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## EXPERT WITNESS TESTIMONY: BACK TO THE FUTURE

L. Timothy Perrin\*

### I. INTRODUCTION

Expert witnesses are at once detested and treasured. The scorn is significant because of the increasingly prominent role experts play in both civil and criminal litigation. Experts are seen as mercenaries,<sup>1</sup> prostitutes<sup>2</sup> or hired guns,<sup>3</sup> witnesses devoid of principle who sell their opinions to the highest bidder. Experts are not impartial professionals who explain difficult concepts to the trier of fact.<sup>4</sup> Rather, experts become advocates for the side who hired them.<sup>5</sup> The consequences of this role

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1. *State ex rel. Lichter v. Clark*, 845 S.W.2d 55, 61 (Mo. Ct. App. 1992)..

2. See GERRY SPENCE, WITH JUSTICE FOR NONE 272 (1989); Samuel P. Gross, *Expert Evidence*, 1991 WIS. L. REV. 1113, 1115 (1991) (“[L]awyers and experts alike see expert witnesses . . . as whores.”).

3. See *Virginia Tech Found. Inc. v. Family Group Ltd. V*, 666 F. Supp. 856, 858 (W.D. Va. 1987).

4. See Michael McCloskey et al., *The Experimental Psychologist in Court: The Ethics of Expert Testimony*, 10 LAW & HUM. BEHAV. 1, 4-5 (1986) (noting that current practice of experimental psychologists testifying as experts is closer to advocacy than impartial education); see also Mark S. Frankel, *Ethics and the Forensic Sciences: Professional Autonomy in the Criminal Justice System*, 34 J. FORENSIC SCI. 763, 764-65 (1989) (“Historically, the law has defined the role of the expert as that of impartial educator asked to assist the trier of fact so that the latter can decide questions which may depend on specialized knowledge.”).

5. See Terry O'Reilly, *Ethics and Experts*, 59 J. AIR L. & COM. 113, 116 (1993) (“[T]here are experts who sincerely believe that it is their job to be advocates and to make no attempt to be fair.”); Elizabeth F. Loftus, *Experimental Psychologist as Advocate or Impartial Educator*, 10 LAW & HUM. BEHAV. 63, 70-77 (1986) (adopting a Darwinian approach to expert testimony: “Each individual can decide what strategy best suits him and her, and let the survival of the fittest expert prevail.”). This is apparently not a new problem. See HENRY WADE ROGERS, *THE LAW OF EXPERT TESTIMONY* 94-95, 464-65 (2d ed. 1891) (arguing that expert witnesses are “zealous partisans” deserving of little weight).

change are not desirable: experts testify to matters beyond their expertise, render opinions that are unreliable, speculative or outside what the experts would be willing to say in their own disciplines, and misrepresent the certainty of many scientific principles they rely on and conclusions they reach.<sup>6</sup> Unfortunately, experts are rarely held accountable for their errors on the witness stand:<sup>7</sup> they testify without risk of perjury prosecutions<sup>8</sup> or sanctions from their professional peers.<sup>9</sup> The disdain for experts comes from all quarters: judges,<sup>10</sup> lawyers,<sup>11</sup> com-

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6. See *Eymard v. Pan American World Airways*, 795 F.2d 1230, 1233-34 (5th Cir. 1986) (Many experts "present studies and express opinions [in the courtroom that] they might not be willing to express in an article submitted to a refereed journal of their discipline.").

7. See *The Use and Misuse of Expert Evidence in the Courts*, 77 JUDICATURE 68, 71 (1993) (A panel discussion, wherein Dr. Thomas N. Thomas, a psychiatrist, stated that "experts testify to juries without consequence. The transcript will not be presented to the Board of Medical Examiners and no one will confront the expert about his testimony."); Gross, *supra* note 2, at 1178.

8. Gross, *supra* note 2, at 1113; Jeremial M. Long, *Discovery and Experts Under the Federal Rules of Civil Procedure*, 39 WASH. L. REV. 665, 678 (1964); see John Van Voorhis, *Expert Opinion Evidence*, 13 N.Y.L. F. 651, 657 (1967) (recounting a professional expert "who knew that he could be prosecuted for perjury in deliberately misstating facts but that this could seldom be demonstrated in the case of erroneous opinions.").

9. See Gross, *supra* note 2, at 1178 ("[W]hat an expert says in court is generally invisible and inaudible in her own professional world."); O'Reilly, *supra* note 5, at 114 ("It is pointless to rely upon the professional ethics of experts, even where such a code exists, because most such codes have no effect and are often politely disregarded.").

10. See, e.g., *Eymard*, 795 F.2d at 1233-34 (stating that some members of the academy give opinions in court that they would never publish in a refereed journal and experts sell their opinions to the highest bidder); *Glover v. United States*, 708 F. Supp. 500, 501 (E.D.N.Y. 1989) ("[T]he most pernicious aspect of personal injury litigation is the readiness with which 'expert' witnesses render opinions on matters on which they have no competence."); *Virginia Tech Found. Inc. v. Family Group Ltd.* 666 F. Supp. 856, 858 (W.D. Va. 1987) ("The experts . . . did more to obfuscate the problem than . . . to clarify it. . . . [T]he hired guns did what they were hired to do."); *Clement v. Griffin*, 634 So. 2d 412, 426 (La. Ct. App. 1994) (It is "almost common knowledge that many experts were available to the highest bidder; in other words, they will testify favorably to whomever pays for their services"); *State ex rel. Lichtor v. Clark*, 845 S.W.2d 55, 61 (Mo. Ct. App. 1992) (There is widespread concern about the use of "mercenary" experts because they are "likely to be a greater hindrance to a fair trial than a biased lay witness.").

11. See, e.g., SPENCE, *supra* note 2, at 270. ("Testifying has become not only an art but big business for many so-called scientists. . . . The swearing-for-hire business is immense and indispensable to nearly every case. . . ."); William G. Burd & Madelyn S. Lozano, *Experts: Is the End Near for Their Use?* 59 J. AIR L. & COM. 77, 78 (1993) (noting the misuse and abuse of expert testimony in the judicial process).

mentators,<sup>12</sup> politicians,<sup>13</sup> the media,<sup>14</sup> and even experts themselves.<sup>15</sup>

Yet, due to liberalized rules of admission for expert testimony,<sup>16</sup> the explosion of scientific knowledge, and the creation of new claims and defenses and expansion of others,<sup>17</sup> expert testimony is used more today than ever before.<sup>18</sup> Lawyers seem incapable of trying a lawsuit without one or more experts. They pay the expert exorbitant sums of money to testify<sup>19</sup> to what-

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12. See, e.g., PETER W. HUBER, *GALILEO'S REVENGE* 17-20 (1991) (discussing the problem of unreliable scientific testimony and partisan experts); Richard A. Epstein, *A New Regime for Expert Witnesses*, 26 VAL. U. L. REV. 757, 758 (1992) (stating that bias and coaching are serious problems with expert witness practice); Michael H. Graham, *Expert Witness Testimony and the Federal Rules of Evidence: Insuring Adequate Assurance of Trustworthiness*, 1986 U. ILL. L. REV. 43, 45 (1966) (arguing that expert witnesses are subject to strong bias in favor of party who calls them); James W. McElhaney, *Trial Notebook: Fixing the Expert Mess*, 20 LITIG., Fall 1993 53, 53-55 (claiming that problems with unreliable expert testimony necessitate reform of the rules); see generally Gross, *supra* note 2, at 1115 (arguing that experts have long been abused by any number of "unflattering descriptions").

13. See, e.g., Deborah R. Hensler, *Taking Aim at the American Legal System: The Council on Competitiveness's Agenda for Legal Reform*, 75 JUDICATURE 244, 247 (1992) (reprinting the reforms proposed by then Vice-President Dan Quayle's Council on Competitiveness regarding the use of expert witnesses and other matters).

14. See, e.g., Michael Mason, *Trial and Error Courtroom Experts May Have All the Answers, But That Doesn't Mean They're Telling the Truth*, S.F. CHRON., Feb. 20, 1994, at 5 ("[E]xpertise has ballooned into an industry without quality control. For every reputable researcher, there's a quack peddling junk science, seducing judges and juries with an air of infallibility."); Walter Olson, *The Case Against Expert Witnesses*, FORTUNE, Sept. 25, 1989, at 133, 135 (stating that expert witnesses are willing to testify to anything and they tend to testify more if they are partisan).

15. See Gross, *supra* note 2, at 1115 ("[I]n many professions service as an expert witness is not generally considered honest work.")

16. See *infra* text accompanying notes 30-34.

17. See Faust F. Rossi, *Modern Evidence and the Expert Witness*, 12 LITIG., Fall 1985, at 18 (asserting that inflation in the use of experts is the result of (1) the growth of complex litigation, (2) the explosion of technology and science, (3) the increasing creativity of advocates, and (4) liberality of the rules of evidence).

18. See Michael D. Green, *Expert Witnesses and Sufficiency of Evidence in Toxic Substances Litigation: The Legacy of Agent Orange and Bendectin Litigation*, 86 NW. U.L. REV. 643, 670 n.123 (1992) (stating that the number of experts regularly testifying in Cook County, Illinois increased 1500% (from 188 to 3100) between 1974 to 1989); Anne K. Smith, *Opinions With a Price*, 113 U.S. NEWS & WORLD REP., July 20, 1992, at 64 (reporting that demand for experts from the Technical Advisory Service for Attorneys, a private expert referral service, has more than tripled in the last ten years).

19. See Daniel W. Shuman et al., *An Empirical Examination of the Use of Expert Witnesses in the Courts—Part II: A Three City Study*, 34 JURIMETRICS J. 193, 205 (1994) (showing that the average fee charged by expert witnesses was \$185 an hour,

ever opinion is necessary to avoid summary judgment or prevail on the merits, regardless of how farfetched the claim or defense may be.<sup>20</sup> Judges, for their part, have traditionally deferred to experts in deciding whether to admit or exclude their testimony, taking a remarkably passive role in the entire process,<sup>21</sup> while steadily expanding the areas considered appropriate for expert testimony.<sup>22</sup> The contrast could not be more stark: the system batters experts for their partisanship and lack of reliability, while at the same time the expert is championed by lawyers, and, at times, even rewarded by the system.

In the midst of this confusion, everyone agrees on one point: there must be a better way.<sup>23</sup> Yet, despite the many proposed reforms, Rules 702 through 706 of The Federal Rules of Evidence, which govern the admission of expert witness testimony in federal courts, remain basically the same today as when the rules were enacted twenty years ago.<sup>24</sup> Clearly, the admission

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with a range from \$50 to \$500 an hour). A previous study by the same researchers found an average fee of \$258 an hour with a range up to \$1000 an hour. See Anthony Champagne et al., *Expert Witnesses in the Courts: An Empirical Examination*, 76 JUDICATURE 5, 6-7 (1992).

20. Margaret A. Berger, *A Relevancy Approach to Novel Scientific Evidence*, 26 JURIMETRICS J. 245, 247 (1986) ("It is quite apparent that experts are readily available to present essentially frivolous theories in an effort to defeat summary judgment motions, or to create reasonable doubt.").

21. See L.L. Plotkin, *Recent Development: Brock v. Merrell Dow Pharmaceuticals, Inc.: What is the Court's Role in Evaluating Expert Testimony?* 64 TUL. L. REV. 1263, 1264 (1990) ("[M]ost courts [have] passively accepted expert testimony without examining or challenging the expert's data or reasoning process. . . ."). The zenith of judicial deference is likely marked by *Ferebee v. Chevron Chem. Co.*, 736 F.2d 1529 (D.C. Cir.), cert. denied, 469 U.S. 1062 (1984). "[O]n questions . . . which stand at the frontier of current medical and epidemiological inquiry, if experts are willing to testify [to causation], it is for the jury to decide whether to credit such testimony." *Id.* at 1534.

22. See, e.g., *Sherrod v. Berry*, 827 F.2d 195, 206 (7th Cir. 1987) (admitting expert testimony on hedonic damages), *vacated and remanded on other grounds*, 856 F.2d 802 (7th Cir. 1988) (en banc); *State v. Alberico*, 861 P.2d 192 (N.M. 1993) (admitting psychological testimony that alleged rape victims' suffered post-traumatic stress disorder consistent with sexual abuse); *Browning-Ferris Indus. v. Lieck*, 845 S.W.2d 926 (Tex. Ct. App. 1992) (admitting expert testimony about defendant's cash flow to prove the proper amount of punitive damages).

23. See, e.g., Bert Black et al., *Science and the Law in the Wake of Daubert: A New Search for Scientific Knowledge*, 72 TEXAS L. REV. 715, 719 (1994) ("[C]ourts can and must do better" in controlling the use of scientific expert testimony.); Gross, *supra* note 2, at 1117 ("We ought to be able to do better" in using expert evidence.).

24. Rule 704 was amended in 1984 by the addition of subdivision (b), which provides in pertinent part:

of testimony from partisan expert witnesses presents inordinately difficult and perhaps even intractable problems for the adversary system.<sup>25</sup> The combination of zealous advocates, paid experts, liberal rules of admission, and untrained jurors raises the question of whether the adversary system produces a reliable and accurate evaluation of expert witness testimony, and whether it is capable of doing so. The United States Supreme Court, in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,<sup>26</sup> gave a firm and clear answer to that question,<sup>27</sup> concluding that the standard provided by Rule 702 of the Federal Rules of Evidence and the tools provided by the adversary system are sufficient means of attacking "shaky evidence," including expert testimony that barely passes muster.<sup>28</sup> The question, however, is not easily answered. To find the answer, one must engage in a reanalysis of the roles of judges, lawyers, expert witnesses, and jurors in our adversary system, as well as a careful balancing of important social goals and policies.

This article begins to undertake that task. It concludes that the adversary system performs poorly in producing a fair and accurate evaluation of expert witness testimony by the jury and that reform is necessary. Part II of this article will lay out the context by briefly exploring Rules 702 through 705 of the Federal Rules of Evidence and the standards for admitting expert testimony. Part III will discuss three problems presented by expert testimony: the partisanship of expert witnesses, the in-

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No expert witness testifying with respect to the neutral state or condition of a defendant in a criminal case may state an opinion or inference as to whether the defendant did or did not have the mental state or condition constituting an element of the crime charged or of a defense thereto.

FED. R. EVID. 704(b). Otherwise, the Rules have not been substantively amended since their enactment.

25. *Cf. Eymard v. Pan American World Airways*, 795 F.2d 1230, 1233 (5th Cir. 1986) ("Basic policy questions that affect the very nature of a trial lie behind decisions to receive expert testimony."); MCCORMICK ON EVIDENCE § 17, at 26 (John W. Strong ed., 4th ed. 1992) (Application of the adversary system of trial "in the procurement and presentation of expert testimony is widely considered a sore spot in judicial administration.").

26. 113 S. Ct. 2786 (1993).

27. *Id.* at 2798.

28. *Id.* The Court noted three specific aspects of the adversarial system that are the traditional protections: cross examination, presentation of contrary evidence, and instruction of the jury on the burden of proof. *Id.* (citing *Rock v. Arkansas*, 483 U.S. 44, 61 (1987)).

adequacy of the safeguards of the adversary system, and the ability of the ill-equipped lay jury to weigh and evaluate expert witness testimony. Part IV will propose important changes to the use of expert testimony: first, a call to lawyers to take the higher ground by ending the misuse and abuse of experts; and second, revision of Rule 702 to expressly require a showing by the proponent of expert testimony that the testimony is reliable, and if only marginally reliable, is also needed by the jury.

## II. EXPERT WITNESS TESTIMONY UNDER THE FEDERAL RULES OF EVIDENCE: A PRICELESS TREASURE

Despite their many vitriolic complaints about expert witnesses, lawyers treat them like a priceless treasure.<sup>29</sup> Under the Federal Rules of Evidence, perhaps they are. Rules 702 through 705 have a definite "liberal thrust"<sup>30</sup> that is consistent with the structure of the Rules as a whole.<sup>31</sup> In fact, the Rules are so permissive that one court has derisively warned of the "let it all in" approach that seems to govern expert testimony.<sup>32</sup> Thus, although the Federal Rules of Evidence are not the sole reason for the high value placed on experts and their ever-increasing use,<sup>33</sup> they are the primary one.<sup>34</sup> The Rules provide experts with powerful testimonial tools, such as a minimal

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29. Cf. Mason, *supra* note 14, at 6 ("A persuasive witness is a pearl, and lawyers don't always check thoroughly for flaws.")

30. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 113 S. Ct. 2786, 2794 (1993); see 3 JACK B. WEINSTEIN & MARGARET A. BERGER, *WEINSTEIN'S EVIDENCE*, 702-36 (1995) [hereinafter *WEINSTEIN'S EVIDENCE*] (The Federal Rules place an emphasis on "liberalizing expert testimony."); Lee N. Miller, *Cross Examination of Expert Witnesses: Dispelling the Aura of Reliability*, 42 U. MIAMI L. REV. 1073, 1084 (1988) ("The liberal approach of the Federal Rules of Evidence has led the majority of courts to allow an expert to testify to virtually anything.")

31. See FED. R. EVID. 402 (providing that all relevant evidence is admissible except as excluded by the Constitution, Act of Congress, other Federal Rules, or the Supreme Court).

32. See *Eymard v. Pan American World Airways*, 795 F.2d 1230, 1234 (5th Cir. 1986). *But see Daubert*, 113 S. Ct. at 2794-95 (A liberal standard under the Federal Rules does not mean "that the Rules themselves place no limits on the admissibility of purportedly scientific evidence.")

33. See *supra* notes 17-19 and accompanying text.

34. See Rossi, *supra* note 17, at 18; see also Green, *supra* note 18, at 668-70 (identifying the expansion of liability theories and the liberalization of the Federal Rules of Evidence as the causes of the increase of expert testimony).

standard of qualification,<sup>35</sup> almost limitless permissible areas of testimony, the use of opinion testimony, the ability to state an opinion that encompasses the ultimate issue and to state it before giving the basis of the opinion, and the right to rely on inadmissible evidence in forming opinions.<sup>36</sup> Experts not only explain the evidence, but by the opinions they render they also are a source of evidence for the jury.<sup>37</sup> These tools make experts important witnesses in every case. The extensive testifying experience of many experts makes them not only powerful, but also persuasive witnesses, capable of making or destroying a case.<sup>38</sup>

### A. *The Boundaries of Expert Testimony*

#### 1. Qualifications

Rule 702 is generous in its definition of an expert.<sup>39</sup> It provides that individuals may be qualified to testify as an expert by their "knowledge, skill, experience, training, or education."<sup>40</sup> The standard is not difficult to satisfy.<sup>41</sup> "Almost everyone qualifies as an expert in one field or another."<sup>42</sup> It is rare for a trial court to exclude an expert witness because of a failure to qualify, and rarer yet for an appellate court to disturb the trial judge's decision.

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35. See FED. R. EVID. 702.

36. See FED. R. EVID. 703-705.

37. See Gross, *supra* note 2, at 1140. Professor Gross observes that one of the major functions of experts is to "create new evidence in the form of expert opinions." *Id.* In reaching the opinions, the expert may generate additional observations through the conduct of studies or experiments. *Id.* This allows experts to manipulate the evidence and their opinions in unlimited ways. *See id.* This aspect of freedom or open-endedness is a powerful feature of expert testimony. *See id.*

38. Cf. William S. Bailey, *Expert Witnesses in the Sound-Bite Era*, 29 TRIAL, Feb. 1993, at 65, 69 ("Winning or losing at trial depends largely on the persuasiveness of experts. . . . If you win the battle of the experts, you are also likely to win the war.").

39. See FED. R. EVID. 702.

40. *Id.*

41. See JAMES W. MCELHANEY, MCELHANEY'S TRIAL NOTEBOOK 276 (3d ed. 1994) ("In Baltimore they say, 'Anyone with a mustache can be an expert.'").

42. Graham, *supra* note 12, at 73.



Rule 702's definition includes so-called "skilled witnesses," such as bankers, landowners, or car mechanics,<sup>43</sup> as well as witnesses with no formal education, but substantial experience,<sup>44</sup> or conversely, witnesses with substantial formal education, but no practical experience.<sup>45</sup> The judge decides the issue as a preliminary question under Rule 104(a)<sup>46</sup> based on a preponderance of the evidence standard.<sup>47</sup> The central focus of the inquiry is whether the witness's testimony "will assist the trier of fact to understand the evidence or to determine a fact in issue."<sup>48</sup> Any lawyer who has sought to exclude a witness from testifying as an expert based on lack of qualification knows the court's response to the request all too well: "it goes to the weight, Counsel."<sup>49</sup>

## 2. Subject Matter

Before an expert testifies, the proponent of the evidence must show that the subject matter is appropriate for expert testimony.

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43. See FED. R. EVID. 702 advisory committee's note.

44. See, e.g., *T-Bill Option Club v. Brown & Co. Sec. Corp.*, 23 F.3d 410 (7th Cir. 1994) (allowing an expert to testify about options and margin rules because of his experience in the industry but despite absence of formal education in the field); *United States v. Hernandez-Palacios*, 838 F.2d 1346, 1350 (5th Cir. 1988) (stating that expert testimony regarding the conditions of two buses altered for smuggling marijuana from Mexico was properly received from a bus mechanic with 30 years of experience).

45. See, e.g., *Lavespere v. Niagara Mach. & Tool Works*, 910 F.2d 167, 176-77 (5th Cir. 1990), *cert denied*, 114 S. Ct. 171 (1993) (allowing an expert with a doctorate in mechanical engineering to be qualified to testify about the defective design of a press brake even though he had never designed one).

