and Monforton, in their attack on regulated industries that manage to manufacture uncertainty, acknowledge that “[e]nvironmental activists can also be guilty of using the existence of scientific uncertainty to advance policy aims”⁴⁷ Using the precautionary principle, some zealous advocates for the environment demand certainty that an action will do no harm, which can delay and disparage “scientific advances or public health interventions with the potential to genuinely improve the human condition. . . .”⁴⁸ And while all of the authors’ examples of manufactured uncertainty in litigation involve defendant corporations, the strategy is equally available to plaintiffs. Consider, for example, plaintiffs’ attorney Dov Apfel’s argument that in cerebral

43. *See id.* at S40-43.

44. *Id.* at S45. Scientific uncertainty, for example, is inevitable in designing disease prevention programs. Scientists cannot feed toxic chemicals to people, for example, to see what dose causes cancer; instead, we study the effects on laboratory animals, and we harness the “natural experiments” where human exposures have already happened. Both epidemiologic and laboratory studies have many uncertainties, and scientists must extrapolate from study-specific evidence to make causal inferences and recommend protective measures. Absolute certainty is rarely an option.

Id. at S40.

45. *See id.*

46. *See id.* at S44. The authors offer the example of litigation over Parlodel, a drug (to stop postpartum lactation) that allegedly caused heart attacks and strokes; “when several women sued the drugs manufacturers, claiming Parlodel was responsible for their illness, their cases were essentially thrown out of court for lack of scientific certainty.” *Id.* (citing J.P. Kassiner & J.S. Cecil, *Inconsistency in Evidentiary Standards for Medical Testimony*, 288 J. AM. MED. ASS’N 1382 (2002)).

47. *See* Michaels & Monforton, *supra* note 40, at S39.

48. *See id.*

palsy cases, the defendants rely upon “four essential criteria” (published by the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists) that must be met before cerebral palsy can be attributed to an interpretation event.⁴⁹

Defense experts offer the [four criteria] to support the proposition that most cases of cerebral palsy are caused by antepartum events (before labor and delivery). However, the data on which [the criteria] relies for this hypothesis is strongly contradicted.⁵⁰

Indeed, for Apfel, the “criteria provide a classic example of junk science,” and lawyers

representing brain-injured children must show the court that [the] exclusive criteria are based on a distortion of the literature and the available data and are nothing more than a litigation tool to prevent legitimate claims from being considered by the jury.⁵¹

Apfel quotes from *Koval v. Kincheloe*, where the trial judge refused to be bound by the criteria because

the parties’ arguments and authorities . . . suggest that there is disagreement in the medical community regarding whether cerebral palsy can be shown to have been caused by an intrapartum event of hypoxia and the factors which may indicate such causation.⁵²

The plaintiffs in *Koval* therefore succeeded in manufacturing enough uncertainty to challenge the science behind the criteria.

Without questioning at all either the flawed policy processes identified by Michaels and Monforton, or their concerns with “the organized movement to extend *Daubert’s* reach from the judiciary . . . into the federal rulemaking arena,”⁵³ it is difficult to imagine a violation of the bar’s minimalist ethical standards on the part of attorneys who “manufacture” sufficient uncertainty to win a *Daubert* reliability challenge. There may be problems with *Daubert*, or with judges, or with experts who claim that “the evidence is inconclusive” even when “genuine scientific uncertainty does

49. See Dov Apfel, *Keep ‘Junk Science’ out of Cerebral Palsy Cases*, TRIAL, May 2004, at 46.

50. *Id.* at 51.

51. *Id.* at 46, 48.

52. *Id.* at 53 (citing *Koval v. Kincheloe*, No. CIV-99-1524-T, 2001 U.S. Dist. LEXIS 24301, at *5 (N.D. Okla. 2001)).