46. 3 WEINSTEIN'S EVIDENCE, *supra* note 30, at 702-52. Rule 104(a) provides, in pertinent part:

Preliminary questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court, subject to the provisions of subdivision (b).

FED. R. EVID. 104(a).

47. See *Bourjaily v. United States*, 483 U.S. 171, 176 (1987).

48. FED. R. EVID. 702; see *Kopf v. Skyrn*, 993 F.2d 374, 377 (4th Cir. 1990) (Under Rule 702, "helpfulness to the trier of fact is [the] 'touchstone.'"); 3 WEINSTEIN'S EVIDENCE, *supra* note 30, at 702-60.

49. See STEVEN LUBET, MODERN TRIAL ADVOCACY ANALYSIS AND PRACTICE 197 (1993) (stating that the typical response of a judge to a motion to exclude an expert from testifying is to rule that the objection goes only to the weight, not the admissibility, of the testimony); see also *Joy v. Bell Helicopter Textron, Inc.*, 999 F.2d 549, 569 (D.C. Cir. 1993) (recognizing the tendency of judges to respond to expert testimony objections by stating "the jury will give it 'the weight it deserves.'").

ny.<sup>50</sup> Once again, the permissiveness of the Rule is evident.<sup>51</sup> First, there is no obvious competency standard in the Rule by which expert testimony can be measured.<sup>52</sup> Instead, the subject matter of the testimony must be "specialized knowledge," a purposefully broad and vague term.<sup>53</sup> Second, the Rule does not appear to require that the testimony concern only matters beyond the juror's common knowledge.<sup>54</sup> Instead, Rule 702 imposes a helpfulness standard, otherwise known as a mere relevance requirement.<sup>55</sup>

Helpfulness does not involve a detailed inquiry into the expert's opinions or methodology. Rather, the court simply asks: "On *this subject* can a jury from *this person* receive appreciable help?"<sup>56</sup> Testimony from a qualified expert about a relevant matter that is the proper subject of expert testimony is presumed to be helpful under Rule 702.<sup>57</sup> Thus, doubts about the helpfulness of an expert's testimony are generally resolved in favor of admission.<sup>58</sup> The jury is relied upon to resolve questions about the validity or reliability of an expert's opinions or theories. Judge Weinstein says: "The jury is intelligent enough, aided by counsel, to ignore what is unhelpful in its deliberations."<sup>59</sup> The only real check on this kind of expert testimony is Rule 403,<sup>60</sup> which excludes evidence when its probative val-

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50. See Rossi, *supra* note 17, at 18-19.

51. MCELHANEY, *supra* note 41, at 276 (In Cleveland the motto is, "An expert can say anything.").

52. See McElhaney, *supra* note 12, at 53-54 (Rule 702 "doesn't have anything to do with how reliable scientific evidence has to be.").

53. See FED. R. EVID. 702 advisory committee's note ("The rule is broadly phrased. The fields of knowledge . . . extend to all 'specialized' knowledge.").

54. See 3 WEINSTEIN'S EVIDENCE, *supra* note 30, at 702-10; *infra* text accompanying notes 63-69.

55. See *Daubert v. Merrell Dow Pharmaceuticals*, 113 S. Ct. 2786, 2795-96 (Rule 702's requirement of helpfulness "goes primarily to relevance."). Obviously, testimony that is not relevant under Rule 401 is not helpful to the trier of fact. *Id.* Rule 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." FED. R. EVID. 401.

56. 7 WIGMORE, EVIDENCE § 1923, at 29 (Chadbourne rev. 1978).

57. See *In re Japanese Elec. Prod. Antitrust Litig.*, 723 F.2d 238, 280 (3d Cir. 1983), *reversed on other grounds sub nom. Mitsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574 (1986); Rossi, *supra* note 17, at 19.

58. 3 WEINSTEIN'S EVIDENCE, *supra* note 30, § 702[02], at 702-37.

59. *Id.*

60. FED. R. EVID. 403. Rule 403 provides:

ue is substantially outweighed by the danger of unfair prejudice or concerns of misleading or confusing the juror or wasting time.<sup>61</sup> Yet, Rule 403 is not much of a check because, like Rule 702, it provides a tilted standard toward admission and places the burden of proof on the opponent of the evidence.<sup>62</sup>

Traditionally, courts have excluded expert opinions about matters within the common knowledge and experience of the jurors.<sup>63</sup> For example, an expert was not permitted to testify that guardrails could prevent a person from falling off a scaffold because that is a matter of common knowledge.<sup>64</sup>

Rule 702's "helpfulness" standard expands the admission of expert testimony to include matters of common knowledge if it is "helpful."<sup>65</sup> Although some courts continue to invoke the familiar mantra "beyond the ken of the jury,"<sup>66</sup> most courts ad-

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Although relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence.

*Id.*

61. *See id.*

62. *See* CHRISTOPHER R. MUELLER & LAIRD C. KIRKPATRICK, EVIDENCE 193 (1995) ("Rule [403] is designed to favor admissibility.").

63. *See* 2 JONES ON EVIDENCE 607 (Spencer A. Gard, ed., 6th ed. 1972). Judge Gard states the common law rule as follows:

The rule is that in the discretion of the court expert testimony may be excluded if all primary facts can be accurately and intelligibly described to the jury, and if they, as men of common understanding are as capable of comprehending the primary facts and of drawing correct conclusions from them as are the witnesses possessed of special or peculiar training, experience, or observation.

The decisive consideration in determining whether expert opinion evidence is necessary is whether the subject of inquiry is sufficiently beyond common experience that the opinion of an expert would assist the trier of fact, or on the other hand, is one of such common knowledge that men of ordinary education could reach a conclusion as intelligently as the witness.

*Id.* (citations omitted).

64. *See* Hernandez v. Power Constr. Co., 382 N.E.2d 1201, 1205 (Ill. 1978).

65. *See* FED. R. EVID. 702; 3 WEINSTEIN'S EVIDENCE, *supra* note 30, at 702-20 (common knowledge exclusion is "incompatible with the standard of helpfulness expressed in Rule 702.").

66. The Second Circuit in particular continues to espouse this standard. *See, e.g.*, United States v. Amuso, 21 F.3d 1251, 1263-64 (2d Cir. 1994) (holding that law enforcement agent's testimony about the "operational methods of organized crime families" satisfied the "beyond the ken of the average juror" standard); United States v. Castillo, 924 F.2d 1227, 1232 (2d Cir. 1991) (noting that expert testimony about the

mit "expert" testimony about the most ordinary matters. For example, courts have admitted expert testimony under Rule 702 that a red emergency stop button on an escalator would attract small children,<sup>67</sup> that it was unsafe to permit plaintiff to dive in shallow water,<sup>68</sup> and that the defendant's seized clothing was the same clothing worn by the robbers in a surveillance photograph.<sup>69</sup>

Information that once would have been brought out by the lawyer on cross examination and argued during closing argument is now brought out through an expert witness who has access to all the testimonial advantages the Rules provide to experts. The expert can even testify to opinions that embrace the ultimate issue, thus enhancing the advocate role of the expert.

### 3. Ultimate Issues

Expert witnesses are not only permitted to testify to almost anything that assists the jury, but also they can give their opinion on the ultimate issue that the jury is to decide.<sup>70</sup> The Federal Rules of Evidence thus expand the common law<sup>71</sup> which prohibited experts from stating opinions on ultimate issues because to do so would invade or usurp the province of the jury.<sup>72</sup>

Rule 704 eliminates that objection, except with regard to the mental state of the defendant when that mental state constitutes an element of the crime charged.<sup>73</sup> The proper objection

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operations of narcotics dealers is admissible only if it is "beyond the ken of the average juror").

67. *Carroll v. Otis Elevator Co.*, 896 F.2d 210, 212 (7th Cir. 1990).

68. *Leonard v Pitstick Dairy Lake and Park, Inc.*, 464 N.E. 2d 644, 649 (Ill. App. Ct. 1984) (reh'g denied June 28, 1985).

69. *United States v. Barrett*, 703 F.2d 1076, 1084 n.14 (9th Cir. 1983). *But see United States v. Barta*, 888 F.2d 1220, 1223 (8th Cir. 1989).

70. *See* FED. R. EVID. 704(a). Rule 704(a) provides, in pertinent part: "[T]estimony in the form of an opinion or inference otherwise admissible is not objectionable because it embraces an ultimate issue to be decided by the trier of fact." *Id.*

71. 3 WEINSTEIN'S EVIDENCE, *supra* note 30, at 704-07.

72. *See Owen v. Kerr McGee Corp.*, 698 F.2d 236, 240 (5th Cir. 1983) (Rule 704(a) "was enacted to change the old view that the giving [of] an opinion on an ultimate issue would 'usurp the function' or 'invade the province' of the jury.").

73. *See* FED. R. EVID. 704(b). Rule 704(b) was enacted in 1984 as part of the

now is that the expert's testimony is not helpful or it abridges Rule 403.<sup>74</sup>

Although this change is supported by logic and necessity, it has led to some unfortunate abuses. Examples abound of judges who have allowed experts to testify to legal conclusions, essentially telling the jury how to decide the case. An engineer was allowed to testify in a products liability case that the product was "unreasonably dangerous;"<sup>75</sup> an expert concluded in his testimony that the defendants were "deliberately indifferent" to decedent's medical needs;<sup>76</sup> and an expert for plaintiff in an antitrust case opined that the defendants had conspired to violate the antitrust laws.<sup>77</sup>

Such testimony not only wastes time, but it can overwhelm the jury and result in an expert swearing match about which side should win. This only serves to confuse and distract the jury from its factfinding. Therefore, it is not surprising that when experts become partisans they turn their testimony into summations, telling the jury how to decide the case and why.<sup>78</sup>

#### 4. The Form and Timing of the Expert's Opinion

Rule 705<sup>79</sup> represents another expansion of expert witness

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Insanity Defense Reform Act, which arose out of the acquittal of John Hinckley on charges of attempting to assassinate President Ronald Reagan and shooting Press Secretary James Brady. See 18 U.S.C. § 17 (1988); 3 WEINSTEIN'S EVIDENCE, *supra* note 30, at 704-17 & n.4. For the text of Rule 704(b), see *supra* note 24.

74. See 3 WEINSTEIN'S EVIDENCE, *supra* note 30, at 704-10.

75. See *Burke v. Deere & Co.*, 780 F. Supp. 1225, 1260-61 (S.D. Iowa 1991).

76. *Heflin v. Stewart County*, 958 F.2d 709, 715 (6th Cir. 1992) *reh'g en banc denied* 968 F.2d 1 (6th Cir. 1990). *But see Berry v. City of Detroit*, 25 F.3d 1342, 1353 (6th Cir. 1994) (reaching opposite conclusion; expert testimony on "deliberate indifference" is not admissible).

77. See *In re Japanese Elec. Prod. Antitrust Litig.*, 723 F.2d 238, 280 (3d Cir. 1983), *reversed on other grounds sub nom. Mitsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574 (1986).

78. See *Eymard v. Pan American World Airways*, 795 F.2d 1230, 1233 (5th Cir. 1986) (Trial judges "ought to insist that a proffered expert bring to the jury more than lawyers can offer in argument." It is too easy for the expert to "become nothing more than an advocate of policy before the jury.").

79. FED. R. EVID. 705. Rule 705 provides:

The expert may testify in terms of opinion or inference and give reasons therefore without first testifying to the underlying facts or data, unless the court requires otherwise. The expert may in any event be required to

testimony. Historically, expert opinions were disclosed by asking a hypothetical question, which included all of the facts and data that supported the opinion.<sup>80</sup> The questions were often long and complex, making expert testimony unnecessarily difficult and protracted.<sup>81</sup> Rule 705 substantially reduces the need to use hypothetical questions and leaves it up to the examining lawyer (subject to the judge's discretion) to decide how best to disclose the expert's opinions.

Experts may reveal their opinion before they explain the facts or data that support the opinion, or they may give their opinion on direct without ever explaining the underlying bases.<sup>82</sup> Of course, opposing counsel is entitled to explore the supporting material on cross examination and the judge has discretion to require disclosure of the underlying data on direct.<sup>83</sup>

## 5. The Expert's Basis

The "liberal thrust" of the Federal Rules' treatment of expert testimony reaches its zenith in Rule 703.<sup>84</sup> Rule 703 allows consideration by experts of not only matters that have not been introduced into evidence, but also of matters that are inadmissible. Like Rule 704, this expansion has resulted in unforeseen and unintended abuses, most significantly the use of the expert as a "conduit" of hearsay.<sup>85</sup>

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disclose the underlying facts or data on cross-examination.

*Id.*

80. John F. Sutton, *Article VII: Opinions and Expert Testimony*, 30 HOUS. L. REV. 797, 800 (1993). Only in the event that the expert had personal knowledge of the facts could the expert state an opinion without a hypothetical question. *Id.*

81. See FED. R. EVID. 705 advisory committee's note (The use of hypothetical questions has been criticized because it encourages "partisan bias," allows the party the opportunity of "summing up in the middle of the case," and it is "complex and time consuming."); Graham, *supra* note 12, at 67.

82. See FED. R. EVID. 705.

83. See *id.*

84. Rule 703 provides:

The facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to the expert at or before the hearing. 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.

FED. R. EVID. 703.

85. See Ronald L. Carlson, *Experts as Hearsay Conduits: Confrontation Abuses in*

Rule 703 provides three bases for expert opinions: 1) facts or data within the expert's personal knowledge; 2) facts or data the expert learns at or before the hearing; and 3) facts or data that are inadmissible, but "reasonably relied" upon by the expert.<sup>86</sup> The first two are a continuation of prior practice, but the third option is new<sup>87</sup> and has produced a startling phenomenon: the wholesale introduction of hearsay evidence based upon the expert's reliance on it.

The change was intended to bring the judicial practice into line with the practice of the experts themselves when not in court, such as the practice of physicians who make "life and death decisions" in reliance on statements from patients, relatives, nurses, and others.<sup>88</sup> Not surprisingly, many courts have taken the broadest possible approach in applying Rule 703. They have deferred to the expert witness in deciding whether the expert reasonably relied upon the hearsay evidence,<sup>89</sup> and then have allowed the admission of the hearsay into evidence on direct examination without conducting any inquiry into the reliability of the evidence.<sup>90</sup> Some courts have recognized a

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*Opinion Testimony*, 76 MINN. L. REV. 859, 859 (1992) (experts are used as conduits of hearsay) (quoting *Dep't of Corrections v. Williams* 549 So. 2d 1071, 1072 (Fla. Dist. Ct. App. 1989)).

86. See FED. R. EVID. 703.

87. Michael C. McCarthy, Note, "Helpful" or "Reasonably Reliable"? Analyzing the Expert Witness's Methodology Under Federal Rules of Evidence 702 and 703, 77 CORNELL L. REV. 350, 355-56 (1992).

88. FED. R. EVID. 703 advisory committee's note.

89. See *In re Japanese Elec. Prod. Antitrust Litig.*, 723 F.2d 238, 280 (3d Cir. 1983), reversed on other grounds sub nom. *Mitsubishi Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574 (1986) (stating that a judge should defer to the experts in deciding "reasonable reliance"). The Third Circuit recently rejected this deferential approach because of the Supreme Court's decision in *Daubert*. See *In re Paoli Railroad Yard PCB Litig.*, 35 F.3d 717, 748 (3d Cir. 1994) (amended Oct. 17, 1994) (The standard under Rule 703 is "equivalent" to Rule 702's reliability requirement—"there must be good grounds on which to find the data reliable."); cf. *United States v. Locascio*, 6 F.3d 924, 938-39 (2d Cir. 1993) (Post-*Daubert* decision upholding judge's discretion to reject expert testimony based on questionable data, but declining to require a "mandatory and explicit trustworthiness analysis.").

90. See, e.g., *United States v. Lundy*, 809 F.2d 392, 395 (7th Cir. 1987) (upholding admission of hearsay relied on by an arson expert because expert testified that reliance on such hearsay was "a standard investigatory technique"); *Lewis v. Rego Co.*, 757 F.2d 66, 72-73 (5th Cir. 1986) (stating that it was an abuse of discretion to permit cross examination of an expert regarding his opinion and the basis for it under the facts of this case); *Stevens v. Cessna Aircraft Co.*, 634 F. Supp. 137, 142-43 (E.D. Pa. 1986), *aff'd*, 806 F.2d 254 (3d Cir. 1986) (unpublished decision).

much more active role for the court in this determination.<sup>91</sup> Everyone agrees, however, that the underlying facts are admitted only to explain the basis of the experts opinion, not for their truth.<sup>92</sup> The opponent of the evidence is entitled to a limiting instruction under Rule 105,<sup>93</sup> that is, if the opponent wants one.

Thus, under Rule 703 jurors are asked to do the impossible. They are told to consider the hearsay, not for its truth, but only as the basis of the experts opinion.<sup>94</sup> No one truly believes jurors (or anyone else for that matter) are capable of making that subtle distinction.<sup>95</sup> Instead, jurors consider the hearsay even when the evidence is regarded as too unreliable for admission as substantive evidence.

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91. See, e.g., *Christophersen v. Allied-Signal Corp.*, 939 F.2d 1106, 1110-11, 1113-15 (5th Cir. 1991) (making independent inquiry into the basis of plaintiff's expert opinion); *In re Agent Orange Prod. Liab. Litig.*, 611 F. Supp. 1223, 1243-55 (E.D.N.Y. 1985), *aff'd*, 818 F.2d 187 (2d Cir. 1987) (same); see also *Shatkin v. McDonnell Douglas Corp.*, 727 F.2d 202, 207-208 (2d Cir. 1984); *Soden v. Freightliner Corp.*, 714 F.2d 498, 505 (5th Cir. 1983).

92. See *Engebretsen v. Fairchild Aircraft Corp.*, 21 F.3d 721, 729 (6th Cir. 1994) (admitting inadmissible evidence to explain the basis of the expert's opinion); Rossi, *supra* note 17, at 23.

93. *Engebretsen*, 21 F.3d at 729; *Paddack v. Dave Christensen, Inc.*, 745 F.2d 1254, 1262 (9th Cir. 1984); see Rossi, *supra* note 17, at 23. Rule 105 of the Federal Rules of Evidence provides: "When evidence which is admissible as to one party or for one purpose but not admissible as to another party or for another purpose is admitted, the court, upon request, shall restrict the evidence to its proper scope and instruct the jury accordingly." FED. R. EVID. 105.

94. See Rossi, *supra* note 17, at 22-23 ("[T]he subtlety of this distinction [between admitting hearsay for its truth and admitting it as the basis of the expert's opinion] is likely to escape triers of fact, especially jurors."). The drafters of the rules recognized the particular difficulty jurors have in distinguishing between "truth" and "basis." See FED. R. EVID. 803(4) advisory committee's note. Rule 803(4) expands its scope to include statements to a physician consulted only for the purpose of enabling him to testify, based upon the conclusion that such statements were already admissible to show the basis of the doctor's opinion under Rule 703 and that "[t]he distinction thus called for was one *most unlikely* to be made by juries." *Id.* (emphasis added).

95. See *Nash v. United States*, 54 F.2d 1006, 1007 (2d Cir. 1932) (The limiting instruction is a "recommendation to the jury of a mental gymnastic which is beyond, not only their powers, but anybody's else."). There is empirical data to support this position. E.g., Jonathan D. Casper & Kenneth M. Benedict, *The Influence of Outcome Information and Attitudes on Juror Decision Making in Search and Seizure Cases in INSIDE THE JUROR* 65, 82 (Reid Hastie ed., 1993) (concluding from studies that the jury considers and is influenced by evidence they are instructed to disregard).



## B. *Scientific Expert Testimony*

Complex scientific and technical matters present entirely different problems. Judges, lawyers, and commentators have long recognized that jurors are poorly suited to resolve disputes between experts concerning matters about which the jurors know little or nothing.<sup>96</sup> Historically, courts recognized two types of expert testimony: (1) novel scientific evidence, and (2) all other expert testimony.<sup>97</sup> If the testimony did not involve some novel scientific technique or theory, the court simply applied the helpfulness standard from Rule 702.

### 1. Historical Approaches

Before *Daubert* there were at least two approaches to novel scientific evidence: (1) the relevance test<sup>98</sup> and (2) the *Frye* general acceptance test.<sup>99</sup> The former was simply an application of the helpfulness standard under Rule 702 to scientific evidence with the recognition that unreliable theories or techniques are not helpful to the jury.<sup>100</sup> The relevancy approach focused on three factors: (1) the reliability of the technique or

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96. See Learned Hand, *Historical and Practical Considerations Regarding Expert Testimony*, 15 HARV. L. REV. 40, 51-52 (1901). A California appellate court recently noted this concern in discussing the admissibility of the prosecution's DNA evidence. The court stated:

To . . . leave it to jurors to assess the current scientific debate on statistical calculation as a matter of weight rather than admissibility . . . would be asking jurors to do what judges carefully avoid—decide the substantive merits of competing scientific opinion as to the reliability of a novel method of scientific proof. We cannot reasonably ask the average juror to decide such arcane questions. . . .

People v. Barney, 10 Cal. Rptr. 2d 731, 742 (1992). *But see* Christophersen v. Allied-Signal Corp., 939 F.2d 1106, 1128-29 (5th Cir. 1991) (Reavley, J., dissenting)(arguing that "we routinely entrust difficult determinations to jurors that assume their possession and use of critical capacities" and concluding that although juries may not be ideal they are "the essential voice of the community in solving one problem fairly brought before it"), *cert. denied*, 112 S. Ct. 1280 (1992).

97. See 3 WEINSTEIN'S EVIDENCE, *supra* note 30, at 702[02]-[03].

98. See *United States v. Downing*, 753 F.2d 1224, 1233 (3d Cir. 1985). *Downing* also notes a third approach consisting of "suggested variations on the *Frye* standard." *Id.* (citations omitted).

99. See *Frye v. United States*, 293 F. 1013, 1014 (D.C. Cir. 1923).

100. See *Downing*, 753 F.2d at 1230, 1233.

theory used to produce the evidence; (2) Rule 403 concerns of overwhelming, confusing, or misleading the jury; and (3) the relevance or "fit" of the scientific evidence to the factual issues in the case.<sup>101</sup> Under this approach, the fact that a new theory was not broadly accepted in the applicable scientific community was not fatal, provided that it satisfied the minimum standard of reliability required for the evidence to assist the jury.<sup>102</sup>

The general acceptance test, on the other hand, focused on a single inquiry: whether the theory or technique used by the expert had gained general acceptance in the relevant scientific community.<sup>103</sup> This approach originated with *Frye v. United States*,<sup>104</sup> a 1923 case decided by the District of Columbia Court of Appeals, and was the dominant approach of federal courts when *Daubert* was decided.<sup>105</sup> Despite the many criticisms of *Frye*,<sup>106</sup> courts followed its general acceptance ap-

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101. *See id.* at 1237.

102. *See id.* at 1238-39. Instead of using the single general acceptance factor, *Downing* provided an illustrative list of seven factors that should be considered in deciding the helpfulness of the evidence. The factors include the following:

- 1) degree of acceptance in the relevant scientific community;
- 2) "the novelty of the new technique";
- 3) the existence of specialized literature about the technique;
- 4) qualifications of the expert;
- 5) non-judicial uses of the scientific techniques;
- 6) error rate; and
- 7) prior judicial acceptance

*See id.*

103. *See Christophersen v. Allied Signal Corp.*, 939 F.2d 1106, 1115 (5th Cir. 1991). In *Frye* the District of Columbia Circuit Court stated:

[W]hile 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.

*Frye v. United States*, 293 F. 1013, 1014 (D.C. Cir. 1923).

104. *Frye*, 293 F.2d 1013. *Frye* concerned the admission of testimony about a systolic blood pressure deception test, a precursor to the polygraph. *See id.* at 1013.

105. At the time *Daubert* was decided, seven circuits followed *Frye* and two circuits followed the relevancy approach. *See David Faigman et al., Check Your Crystal Ball at the Courthouse Door, Please: Exploring the Past, Understanding the Present and Worrying About the Future of Scientific Evidence*, 15 CARDOZO L. REV. 1799, 1835 n.33 (1994).

106. *See generally* Paul C. Giannelli, *The Admissibility of Novel Scientific Evidence: Frye v. United States, a Half-Century Later*, 80 COLUM. L. REV. 1197, 1208-28 (1980); Mark McCormick, *Scientific Evidence: Defining a New Approach to Admissibility*, 67 IOWA L. REV. 879, 885-86 (1982). Professor Giannelli, in his important article, synthesized the problems with *Frye* as follows:

proach because of two positive features: questions about the reliability of new scientific theories or techniques were decided by their acceptance in the pertinent scientific community, not among judges or lawyers, and it treated expert testimony about novel scientific matters with caution because of its "aura of infallibility."<sup>107</sup>

Although the two approaches both seek to keep out unreliable expert testimony, court rulings sometimes turned on which approach was taken.<sup>108</sup> In *Daubert*, the Supreme Court finally ventured into the debate and adopted a standard of reliability that raises more questions than it answers.<sup>109</sup>

## 2. *Daubert's* Approach to Scientific Evidence

Eric Schuller and Jason Daubert, the plaintiffs in *Daubert*, were born with severe birth defects. They sued the maker of Bendectin, Merrell Dow Pharmaceuticals, and alleged that their condition was caused by their mothers' ingestion of Bendectin, an anti-nausea drug, during pregnancy.<sup>110</sup> Merrell Dow

1) Inconsistent or inaccurate identification of the relevant field in which the principle falls, Gianelli, *supra* at 1208-10;

2) The manipulation of or failure to address the extent of acceptance required by the relevant scientific community, *id.* at 1210-11;

3) Failure to resolve whether *Frye* requires general acceptance of the scientific technique or both the underlying principle and the technique, *id.* at 1211-15;

4) Difficulties in determining what proof is necessary to establish general acceptance, *id.* at 1215-19;

5) Selective application of the *Frye* doctrine, caused in part by varying definitions of "scientific evidence," *id.* at 1219-21;

6) Confusion concerning the appropriate standard of review on appeal, *id.* at 1222-23.

It is interesting to note that several of these criticisms, which justified to many the abandonment of *Frye*, continue to plague the law of expert testimony after the Supreme Court's opinion in *Daubert*. See *infra* Part IV.C.1.

107. See Gianelli, *supra* note 106, at 1207, 1224 ("The requirement of general acceptance in the scientific community assures that the most qualified to assess the general validity of a scientific method will have the determinative voice."); *United States v. Addison*, 498 F.2d 741, 743-44 (D.C. Cir. 1974).

108. Compare *Addison*, 498 F.2d at 745 (excluding spectrographic voice identification evidence based on lack of general acceptance under *Frye* standard) and *People v. Kelly*, 549 P.2d 1240, 1251 (Cal. 1976) (same) with *United States v. Williams*, 583 F.2d 1194, 1197-1201 (2d Cir. 1978) (admitting spectrographic voice identification evidence based on its reliability under relevancy test).

109. See *infra* Part IV.C.1.

110. *Daubert*, 113 S. Ct. at 2791.

brought a motion for summary judgment supported by an affidavit of their expert, which concluded that no published epidemiological study had found any causal link between the ingestion of Bendectin during pregnancy and birth defects in humans.<sup>111</sup>

Plaintiffs offered evidence from eight highly credentialed experts who did not contest Merrell Dow's characterization of the extant epidemiological research, but nevertheless concluded that Bendectin can cause birth defects based on other types of research and a re-analysis of the epidemiological data.<sup>112</sup> The district court, applying *Frye*, granted summary judgment because plaintiff's scientific evidence was not "sufficiently established to have general acceptance in the field to which it belongs."<sup>113</sup> The Ninth Circuit affirmed.<sup>114</sup>

The Supreme Court granted certiorari and held that Rule 702 of the Federal Rules of Evidence requires expert testimony to be reliable and supported by appropriate validation based on what is known.<sup>115</sup>

The Supreme Court's decision in *Daubert* provided both the expected and the unexpected. First, the expected: the Court held that *Frye's* general acceptance test did not survive the enactment of the Federal Rules of Evidence.<sup>116</sup> This result was

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111. *Id.* Defendant's expert, Dr. Steven H. Lamm, a physician and epidemiologist, stated that he had reviewed 30 published studies involving over 130,000 patients. *Id.*

112. *Id.* Plaintiffs' experts included Shanna Swan, the chief of the section of the California Department of Health and Services that determines causes of birth defects, who had a doctorate in statistics, and Stewart A. Newman who had a doctorate in chemistry and had studied the effect of chemicals on limb development for over a decade. The other experts retained by plaintiffs had equally impressive credentials. *Id.* at 2971 n.2. The experts did not rely exclusively on epidemiological studies as did defendants. Rather, they used other data such as in vitro (or test tube) studies, in vivo (or animal) studies, pharmacological studies of the chemical structure of Bendectin, and a reanalysis of the published epidemiological studies. *Id.* at 2791.

113. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 727 F. Supp. 570, 572 (S.D. Cal. 1989).

114. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 951 F.2d 1128, 1128-29 (9th Cir. 1991).

115. *Daubert*, 113 S. Ct. at 2793.

116. *Id.* at 2794. This result was not unexpected because the Court has taken a "plain meaning" approach to interpreting the Rules of Evidence, generally refusing to recognize or follow common law rules or principles that are not expressly retained by the Rules. See *Bourjaily v. United States*, 483 U.S. 171, 181 (1987) (construing plain language of Rule 104(a) to allow judge to consider disputed co-conspirator statement

predictable based upon the Court's recent construction of the Rules of Evidence.<sup>117</sup> The Court surprised many though, by finding a reliability requirement in the express language of Rule 702 instead of finding it as a necessary component of helpfulness.<sup>118</sup> The term "scientific . . . knowledge," as used in the Rule, imposes a reliability requirement on expert testimony.<sup>119</sup> The standard of reliability is measured by "scientific validity."<sup>120</sup> In other words, courts must determine as a preliminary matter whether "the reasoning or methodology underlying the testimony is scientifically valid."<sup>121</sup> This new standard gives a judge an active role with expert testimony. As the "gatekeeper," the judge must make a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and whether that reasoning or methodology can be applied to the facts in issue.<sup>122</sup>

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in deciding preliminary question of existence of conspiracy despite contrary common law rule).

117. See *Daubert*, 113 S. Ct. at 2794.

118. See *id.* at 2795. The expectation was that the Court would decide between the relevancy approach and the *Frye* general acceptance test. In fact, one of the two questions on which the Court granted the writ of certiorari was whether *Frye* was adopted by the Federal Rules of Evidence, and the other was whether *Frye* required peer review and publication. Brief for Petitioner, at 3, *Daubert v. Merrell Dow Pharmaceuticals, Inc.* 113 S. Ct. 2786 (1993) (No. 92-102) (1992 WL 541269); see *Daubert*, 113 S. Ct. 320 (1992) (grant of certiorari by Supreme Court).

119. See *Daubert*, 113 S. Ct. at 2795. The Court referred to one of its favorite sources—Webster's Third New International Dictionary—to define "scientific" and "knowledge." *Id.* The Court stated:

The adjective "scientific" implies a grounding in the methods and procedures of science. Similarly, the word "knowledge" connotes more than subjective belief or unsupported speculation. The term "applies to any body of known facts or to any body of ideas inferred from such facts or accepted as truths on good grounds."

*Id.* (quoting WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1252 (1986)).

120. *Daubert*, 113 S. Ct. at 2795 n.9. There has been much debate and commentary over distinctions between validity and reliability in science and reliable evidence. See, e.g., Bert Black, *A United Theory of Scientific Evidence*, 56 *FORDHAM L. REV.* 595, 599 (1988). In a footnote destined to be cited often, the Court resolved the debate, at least for now. The requirement is evidentiary reliability. That is, the expert's theories and techniques must be trustworthy in the same way that hearsay must be trustworthy and in the same way that witnesses must testify from personal knowledge. *Daubert*, 113 S. Ct. at 2795 n.9. When scientific evidence is involved, however, trustworthiness or "evidentiary reliability" is possible only when the evidence has scientific validity; that is, the principle supports what it purports to show. *Id.*

121. *Daubert*, 113 S. Ct. at 2796.

122. *Id.* at 2790.

This trustworthiness requirement varies from the relevancy approach in one important way: it is not simply one aspect of the helpfulness determination. Rather, the court must make an independent determination of reliability. Rule 702 is a rule of competence; it requires that expert testimony be reliable and relevant.<sup>123</sup>

In making the reliability determination, the Supreme Court identified four non-exclusive "general observations" to assist the undertaking.<sup>124</sup> Not surprisingly, general acceptance is one of the factors courts may consider,<sup>125</sup> as well as peer review and publication.<sup>126</sup> These factors provide circumstantial evidence of reliability.<sup>127</sup> Peer review and publication is simply one step toward obtaining general acceptance. Perhaps the primary question under *Daubert's* formulation, however, is "whether a theory or technique . . . can be (and has been) tested."<sup>128</sup> After all, trial and error and falsifying hypotheses are the distinctive marks of science.<sup>129</sup> Finally, the Court directs consideration of

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123. See *id.* at 2794 ("[T]he trial judge must ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable."). *Daubert* provides a two prong inquiry the trial judge must make initially under Rule 104(a): "whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue." *Id.* at 2796.

124. *Id.* at 2796-97. Chief Justice Rehnquist and Justice Stevens dissented from the "general observations" made by the Court for three reasons: (1) they were unnecessary to decide the case; (2) they raised more questions than they answered; and (3) they were unclear. *Id.* at 2799-800.

125. *Id.* at 2797. Despite the confusion that is bound to follow from including general acceptance as a reliability factor after declaring *Frye* dead, it is well established that general acceptance is an important consideration in deciding scientific validity. *United States v. Downing*, 753 F.2d 1224, 1238 (3d Cir. 1985). After *Daubert*, proof of general acceptance will likely always result in admission of the evidence. See *id.* ("[W]e expect that a technique that satisfies the *Frye* test usually be found to be reliable as well."); see also *Daubert* 113 S. Ct. at 2797 ("Widespread acceptance can be an important factor in ruling particular evidence admissible."). *Daubert* is more liberal than *Frye* in at least one sense, however, because it leaves open the possibility that theories and techniques that are not yet generally accepted might be reliable, and thus, admissible. *Id.*

126. *Daubert*, 113 S. Ct. at 2797. This factor is not dispositive, according to the Court, but it is a component of "good science." *Id.*

127. See McElhaney, *supra* note 12, at 53, 54.

128. *Daubert*, 113 S. Ct. at 2796-97

129. *Id.* The application of the scientific knowledge factor was of particular concern to Chief Justice Rehnquist. He argued that the Federal Rules do not give judges "the obligation or the authority to become amateur scientists" in performing their gatekeeping responsibility. Despite his confidence in federal judges, Rehnquist expressed concern that application of this factor, including determining the "falsifiability

the rate of error of the technique and an examination of the existence of standards that control the technique's operation.<sup>130</sup>

*Daubert* has something for everyone.<sup>131</sup> For *Frye* proponents it finds a requirement of reliability in the language of Rule 702 and identifies "general acceptance" as one of the factors courts should use.<sup>132</sup> For proponents of the relevancy approach, it pronounces *Frye* dead, as it is "at odds with the 'liberal thrust' of the Federal Rules."<sup>133</sup> For commentators, it creates a plethora of questions about its application, ranging from the basic: "what constitutes scientific knowledge under Rule 702?" to the arcane: "what confidence interval is required to satisfy the rate of error factor?" to the procedural: "what is the standard of review on appeal?" This merely demonstrates that reliability may sound better than general acceptance as a standard of admission, but it will be at least as difficult to apply.

### C. Summary

Experts are powerful witnesses. The expert is largely free of the restraints the rules impose on everyone else. Opinion testimony is not simply allowed, it is expected. Even opinions that embrace the ultimate issue are permitted. Personal knowledge is unnecessary. Testimony on matters of common knowledge is allowed. Theories and methodologies that are rejected by most experts can be used. The expert is permitted to use hearsay in forming an opinion and to tell the jury about it. The structure of the rules of evidence provides the context to understand why experts are so attractive to lawyers and why expert abuse and misuse is so widespread.

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ty" of the theory, would be beyond the capacity of most federal judges. *Id.* at 2799-800 (Rehnquist, C.J., concurring in part and dissenting in part.).

130. *Id.* at 2797

131. See Kenneth R. Foster et al., *Science and the Toxic Tort*, 261 *SCIENCE*, Sept. 17, 1993, at 1509, 1614 ("Astonishingly, all parties expressed satisfaction with the *Daubert* decision."); Paul Houston, *High Court Relaxes Curbs on Expert Witness Testimony Law: Ruling Praised for Allowing Flexibility*, *L.A. TIMES*, June 29, 1993, at A14 ("Lawyers on both sides of the [*Daubert*] case claimed victory, disagreeing on how rigorous the court's screening guidelines are.").

132. *Daubert*, 113 S. Ct. at 2795.

133. *Id.* at 2794.

### III. THE EXPERT WITNESS AND THE ADVERSARY SYSTEM: PROBLEMS OF BIAS, INADEQUATE SAFEGUARDS, AND INCOMPETENCE

The generosity of the Federal Rules of Evidence in admitting substantial amounts of expert testimony has not only increased the use of experts, but it has also contributed to a significant change in the profile of the typical expert witness. There is now a large and expanding industry consisting of individuals who spend substantial portions of their time testifying for or consulting with litigants.<sup>134</sup> Thousands of experts, spanning an incredible array of subjects, advertise their availability to testify as expert witnesses.<sup>135</sup> Even more disturbing is the recent development and growth of firms offering expert referral services, whereby the agency will find an expert that fits the needs of

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134. See *Graham v. Gielchinsky*, 599 A.2d 149, 156 (N.J. 1991) (“The business of being an expert has become a cottage industry.” (quoting Joseph M. McLaughlin, *Discovery and Admissibility of Expert Testimony*, 63 NOTRE DAME L. REV. 760, 763 (1988)). In Cook County between 1974 and 1989, the number of regularly testifying experts increased 1,540% from 188 to 3,100. Andrew Blum, *Experts: How Good Are They?*, NAT’L L.J., August 24, 1989, at 1, col. 4. In a study of 529 civil trials that resulted in jury verdicts in California Superior Courts in 1985 and 1986, experts testified in 86% of the cases, and there was an average of 3.3 experts per trial. Gross, *supra* note 2, at 1119.

135. See, e.g., 29 TRIAL 82, 82-92 (Dec. 1993). (containing over 50 advertisements by expert witness and expert referral services and more than 100 classified ads for experts); 79 A.B.A. J., Jan 1993, 106, 106-111 (containing over 100 classified ads for experts, but fewer than ten for lawyers).

One example of this phenomenon is the fifth edition of the Southwestern Directory of Expert Witnesses and Consultants. The directory includes the advertisements of 143 persons or firms promoting their expertise in everything from “above ground power lines” to “zinc,” and “sport accidentology” to “traumatology.” See TEXAS LAWYER SOUTHWESTERN DIRECTORY OF EXPERT WITNESSES 6, 32-33, 36 (5th ed., 1994-95).



the lawyer.<sup>136</sup> The referral firm gets paid for finding a match, and is like a headhunter agency for experts.

Unfortunately, that is not the worst of it. In some urban areas medical clinics are springing up, advertising their services to treat "work related injuries" or "injuries from automobile accidents," and informing the audience that referrals to lawyers are "available upon request."<sup>137</sup> This is just what the system needed: a direct feeder system from doctors to lawyers and back again. Professional experts are no longer anomalous. They are is now commonplace,<sup>138</sup> and bring a pervasive bias to expert testimony.<sup>139</sup>

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136. See Anne Kates Smith, *Opinions With a Price*, 113 U.S. NEWS & WORLD REP., July 20, 1992, 64. According to Smith, the Technical Advisory Service for Attorneys (TASA) listed more than 18,500 experts on its rolls. *Id.* More recently, in 1994, the author received a promotional brochure from TASA stating: "TASA's comprehensive roster includes more than 22,000 experts in over 5,500 categories of expertise." (The brochure is on file with the author.) *Trial* magazine includes numerous such referral services in its advertisements, most of which claim to have thousands of experts. See 29 TRIAL, December 1993, 82, 82-92. Some of the referral services take care to note that their experts are not "professional" or "commercial" witnesses. *Id.* at 86 (American Medical Forensic Specialists, Inc. claiming they provide only "[c]redible experts: no 'commercial' witnesses."); *id.* at 90 (Physicians for Quality asserted that "[o]ur physicians have jury credibility because they are medical professionals, not professional witnesses."). There are also legal organizations that maintain lists of experts and their areas of expertise. See, e.g., *id.* at 84 (ATLA Exchange, an expert witness database, advertising its availability to members of the American Trial Lawyers Association, including the names of experts in over 600 categories.); SPENCE, *supra* note 2, at 272 (describing the Defense Institute's computer bank "listing willing witnesses in every conceivable field of expertise.").

137. On a recent visit to the Dallas-Fort Worth, Texas area, the author saw television advertisements for "K Clinics," which included a statement about the availability of consultations with lawyers.

138. See *Eymard v. Pan American World Airways*, 795 F.2d 1230, 1234 (5th Cir. 1986); see also Graham, *supra* note 12, at 44 ("The professional expert witness has . . . become a fact of life in American litigation."); Gross, *supra* note 2, at 1131 (noting that many experts become professional witnesses).

139. See Gross, *supra* note 2, at 1132. Gross states the problem this way: "The problem is professional partisanship. Experts whose incomes depend on testimony must learn to satisfy the consumers who buy that testimony; those who do not will not get hired. In some cases experts may distort their views to suit the interests of their clients, perhaps even lie outright. . . ." *Id.*

### A. *The Problem of Money*

It is illegal to pay for a witness's testimony, other than nominal witness fees and expenses.<sup>140</sup> This long held, well-established rule is necessary to protect the integrity of the adversary system. Purchased testimony obstructs the process and interferes with truth-seeking. Yet, it is necessary to pay expert witnesses, typically based on the expert's hourly rate, to obtain the services of the expert.<sup>141</sup> Of course, the payment is not for a particular opinion from the expert or a particular outcome in the case. To the contrary, the use of contingent fee agreements with experts, which make the expert's compensation contingent upon the case's outcome, is prohibited by the ethical rules of most jurisdictions.<sup>142</sup> The system refuses to tolerate that kind of direct bias.<sup>143</sup> Nevertheless, the payment of experts for their time and expertise is tolerated, even though it creates a substantial incentive for the expert to advocate a party's position that is not supported by available research and data. This problem is particularly acute with the professional witness, who makes her living testifying as an expert.<sup>144</sup> Obviously, such a

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140. See 18 U.S.C. § 201(c)(2) (1988) (It is illegal to offer or accept "anything of value . . . for or because of testimony under oath given . . . as a witness upon a trial."). Section 201(d) allows the payment of witness fees provided by law. See 18 U.S.C. § 201(d). The Model Rules of Professional Conduct prohibit a lawyer from offering "an inducement to a witness that is prohibited by law." MODEL RULES OF PROFESSIONAL CONDUCT Rule 3.4(b) (1994). The comment to the Rule states that it is "improper to pay an occurrence witness any fee for testifying" but "it is not improper to pay a witness's expenses." *Id.* at Rule 3.4(b) cmt.