53. Michaels & Monforton, *supra* note 40, at S44 (“The legal, economic, and political obstacles faced by regulators will increase dramatically when *Daubert*-like criteria are applied to each piece of scientific evidence used to support a regulation.”).

not exist,”⁵⁴ or even a personal ethical dilemma on the part of an attorney who does not want to help a corporation avoid liability for its products, but there’s no formal ethical problem unless the “manufacturing” attorney *knows* that a proffered expert is lying. As Steven Lubet explains, “our adversary system calls each attorney to make out the best case possible, and relies upon the judge to rule on disputed issues of law.”⁵⁵ Lubet also points out that attorneys should not take comfort in erroneous judicial rulings, or in an opposing counsel’s failure to object, if improper evidence is presented.⁵⁶ “Indeed, one of the justifications for the adversary system is precisely that counsel can be relied upon to perform this minimal level of self-policing.”⁵⁷ And it is minimal—unless the attorney knows that proffered evidence is improper, i.e., *knows* to be false or misleading, then no self-policing is required by the rules of professional conduct.

B. *Deconstruction of Evidence*

The term “deconstruction,” famously associated with the late Jacques Derrida and complex post-structuralist literary theory,⁵⁸ has a relatively simplistic meaning as a trial strategy. Pamela Hobbs, for example, in her linguistic analysis of the cross-examination of an expert physician in a medical malpractice case, demonstrates “how a cross-examining attorney attempts to systematically dismantle the conceptual evidence that has been

54. *See id.* at S43 (“[A] lucrative business of science for hire has emerged. Consultants in epidemiology, biostatistics, and toxicology are frequently engaged by industries facing regulation to dispute data used by regulatory agencies in developing public health and safety standards.”).

55. LUBET, *supra* note 3, at 294.

56. *See id.* at 295.

57. *Id.*

58. *See generally* Jack M. Balkin, *Deconstruction’s Legal Career*, 27 CARDOZO L. REV. 719 (2005). Balkin summarizes the origins of “deconstruction,” as “a series of techniques invented by Jacques Derrida, Paul de Man, and others to analyze literary and philosophical texts.” *See id.* at 719. Literary texts, for example, can be deconstructed to reveal the privileging of one pole of a conceptual opposition. *See id.* at 723. The technique

has obvious applications to legal and policy argument Given a doctrinal or theoretical distinction between *A* and *B*, the legal scholar . . . can argue that the justifications for the distinction undermine themselves, that categorical boundaries are unclear or at odds with the proffered justification, or that the boundaries shift radically as they are placed in new contexts of judgment.

Id. at 724. While such a technique suggests a far more complex and sophisticated sense of “deconstruction” than is typical in the discourse concerning challenges to scientific expertise, Balkin identifies deconstruction with the argument “that structures of social meaning are always unstable, indeterminate, nonpermanent and historically situated, constantly changing over time and accumulating new connections, associations and connections.” *See id.* at 720. To the extent that deconstruction of an expert’s evidence is intended to show that science and scientific practices are unstable, highly interpretive, historically situated, and dynamic, then the use of the term deconstruction in discussions of courtroom expertise is at least associated with deconstruction as a literary-theoretical and critical-legal technique.

erected on direct examination”⁵⁹ Her point is that such “deconstruction” is actually a “construction” of “a competing version, or re-analysis, of the evidence.”⁶⁰

A more sophisticated sense of “deconstruction” has been popularized by Sheila Jasanoff, who links the terms to the notion of the “construction” of science as understood by sociologists of science:

Through detailed descriptions of laboratory work and other forms of scientific practice, researchers have shown that the production of facts and bodies of knowledge is invariably embedded in a matrix of social interactions, agreements, and understandings. Scientific knowledge, according to these studies, must be communally certified to be legitimate Negotiation within and among scientific communities establishes the conventions for acceptable research These observations are frequently summarized in the statement that science is socially constructed.⁶¹

The fact that “consensus in science is usually provisional and hardly ever all-inclusive” facilitates courtroom battles of experts—scientific claims can be “pulled apart, or deconstructed” by an opposing scientific expert who sows doubts “about the reliability of particular scientific practices, the adequacy or completeness of scientific interpretive frameworks, the comparative saliency of different kinds of evidence, and the credibility of competing experts.”⁶² Likewise, cross-examination offers opportunities for deconstruction by “disclosing areas of uncertainty and interpretive conflict.”⁶³ Such efforts may be limited, however, by “a bias toward maintaining the institutional authority of science even in these orgies of deconstruction.”⁶⁴ Cross-examination, typically, selectively targets

inconsistencies in the witness’s testimony and . . . biases, such as ties to economic interests, that are considered important in commonsense tests of credibility. The technical practices of lawyering thus shore up a deeper commitment to the notion of science as a reservoir of determinable facts.⁶⁵

59. See Pamela Hobbs, *Tipping the Scales of Justice: Deconstructing an Expert’s Testimony on Cross-Examination*, 15 INT’L J. SEMIOTICS L. 411, 414 (2002).