141. See Gross, *supra* note 2, at 1129; see also 18 U.S.C. § 201(d)(1988) (It is not illegal to pay expert witnesses "a reasonable fee for time spent in preparation of such opinion, and in appearing and testifying."); MODEL RULES OF PROFESSIONAL CONDUCT Rule 3.4(b) cmt. (1994) ("[I]t is not improper . . . to compensate an expert witness on terms permitted by law."). The payment of experts is not only the rule, it is often at exorbitant rates. See *supra* note 19.

142. See, e.g., MODEL RULES OF PROFESSIONAL CONDUCT RULE 3.4(b) cmt. (1994).

143. See J. ALEXANDER TANFORD, *THE TRIAL PROCESS: LAW, TACTICS AND ETHICS* 460 (1983) ("An expert who is paid only upon a favorable verdict may be induced to give stronger or more positive testimony than he or she otherwise would give.")

144. Gross, *supra* note 2, at 1131; Graham, *supra* note 12, at 44. The Fifth Circuit in particular has recognized the bias presented by professional experts. In *Eymard* the Fifth Circuit warned that the professional expert, who "spends substantially all of his time consulting with attorneys and testifying" may be one indication of an "expert whose opinions are available to the highest bidder." *Eymard v. Pan American World Airways*, 795 F.2d 1230, 1234. That kind of expert, the Court concluded, should not

witness is highly motivated out of self interest to develop relationships with lawyers because those relationships are the expert's lifeblood. The more effective the expert is in advancing the lawyer's case, the greater the likelihood the expert will be retained again.<sup>145</sup>

Money also poses a problem for other experts, such as the professor who supplements her income by testifying as an expert occasionally,<sup>146</sup> or the doctor who testifies periodically in medical malpractice cases.<sup>147</sup> These experts find that they can make substantial amounts of money consulting. They, too, succumb to the circumstances and testify to conclusions more definitive than they would typically assert, or they shade their

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be allowed to testify. *Id.*

145. See *Trower v. Jones*, 520 N.E.2d 297, 300 (Ill. 1988) (upholding cross examination of expert witness about how much the expert made annually from services related to rendering expert testimony). In *Trower*, the Illinois Supreme Court described the expert's financial incentive as follows:

[W]e reach our decision based on an appreciation of the fact that the financial advantage which accrues to an expert witness in a particular case can extend beyond the remuneration he receives for testifying in that case. A favorable verdict may well help him establish a "track record" which, to a professional witness, can be all-important in determining not only the frequency with which he is asked to testify but also the price which he can demand for such testimony.

*Id.*

146. See *Eymard*, 795 F.2d at 1234 (noting the court's experience wherein such professors "present studies and express opinions that they might not be willing to express in an article submitted to a refereed journal of their discipline or in other contexts subject to peer review.").

One lawyer has described the problem this way: "You get a professor who earns \$60,000 a year and give him the opportunity to make a couple of hundred thousand dollars in his spare time and he will jump at the chance. They are like a bunch of hookers in June." Blake Fleetwood, *From The People Who Brought You The Twinkie Defense: The Rise of The Expert Witness Industry*, WASH. MONTHLY, June 1987, at 33, 35-36 (quoting Dennis Roberts, an Oakland criminal defense and personal injury lawyer).

147. See *Kirby v. Ahmad*, 635 N.E.2d 98, 99 (Ohio Ct. Common Pleas 1994) (In medical malpractice case in which doctor charged \$500 an hour for an in-office deposition (\$750 if the deposition was videotaped), the court concluded that "the Hippocratic Oath has been supplanted by opportunism and greed by those who participate as medical expert witnesses."); see SPENCE, *supra* note 2, at 270 ("[S]ome medical school professors I know make several times their annual salary by selling testimony to anyone who will retain them.").

opinion in favor of their client.<sup>148</sup> In fact, no expert is immune from the bias that comes with compensation.<sup>149</sup>

The structure of the adversary system itself contributes to the pervasive existence of bias. The parties and their lawyers are solely responsible for the investigation and development of their claim or defense.<sup>150</sup> First, the advocates select their experts. This selection is not based upon the most knowledgeable or the most respected in the field, although lawyers certainly seek well-credentialed experts.<sup>151</sup> Rather, lawyers shop for experts, ultimately choosing the one that talks right, looks right, has the right credentials, and will work with the lawyer in the development of her opinions.<sup>152</sup> Thus, "[a] fool with a small

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148. See John H. Langbein, *The German Advantage in Civil Procedure*, 52 U. CHI. L. REV. 823, 835 (1985) Langbein describes his experiences as an expert witness in similar terms:

I sometimes serve as an expert in trust and pension cases, and I have experienced the subtle pressures to join the team—to shade one's views, to conceal doubt, to overstate nuance, to downplay weak aspects of the case that one has been hired to bolster. Nobody likes to disappoint a patron; and beyond this psychological pressure is the financial inducement.

*Id.*

149. See Gross, *supra* note 2, at 1188.

150. Professor Gross, in his very insightful article on expert witnesses, carefully and thoroughly describes the effect of the adversary system on the selection of expert testimony. See Gross, *supra* note 2, at 1126-36.

151. See *id.* at 1130. Nor is selection based primarily on whether the expert's opinions are "right". *Id.* at 1134. "The confident expert witness is less likely to have been chosen because she is right, than to have been chosen because she is confident, whether or not she is right." *Id.*

152. See SPENCE, *supra* note 2, at 270 (claiming that expert witnesses "are not chosen for their knowledge but for their ability to persuade."); Graham, *supra* note 12, at 85-86; Gross, *supra* note 2, at 1130; Shuman, *supra* note 19, at 201-02. The study by Champagne, Shuman and Whitaker surveyed 215 lawyers from Baltimore, Seattle, and Tucson who were involved in the trials studied and 30% of them responded (a total of 65 responses). *Id.* at 197-98 & n.11. An overwhelming majority of the lawyers who responded considered the expert's credentials 88%, the adamancy of the expert's support for the lawyer's position 84%, and the fee charged by the expert 74% in selecting experts. Over half of the lawyers considered the physical appearance of the expert. Moreover, 65% of the lawyers believed that experts were willing to be coached about how their testimony should be presented. *Id.* at 202. Of course, the results of the study are not definitive because of the relatively small sample. Nevertheless, in a previous study by the same researchers (involving trials in Dallas, Texas), only 7% of the lawyers questioned said that they considered the impartiality of the expert when employing experts. Champagne, *supra* note 19, at 8.

Trial practice journals bear out the findings of this research. See, e.g., Gerson H. Smoger, *Using Experts Wisely in Toxic Tort Cases*, 29 TRIAL, Sept. 1993, at 30-32.

flair for acting and mathematics might be a more successful witness than, say, Einstein."<sup>153</sup> In two recent studies almost half of the lawyers questioned admitted to shopping for experts.<sup>154</sup> In one of the studies, eighty-six percent of the lawyers identified the adamancy of the expert's support for the party's position as important or very important in selecting an expert.<sup>155</sup>

The Federal Rules of Civil Procedure implicitly encourage shopping for experts by protecting from disclosure and discovery the identity or opinions of "consulting experts."<sup>156</sup> Thus, not only can a party retain experts without knowing the expert's opinions and do so without risk of having to tell the other side

Ms. Smoger advises lawyers about how to find experts for toxic tort cases and how to ensure that the expert is effective. The keys to choosing the best expert include:

1. review the expert's publications;
2. contact other attorneys the expert worked with;
3. confirm board certifications;
4. inquire about the expert's direct experience with the chemical in question;
5. find out how the expert's time will be billed;
6. meet with the prospective experts and evaluate their ability to perform in the courtroom;
7. consider whether you and the expert will be able to maintain a smooth working relationship (for future collaborations);
8. make sure the expert is comfortable using whatever "magic words" are required in the jurisdiction where the case will be tried.

*Id.* at 30.

The expert's ability to communicate effectively is a critical factor for lawyers. See JAMES W. JEANS, SR., TRIAL ADVOCACY 388 (1993) (The expert "must be able to express his esoteric knowledge in simple terms"); LUBET, *supra* note 49, at 187-88; Champagne, *supra* note 19, at 8 (noting that experts themselves placed extreme importance on "the ability to convey technical information in a nontechnical fashion and the willingness to draw firm conclusions.").

153. SPENCE, *supra* note 2, at 270.

154. See Shuman, *supra* note 19, at 202 (Forty-three percent of the lawyers responding "acknowledged that they shopped for experts. They interviewed several experts before deciding whom to retain."); Champagne, *supra* note 19, at 7 (Forty-nine percent of the responding lawyers interviewed several experts before making the decision to employ one.").

155. Champagne, *supra* note 19, at 7.

156. See FED. R. CIV. PRO. 26(b)(4)(B) (Expert "who is not expected to be called as a witness at trial" may be discovered only upon "a showing of exceptional circumstances."); Robert S. Thompson, *Decision, Disciplined Inferences and the Adversary Process*, 13 CARDOZO L. REV. 725, 775 (1991) (Federal Rule of Civil Procedure 26(b)(4)(B) encourages "shopping for the 'right expert.'"). A "consulting" expert is one not expected to testify at trial who has either been specially retained or informally contacted by the lawyer. See FED. R. CIV. P. 26(b)(4)(B).

about it, but a party may also employ experts to prevent the other side from using them.<sup>157</sup>

Moreover, shopping for experts has never been easier than it is today. The prevalence of expert referral systems gives lawyers almost limitless hiring opportunities.<sup>158</sup> Multiple experts can be conveniently screened by the lawyer with little cost or effort, guaranteeing that the lawyer is certain to ultimately find one who will support the lawyer's position.<sup>159</sup>

Lawyers do not shop for an expert every time they need one. Instead, lawyers frequently retain the same expert or firm to testify in every case that involves a particular subject matter or a certain issue. Experts often have well-developed reputations as a plaintiff's or defendant's expert, which lawyers perpetuate.<sup>160</sup>

Regardless of how attorneys find their experts, however, they must prepare the expert to testify.<sup>161</sup> In fact, the amount of preparation needed for experts is greater than for lay witnesses because experts typically do not have personal knowledge of the events at issue.<sup>162</sup> Thorough preparation of experts is essential to make the testimony clear and direct.<sup>163</sup> The danger presented by expert witnesses, unlike the typical lay witness, is that experts have a financial interest in thorough preparation because they are paid for their time and they want to perform

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157. See Gross, *supra* note 2, at 1125.

158. See *supra* notes 136-37 and accompanying text.

159. See *Trower v. Jones*, 520 N.E.2d 297, 299 (Ill. 1988) (There has been a "proliferation of expert 'locator' services which, as a practical matter, can help the litigants of either side of most any case find an expert who will help advocate the desired position.").

160. See Gross, *supra* note 2, at 1132-33.

161. See Richard A. Epstein, *A New Regime for Expert Witnesses*, 26 VAL. U. L. REV. 757, 759 (1992). Epstein notes that this "coaching" is not only expensive, but also "increases the risk of bias." *Id.* Although lawyers prepare lay witnesses to testify as well, there are critical differences between the two. Lay witnesses usually know certain facts that are not subject to such manipulation or at least are within the witness's and not the lawyer's control. Experts create evidence. Lay witnesses typically have no incentive or motivation to prepare extensively. Experts are paid for their time and are motivated by the desire for future employment. Gross, *supra* note 2, at 1126-29.

162. See John S. Applegate, *Witness Preparation*, 68 TEX. L. REV. 277, 295 (1989) (stating that experts require "considerable preparation" because they lack personal knowledge).

163. *Id.* at 296 (claiming that experts are unable to testify without preparation).

well so they will get hired again.<sup>164</sup> Lawyers use their power of preparation to shape the expert's opinions. The lawyer decides what information the expert receives, what issues the expert testifies about, and, in some instances, the words the expert uses in stating her opinions.<sup>165</sup>

The corrupting influence of money<sup>166</sup> makes the lawyer's control of selection and preparation of experts a part of the problem.<sup>167</sup> Experts are selected for their witness skills and predilections, and become paid advocates for the party,<sup>168</sup> members of the trial team who assist in preparation of the case and argue the party's position through their testimony at trial. This role is expected today and is facilitated, and even encouraged, by the liberal Rules of Evidence.

Experts do shade their opinions,<sup>169</sup> overstate the certainty of

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164. Gross, *supra* note 2, at 1146. Professor Gross has previously identified these twin financial incentives:

Since the expert is paid she can afford to spend time preparing to testify. . . . If the expert values the role of witness . . . she will have an additional motive to spend time working with the attorney who calls her: careful preparation and close collaboration are likely to increase the satisfaction of that attorney, and to make the expert more desirable as a witness in the future.

*Id.* at 1138. Recent research suggests two additional points: 45% of lawyers in one study admitted that if the expert is willing to be biased in favor of the lawyer's position, the lawyer is inclined to employ the expert in the future. Champagne, *supra* note 19, at 7. Two-thirds of the lawyers responding to the Shuman study said they regularly retain the same expert. Shuman, *supra* note 19, at 202.

165. See Gross, *supra* note 2, at 1145-46; Shuman, *supra* note 19, at 202 (showing that 65% of the lawyers responding to the study believed experts were willing to be coached about how testimony should be presented); Champagne, *supra* note 19, at 7 (demonstrating that 77% of lawyers believed experts were willing to be coached).

166. The lure of money has long been recognized as a powerful influence leading to illegal, unethical, and immoral conduct. See *United States v. Coady*, 809 F.2d 119, 124 (1st Cir. 1987) (noting that participation in a drug trafficking scheme was done for "the love of money"); *Lewis v. State*, 414 So. 2d 470, 475 (Ala. Crim. App. 1982) (showing that the defendant committed robbery for "the love of money"); *Bushman v. State Bar of Cal.*, 522 P.2d 312, 314 (Cal. 1974) (suspending lawyer from practice for charging client an unconscionable fee); see also I *Timothy* 6:10 (New International) ("[T]he love of money is the root of all kinds of evil.").

167. See Gross, *supra* note 2, at 1146. ("The possibility of improper influence is inherent in adversarial preparation of all witnesses" but "experts are far easier to manipulate than lay witnesses.").

168. See *supra* note 5 and accompanying text.

169. See Gross, *supra* note 2, at 1138 (describing how process of selection and preparation of experts causes the expert "to compromise accuracy to achieve clarity"); cf. Langbein, *supra* note 148, at 835-36 (stating that personal experience as an expert

their opinions,<sup>170</sup> use unreliable methodologies or rely on unproven theories,<sup>171</sup> serve as conduits of inadmissible evidence<sup>172</sup> and occasionally lie<sup>173</sup> in the service of their

included "subtle pressures to . . . shade one's views").

170. See, e.g., Joseph Sanders, *From Science to Evidence: The Testimony on Causation in the Bendectin Cases*, 46 STAN. L. REV. 1, 37 (1993) (In the Bendectin litigation (described in some detail *infra* at text accompanying notes 230-51) the expert witnesses "expressed little uncertainty as to whether Bendectin is or is not a teratogen" despite the fact that scientific research did not definitively show any casual connection between Bendectin and limb reduction defects.); Cf. Champagne, *supra* note 19, at 7 (Fifty-six percent of lawyers responding to study "urged experts to be less tentative in their testimony.").

171. See *Eymard v. Pan American World Airways*, 795 F.2d 1230 (1986). In *Eymard* the expert economist for the children of decedent Ted Eymard testified to Mr. Eymard's future income (if he had lived) and the collective loss of inheritance for the three children. *Id.* at 1232-33. In rendering his opinions, however, the economist made assumptions that the Fifth Circuit found were "unsupported" and "completely incredible" and based his calculations on principles that were "inappropriate" and ignored reality. *Id.* at 1234-35. As a result, the court overturned the jury's damage award for loss of inheritance as "speculative or purely conjectural" and lectured trial judges on the need to be more vigilant in dealing with experts. *Id.* at 1235.

Similarly unreliable was the expert testimony offered by plaintiffs' experts in *Sorenson v. Shaklee Corp.*, 31 F.3d 638 (8th Cir. 1994). The experts opined that "because [the children] sustained birth defects . . . and their parents used Shaklee's alfalfa tablets, and because some alfalfa tablets had contained an EtO residue, the parents must have ingested the EtO residue tablets." *Id.* at 649. The appellate court noted with incredulity the experts' final inference, which essentially "reasoned from a final result in order to hypothesize what needed to be known but what was not." *Id.*; see *E.I. du Pont de Nemours and Co. v. Robinson*, No. 94-0843, 1995 WL 359024 (Tex. June 15, 1995) (excluding expert testimony based in part on faulty methodology "similar to that condemned by the court in *Sorenson*").

For another example of an unproven theory that found its way into the courtroom, see *United States v. Tranowski*, 659 F.2d 750, 752-54 (7th Cir. 1981) (allowing an astronomer to testify at trial, without objection, that he could date a photograph by making certain calculations from the "directional angle of the shadow cast by [an] object," despite the fact that no one had ever used his theory to date a photograph before and his theory had never been published, verified, or corroborated); see also HUBER *supra* note 12, at 37 *passim* (describing numerous examples of the admission of unreliable evidence); *infra* notes 234-47 and accompanying text (discussing unreliable expert testimony in Bendectin cases).

172. See *supra* notes 84-90 and accompanying text.

173. See *Ladner v. Higgins*, 71 So. 2d 242, 244 (La. Ct. App. 1954). In *Ladner*, the defendant's medical expert gave one of the most candid, if not most blatant, examples of false testimony. The exchange at trial, as reported by the court of appeals, was as follows:

Q.: Is that your conclusion that this man is a malingerer?

A.: I wouldn't be testifying if I didn't think so, unless I was on the other side, then it would be a post traumatic condition.

*Id.* Undoubtedly, testimonial lies from experts are the exception and not the rule, for several reasons. For one, the nature of expert testimony is to render opinions, not to state facts. Thus, outright lies are difficult to identify and most "opinions" are subject



clients.<sup>174</sup> The financial incentive, when combined with the process of selection and preparation, is significant enough that even the most honorable expert is placed in a difficult dilemma.

The problem of bias is a serious one.<sup>175</sup> However, the legal conventional wisdom is that the system can adequately deal with the problem.<sup>176</sup> The adversary system, including cross examination, presentation of conflicting evidence, and jury instructions, should reveal the expert's bias and provide the jury with the information needed to properly evaluate the testimony.<sup>177</sup> Too often, however, the bias of the paid expert is largely immune from the safeguards of our adversary system, and, left unchecked, threatens to undermine the system's pursuit of truth and justice.<sup>178</sup> This threat exists because the paid partisan operates under such liberal rules of evidence and testifies before an ill-equipped lay jury. These concerns are discussed below.

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to interpretation. Moreover, lawyers much prefer experts who truly believe in their position (however far out of the mainstream). Gross, *supra*, note 2, at 1132, 1177. Nevertheless, egregious and disturbing examples of widespread fraud by expert witnesses have been reported with disturbing frequency. One example is the pathologist for about 40 counties in Texas who falsified autopsies and then testified about the false reports in court. Andre A. Moenssens, *Novel Scientific Evidence in Criminal Cases: Some Words of Caution*, 84 J. CRIM. L. & CRIMINOLOGY 1, 16 (1993).

174. See Graham, *supra* note 12, at 45 ("[P]racticing lawyers can locate quickly and easily an expert witness to advocate nearly anything the lawyers desire" or "almost anything the client desires."); Jack B. Weinstein, *Improving Expert Testimony*, 20 U. RICH. L. REV. 473, 482 (1986) (concluding that "[a]n expert can be found to testify to the truth of almost any factual theory, no matter how frivolous.").

175. See HUBER, *supra* note 12, at 17-20; Richard A. Epstein, *Judicial Control Over Expert Testimony: Of Deference and Education*, 87 NW. U. L. REV. 1156, 1162-63 (1993) ("[T]he close working relationship between experts and their clients threatens objectivity and neutrality, resulting in serious damage to the trial system."); Gross, *supra* note 2, at 1146.

176. See Ronald J. Allen & Joseph S. Miller, *The Common Law Theory of Experts: Deference or Education?*, 87 NW. U. L. REV. 1131, 1146 (1993) (arguing that cross examination can fully reveal the extent of the expert's bias and that "it would be evidence of remarkable and disqualifying stupidity" if the jury was unable to understand the point).

177. See *Daubert*, 113 S. Ct. at 2798.

178. See Epstein, *supra* note 175, at 1162-63.

### B. *The (Un)Safeguards of the Adversary System*

The adversary system can be distinguished from other systems of adjudication by its heavy reliance on the parties to investigate and present their claims or defenses, and on a passive decision-maker to render a verdict.<sup>179</sup> Two parties, pitted against each other in "legal combat,"<sup>180</sup> are motivated to present their best case and to vigorously attack the other side's evidence, providing the impartial factfinder with all the information needed to decide the matter appropriately.<sup>181</sup> If the system works, the outcome is a just and true verdict.<sup>182</sup>

The system, however, does not always work.<sup>183</sup> The adversary system turns expert testimony into a sport<sup>184</sup> rather than a search for the truth. The truth-seeking tools of the system, including the presentation of contrary evidence and cross examination, serve only to mask the truth<sup>185</sup> and create uncer-

179. See Ellen F. Sward, *Values, Ideology & the Evolution of the Adversary System*, 64 IND. L.J. 301, 302, 313 (1989) (contrasting party control and passive decision-maker aspects of adversary system with inquisitorial systems that emphasize judicial control over investigation, presentation, and decision-making).