60. See *id.*

61. See Sheila Jasanoff, *Research Subpoenas and the Sociology of Knowledge*, 59 LAW & CONTEMP. PROBS. 95, 98 (1996).

62. See *id.* at 100.

63. See JASANOFF, *SCIENCE AT THE BAR*, *supra* note 26, at 53.

64. See *id.*

65. See *id.* at 211.

The weaknesses of the individual expert, rather than the “structurally or institutionally conditioned contingences in scientific knowledge,” are the subject of scrutiny.⁶⁶

In any event, the strategy of “deconstruction” as described by Jasanoff has been identified as a potential problem in the policy context. Wendy Wagner, in an article on the perils of interest group valuations of science, argues that

[c]redible studies, traditional research methods, and respected researchers . . . may all be deconstructed if those judging or scrutinizing the science do not respect the vulnerable, socially constructed features of traditional research methods.⁶⁷

Wagner thus associates deconstruction with the disclosure of the “constructedness” of science insofar as studies are based upon communal and methodological conventions, consensus, assumptions and understandings.⁶⁸ Further, Wagner locates the danger of such revelations in decision-makers who are unaware of how science works and perhaps expect a more perfect “mirror of nature” or representation of physical reality.⁶⁹ Wagner likewise suggests that trial judges hearing a *Daubert* challenge might also lack knowledge of how science works,⁷⁰ but as

cross-examinations are as likely to lead to the deconstruction of credible research, it is not obvious that *Daubert* increases the risk of this counterproductive approach to reviewing science.⁷¹

One might ask where the harm lies in deconstruction by reference to science’s social aspects, since that strategy is equally available to both sides in a dispute. In the policy arena, Wagner suggests, deconstructing credible science that supports a needed regulatory program might make the program disappear. In the litigation context, however, each side presents evidence that can be deconstructed by the other side. Once the playing

66. *See id.*

67. *See* Wendy Wagner, *The Perils of Relying on Interested Parties to Evaluate Scientific Quality*, 95 AM. J. PUB HEALTH S99, S102 (Supp. July 2005).

68. *See id.*

69. *See* Jasanoff, *Research Subpoenas*, *supra* note 61, at 52.

Contradicting the logical positivists’ view that science simply mirrors nature, [the sociology of scientific knowledge] stresses the social factors that go into the production of scientific knowledge. The authority of scientific claims derives, according to the sociological account, not directly, from the representation of physical reality, but indirectly, from the certification of claims through a multitude of informal, often invisible, negotiations among members of relevant disciplines.

Id.

70. *See* Wagner, *supra* note 67, at S103-04 (“Judges . . . are not typically scientists, and we know from the large body of critical literature and a growing number of published opinions that they sometimes make decisions about science that are wrong.”).

71. *See id.* at S102.

field is leveled by showing the “constructed” aspects of all science, then in *Daubert* hearings and in cross-examinations attorneys can move on to other targets.

From an ethical perspective, it is difficult to see how deconstruction violates the rules of professional responsibility. Revealing the social aspects of science is not misleading in itself, although some idealistic judges might view the exercise as a revelation that such science is unreliable—if the science being offered by both sides is thereby called into question, that could be a tactical advantage for the party with a weaker scientific argument. That situation may signal a problem with judicial understanding of science, but there is not a violation of the prohibition against presenting evidence known to be false.

C. Demands for “Sound Science”

Defenders of pollution and dangerous products often call for policies and legal decisions to be based in “sound science.” This is a concept that is . . . rarely defined, but presumably signifies the opposite of whatever has been labeled as junk science.⁷²

Carolyn Raffensperger and Nancy Myers, after noting that the phrases “sound science” and “junk science” are “familiar to environmental advocates,” define “sound science” as “shorthand for a narrow definition of what counts as scientific evidence.”⁷³ Proponents demand reliance upon epidemiology, dismiss animal studies and “require very high levels of confidence before pronouncing a link between cause and effect,” but this narrow definition

leaves out vast areas of scientific knowledge and inquiry and many legitimate tools of investigation. Scientists themselves rely on animal studies, models, systematic field observations, and even casual observations as sources of knowledge—but “sound science” advocates tend to discredit such knowledge.⁷⁴