180. See Fred C. Zacharias, *Structuring the Ethics of Prosecutorial Trial Practice: Can Prosecutors Do Justice?*, 44 VAND. L. REV. 45, 54 (1991) (describing the adversary system as "legal combat").

181. See *Herring v. New York*, 422 U.S. 853, 862 (1975) ("[V]ery premise of adversary system is that partisan advocacy on both sides of a case will best promote the ultimate objective that the guilty be convicted and the innocent go free."); *Smith v. Armontrout*, 632 F. Supp. 503, 508 n.9 (W.D. Mo. 1986) ("The adversary system is based upon the idea that, in an open forum where each party is allowed to present its own information and test the other's information, the 'truth' will rise to the surface."); Applegate, *supra* note 162, at 326 (asserting that the adversary theory of factfinding presupposes that the truth will best be found by the clash of two or more versions of reality before a neutral tribunal); Sward, *supra* note 179, at 316-17 (When each side presents its best case in the adversary system, the decision-maker has all the information it needs to reach a just result.).

182. See Paul L. Haines, *Restraining the Overly Zealous Advocate: Time for Judicial Intervention*, 65 IND. L.J. 445, 447 (1990) (arguing that the adversary system is a means of discerning truth and justice); Sward, *supra* note 183, at 304-05 (stating that truth and justice are important aspects of the adversary system). Of course, "truth" cannot be known with absolute certainty. *Smith v. Armontrout*, 632 F. Supp. 503, 508 n.9 (W.D. Mo. 1986); Sward, *supra* note 179, at 304 (stating that "truth is elusive").

183. See Zacharias, *supra* note 180, at 55 (arguing that the adversary system does not always expose truth).

184. See generally Judith L. Maute, Note, *Sporting Theory of Justice: Taming Adversary Zeal with a Logical Sanctions Doctrine*, 20 CONN. L. REV. 7, 30 (1987) (discussing the positive and negative dimensions of litigation as a game or sport).

185. See Sward, *supra* note 179, at 317 (alleging that the adversary system en-

tainty. The jury as the factfinder finds itself lost, isolated, and helpless.

### 1. The Lay Jury

Almost a century ago Justice Learned Hand recognized the limitations of the lay jury. He concluded that in resolving conflicts or inconsistencies in expert testimony “[t]he jury is not a competent tribunal.”<sup>186</sup> In fact, “[i]t is just because they are incompetent for such a task that the expert is necessary at all.”<sup>187</sup> Hand based his conclusion on the fact that a jury lacks the experience necessary to understand the validity of the laws or propositions used by the experts.<sup>188</sup> Hand considered the problem intractable, causing him to propose the widespread use of court appointed experts who would provide the jury “the final statement of what was true.”<sup>189</sup> Therein lies the age old conundrum: how can the system give the jury the assistance it needs to resolve conflicts in expert testimony without overwhelming the jury with conflicting advice that it cannot competently evaluate?

#### a. The Supreme Court’s View of the Jury

Unfortunately, there is no obvious solution to the problem. The Supreme Court, in *Daubert v. Merrell Dow Pharmaceuticals Inc.*,<sup>190</sup> gave a two part response to the dilemma. First, it imposed gatekeeper responsibilities on the judge, requiring the exclusion of opinions based on unreliable methodologies or theories.<sup>191</sup> Second, it relied on the adversary system to give the

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courages litigants to “mask” the truth).

186. See Hand, *supra* note 96, at 54-55.

187. *Id.* at 54.

188. *Id.* The fundamental and insurmountable problem for juries, in Hand’s opinion, was that the truth of a proposition relied on by an expert “lies just in its validity as an inference from a vast mass of experience. . . . Knowledge of such general laws can be acquired only from a specialized experience such as the ordinary man does not possess.” *Id.* at 55.

189. *Id.* at 56. Hand’s other equally compelling concern was “that the expert becomes a hired champion of one side.” See *id.* at 53.

190. 113 S. Ct. 2786 (1993).

191. *Id.* at 2798.

jury the aid necessary to resolve expert conflicts.<sup>192</sup> The Court expressed its belief that skeptics of jury competence are "overly pessimistic about the capabilities of the jury, and of the adversary system generally."<sup>193</sup>

The Court, however, is apparently more pessimistic about juries and the adversary system than it was when it decided *Barefoot v. Estelle*<sup>194</sup> in 1983. In *Barefoot*, the Court held that a criminal defendant's due process rights were not violated by the admission of psychiatric opinion testimony about the defendant's future dangerousness.<sup>195</sup> This ruling was contrary to the available data, which indicated that "psychiatrists and psychologists are accurate in no more than one out of three predictions of violent behavior."<sup>196</sup> The Court was confident that the adversary system would sort out the reliable evidence from the unreliable, and that the jury would take due account of the shortcomings of the evidence.<sup>197</sup>

In *Daubert*, on the other hand, the Supreme Court implicitly recognized that trusting juries with *unreliable* expert testimony is unwise, and thus imposed a reliability requirement on scientific expert testimony that predictions of future dangerousness may well not satisfy.<sup>198</sup> Justice Blackmun, who wrote the Court's opinion in *Daubert*, and scolded Merrell Dow's lawyers

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192. *Id.*

193. *Id.* In *Barefoot v. Estelle*, 463 U.S. 880 (1983), the Court reached the same conclusion in a different context. In *Barefoot*, the Court addressed the admission of expert testimony by psychiatrists predicting a person's future dangerousness and concluded that the testimony should be admitted. Its weight could be determined by the fact finder who had the benefit of observing cross examination and contrary evidence presented by the opposing party. *Id.* at 898.

194. 463 U.S. 880 (1983).

195. *Id.* at 896-903.

196. *Id.* at 898 n.7. The American Psychiatric Association filed an amicus brief in which it stated its opposition to the prediction of future dangerousness by psychiatrists. *Id.* at 899. The Court noted that some members of the Association expressly disagreed with the Association's position. *Id.*

197. *Id.* at 899, 901. In addition, the Court noted that predictions of dangerousness by lay persons are admissible and "it makes little sense, if any, to submit that psychiatrists . . . would know so little about the subject that they should not be permitted to testify." *Id.* at 896-97.

198. Paul C. Giannelli, *Daubert: Interpreting the Federal Rules of Evidence*, 15 CARDOZO L. REV. 1999, 2021 (1994). Professor Giannelli is more bold. He says: "[E]ven a superficial reliability analysis should result in the exclusion of [the testimony from *Barefoot*]." *Id.*

(and others) for their skepticism about the jury,<sup>199</sup> dissented in *Barefoot* and recognized the danger of admitting unreliable expert testimony.<sup>200</sup> He stated: "unreliable scientific evidence is widely acknowledged to be prejudicial" and "the prejudice is likely to be indelible."<sup>201</sup> In language reminiscent of Judge Learned Hand, Blackmun observed: "One can only wonder how juries are to separate valid from invalid expert opinions when the "experts" themselves are so obviously unable to do so."<sup>202</sup>

#### b. In the Jury We Trust?

As Hand and the Supreme Court in *Barefoot* and *Daubert* so clearly demonstrate, one's perception of the jury's capability to competently weigh expert witness testimony is often at the heart of any attempt to reform expert witness testimony or change the standard for admitting such testimony. In *Daubert*, the Court ended *Frye*'s reign based on the belief that cross examination, contrary evidence, and instructions from the judge were sufficient tools to allow the jury to evaluate expert testimony competently.<sup>203</sup> The *Frye* general acceptance test is applied by courts because of the belief that scientific evidence takes on an "aura of special reliability" that may mislead the jury.<sup>204</sup> Commentators follow the same path: Those who mis-

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199. See *supra* note 193 and accompanying text.

200. See *Barefoot*, 463 U.S. at 916 (Blackmun, J., dissenting).

201. *Id.* at 926-27 (Blackmun, J., dissenting). The record in *Barefoot* supported Justice Blackmun's concerns, suggesting that psychiatrists are accurate only one out of three times when predicting future dangerousness. 463 U.S. at 899 n.7 (citing MONAHAN, *THE CLINICAL PREDICTION OF VIOLENT BEHAVIOR* 47-49 (1981)). Blackmun concluded that "[t]here can be no question that psychiatric predictions of future violence will have an undue effect on the ultimate verdict." 463 U.S. at 929. The Court, while characterizing Blackmun's dissent as premised on the jury's inability to separate the wheat from the chaff, stated: "We do not share in this low evaluation of the adversary process." *Id.* at 899 n.7.

202. *Barefoot*, 463 U.S. at 929; see *supra* notes 186-89 (discussing Judge Learned Hand's remarks on jury incompetence).

203. See *Daubert*, 113 S. Ct. at 2798.

204. See, e.g., *Daubert v. Merrell Dow Pharmaceuticals*, 951 F.2d 1128 (1991) (following *Frye* because expert opinion based on a scientific technique "create[s] a substantial danger of undue prejudice or of confusing the issues or of misleading the jury . . . because of its aura of special reliability and trustworthiness") (quoting *United States v. Amaral*, 488 F.2d 1148, 1152 (9th Cir. 1973)), *vacated and remanded*, 113 S. Ct. at 2798 (1993); *United States v. Alexander*, 526 F.2d 161, 168 (8th Cir. 1975) (stating that scientific evidence "is likely to be shrouded with an aura of near

trust the jury's competence seek tighter control over expert testimony,<sup>205</sup> those who believe the jury is capable of evaluating expert testimony propose maintaining the liberal Federal Rules, or, at most, changing the presentation of evidence, but not the standard for admission.<sup>206</sup>

This relationship between the standard for admitting and excluding expert testimony and the testimony's perceived effect on the jury should not come as a surprise. At the core of the Federal Rules of Evidence is the premise that evidence that poses a significant danger of confusing, overwhelming or otherwise distracting the jury from its factfinding should be excluded.<sup>207</sup> The rule against hearsay is perhaps the most prominent example of this principle.<sup>208</sup> The rule excludes out of court statements offered for their truth subject to numerous exceptions,<sup>209</sup> out of concern that the jury will fail to give hearsay statements the appropriate weight.<sup>210</sup> In more general terms, Rule 403 embodies this premise, specifically excluding evidence when the risk that the jury will decide a case based on emotion instead of the facts is substantially greater than the probative

infallibility, akin to the ancient oracle of Delphi"); *United States v. Addison*, 498 F.2d 741, 744 (D.C. Cir. 1974) (finding that scientific evidence may "assume a posture of mythic infallibility in the eyes of a jury of laymen"); *People v. Leahy*, 882 P.2d 321 (Cal. 1994) ("[L]ay jurors tend to give considerable weight to scientific evidence when presented by experts with impressive credentials: . . . [A] misleading aura of certainty . . . often envelopes a new scientific process.")

205. *E.g.*, Epstein, *supra* note 175, at 1157-58; David L. Faigman, *Struggling to Stop the Flood of Unreliable Expert Testimony*, 76 MINN. L. REV. 877, 886 (1992).

206. *E.g.*, Weinstein, *supra* note 174, at 482.

207. *See* FED. R. EVID. 403.

208. *See* FED. R. EVID. 801(c). Rule 801(c) provides: "'Hearsay' is a statement, other than one made by the declarant while testifying at the trial or hearing, offered in evidence to prove the truth of the matter asserted." *Id.*

209. *See* FED. R. EVID. 801(d), 803, and 804.

210. *See* 2 JONES ON EVIDENCE, *supra* note 63, at 168 (arguing that the hearsay rule was developed for jury trials because of a distrust for juries based on jurors' lack of training to discriminate between different grades of testimony); JAMES B. THAYER, A PRELIMINARY TREATISE ON EVIDENCE AT THE COMMON LAW 517-23 (1898); Faigman, *supra* note 205, at 879-80 ("The drafters of the Rules simply did not trust juries to appreciate the limited weight hearsay should receive."). *But see* Richard F. Rakos & Stephen Landsman, *Researching the Hearsay Rule: Emerging Findings, General Issues, and Future Directions*, 76 MINN. L. REV. 655, 658-63 (1992) (suggesting that initial research does not support historical premise for excluding hearsay).

value of the evidence.<sup>211</sup> Clearly, jury competence is and should be a fundamental issue of evidentiary reform.<sup>212</sup>

Remarkably, the debate over expert witness testimony has been argued without much reference to reliable information about the jury.<sup>213</sup> Instead, commentators have often relied on personal experience,<sup>214</sup> intuition,<sup>215</sup> and anecdotal evidence,<sup>216</sup> rather than empirical research.<sup>217</sup> Of course, it does not take the assistance of empirical data to know that jurors are ill-equipped to understand complex expert testimony. That is a matter of common sense.<sup>218</sup> On the other hand, research can shed light on the extent to which the jury's limitations cause inconsistent or inaccurate decision-making. Unfortu-

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211. Rule 403 precludes the admission of evidence when the "probative value is substantially outweighed by the danger of unfair prejudice." FED. R. EVID. 403. Most notably, Rule 403 covers evidence with "an undue tendency to suggest decision on an improper basis [such as] an emotional one." FED. R. EVID. 403 advisory committee's note.

212. See Edward J. Imwinkleried, *The Standard for Admitting Scientific Evidence: A Critique From the Perspective of Juror Psychology*, 28 VILL. L. REV. 554, 564 (1982-83) (arguing that in situations in which a jury is not able to critically evaluate scientific testimony, liberal admission of the testimony would be a miscarriage of justice).

213. See Neil Vidmar, *Are Juries Competent to Decide Liability in Tort Cases Involving Scientific/Medical Issues? Some Data From Medical Malpractice*, 43 EMORY L.J. 885, 886 (1994) (noting that many commentators have relied on anecdotal evidence to support claim that juries are incompetent); J. Alexander Tanford & Sarah Tanford, *Better Science Through Trials: A Defense of Psychologist-Lawyer Collaboration*, 66 N.C. L. REV. 741, 753-54 (1988) (noting failure of lawyers to distinguish between 'pop psychology' and scientific research on the jury).

214. See, e.g., Irving Younger, *A Practical Approach to the Use of Expert Testimony*, 31 CLEV. ST. L. REV. 1, 39 (1982) (concluding that in his experience jurors are competent to assess the credibility of experts).

215. See, e.g., Faigman, *supra* note 205, at 882 (relying on intuition to conclude that juries cannot critically assess scientific evidence); Gianelli, *supra* note 106, at 1237 (stating that the major danger of scientific evidence is its potential to mislead the jury, but failing to cite any study or research to support his point); Hand, *supra* note 96, at 55-56 (concluding without citing to any authority that the jury is not competent to resolve conflicts in expert testimony).

216. See, e.g., HUBER, *supra* note 12, at 20 *passim* (describing numerous anecdotes of alleged "junk science" that misled juries to illustrate the problem); Vidmar, *supra* note 213, at 886-87 (describing use of anecdotal evidence by Huber and others).

217. There are some notable exceptions of course. For a discussion of empirical data on jury competence see Imwinkleried, *supra* note 212, at 564-70; Steven M. Egesdal, Note, *The Frye Doctrine and Relevancy Approach Controversy: An Empirical Evaluation*, 74 GEO. L.J. 1769, 1776-77 (1986).

218. Imwinkleried, *supra* note 212, at 564 ("[C]ommon sense suggests that lay jurors with little or no background in science will have difficulty understanding complex, technical testimony.").

nately, most, if not all, of the available research is equivocal and does not support general conclusions about the jury.<sup>219</sup>

The reasons for the limitations are varied. First, until recently, much of the research in this area has been narrowly focused on expert testimony about eyewitness testimony and polygraph examinations.<sup>220</sup> Second, many of the available studies are "simulations" in that they involve simulated jurors, simulated cases, or both.<sup>221</sup> Thus, the results may not generalize to real jurors in real cases. Third, the studies rarely include group deliberations or verdicts so that the practical effect of the testimony can be measured.<sup>222</sup> Fourth, studies that involve actual cases and juries are typically small and must rely on post-trial interviews of the jury to evaluate jury competence. Not surprisingly, most jurors believe they understand the testimony presented.<sup>223</sup>

219. Michael S. Jacobs, *Testing the Assumptions Underlying the Debate About Scientific Evidence: A Closer Look at Juror "Incompetence" and Scientific "Objectivity,"* 25 CONN. L. REV. 1083, 1094, 1097 (1993) ("[T]he import of [the empirical data] is undeniably equivocal."); Gross, *supra* note 2 at 1179 (stating that the data on jury behavior may have limited "generalizability").

220. Gross, *supra* note 2, at 1179.

221. See, e.g., Jane Goodman, *Jurors' Comprehension and Assessment of Probabilistic Evidence*, 16 AM. J. TRIAL ADVOC. 361, 368-69 (1992) (using mock jurors and written case summary); Ann Cavoukian & Ronald J. Keslegrave, *The Admissibility of Polygraph Evidence in Court: Some Empirical Findings*, 4 L. & HUM. BEHAV. 117, 124-25 (1980) (using mock jurors and a written description of a murder case); Ronald L. Carlson et al., *The Effect of Lie Detector Evidence on Jury Deliberations: An Empirical Study*, 5 J. POLICE SCI. & ADMIN. 148, 150 (1977) (using mock jurors).

222. See Tanford & Tanford, *supra* note 213, at 754-55 ("[T]he effect of a manipulation on actual jurors cannot be predicted without considering the deliberation process.").

223. See SAUL M. KASSIN & LAWRENCE S. WRIGHTSMAN, *THE AMERICAN JURY ON TRIAL* 14-17 (1988) (noting weaknesses of research involving review of court records, interviewing jurors or interviewing other trial participants). Kassin and Wrightsman observe that reviewing court records or interviewing jurors does not allow the researcher to draw firm conclusions about cause and effect. Moreover, the reliability of juror interviews depend on the ability and willingness of the jurors to disclose truthful information. *Id.*

The groundbreaking study of juries by Kalven and Zeisel in which actual trials were studied and actual jurors were interviewed, is often cited as proof that jurors do not overvalue expert testimony. *E.g.*, Imwinkler, *supra* note 212, at 566-67 (stating that the findings of Kalven and Zeisel that jurors adequately follow the evidence and understand the case, and that a jury's verdict moves with the weight and direction of the evidence "are highly relevant because many of the cases they studied involved scientific evidence"). Yet, the trials studied occurred in 1954-55 and 1958, expert witness testimony was given in only 25% of the prosecution cases and 6% of the criminal defense cases, and both sides presented expert testimony in only 3% of the cases. HARRY KALVEN & HANS ZEISEL, JR., *THE AMERICAN JURY* 33 n.1 & 139 (1966).



Nevertheless, many of the commentators who have reviewed the available "equivocal" data have concluded that juries are competent to evaluate expert testimony,<sup>224</sup> or at least are no worse with expert evidence than with any other evidence they evaluate.<sup>225</sup> However, there is also a body of research that supports the opposite conclusion.<sup>226</sup> The Special Committee on Jury Comprehension of the American Bar Association's Litigation Section, which studied four complex trials, found that many jurors were "out of their league," and that in a six week trial involving misappropriation of trade secrets the jury had a difficult time understanding and evaluating the evidence.<sup>227</sup> Perhaps most interesting is that alternate juries used by the Committee reached different verdicts from the actual juries in three of the four cases.<sup>228</sup> In addition, there is substantial research concluding that jurors do not competently evaluate statistical evidence.<sup>229</sup>

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Thus, the study is not particularly revealing about how juries handle the now-common battle of the experts or the more sophisticated expert testimony presented in courtrooms in 1995. See Joe S. Cecil, *Citizen Comprehension of Difficult Issues: Lessons From Civil Jury Trials*, 40 AM. U. L. REV. 727, 747-48 (1991).

224. See Cecil, *supra* note 224, at 764 ("[T]he overall picture of the jury that emerges from the available data indicates that juries are capable of deciding even very complex cases."); Gross, *supra* note 2, at 1179 ("[T]he limited experimental data on jury behavior do not support the view that jurors attribute a 'mystic infallibility' to expert evidence."); Imwinkleried, *supra* note 212, at 566-71 (concluding that there is little or no objective support for position that jurors attach too much weight to expert testimony); Jacobs, *supra* note 221, at 1097 (stating that available empirical data "strongly rebuts the broad assumption that jurors are not competent to understand complicated scientific evidence."); Vidmar, *supra* note 213, at 907 (finding that data supports the conclusion that in the preponderance of medical malpractice cases jurors "make reasonable decisions").

225. See Gross, *supra* note 2, at 1180.

226. See *Expert Witnesses Found Credible by Most Jurors*, NAT'L L.J., Feb. 22, 1993, at S-4. A poll of nearly 800 people who served on civil or criminal juries in 1992 found that 89% of the jurors polled thought the expert witnesses who testified were believable. Moreover, 36% thought the expert testimony "made a great deal of difference" and 32% said it "made some difference" in their case. For additional material see ARTHUR D. AUSTIN, *COMPLEX LITIGATION CONFRONTS THE JURY SYSTEM: A CASE STUDY 85-86* (concluding that juries in two complex cases did not understand economic testimony); Egesdal, *supra* note 217, at 1776-77.

227. Special Comm. on Jury Comprehension, *Jury Comprehension in Complex Cases*, 1989 A.B.A. SEC. LITIG. 25. The other cases involved sexual harassment, antitrust, and insurance fraud. *Id.* at 9.

228. *Id.* at 59.

229. Jacobs, *supra* note 219, at 1096 ("Understanding and evaluating statistical evidence, for example, seems to present real difficulties to most ordinary jurors.").

The most revealing research, however, is the recent work done by Professor Joseph Sanders on the Bendectin litigation.<sup>230</sup> The issue in every Bendectin case was the same: Did the anti-nausea drug Bendectin cause limb reduction defects in newborn children?<sup>231</sup> More than a thousand lawsuits were filed against the manufacturer of Bendectin, Merrell Dow Pharmaceuticals.<sup>232</sup> Twenty-five of the cases were tried to a jury, and verdicts were returned in twenty.<sup>233</sup>

It is generally recognized by scientists that Bendectin does not cause limb reduction defects in newborn children.<sup>234</sup> Yet, plaintiffs presented highly credentialed expert witnesses at each trial<sup>235</sup> who testified under oath that based upon in vivo and in vitro studies, pharmacological structural analysis, and re-analyses of epidemiological data, Bendectin can cause limb reduction defects in newborn children.<sup>236</sup> Defendants also of-

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230. See generally Sanders, *supra* note 170, at 4-12 (overviewing the Bendectin litigation). The terms "Bendectin litigation" or "Bendectin cases" are used interchangeably in this article to describe a series of cases involving claims by plaintiffs of limb reduction defects caused by the ingestion of Bendectin by the mother during pregnancy. Professor Joseph Sanders has studied the Bendectin litigation extensively, see *id.* at 3-5, and the data he has collected and written about is referred to at some length in this section of the article. Sanders interviewed the jurors in one Bendectin case, *Havner v. Merrell Dow Pharmaceuticals, Inc.*, in which a large verdict was returned for the plaintiff, reviewed transcripts from a total of six Bendectin trials, and correlated the outcomes in every case tried to a verdict. See *id.* at 30.

231. Sanders, *supra* note 170, at 5 ("Each trial involved the same fundamental question: Did Bendectin cause birth defects?"); see, e.g., *Daubert*, 113 S. Ct. at 2788; *Turpin v. Merrell Dow Pharmaceuticals, Inc.* 959 F.2d 1349, 1349-50 (6th Cir. 1992) (noting inconsistent results reached on causation issue); *De Luca v. Merrell Dow Pharmaceuticals, Inc.*, 911 F.2d 943 (3rd Cir. 1990) (noting existence of over 1000 suits alleging Bendectin caused birth defects).

232. See *De Luca*, 911 F.2d at 943 ("This is one of the last of over 1,000 suits alleging that birth defects were caused by the drug Bendectin."); Sanders, *supra* note 170, at 4 (stating that almost 1,700 suits have been filed against Merrell Dow alleging injuries caused by Bendectin). One of the jury trials was the consolidation of 818 cases and involved only the common issue of causation. See *In re Richardson-Merrell, Inc. "Bendectin" Prod. Liab. Litig.*, 624 F. Supp. 1212, 1216 n.1 (S.D. Ohio 1985).

233. See Sanders, *supra* note 170, at 4. In addition, five trials were tried to the judge. See *id.* at 4-5.

234. *Id.* at 9-12 (The "sentiment in both scientific and judicial communities [is] that Bendectin is not a teratogen.").

235. See *id.* at 32 (showing that almost all the experts possessed a Ph.D. or M.D. and some held other advanced degrees); see also *Daubert*, 113 S. Ct. at 2791 & n.2 (describing the highly credentialed experts in that case).

236. See generally Sanders, *supra* note 170, at 18-24 (reviewing the types of data relied on by experts in the Bendectin cases); *id.* at 4-18 (describing testimony on

ferred expert testimony at each trial and presented the conventional scientific position that there was no reliable evidence of any causal connection.<sup>237</sup> Remarkably, the jurors found for the plaintiffs forty percent of the time (eight out of twenty trials), a success rate that is consistent with the success rate of plaintiffs in products liability litigation generally.<sup>238</sup> Moreover, plaintiffs' successes were not compressed into the early period of litigation as one might expect; rather, they were spread consistently throughout the litigation.<sup>239</sup>

Professor Sanders concluded that the primary shortcoming of the Bendectin juries was that they became "one-eyed factfinders."<sup>240</sup> That is, they treated all experts as similarly qualified and all evidence of equal value and relevance.<sup>241</sup> The jurors lacked "depth perception."<sup>242</sup> The juries appeared to undervalue the epidemiological evidence, overvalue other types of available data, and misperceive the state of scientific opinion about the causation issue.<sup>243</sup>

The Bendectin cases help fill a vacuum of research data on how effectively (or ineffectively) juries handle conflicting expert testimony. The data is particularly helpful because it is based on the results reached by real juries in real cases who listened to real experts testify about the same issue in each case.<sup>244</sup> It

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causation by plaintiffs' experts).

237. *Id.* at 42.

238. See Joseph Sanders, *Scientific Validity, Admissibility, and Mass Torts After Daubert*, 78 MINN. L. REV. 1387, 1433 (1994).

239. Sanders, *supra* note 170, at 51.

240. *Id.*

241. See *id.*, at 47.

242. *Id.*

243. Epidemiological studies are generally considered indispensable proof in toxic tort or mass exposure cases. In the Bendectin cases, defendants presented evidence, which plaintiffs could not deny, that all 30 of the extant epidemiological studies found no causal connection. Yet, one juror interviewed by Sanders ranked epidemiology last in importance, behind test tube and animal studies and the pharmacological structural analysis. *Id.* at 45. Four other jurors in the same case believed after the trial that a majority of epidemiologists considered Bendectin a teratogen or that they were at most evenly divided. *Id.* at 40.

244. Cf. KASSIN & WRIGHTSMAN, *supra* note 223, at 14-18 (pointing out weaknesses of various research approaches used with juries). The normal shortcoming of relying on court records as a basis for jury research is the inability to draw firm conclusions about causes and effects due to the many variables involved in a trial. *Id.* at 14-15. The Bendectin cases ameliorate that concern to some degree because each case involved the same issue, similar injuries and similar expert testimony. See Sanders,

is compelling data because it comports with the experience of most people and the long held beliefs of many commentators: when confronted with conflicting information from experts (of whatever type) jurors choose between them by making personal judgments.<sup>245</sup> Because jurors are not competent to decide which expert is "right" they use their intuition (they choose the one they like), or decide the issue based on the perceived motivations of the experts (they choose the one they believe), or they decide the issue based on the experts' presentation or qualifications (they choose the one who appears to be the better expert). Alternatively, they may reject the expert advice altogether and decide the issue on other considerations (they choose the position they wanted all along or the position to which they are emotionally attached).<sup>246</sup>

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*supra* note 170, at 2. Accordingly, the results are more helpful than the typical study of jury behavior that consists of mock jurors viewing a simulated case, *see, e.g.*, Alan Markwart & Brian E. Lynch, *The Effect of Polygraph Evidence on Mock Jury Decision-Making*, 7 J. POLICE SCI. & ADMIN. 324, 334 (1979), mock jurors viewing a real trial, *see, e.g.*, Carlson *supra* note 221, at 150, or mock jurors simply reading a description of a case, *see, e.g.*, Caroukian, *supra* note 221, at 125. Simulated jury studies may lack "external validity." That is, they may not generalize to real trials involving real juries. Kassir, *supra* note 223, at 18; Tanford & Tanford, *supra* note 213, at 754-55. The study of the Bendectin cases does not have that weakness.

245. *See, e.g.*, Melvin Belli, *Forensic Medical Experts, Obligations and Responsibilities*, 8 MED. SCI. & L. 15, 19 (1968) (A juror's decision to believe one doctor over another is likely to be based on "courtroom demeanor, personality, or forensic ability."); Jane Goodman et al., *What Confuses Jurors in Complex Cases*, TRIAL, Nov. 1985, at 65 (asserting that jurors are likely to make "personal judgments about the experts and not about the information relayed."); Sanders, *supra* note 170 at 38-39 (claiming that should jurors be unable to weigh expert opinion based on testimony alone, they may look to other factors, make personal judgments about the experts); Younger, *supra* note 214, at 39-42 (concluding that a jury does a good job of assessing an expert's credibility because jurors (1) pay attention to the expert's qualifications, (2) reject testimony that conflicts with their world view, and (3) judge the expert based on his personality, presence, and appearance).

246. *See* Gross, *supra* note 2, at 1187. Professor Gross, in his illuminating article on expert witnesses, articulates four situations in which the jury might disregard the evidence altogether: (1) "jurors might choose the expert opinion that best fit their previous predilections on the factual issue in question"; (2) they might pick one expert's views because it leads to the outcome they prefer for other reasons; (3) they might conclude that the expert testimony is a "wash" because one view cancels out the other; or (4) they might deliberately disregard the evidence "out of anger, or confusion, or disappointment." *Id.* (citations omitted).

One of the concerns in the Bendectin cases was that juries would be swayed by the severe nature of the plaintiffs' injuries. *See* De Luca v. Merrell Dow Pharmaceuticals, Inc., 911 F.2d 943, 952 (claiming that an expert testifying for plaintiff who was "as sympathetic as a child crippled by serious birth defects" should be

This is disturbing because the Bendectin cases share much in common with the typical case tried to juries today.<sup>247</sup> The battle of the experts that was present in every Bendectin case is now commonplace. A study of 529 civil jury trials in California found that opposing expert testimony was presented in fifty-seven percent of all trials.<sup>248</sup> Moreover, testifying experts are likely to be repeat performers who testify frequently,<sup>249</sup> and tend to be well-paid<sup>250</sup> and highly-credentialed.<sup>251</sup> Of course, it would overstate the case to draw conclusions about jury behavior based on the Bendectin cases alone. These cases involved particular sets of facts and issues that may limit their general application. However, the Bendectin cases do suggest that the

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subject to heightened scrutiny); *Richardson v. Richardson-Merrell, Inc.* 857 F.2d 823, 832-33 (D.C. Cir. 1988) ("It is 'imperative' in this case to remain vigilant to ensure that neither emotion nor confusion has supplanted reason. . . . There was an emotional factor at play, a circumstance we are not at liberty to ignore."), *cert. denied*, 493 U.S. 882 (1989). One sign of emotion prevailing over reason is the large damage awards rendered by several juries. In *Merrell Dow Pharmaceuticals, Inc. v. Havner*, a state court jury in Corpus Christi, Texas awarded the plaintiffs over three million dollars in compensatory damages and thirty million dollars in punitive damages. See *Merrell Dow Pharmaceuticals, Inc. v. Havner*, 907 S.W.2d 535 (Tex. Ct. App. 1994).

247. There are, of course, obvious differences. The Bendectin cases involved unusual injuries, focused on the causation issue, not the issue of defect or negligence, and included an inordinately large number of expert witnesses—almost half of all the witnesses called. Even to the extent the lessons from the Bendectin cases cannot be generalized to non-toxic tort litigation, see Vidmar, *supra* note 213, at 909, there is more "mass exposure" litigation than ever and the lessons from those cases are clear.

248. Gross, *supra* note 2, at 1120. The study examined civil trials in California in 1985 and 1986. In 63% of all trials and in three quarters of cases involving expert testimony there was some expert testimony presented by both sides. See *id.*, at 1120. The study also found on average of 3.3 experts testified in every trial. *Id.* An updated study, which examined trials in 1990-91, found 4.1 experts testified in every trial. Samuel R. Gross & Kent D. Syverud, *Preliminary Tabulation* (June 1994) (on file with the author). In a much more recent study of trials in Seattle, Baltimore, and Tucson a sizable majority of the judges, lawyers and experts responding stated that in cases where expert witnesses testified, both sides presented expert testimony. Shuman, *supra* note 19, at 199.

249. See Gross, *supra* note 2, at 1120 (showing that expert witnesses averaged 9.4 appearances in trial over six years); Shuman, *supra* note 19, at 204 (Ninety percent of lawyers responding to a survey stated it was "common for lawyers to work regularly with the same expert witnesses.").

250. See Champagne, *supra* note 19, at 6 (showing that average expert witness fee of 42 experts regarding the study was \$258); Shuman, *supra* note 19, at 205 (demonstrating that the average expert witness fee of 85 experts responding to study was \$185 an hour and ranged up to \$500 an hour).

251. See Gross, *supra*, note 2, at 1119; Shuman, *supra* note 19, at 204 (demonstrating that 64% of experts in study had at least a masters degree; 54% had a doctorate or professional degree).

tools of the adversary system do not demystify expert testimony for juries; instead they may make the jury's task more difficult.

## 2. Cross Examination and Contrary Evidence

### a. Presentation of Contrary Evidence

The adversary system provides advocates with two weapons for waging legal combat at trial: the opportunity to present evidence that contradicts the evidence of their adversary, and the opportunity to cross examine their adversary's witnesses.

The problems created by the presentation of contrary evidence can be demonstrated by the following example. Assume that ninety-five experts in a particular scientific field take the position that there is no causal connection between a substance or device and plaintiff's injuries. Five experts disagree, and take the position that there is a causal connection. At trial, one expert from each side testifies. The defendant's expert testifies that there is a clear, overwhelming majority of the scientific community that agrees with him. The judge instructs the jury that the number of witnesses called by the parties on an issue is not a factor that it should consider.<sup>252</sup> The jury, because it is unable to substantively evaluate the conflicting positions of the experts, relies on conventional devices, such as bias, to decide the issue. What will the jury decide? It may well choose to dismiss as self-serving the defendant expert's characterization of the scientific community, or simply be swayed by the charm and persuasion of the plaintiff's expert. Of course, if one side presents additional expert testimony, the other side will too.<sup>253</sup> Thus, the first shortcoming of the presentation of con-

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252. A typical instruction to the jury on this point might state as follows:

The weight of evidence is not necessarily determined by the number of witnesses testifying on either side. You should consider all the facts and circumstances in evidence to determine which of the witnesses are worthy of greater credence. You may find that the testimony of a smaller number of witnesses on one side is more credible than the testimony of a greater number of witnesses on the other side.

1 EDWARD J. DEVITT & CHARLES B. BLACKMAR, FEDERAL JURY PRACTICE AND INSTRUCTIONS 573 (3d ed. 1977).

253. Sanders, *supra* note 170, at 39 (assuming both sides have roughly equal resources).

trary evidence, at least with experts, is that the presentation itself may give the jury a misleading portrayal of the relevant scientific community.<sup>254</sup>

Moreover, as Professor Gross has pointed out, those experts in the minority on any issue are more likely to be in great demand because there are fewer of them and their position is the controversial one.<sup>255</sup> Accordingly, they are likely to testify more frequently, become more effective advocates for their position, participate in litigation as a matter of principle and be quite persuasive witnesses.<sup>256</sup> Once again, the Bendectin cases support this point.<sup>257</sup>

Dangers of substance arise as well. When conflicting expert testimony is presented to a lay jury two events take place. First, the conflicts between the experts are emphasized and the areas of agreement are ignored or understated.<sup>258</sup> The advocacy role assumed by many experts leads directly to this problem. Experts who are carefully prepared and selected by lawyers testify to persuade the jury, not to inform them. The best way for lawyer's to accomplish this goal is to focus their expert's testimony on the critical areas of disagreement.<sup>259</sup>

Second, experts state their opinions more conclusively in the courtroom than they do in their disciplines, and more definitively than is justified by their research.<sup>260</sup> A confident expert

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254. See Gross, *supra* note 2, at 1184 (giving example from psychiatry, which has "overwhelmingly rejected the notion that they can predict future violence," yet at a trial the jury will likely hear one expert on each side of "this fictitious divide"); Michael J. Saks & Roselle L. Wissler, *Legal and Psychological Bases of Expert Testimony & Surveys of the Law and of Jurors*, 2 BEHAV. SCI. 435, 438-40 (1984) ("The search for witnesses that is driven by the advocacy process may result in a distortion of knowledge when applied to expert witnesses.").

255. Gross, *supra* note 2, at 1185.

256. *Id.* ("[T]he one expert who will testify to the discredited point of view is probably in greater demand as a witness, more experienced in court, and more effective.").

257. See Sanders, *supra* note 170, at 41.

258. See Gross, *supra* note 2, at 1175. Professor Gross characterizes the problems as follows: "[D]isagreements are all but inevitable, areas of agreement are under-emphasized or ignored, disputes in the field are magnified, and the consensus of experts, if any, is obscured." *Id.*

259. See *supra* notes 161-74 and accompanying text.

260. See Champagne, *supra* note 19, at 7-8 (showing that 71% of experts responding believed firm conclusions were important); Sanders, *supra* note 170, at 37 (alleging that experts accept that it is necessary for them to "simplify their opinions" when testifying); Shuman, *supra* note 19, at 202 (stating that 64% of experts re-

who gives clear, unequivocal opinions is much more persuasive than one who gives uncertain, tentative testimony.<sup>261</sup> Lawyers take great pains in preparing experts to ensure that they testify to firm conclusions, and use the liberality of Rule 704 to have the expert deliver the opinion in terms of the ultimate issue in the case.<sup>262</sup> This certainty almost always comes at the expense of accuracy inasmuch as scientific truth is almost never known absolutely.<sup>263</sup>

Thus, the very act of presenting conflicting expert testimony poses substantial obstacles for the jury by distorting the jury's view of the conflict. Moreover, as Justice Blackmun observed in his dissent in *Barefoot v. Estelle*, if the experts are unable to decide the contested issue, how is the jury supposed to do so?<sup>264</sup> The jury, unable to judge the dispute on the merits, must instead decide which expert to believe. Cross examination is the lawyer's primary opportunity to give the jury reasons not to believe the opposing expert's testimony.<sup>265</sup>

## b. Cross Examination

Cross examination, the cornerstone of the adversary system's search for truth,<sup>266</sup> is the second weapon lawyers use to fight

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sponding to study thought willingness to draw firm conclusions was important to lawyers).

261. See Gross, *supra* note 2, at 1164 ("[A] witness who is forceful and unambiguous may sound more authoritative than one who is appropriately tentative.")

262. See Shuman, *supra* note 19, at 203 (claiming that lawyers prefer experts who reach firm conclusions above all else; 40% of 65 lawyers responding to study identified "being tentative" as the most distressing characteristic of experts); *supra* notes 70-78 and accompanying text (discussion of Rule 704). The Bendectin cases illustrate this point well. Professor Sanders has written that "[i]n the later Bendectin cases, expert witnesses expressed little uncertainty as to whether Bendectin is or is not a teratogen. Their testimony revealed little common ground." Sanders, *supra* note 170, at 37.

263. See *Daubert*, 113 S. Ct. at 2795 ("[A]rguably, there are no certainties in science.")

264. See 463 U.S. 880, 926-27 (1989) (Blackmun, J., dissenting).

265. See Graham, *supra* note 12, at 74 ("The Federal Rules place the burden on cross examining counsel—opposing counsel must explore the underlying facts, data, opinions, and assumptions, and otherwise discredit the testimony of the mistaken or dishonest expert witness during cross examination."); Miller, *supra* note 30, at 1084 (noting the importance of cross examination with expert witnesses under the Federal Rules of Evidence).

266. See *Watkins v. Sowders*, 449 U.S. 341, 349 (1981) ("[U]nder our adversary



the battle of the experts. This process is especially important due to the liberal admission of expert testimony under the Federal Rules.<sup>267</sup>

On cross examination a lawyer typically attempts to expose the opposing experts' lack of qualifications, lack of impartiality, inadequate or unreliable bases in support of the expert's opinion, and prior statements or opinions that are inconsistent with the expert's trial testimony.<sup>268</sup>

Cross examination of an expert witness is not without risk.<sup>269</sup> The expert witness knows more about the subject matter<sup>270</sup> and may well be more experienced in the courtroom than the examining lawyer.<sup>271</sup> Even though a lawyer, through thorough preparation, may be able to learn enough about the subject matter to credibly examine the expert,<sup>272</sup> the experienced expert is not as susceptible as lay witnesses to manipulation or intimidation by the cross examiner.<sup>273</sup> The lawyer's at-

system of justice, cross examination has always been considered a most effective way to ascertain truth. . . ."); *Davis v. Alaska*, 415 U.S. 308, 316 (1974) ("Cross examination is the principal means by which the believability of a witness and the truth of his testimony are tested."); *Van Ness v. United States*, 568 A.2d 1079, 1084 (D.C. Cir. 1990) ("In our adversary system, cross examination plays a crucial role in uncovering the truth. It ensures the integrity of the factfinding process.").

267. See *Daubert*, 113 S. Ct. at 2798; *Trower v. Jones*, 520 N.E. 2d 297, 300 (Ill. 1988) ("[T]he principal safeguard against errant expert testimony is the opportunity of opposing counsel to cross examine."); Michael H. Graham, *Impeaching the Professional Expert Witness by Showing of Financial Interest*, 53 IND. L.J. 35, 40 (1977).

268. See JEANS, *supra* note 152, at §§ 1538-1548 (discussing purposes of cross examination of expert witnesses); LUBET, *supra* note 49, at 196-211 (1993); Graham, *supra* note 12, at 69 ("On cross-examination counsel may probe the witness's qualifications, experience, and sincerity; weaknesses in the opinion's basis, the sufficiency of the assumptions; and the soundness of the opinion.").