The authors are concerned that “the tort system is being eroded by an inappropriate reliance on overly stringent and specific scientific standards in court judgments.”⁷⁵ The *Daubert* criteria for reliability are blamed for encouraging, or at least permitting, “judges to sift through evidence and experts according to specific standards of ‘sound science.’”⁷⁶

Again, if such problems exist, they do not implicate attorneys with respect to the rules of professional conduct. Advocates who take advan-

72. Michaels & Monforton, *supra* note 40, at S43.

73. See Carolyn Raffensperger & Nancy Myers, *Detox for Torts: How to Bring Justice Back to the Tort System (Part I)*, THE NETWORKER (Sci. & Envtl. Health Network, Ames, Iowa), June 2003, at 3, available at http://www.sehn.org/Volume_8-3.html.

74. See *id.*

75. See *id.* at 4.

76. See *id.*

tage of a judge's preference for a narrow view of reliability cannot be blamed for misleading the court.

D. *Daubert Motions as a Trial Tactic*

A pre-trial *Daubert* hearing provides attorneys with the opportunity to engage in all of the previously discussed strategies—manufacturing uncertainty, deconstruction and demanding “sound science.” Because of the pejorative connotations surrounding each of these terms, there is suspicion that *Daubert* motions can be used as a trial strategy. Concerns have been raised about the *Daubert* opinion, including the charges that it disadvantages plaintiffs and criminal defendants, and that it favors parties with more resources than their opposition in litigation. Raffensperger and Myers, for example, argue that

[j]udges are routinely throwing out emerging, incomplete, or even highly suggestive (though not definitive) evidence and barring the plaintiff's scientific experts from testifying. The jury does not hear the testimony. This practice has inevitably favored corporate defendants.

Tort cases are now often dismissed in summary judgments as a result of these pretrial proceedings⁷⁷

Moreover, Wendy Wagner observes that parties

in civil cases are finding that *Daubert* challenges are expensive to mount and defend, a feature . . . that is a disadvantage to those with limited resources For example, plaintiff attorneys report that the added cost of *Daubert* hearings not only impacts their decisions about the types of expert evidence to introduce but also affects their decisions about which cases to take Similarly, . . . [b]ecause counsel for many criminal defendants provide representation either as a public service or through under-funded public defenders' offices, most criminal defendants will be unable to finance *Daubert* challenges.⁷⁸

To the extent that these perceived imbalances and resulting injustice have been caused by *Daubert*, the rules of professional conduct are not going to help.

Hypothetically, imagine a defense attorney representing a wealthy client (in a lawsuit) who hires an expert who states confidentially that in his opinion, the plaintiff's experts will present reliable and conventionally valid scientific testimony, *and* there is no reliable and conventionally valid science available to challenge the plaintiff's claim. If the defense attorney nevertheless brings a *Daubert* motion to exclude the plaintiff's expert testi-

77. *Id.* at 6.

78. Wagner, *supra* note 67, at S103.

mony, purely as a matter of trial strategy, and asks the defense expert to manufacture some uncertainty in an expert report, help defense counsel deconstruct the plaintiff's expert and testify as to some unreasonably high standard for "sound science" that even the plaintiff's expert cannot meet, has there been an ethical violation of the rules of professional conduct? That ought to be the easy case, because we presume that defense counsel *knows* that a claim of unreliability is *false* and that there is no good faith basis for the motion. But even that analysis is subject to question, because it depends upon what the defense expert says in response to the request to help with the motion. If the response is, "I'll do it, but it will all be lies," then defense counsel cannot ethically proceed with the *Daubert* motion because there is knowledge of falsity. On the other hand, if the expert responds, "I'll do it, because scientific knowledge is often mistaken and never certain, and because there are numerous unproven assumptions and methodological conventions underlying the plaintiff's expert's conclusions; and as a scientist, I think we should demand very high levels of proof before pronouncing causal links." Now, even if defense counsel doubts the truthfulness of such statement, advocates do not vouch for their experts and, under the duty of competence, should do the best they can with whatever "shaky" evidence is available.