269. Gross, *supra* note 2, at 1172; see PETER MURRAY, BASIC TRIAL ADVOCACY 342 (1995) ("[T]he fact that the expert is usually fighting in his own territory can make the control of the expert on cross more difficult and risky than with a lay witness. . . . When a lawyer takes on an expert witness in a head-to-head battle, the expert usually wins.").

270. See Gross, *supra* note 2, at 1172.

271. Professor Gross found from his study of California civil trials that an "expert is twice as likely to have testified in another such case in the preceding six months as the attorney is to have tried one." Gross, *supra* note 2, at 1120.

272. Marle L.D. Wawro, *Effective Presentation of Experts*, 19 LITIG., Spring 1993, 31, 36.

273. See Sanders, *supra* note 170, at 37. Professor Sanders' study of the Bendectin cases supports this premise. He found as follows: "[T]he Bendectin experts were not bothered by the potentially demeaning nature of cross-examination. Several seemed to

tempts to shake the expert's confidence in the expert's opinions or reduce the certainty of the expert's opinions are therefore prone to failure.<sup>274</sup> Consequently, the cross examiner's greatest want and need—control over the witness—is difficult to obtain and even more difficult to maintain.<sup>275</sup>

Cross examination questions are likely to be particularly futile include those that concern the expert's reliance on inadmissible evidence as part of the basis of the expert's opinion. Whether the expert has relied on statements of bystanders about a car accident, or deposition testimony of an eyewitness to a product failure, or conversations with fellow doctors about a patient's history, the problems are the same: the lawyer cannot cross examine the hearsay and the jury will be able to consider the otherwise inadmissible evidence. The lawyer's options on expert cross examination are limited: he can seek a limiting instruction that the inadmissible evidence is not to be considered for its truth, but only as the basis of the expert's opinion, and he can attempt to show that the evidence is unreliable or was inappropriately relied upon by the expert. Neither approach is particularly effective because the jury, as a group of mere mortals, will likely be unable to ignore the questionable evidence.

Cross examination of experts focuses largely on issues of credibility.<sup>276</sup> That is, the examiner elicits answers that she hopes will lead the jury to a negative response to the question: "Should this expert be believed?" The lawyer will question the expert's impartiality by asking about such matters as how much the witness is being paid to testify, whether the witness has worked for the party and/or lawyers before, and other indi-

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enjoy sparring with opposing counsel, and few made a fundamental mistake on cross-examination." *Id.*

274. *See id.*

275. *See* LUBET, *supra* note 49, at 68, 196 ("The essential goal of cross-examination technique is witness control."); MURRAY, *supra* note 269, at 342 (Control of expert witnesses is "more difficult and risky than with a lay witness."); J. ALEXANDER TANFORD, *THE TRIAL PROCESS: LAW, TACTICS, AND ETHICS* 401, 450 (1983) (emphasizing the need to control witnesses on cross examination because "[i]f you fail to control the cross-examination . . . the chances are that the witness will end up repeating the direct examination and avoiding or explaining away the weaknesses in it and the impeachment of it").

276. *See* Sanders, *supra* note 170, at 47.

cia of bias.<sup>277</sup> Some courts allow broad inquiry into these matters.<sup>278</sup>

In addition, an expert may be attacked for his "positional bias," a term describing an expert who always testifies to the same conclusion regardless of the circumstances or only testifies for one side of the docket and never the other.<sup>279</sup> Although these attacks may bring some success, they are unlikely to help the jury. The reality is that *both* experts are most likely being paid to testify (thus telling the jury little about the weight to attach to either expert's testimony), and the jury will probably be unable to evaluate an expert's demonstrated bias in any meaningful way.<sup>280</sup>

An attack on an expert's qualifications may be similarly unhelpful. The Bendectin cases suggest that juries are not always capable of making accurate distinctions between one expert's qualifications and another's.<sup>281</sup> Who is better qualified, the Ph.D. or the witness with "real world," hands-on experience? What particular disciplines make one qualified to offer opinions on a specific issue? The jury is capable of making gross credibility determinations, such as distinguishing between one expert who is paid and an opposing expert who is not, or one expert who is highly qualified and an opposing expert who is exposed as a quack.<sup>282</sup> But in a typical case, involving similarly cre-

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277. See Graham, *supra* note 12, at 73 (noting the wide variety of questions allowed to show an expert's bias).

278. See, e.g., Trower v. Jones, 520 N.E.2d 297, 301 (Ill. 1983) (allowing inquiry into expert's annual income from services relating to expert testimony for two years preceding trial and frequency with which the expert testifies for plaintiffs); State *ex rel.* Lichtor v. Clark, 845 S.W.2d 55, 64-65 (Mo. Ct. App. 1992) (holding that a trial court may allow broad evidence of an expert's financial interest, including the expert's annual income from employment as an expert).

279. See LUBET, *supra* note 49, at 206 (explaining cross examination on expert's "positional bias").

280. See Sanders, *supra* note 170, at 47.

281. See *id.* at 37-38 ("Even if jurors are knowledgeable about the quality of the academic institutions with which the experts are affiliated, it is not easy to distinguish an average expert from a leader in his or her field").

282. See Jacobs, *supra* note 219, at 1090 ("I am inclined to believe that, as differences go, those separating the quack from the Nobel Prize winner are fairly easy to spot. Even people entirely lacking in technical training may arguably possess enough native intelligence to deem the latter better qualified than the former."); Younger, *supra* note 214, at 39-40.

denialed experts, the jury's evaluation of the experts' qualifications may be misguided.<sup>283</sup>

The cross examiner can also attempt to discredit the expert's opinion. For example, the cross examiner might force the expert to identify all the assumptions made to reach the opinion and suggest that one or more of the assumptions is unfounded;<sup>284</sup> identify matters the expert ignored or tests the expert failed to conduct in forming his opinion;<sup>285</sup> confront the expert with prior testimony or writings inconsistent with the expert's current testimony;<sup>286</sup> or read to the jury from scholarly articles or books that contradict the expert's reasoning or opinions.<sup>287</sup> Any one or more of these tactics executed effectively will show the jury the weaknesses and vulnerabilities of the expert's testimony.<sup>288</sup> Yet, even effective cross examination does not change the fact that the jury is still a collection of untrained laypersons which will likely be unable to decipher the expert testimony.

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283. See Champagne, *supra* note 19, at 8 (showing that a juror responding to a survey included educational credentials as an important factor that makes experts believable).

284. See LUBET, *supra* note 49, at 208 ("It can be extremely effective . . . to ask a witness to alter an assumption, substituting one that you believe to be more in keeping with the evidence in the case."); Miller, *supra* note 30, at 1084 (noting the importance of determining the key facts and assumptions that give rise to the expert's opinion so that the cross examiner can attack the expert's testimony by showing that the opinion would change if the assumptions were different).

285. See LUBET, *supra* note 49, at 206-08.

286. See Wawro, *supra* note 272, at 37 ("Lawyers love to impeach witnesses with prior inconsistent statements. With experts, there can be a rich fund of such materials: the expert's past work; earlier versions of the expert's report; and the expert's deposition. . ."). In the Bendectin cases, the lawyers "frequently attempted to impeach witnesses based on statements made during depositions, or . . . based on testimony in earlier cases." Sanders, *supra* note 170, at 47-48. However, the discrepancies were generally minor and rarely had any significance in the case. *Id.* Other writers have issued similar warnings about the overuse of prior inconsistent statements. See, e.g., O'Reilly, *supra* note 5, at 119 ("The really skilled expert is seldom trapped by past overstatement."); Wawro, *supra* note 272, at 37 (advising lawyers to be selective in impeaching with prior inconsistencies and to use only "short, obvious contradictions").

287. See Graham, *supra* note 12, at 71-73 (describing use of learned treatises on cross examination). Rule 803(18) of the Federal Rules of Evidence allows for the liberal use of learned treatises on cross examination, although the treatise may not be admitted as an exhibit. It is merely read to the jury. FED. R. EVID. 803(18).

288. Gross, *supra* note 2, at 1170-71.

Thus, the jury ultimately must rely on its common experiences to evaluate experts. The result is that the jury judges the messenger, rather than evaluating the message.<sup>289</sup> In doing so, the jury is swayed by the confidence of the expert, the conclusiveness of the expert's opinion, and the personality of the expert.<sup>290</sup> Even if these factors are accurate predictors of trustworthiness for lay witnesses, they fail miserably with experts. In fact, when juries judge experts based on their presentation and skills as a witness, they will find most credible, and thus, reward the professional witness, not the true "expert."<sup>291</sup> As Professor Samuel R. Gross has noted, the value of witness skills such as "verbal fluency, ease of manner, the appearance of humility, and stellar credentials as signals of truth is destroyed when they become commodities that are bought and sold in the market for effective testimony."<sup>292</sup> The result is a distortion of the expert testimony by the jury which leads to inconsistent and inaccurate verdicts. One is left thinking that the old adage, "trying a case to a jury is often a crap shoot" is uncomfortably true.<sup>293</sup>

#### IV. REFORM OF EXPERT WITNESS TESTIMONY

Calls for reform of expert witness testimony are almost as old as expert testimony itself.<sup>294</sup> Yet, despite the patent need for reform, there are no obvious solutions or quick fixes. This is shown by the hundreds of proposals for reform that have been made since the Federal Rules were enacted,<sup>295</sup> almost all of

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289. See *supra* notes 244-46 and accompanying text.

290. See Sanders, *supra* note 170, at 47.

291. See Gross, *supra* note 2, at 1134.

292. *Id.*

293. See, e.g., Albert W. Alschuler, *The Supreme Court and the Jury: Voir Dire, Peremptory Challenges, and the Review of Jury Verdicts*, 56 U. CHI. L. REV. 153, 153 (1989) (Trial lawyers believe that submitting a case to a jury is very much like rolling dice.).

294. See, e.g., Hand, *supra* note 96, at 56 (proposing use of panels of impartial panels of experts).

295. See, e.g., John W. Behringer, *Introduction*, 26 JURIMETRICS J. 237, 238 (1986) (introducing four articles proposing revisions of Rule 702); Giannelli, *supra* note 106, at 1215 (proposing placing burden of proof on proponent of expert testimony to show reliability before admitting the testimony); Gross, *supra*, note 2, at 1220-21 (proposing mandatory use of court appointed experts and many changes to presentation of expert testimony); Sanders, *supra* note 170, at 68-70 (proposing reforms in presentation of

which have been ignored. The Supreme Court's opinion in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, which jettisoned "general acceptance" as the sole test of admission and substituted a reliability requirement, is an important first step. However, this step is not clear enough or comprehensive enough to remedy the ever-present partisanship that pervades modern expert testimony. Thus, with a deep breath and great trepidation,<sup>296</sup> I propose reform of expert witness testimony.

#### A. *Lawyer Reform Comes First*

This article started with the proposition that lawyers have a love/hate relationship with experts. Lawyers look for experts who will work with the lawyer in shaping the expert's opinions, then label those same experts as "whores" or "hired guns" for doing so;<sup>297</sup> lawyers aggressively cross examine opposing experts about their fees and suggest the expert's opinions were purchased, but still pay their own experts the same exorbitant fees; lawyers hire experts to give opinions in every case, including opinions about the most mundane, speculative or unreliable matters, and then vigorously disparage the "battle of the experts" that they created.

A prominent trial lawyer describes the use of expert witnesses this way:

[Expert witnesses] supply information that can salvage a lost cause or turn a winning case into a loser by purposely misleading the jurors. A lawyer who presents false evidence can be held in contempt of court. Yet there is nothing wrong with using professional opinion that puts the jury in a trance and leads them off on a tangent. . . .

Expert witnesses sell their services like anyone else in the legal profession, and the best in the field can sound convincing defending either side of an argument. Their function is to snow the jury.<sup>298</sup>

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expert testimony and possible change in factfinders).

296. Cf. Thompson, *supra* note 156, at 776 ("With some trepidation I add my own suggestion concerning the usage of expert testimony.").

297. See *supra* notes 1-3 and accompanying text.

298. ROY GRUTMAN & BILL THOMAS, *LAWYERS AND THIEVES* 128 (1990). A similar refrain is reported to have come from Melvin Belli: "If I got myself an impartial

There is something amiss. The misuse and abuse of expert witness testimony will never end until the "misusers" and "abusers"—the lawyers—reform their current practices. As a profession, lawyers must address their use of expert witnesses and the substantial problems posed by the partisanship of experts.<sup>299</sup> They must devise an approach to experts that provides the jury with the information it needs to resolve fact issues, but eliminates the gamesmanship that dominates expert witness testimony today. Short of radically changing the adversary system, the only way to reform the use of experts is for lawyers to fundamentally change their ways.

### 1. Reform in the Selection of Experts

First and foremost, lawyers should select experts based on their expertise or skill instead of based on their partisanship.<sup>300</sup> The problem with selecting experts based on partisanship arises in two different contexts. The first is the expert who will always testify to the same conclusion regardless of the facts.<sup>301</sup> In the 1970's, a Texas psychiatrist nicknamed "Dr. Death" testified for the prosecution in more than fifty sentencing hearings. Reportedly, he always concluded that the defendant would be violent in the future whether or not he actually examined the defendant. Dr. Death's testimony was contrary to the position of the American Psychiatric Association, which had concluded that no psychiatrist can accurately predict future dangerousness.<sup>302</sup> Yet, he was consistently and repeatedly called by prosecutors.

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witness, I'd think I was wasting my money." Michael Specter, *Diagnosis or Verdict? Psychiatrists on the Witness Stand*, WASH. POST, July 28, 1987, at Z10; see also SPENCE, *supra* note 2, at 270-72 (criticizing use of expert witnesses as "a barbarous throwback to the days of trial by duel").

299. See O'Reilly, *supra* note 5, at 127-30 (identifying the need for a change in how lawyers deal with experts).

300. See *id.* at 127 (suggesting a rule that lawyers "only seek experts with legitimate qualifications").

301. Professor Lubet calls this a problem of "positional bias." LUBET, *supra* note 49, at 204; *supra* note 279 and accompanying text.

302. Joseph R. Tybor, *Dallas' Doctor of Doom*, NAT'L L.J., Nov. 24, 1980, at 1.

The second expert who should be avoided is the witness who will testify about anything for anybody.<sup>303</sup> The expert who testifies about an infinite array of topics, many of which fall beyond the person's true expertise, and who draws most or all of her income from testifying, is not impartial and cannot be trusted to give a helpful, objective evaluation of the case.<sup>304</sup> Much like Justice Stewart's definition of obscenity, this kind of expert is difficult to describe in the abstract, but a lawyer knows one when he sees one.

Despite the vulnerability of these experts to cross examination, lawyers still retain them and turn their partisanship into an indication of their expertise. The hiring lawyer tells the jury that the expert's testifying experience shows the expert's tremendous expertise or is the result of the efforts of the pertinent industry to prevent the information from being disclosed.<sup>305</sup>

Lawyers rationalize their method of selecting witnesses by speaking grandly of the adversary system and the duty of zealous representation and the ever-present safeguard of cross examination. At least one jurisdiction even espouses this rhetoric in its rules of professional conduct telling lawyers that if a client "wishes to have suspect evidence introduced . . . the lawyer should do so and allow the finder of fact to assess its probative value."<sup>306</sup> Undoubtedly, there are circumstances when certain evidence is questionable because there are no definitive answers in the pertinent scientific or technical field, thus the lawyer is justified in complying with the client's desires to introduce it. But the lawyer should at least counsel her client about the unreliability of evidence and the lack of credibility of witnesses.

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303. See *Eymard v. Pan American World Airways*, 795 F.2d 1230 1234 (5th Cir. 1986); *Trower v. Jones*, 520 N.E.2d 297 (Ill. 1988); *supra* notes 138-39 and accompanying text.

304. See *Tokio Marine & Fire Ins. Co. v. Grave Mfg. Co.*, 958 F.2d 1169, 1174 (1st Cir. 1992) (Plaintiff's expert "admitted to having testified as a professional expert in an extraordinary array of dissimilar fields," 19 of which were identified by the court and which ranged from scaffolding to waste treatment plants to fire protection systems.).

305. Richard A. Epstein, *Judicial Control Over Expert Testimony: Of Deference and Education*, 87 NW. U. L. REV. 1156, 1164 (1993).

306. See TEXAS MODEL RULES OF PROFESSIONAL CONDUCT Rule 3.03(a)(5), comment 15.



Zealous advocacy does not mean blind advocacy. Clearly, lawyers should choose experts who are good witnesses and who will advance the client's case. However, the priority should be on getting an expert, not an advocate. The lawyer must exercise independent judgment in the selection of experts and not hire them reflexively. Thus, lawyers should commit to avoiding the use of experts who, for whatever reason, are patently biased in their favor.

## 2. Reform in the Preparation and Presentation of Experts

The changes in expert witness selection must be accompanied by a new vision of how experts are prepared for their testimony and how their testimony is presented at trial.<sup>307</sup> Lawyers must change their view of the role of the expert and commit to preparing and presenting experts as impartial educators, not advocates of the lawyer's theory of the case.<sup>308</sup> This kind of fundamental change will be difficult. Lawyers will have to end the practice of preparing the expert by telling him the lawyer's theory of the case first and then seeking the expert's opinion,<sup>309</sup> as well as the practice of cajoling experts to stretch their opinion or expertise when either is not to the lawyer's liking, or when the opinion is not definitive enough. Similarly, the practice of making certain that experts deliver their testimony in terms of the ultimate issues in the case (like an advocate would) instead of in the language of the expert's discipline should also be discouraged.

Instead, lawyers should approach experts with respect and in search of needed information. If lawyers were to view experts as nonpartisans, they would make sure the expert had all of the available and needed information,<sup>310</sup> would help direct the expert to the critical points on which assistance is needed, and would structure the theory of the case based on the expert's

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307. See O'Reilly, *supra* note 5, at 128 (proposing that the lawyer: (1) always fully inform the expert of all the facts; (2) pose the question to the expert, not the answer; (3) give experts ethical guidance).

308. See *supra* note 168 and accompanying text (noting that experts serve as advocates for a party).

309. See O'Reilly, *supra* note 5, at 128.

310. *Id.*

opinion. Moreover, if an expert gave the lawyer an opinion that seemed clearly out of line or seemed suspect, even if it favored the lawyer's client, the lawyer would seek a second opinion from another expert to help ensure the reliability of the first expert.

The unfortunate truth, of course, is that this new lawyer I envision will not become a reality, and the rules of conduct I propose will be generally ignored. In 1883, Henry Wade Rogers voiced concerns about the partisanship of experts in his day,<sup>311</sup> but the practice did not change. Lawyers are just as susceptible as experts to the lure of the almighty dollar. The adversarial method of trying lawsuits is too entrenched to allow for fundamental change. And, in any event, the sense among lawyers that "everybody is doing it" makes the risk of one lawyer treating experts differently too great for most to even try.

### B. *Identifying the Right Reform*

If attitudes are unlikely to change, perhaps the problem of partisan experts is best reformed by eliminating the payment for testimony.<sup>312</sup> If experts were not paid for their time there would be no professional witnesses and many of the incentives that plague the current system would disappear. Undoubtedly, the mere suggestion of such a change would be greeted in the legal community (not to mention the expert witness community) as heresy or worse.<sup>313</sup> The impediments to implementation of such a change would be overwhelming. Lawyers would encoun-

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311. See ROGERS, *supra* note 5, at 199, 448-51 (stating that expert witnesses are too readily available, are not free from bias, and act as "hired advocates" when they testify). Rogers quotes *Grigsby v. Clear Lake Water Co.*, 40 Cal. 404, 405 (1870) as follows:

[I]t must be painfully evident to every practitioner that these witnesses are generally but adroit advocates of the theory upon which the party calling them relies, rather than impartial experts, upon whose superior judgment and learning the jury can safely rely.

*Grigsby*, 40 Cal. at 405.

312. See TANFORD, *supra* note 143, at 459 (noting that experts are no less susceptible to financial inducements than lay witnesses).

313. *But see* SPENCE, *supra* note 2, at 271 (proposing that experts be subject to subpoenas and that they testify for a "fixed statutory fee"); TANFORD, *supra* note 143, at 460 (remarking that some experts who testify lose no income from their industrial or university jobs when they serve as experts).

ter practical problems, such as a paucity of persons willing to serve as experts, and more serious problems, such as constitutional ones. Clearly, no such change is forthcoming.

Others have proposed similarly fundamental changes in the adversary system's use of experts. Professor Gross has proposed the adoption of mandatory court appointed experts wherein *all* experts would be appointed by the court based upon the party's selection but without the party's participation.<sup>314</sup> This would reduce to some degree the partisanship of experts. Others have proposed the use of "blue ribbon juries" consisting of well educated members of the community, or even a science court consisting of scientists from the pertinent discipline.<sup>315</sup> These proposals are helpful. They demonstrate the seriousness of the expert witness problem, and they bring creativity to very difficult issues. Yet, I do not believe that these proposals are any more likely to be adopted than my suggestion that the rules prohibit experts from receiving compensation. The proposals, and others like them, require too much change at too great a price.

In fact, a much less controversial proposal—the increased use of court appointed experts—has been largely rejected by practicing lawyers and judges despite its widespread appeal to commentators. As Professor Gross has noted, the frequency of the proposal to use court appointed experts is equalled only by the rejection of the proposal.<sup>316</sup> The theories for this reluctance are varied and have been thoroughly addressed elsewhere.<sup>317</sup> Although I believe that court appointed expert witnesses would help reduce expert partisanship, I propose amending the rules of evidence in hopes of bringing about needed reform.

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314. See Gross, *supra* note 2, at 1220.