If the defense attorney in the above hypothetical prevails in the motion, it may be because the "judicial community has displayed a woeful ignorance of scientific uncertainty."⁷⁹ Indeed,

a judge who does not [a] have expertise in dealing with scientific uncertainty, [b] agree with a particular interpretation, [c] understand the full value or limit of currently used methodologies, or [d] recognize the hidden assumptions, biases, or strengths of scientific inferences, may reach an incorrect decision on the reliability. . . of credible evidence⁸⁰

Or it may be because judges interpret the Federal Rules of Evidence as "requiring . . . them to apply strict standards to the kind of evidence presented in courts."⁸¹ Finally, if a court "is unaware or unconcerned about the necessity of . . . constructed features of science, attacks against the accepted conventions are likely to succeed."⁸² In any event, taking advantage of the *actual* conservatism (with respect to conclusions) and uncertainty of scientists, the *actual* constructedness of science, and the *actual* interpretations by judges of their gate-keeping duties would seem to be the opposite of bad faith or presenting evidence known to be false.

79. See Raffensperger & Myers, *supra* note 73, at 4.

80. Ronald L. Melnick, *A Daubert Motion: A Legal Strategy to Exclude Essential Scientific Evidence in Toxic Tort Litigation*, 95 AM. J. PUB. HEALTH S30, S30 (Supp. July 2005).

81. See Raffensperger & Myers, *supra* note 73, at 6.

82. Wagner, *supra* note 67, at S102.

Of course, the idea of taking advantage of a judge who does not understand *Daubert* or science is unseemly—recall Steven Lubet’s admonition that attorneys should not take comfort in erroneous judicial rulings, and that “a minimal level of self-policing” is expected of counsel in such situations.⁸³ On the other hand, Monroe Freedman has argued that lying to judges is ethically justifiable in some limited situations.⁸⁴ Freedman offers the examples of a judge who improperly asks criminal defense counsel, “Did he do it or didn’t he?,” and of a judge who confers with counsel separately, in a compulsory settlement conference in a civil suit, and inquires about a client’s minimum and maximum settlement figures.⁸⁵ For purposes of his argument, Freedman predicts that the first judge would assume guilt if counsel replied, “I cannot ethically answer that question” or “The defendant pleaded not guilty” or “You should not ask that question;” similarly, if the attorney explained to the second judge that his or her reply should not be taken as an assertion of a material fact (as in settlement negotiations with an adversary), Freedman assumes that the judge would view the reply as unresponsive and could retaliate in ways that could be highly prejudicial toward the attorney’s client.⁸⁶ Relying on the “Scope” section of the A.B.A. Rules, which confirms that the model rules “do not. . . exhaust the moral and ethical considerations that should inform a lawyer,” Freedman maintains that duties to the client, in the face of a judge who abuses his or her authority, may require “the lawyer to violate [the] salutary disciplinary rules” against fraud on the tribunal and deceit in general.⁸⁷

By comparison, imagine a trial judge who, instead of abusing his or her authority, displays such “a woeful ignorance of scientific uncertainty”⁸⁸ that an opposing expert can be easily attacked in a *Daubert* hearing by highlighting the constructed features of science. Assuming that opposing counsel cannot educate the judge, what is wrong with such an attack? The “lie,” or at least misrepresentation, is the pejorative implication of “constructedness,” or the impression that the expert has been discredited. Nevertheless, I doubt that the attorney attacking the opposing expert has violated the rule against fraud on the tribunal or the rule against deceit in general, because the attorney has presumably revealed only the *actual* constructedness of science, and the attorney’s responsibility is to help a client, not to educate the judiciary.

83. For a further discussion, see *supra* note 57 and accompanying text.

84. See Monroe H. Freedman, *In Praise of Overzealous Representation: Lying to Judges, Deceiving Third Parties, and Other Ethical Conduct*, 34 HOFSTRA L. REV. 771, 773-77 (2006).

85. See *id.* at 773-80.

86. See *id.* at 773.

87. See *id.* at 782 (quoting MODEL RULES OF PROF’L CONDUCT Scope, at 16 (2004); *id.* at 772 (discussing MODEL RULES OF PROF’L CONDUCT R. 3.3(a)(1) & 8.4(c), which respectively prohibit fraud on tribunal and conduct involving dishonesty, fraud, deceit or misrepresentation).

88. For a further discussion, see *supra* note 79 and accompanying text.

III. INTERDISCIPLINARY ETHICS: THE ANALOGY TO LAWYER COLLABORATION WITH SOCIAL WORKERS

Some law school clinicians and social workers have identified the benefits of interdisciplinary law practice as well as the ethical challenges of collaboration between professionals from different fields.⁸⁹ Specifically, the “typical unfettered zeal” of an attorney seems to conflict with “the social worker’s commitment to broader social interests,” although the perceived tension between the two may be exaggerated.⁹⁰

While lawyers and social workers may initially approach their work from different starting points, . . . the collaboration between the two professions offers the client the potential for an enhanced exploration of the client’s goals and options during a comprehensive legal counseling session undertaken before the lawyers embark on their zealous advocacy with third parties.⁹¹

For example, if a married mother of two children wants a divorce and, out of spite, wants custody of one of the children who has a close relationship with the father, her lawyer would (typically) zealously pursue her desired *outcome*.⁹² A social worker involved in the case would (typically) pursue a client’s “best interests and [be] more attentive to the needs of others around the client.”⁹³ The tension between the two orientations might appear to be unworkable, but good lawyering is not exhausted by the notion of zealous advocacy—A.B.A. Model Rule 2.1 requires that lawyers “render candid advice,” and allows lawyers to refer to “moral, economic, [and] social . . . factors . . . relevant to the client’s situation.”⁹⁴ Indeed, a lawyer who neglects to address a client’s spiteful goals, which may not be in the best interest of her child, could be considered ineffective.⁹⁵

Moreover,

attorneys have long recognized that they are capable of good-intentioned, effective manipulation. The problem is not new or unique to interdisciplinary work. Thus, while collaboration might increase the risk of attorney manipulation, it is not its root cause.⁹⁶

89. See Alexis Anderson, Lynn Barenberg, & Paul R. Trembly, Professional Ethics in Interdisciplinary Collaboratives: Zeal, Paternalism and Mandated Reporting, 13 CLINICAL L. REV. 659 (2007).

90. See *id.* at 663.

91. *Id.* at 664-65.

92. See *id.* at 666.

93. See *id.* at 670.

94. See *id.* at 676.

95. See *id.* at 676-77.

96. *Id.* at 690.

Some, therefore, conclude that complementary professional orientations and interdisciplinary legal counseling can be “richer and more comprehensive” than simply championing a client’s initially chosen goal.⁹⁷

Perhaps this model has some applicability to the collaboration between lawyers and scientists in a lawsuit. The professional orientation of a scientist is not to be an advocate, and the scientist has a commitment to interests beyond the lawsuit, such as to scientific accuracy. In some cases, an expert may not be able to offer the unqualified opinion that a zealous lawyer and his or her client want. If the lawyer and client decide to drop the case, their interdisciplinary engagement has arguably enriched their cause by showing them they should not waste their time. If, in the alternative, the lawyer interviews other experts until he or she finds one who will support the claim, the lawyer may reasonably believe that the experts testifying will be shaky and perhaps even false. A.B.A. Rule 3.3(a)(3) gives a lawyer the discretion to refuse to offer such testimony, for strategic reasons—impliedly because the expert will not help, and may hurt, the client’s case.⁹⁸ Again, the client’s case has arguably been enriched by the (failed) interdisciplinary engagement, and the potential for more effective lawyering has been realized. Conversely, if a lawyer takes advantage of the ethical permissions, in the name of advocacy, to present shaky evidence, the representation may be less effective. There are good reasons, therefore, for tempering zealous advocacy in some cases.

IV. CONCLUSION: NOTHING TO BE PROUD OF

The view that the rules of professional conduct require attorneys to police the reliability of science in the courtroom, albeit compelling on moral grounds or with reference to social justice, is a minority position that almost tends toward civil disobedience. We value the “unfairness” of trial strategies when they represent zealous advocacy, because we believe in the fairness of a genuinely adversarial process.⁹⁹

In the policy arena, opponents of regulation based on scientific studies can offer re-analyses of the data supporting those studies, and this “sometimes results in the existence of what appear to be equal and opposite studies, encouraging policymakers to do nothing in the face of what appears to be contradictory findings.”¹⁰⁰ Trial attorneys can do the same

97. See *id.* at 717.

98. For a further discussion, see *supra* note 2 and commentary following MODEL RULES OF PROF’L CONDUCT R. 3.3.

99. See JASANOFF, SCIENCE AT THE BAR, *supra* note 26, at 52. “Defenders of the adversary process claim that legal decisions are fairest when the two parties argue ‘as unfairly as possible, on opposite sides, for then it is certain that no important consideration will altogether escape notice.’” *Id.* (citing Peter Brett, *The Implications of Science for Law*, 18 MCGILL L.J. 170, 186 (1972) (quoting Lord Thomas Babington Macaulay)).

100. See Michaels & Monforton, *supra* note 40, at S45.

thing, as one of the lawyering techniques offered in trial advocacy training manuals is the “disagreement of experts” move:

Frequently you will have little ammunition to reduce the effectiveness of the [opposing] expert’s testimony. In these situations the best you can realistically . . . achieve is to level the playing field. Show that the experts on both sides are essentially equal and, in effect, cancel themselves out This is always a useful approach whenever the other side’s experts are either more impressive or more numerous.¹⁰¹

It is perhaps unfortunate that during a trial, relatively equal numbers of experts are pitted against each other on the witness stand, giving the possibly false impression that opinion in the larger scientific community is also similarly divided.¹⁰²

But we do not blame the attorneys for being unethical—we trust those attorneys who are negatively affected to correct false impressions, and we trust judges and juries not to be misled by false impressions.

Those who complain about the dire effects of manufacturing uncertainty, deconstruction of credible science and demands for “sound science” almost always identify the source of their effectiveness in an unrealistic or idealized vision of science on the part of judges (or policymakers). For Michaels and Monforton, *Daubert* allows judges to demand a level of certainty that science cannot provide, which allows defendants to magnify and exploit the commonplace uncertainties of science and convince judges “to exclude credible evidence and scientists from court cases.”¹⁰³ For Wagner, deconstruction succeeds because judges “do not respect the vulnerable, socially constructed features of traditional research methods?”¹⁰⁴ (It bears mention that deconstruction by revealing the socially-constructed aspects of science may *not* work if a judge idealizes science, because the judge simply may not believe that scientific claims are certified “through a multitude of informal, often invisible, negotiations among members of relevant disciplines” rather than by unmediated access to physical reality; in that case, deconstruction may still succeed by attacking “the personal credibility of witnesses,” and revealing “biases, such as ties to economic interests.”)¹⁰⁵ And for Raffensperger and Myers, appeals to “sound science” only work because some judges have a simplistic vision of scientific evidence and expertise that is “at odds with scientific convention.”¹⁰⁶ Thus we can blame judges who have a pollyannaish view of sci-

101. See THOMAS A. MAUET, TRIAL TECHNIQUES 391 (5th ed. 2000).

102. JASANOFF, SCIENCE AT THE BAR, *supra* note 26, at 55.

103. See Michaels and Monforton, *supra* note 40, at S40, S44.

104. See Wagner, *supra* note 67, at S102.

105. See JASANOFF, SCIENCE AT THE BAR, *supra* note 26, at 52, 211.

106. See Raffensperger & Myers, *supra* note 73, at 6.

ence; we can also blame conservative politicians,¹⁰⁷ the tobacco (or lead, or chemical, or asbestos) industries,¹⁰⁸ or the American Enterprise Institute,¹⁰⁹ or the junk science movement,¹¹⁰ or unethical experts,¹¹¹ or anyone else who we might believe is responsible for popularizing an idealized vision of scientific certitude; and we can even blame lawyers for doing their jobs—but we cannot justifiably bring formal ethical complaints unless lawyers know they are misleading the court with false evidence.

107. See Chris Mooney, *Sucker Punch: How Conservatives Are Trying to Use a Conflict over Obscure Fish to Gut the Science Behind the Endangered Species Act*, LEGAL AFFAIRS, May/June 2004, at 23.

108. See Michaels & Monforton, *supra* note 40, at S40-41.

109. See Raffensperger & Myers, *supra* note 73, at 2.

110. See Michaels & Monforton, *supra* note 40, at S43.

111. See *id.*