315. See Sanders, *supra* note 170, at 79-82.

316. Gross, *supra* note 2, at 1193.

317. See, e.g., *id.* at 1193-94 (noting judge concerns about having to find the right expert and about "intervening" in the lawsuit and lawyer concern about losing control over the expert and the prejudicial effect of a court-appointed expert's opinion on the jury).

### C. *Reform of Rule 702*

One of the primary reasons expert testimony is so prevalent today is because of the liberal rules of admission.<sup>318</sup> The greater allowance of expert testimony has led to greater abuses of expert witnesses. Thus, the rules themselves must be changed to stem the tide. The widespread abuses facilitated by the loosening of expert testimony rules necessitate reform of all aspects of the admission of such testimony, starting with Rule 702.<sup>319</sup>

#### 1. *Daubert's* Deficiencies

Although *Daubert* provides a good starting point for the discussion of reform, the court's opinion does not resolve many of the problems with experts, and instead, creates uncertainty. The concerns about *Daubert* are three-fold: (1) the shaky decisional basis of the Court's opinion; (2) the uncertainty of the scope of the Court's opinion, and (3) the likely inconsistent application of the Court's opinion.

The Supreme Court's decision turned on the reliability requirement the court found in Rule 702's phrase "scientific . . . knowledge."<sup>320</sup> The Court's construction of the Rule is suspect. First, there is no indication from the language of Rule 702 or from the legislative history that the expression "scientific knowledge" was intended to impose a reliability requirement. Rather, the more likely meaning of the phrase is simply to identify the general fields of knowledge from which experts may be drawn.<sup>321</sup> The limitations in Rule 702 are the requirements

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318. See *supra* Part II.

319. See McElhane, *supra* note 12, at 55-56 (proposing reform of all of the expert witness rules).

320. *Daubert*, 113 S. Ct. at 2795.

321. Leslie A. Lunney, *Protecting Juries From Themselves: Restricting the Admission of Expert Testimony in Toxic Tort Cases*, 48 SMU L. REV. 103, 147-48 (1994). Rather than citing to legal authority in support of its construction of Rule 702, the Court cited to one of its favorite sources—the dictionary and two amicus briefs. See *id.* at 147.

that the expert's knowledge "will assist" the jury and that the expert is qualified.<sup>322</sup>

Second, a comparison of Rule 701<sup>323</sup> regarding lay witness testimony and Rule 702 supports this construction. In Rule 701, where the drafters intended to require more than helpfulness before allowing lay opinions into evidence, they included the explicit requirement that lay opinions must be "rationally based" on the witness' perceptions.<sup>324</sup> Not only does Rule 702 not contain a similar provision, but the advisory committee's note states that the standard for admitting expert testimony is assisting the trier of fact.<sup>325</sup>

Third, the Court places heavy reliance on its unsupported conclusion that the omission of "*Frye*" or "general acceptance" from Rule 702 and its legislative history means the drafters rejected that standard.<sup>326</sup> The drafters of Rule 702 may have simply failed to consider the admission of scientific testimony in the drafting process.<sup>327</sup> *Frye* and "general acceptance" are conspicuous by their absence. But that fact is ambiguous: it could support the view that the drafters would have mentioned *Frye* if they meant to overrule it or the position that the failure to mention *Frye* suggests an intent to reject the general acceptance standard.<sup>328</sup>

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322. See FED. R. EVID. 702.

323. Rule 701 of the Federal Rules of Evidence provides:

If the witness is not testifying as an expert, his testimony in the form of opinions or inferences is limited to those opinions or inferences which are (a) rationally based on the perception of the witness and (b) helpful to a clear understanding of his testimony or the determination of a fact in issue.

FED. R. EVID. 701.

324. See *id.*; see also *Asplundh Mfg. Div. v. Benton Harbor Eng'g*, 57 F.3d 1190 (3d Cir. 1994) ("Rule 701's requirement that the opinion be 'rationally based on the perception of the witness' demands more than that the witness have perceived something firsthand; rather, it requires that the witness's perception provide a truly rational basis for his or her opinion.").

325. See FED. R. EVID. 702 advisory committee's note ("Whether the situation is a proper one for the use of expert testimony is to be determined on the basis of assisting the trier.").

326. See *Daubert*, 113 S. Ct. at 2794.

327. See Gianelli, *supra* note 106, at 1207.

328. See *id.* Of course, the Supreme Court took the omission by drafters to signal a rejection of "general acceptance," *Daubert*, 113 S. Ct. at 2794.

*Daubert* is also inadequate because of uncertainty about its scope. Does the opinion apply only to *scientific matters* or only to *novel scientific matters*, or to *all types of expert testimony*? In the short time since *Daubert* was decided, courts have reached dramatically conflicting conclusions about *Daubert's* intended scope. Some courts have applied *Daubert* to clearly nonscientific expert testimony while others have limited its application to only novel scientific matters.<sup>329</sup> Moreover, even courts that apply *Daubert* to expert testimony about all scientific matters must define "scientific," and must distinguish between what is "scientific," and what is "technical" or "specialized." For example, does "scientific" include the so-called soft sciences as well as the hard sciences? Rule 702 should be revised to clearly require the same standard of reliability for all expert testimony.

Finally, *Daubert* leaves uncertainty about how it should be applied. Although *Frye* was often criticized for the lack of predictability it provided,<sup>330</sup> admission under *Frye* arguably relied

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329. Some federal courts have restricted *Daubert* to novel scientific evidence. *E.g.*, *Iacobelli Constr. v. County of Monroe*, 32 F.3d 19, 25 (2d Cir. 1994) (Experts in areas of geotechnology and underground construction were not "the kind of 'junk science' problem that *Daubert* [was] meant to address."); *Lappe v. American Honda Motor Co.*, 857 F. Supp 222, 228 (N.D.N.Y. 1994) (refusing to apply *Daubert* to testimony of an accident reconstruction expert because *Daubert* applies only to "novel scientific evidence.").

Other federal courts have viewed *Daubert* as reaching all scientific expert testimony. *E.g.*, *Vadala v. Teledyne Indus. Inc.*, 44 F.3d 36, 39 (1st Cir. 1995) (stating that *Daubert* is limited to "scientific law" and does not apply to accidents); *Tamarin v. Adam Caterers, Inc.*, 13 F.3d 51, 53 (2d Cir. 1993) (*Daubert* "specifically dealt with the admissibility of scientific evidence."); *United States v. Starzecpyzel*, 880 F. Supp. 1027, 1041 (S.D.N.Y. 1995) (Finding "no support for the proposition that *Daubert* extends past the 'scientific' branch of Rule 702," the court did not apply *Daubert* to nonscientific experts before it.); *Hawthorne Partners v. AT & T Technologies, Inc.*, 1993 WL 311916 at \*3 (N.D. Ill. 1993) (refusing to apply *Daubert* to expert testimony about commercial real estate appraisal); *cf.* *Hopkins v. NCR Corporation*, 1994 WL 757510, at \*6 (M.D. La. 1994) (*Daubert* cannot be applied to some areas involving "specialized knowledge," but should only be applied when "the type of expert knowledge submitted is at a minimum quasi-scientific.").

And still other courts have applied *Daubert* to distinctly nonscientific matters. *E.g.*, *United States v. Sepulveda*, 15 F.3d 1161, 1183-84 (1st Cir. 1993) (applying *Daubert* to economics of cocaine trade); *United States v. Locascio*, 6 F.3d 924, 938-39 (2d Cir. 1993) (applying *Daubert* to expert testimony about the structure and operation of an organized crime families' structure), *cert. denied*, 114 S. Ct. 1645, 1646 (1994); *Frymire-Brinati v. KPMG Peat Marwick*, 2 F.3d 183, 186 (7th Cir. 1993) (applying *Daubert* to expert testimony about the valuation of a corporation's partnership interest).

330. *See supra* note 106 and accompanying text.

on a more objective basis than *Daubert* does. That is, under *Frye* the scientific community's consensus or lack of consensus on a particular theory was determinative of admission for the judge. Of course, despite its objective standard, *Frye* was subject to manipulation by judges in that it was not consistently applied to certain areas of expertise.<sup>331</sup>

Under *Daubert* this inconsistent application may be more true than ever, as judges are given the responsibility to determine the reliability of a technique or theory.<sup>332</sup> Some language in *Daubert* might encourage a judge to minimize the gatekeeper responsibility and admit arguably unreliable expert testimony, leaving the jury to make the tough calls about the testimony.<sup>333</sup> One court, remarkably enough, has concluded that its role after *Daubert* is simply to screen expert testimony under Rule 104(b) and to let the jury decide reliability any time there is an issue about the reliability of the expert's theories or techniques.<sup>334</sup> That is directly contrary to *Daubert*.<sup>335</sup> The bottom line is that *Daubert's* reliability standard does not change the difficult task of courts. Perhaps the Arizona Supreme Court, in *Arizona v. Bible*,<sup>336</sup> a post-*Daubert* decision wherein the Court rejected *Daubert's* formulation of Rule 702 in favor of retaining *Frye's* general acceptance test, said it best when it concluded: "[E]ven were we to use *Daubert's* reliability/scientific validity analysis, we would still be left with the problem posed by *Frye*: precisely when 'in [the] twilight zone the evidential force of the [scientific] principle must be recognized.'"<sup>337</sup> The court concluded: "that line is hard to draw."<sup>338</sup> Rule 702 should be amended

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331. See Gianelli, *supra* note 106, at 1209.

332. See *Daubert*, 113 S. Ct. at 2796 (describing judge as a "gatekeeper" who must make "preliminary assessment" of the scientific validity of the reasoning or methodology used by the expert).

333. John W. Strong, *Development in the Law—Confronting the New Challenges of Scientific Evidence*, 108 HARV. L. REV. 1509, 1514-16 (1995).

334. See *Isely v. Capuchin Province*, 877 F. Supp. 1055, 1066 (E.D. Mich. 1995) ("[U]nder *Daubert*, the Court perceives its role . . . as being a 'screener' of expert testimony, similar to its role under [Rule] 104(b).").

335. See *Daubert*, 113 S. Ct. at 2796.

336. *Arizona v. Bible*, 858 P.2d 1152, 1183 (Ariz. 1993), *cert. denied*, 114 S. Ct. 1578 (1994).

337. *Id.* (citing *Frye*, 293 F. at 1014).

338. *Id.*

so that (to the extent possible) courts have clear direction about how to apply the standard of admission.

## 2. Current Efforts to Reform Rule 702

Due to the uncertainty created by *Daubert*, revision of Rule 702 is once again the subject of formal reform efforts. On March 8, 1995, the House of Representatives passed the Attorney Accountability Act, which included amendments to Rule 702.<sup>339</sup> The amendments serve two purposes: (1) to codify *Daubert's* reliability requirement; and (2) to prohibit contingent fee agreements with experts.<sup>340</sup>

The amendment of Rule 702 would, in civil cases, only impose a requirement that scientific expert testimony meet the requirements of reliability and relevance as *Daubert* requires.<sup>341</sup> Of much greater significance and interest, however,

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339. *Federal Rules Watch: Senate Prepares Alternative Amendment to Rule 702*, 9 INSIDE LITIGATION, May 1995, at 15 [hereinafter *Federal Rules Watch*]. The amendment would revise Rule 702 to provide as follows:

(a) *In general*—If scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.

(b) *Adequate basis for opinion*.—Testimony in the form of an opinion by a witness that is based on scientific knowledge shall be inadmissible in evidence unless the court determines that such opinion—

(1) is scientifically valid and reliable;

(2) has a valid scientific connection to the fact it is offered to prove;

(3) is sufficiently reliable so that the probative value of such evidence outweighs the dangers specified in Rule 403.

(c) *Scope*. Subdivision (b) does not apply to criminal proceedings.

H.R. 988, 104th Cong., 1st Sess. § 3 (1995).

Others have also proposed adding an explicit reliability requirement to Rule 702. See, e.g., JACK B. WEINSTEIN ET AL., 1993 RULES, STATUTE AND CASE SUPPLEMENT 84 (1993) (Proposed an amendment to Rule 702 by the Advisory Committee on the Federal Rules of Civil Procedure); Frederic I. Lederer, *Resolving the Frye Dilemma—A Reliability Approach*, 26 JURIMETRICS J. 240, 241 (1986) (proposing to insert the word “reliable” after the word “If” at the beginning of Rule 702). At least one state has amended their Rule 702 to require scientific expert testimony to be based on scientifically valid theories and techniques, and did so before *Daubert* was decided. See IND. R. EVID. 702.

340. See *Federal Rules Watch*, *supra* note 339, at 15.

341. See H.R. 988, 104th Cong., 1st Sess. §3 (2)(b) (1995).



is the Act's requirement that in civil cases the probative value of scientific expert testimony must outweigh the dangers outlined in Rule 403.<sup>342</sup> This requirement, which is identical to the admission standard for specific instances of a sexual assault's victim's prior sexual behavior under Rule 412(c)(3)<sup>343</sup> and prior convictions of a criminal defendant under Rule 609(a)(1),<sup>344</sup> would change the balance of expert witness testimony from a presumption of helpfulness to a presumption of unhelpfulness.<sup>345</sup> It would place the burden of proof on the admission of expert testimony on the proponent of the evidence instead of the opponent as Rule 403 requires.<sup>346</sup> Criminal cases would operate under the current version of Rule 702, presumably without any independent requirement of reliability.<sup>347</sup>

The Senate version of amended Rule 702, which has not yet been put to a vote, differs materially from the House version: it applies to both civil and criminal cases, and it adopts the general acceptance test for "techniques, methods, and theories used to formulate [the expert's opinions] . . . within the relevant scientific, medical or technical field."<sup>348</sup> This change would apparently expand *Frye* to almost all expert testimony.<sup>349</sup>

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342. *Id.*

343. *See* FED. R. EVID. 412(c)(3). Commonly known as the "rape shield doctrine," Rule 412 severely limits the admission into evidence of prior sexual conduct by the victim and requires that the judge determine after an *in camera* proceeding whether the probative value of the evidence outweighs the danger of unfair prejudice posed by the evidence. *Id.*

344. *See* FED. R. EVID. 609(a)(1). Due to the substantial risk of unfair prejudice that arises when prior convictions of a criminal defendant are introduced at the defendant's trial, all such convictions that do not involve dishonesty or false statements are excluded unless the probative value of the conviction exceeds the prejudicial effect. *Id.*

345. MUELLER, *supra* note 62, at 243-44. Rule 403 is generally recognized as a "rule of admission." That is, the probative value of most relevant evidence is not substantially outweighed by unfair prejudice. *See id.* at 193. On the other hand, when the standard is shifted to require greater probative value than prejudice, the standard is much more one of exclusion. *Id.* at 243-44.

346. *Id.* at 245.

347. H.R. 988, 104th Cong., 1st Sess. § 3(d) (1995). This aspect of the amendment of Rule 702 is of substantial concern, particularly in light of the many reliability concerns presented by forensic scientific evidence. *See* Paul C. Gianelli, "Junk Science": *The Criminal Cases*, 84 J. CRIM L. & CRIMINOLOGY 105, 113-17 (1993) (noting need for particular attention to reliability in criminal context due to potential impact of evidence and unproven reliability of some evidence).

348. *Federal Rules Watch*, *supra* note 339, at 15.

349. *See id.* Such a proposal would likely encounter practical problems in applying

Ultimately, these proposals do both too little *and* too much.

### 3. A Proposal to Require Both Reliability and Necessity in Rule 702

The current standard for admitting testimony of expert witnesses reflects an unrealistic view of modern expert witness practice. Rule 702's "liberal thrust" is inconsistent with a paid expert working as an advocate to persuade the jury of the client's position. The Rules should be skeptical of experts, not trusting and accepting. In that way, expert witness testimony can be appropriately analogized to hearsay evidence. Both kinds of evidence present serious concerns about the jury's competence and they both hold similar positions as exceptions to Rule 402's pronouncement that "all relevant evidence is admissible."<sup>350</sup> The hearsay exceptions in Rules 803 and 804 are based on the heightened degree of trustworthiness, extreme need, or both, that attach to the excepted statements.<sup>351</sup> The residual exceptions to the hearsay rule explicitly require a showing of both trustworthiness and need.<sup>352</sup>

Expert witness testimony presents greater concerns about jury competence than hearsay testimony does, particularly when dealing with complex technical and scientific evidence.<sup>353</sup> Yet, under the Federal Rules expert testimony is often freely admit-

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*Frye* to nonscientific matters.

350. FED. R. EVID. 402; see Epstein, *supra* note 175, at 1159-60 (excluding hearsay serves the same purpose as excluding unreliable expert testimony); Faigman, *supra* note 208, at 885 (analogizing the hearsay exceptions to expert testimony); Giannelli, *supra* note 106, at 1247-48 n.379 ("Novel scientific evidence can be viewed in much the same way as hearsay."); Edward J. Imwinkler, *The Next Step After Daubert: Developing a Similarly Epistemological Approach to Ensuring the Reliability of Nonscientific Expert Testimony*, 15 CARDOZO L. REV. 2271, 2282 (1994) (comparing requirements of reliability and necessity for exceptions to the rule against hearsay to *Daubert's* requirements of reliability and necessity for expert testimony).

351. See IRVING YOUNGER, *HEARSAY: A PRACTICAL GUIDE THROUGH THE THICKET* 45-47 (1988).

352. See FED. R. EVID. 803(24) & 804(b)(5). The two exceptions provide, in pertinent part, that "[a] statement not specifically covered by any of the foregoing exceptions, but having equivalent circumstantial guarantees of trustworthiness" is not excluded by the hearsay rule, if, *inter alia*, "the statement is more probative on the point for which it is offered than any other evidence which the proponent can procure. . . ." *Id.*

353. Faigman, *supra* note 205, at 881.

ted, while hearsay is at times subjected to a more exacting standard.<sup>354</sup> This does not make sense, especially in light of the tremendous concern about the abuse of expert witnesses and the growth of partisan expert witness testimony.

Professor Irving Younger's classic formulation of the "rule of thumb" for admitting hearsay is a helpful standard for experts as well. Younger's algebraic formula is  $N + R = 1$ .<sup>355</sup> Thus, the greater the need for the evidence, the less a showing of reliability is required. Conversely, the greater the reliability of the evidence, the less need matters.<sup>356</sup> Rule 702 should codify *Daubert* by restricting expert testimony to that which is based on reliable theories and techniques. This requirement should extend to all types of expert testimony in all kinds of cases. Moreover, the Rule should be amended by requiring that marginally reliable expert testimony satisfy a necessity requirement, limiting expert testimony to that which is needed by the jury to resolve an issue in the case.

#### a. The Reliability Requirement

The first requirement is that expert testimony must be derived from reliable theories, techniques, or methods and that the expert's opinions given from the witness stand should follow from sound, verifiable analysis. The reliability requirement, however, should not be limited to scientific theories or techniques. A uniform standard of reliability would help reduce the uncertainty of *Daubert* and the practical problems of application it has caused.

The reliability requirement should apply to all expert testimony because of the concerns outlined in part III, including the partisanship of experts, the failure of the adversary system to

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354. See FED. R. EVID. 803 & 804.

355. See YOUNGER, *supra* note 351, at 46.

356. *Id.* This restructuring of the Rule might provide an analytical framework for some perplexing areas of expert testimony. For instance, future predictions of dangerousness by psychologists have long been admitted, despite their lack of reliability. See *supra* notes 229-30. Apparently, the basis for the admission is that "future dangerousness" is a legal requirement in some contexts, and thus, the jury needs the best possible information on the issue even though not reliable. Of course, under my proposal, if the theory is unreliable it is excluded, regardless of need.

effectively root out marginal expert testimony, and the deficiencies of the jury in evaluating expert testimony. These problems are not limited to testimony about scientific matters. In fact, nonscientific expert testimony deserves even greater skepticism because there is often no ability to test the technical expert's theories or techniques or to prove false the expert's underlying premise. Finally, evidentiary policy requires that all evidence satisfies a minimum standard of reliability.<sup>357</sup> The rules of evidence that require personal knowledge and limit the admission of hearsay impose a reliability requirement,<sup>358</sup> which should be extended to the long-ignored nonscientific expert testimony.

The more perplexing dilemma is in the application of the reliability criterion. Two primary issues arise: (1) what standard should be used to measure reliability; and (2) how can the judge determine the reliability of scientific or technical theories used by experts.

#### i. Application of Reliability Requirement to Scientific Matters

The question concerning the appropriate standard for measuring reliability was answered correctly (at least as to scientific matters) by the Supreme Court in *Daubert*: reliability must be measured by scientific validity.<sup>359</sup> The critical inquiry into scientific validity is whether the theory or technique has been tested.<sup>360</sup> If it cannot be tested it is not valid. If it can be tested, the query is: what is the error rate that is attached to the technique?<sup>361</sup>

Judge Zagel of the Northern District of Illinois delivered one of the most eloquent discourses on the judicial process of searching for reliability in his opinion in *Mercado v. Ahmed*.<sup>362</sup> Judge Zagel anticipated the holding in *Daubert* and recognized the importance of a judge's careful inquiry into the reliability and validity of expert testimony.<sup>363</sup> Judge Zagel defined valid

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357. See Imwinkler, *supra* note 350, at 2281.

358. See *Daubert*, 113 S. Ct. at 2795 n.9 (citing to Rule 602 and the hearsay rules as examples of the rules' insistence on evidentiary reliability).

359. See *Daubert*, 113 S. Ct. at 2795.

360. See *id.*

361. See *id.*

362. 756 F. Supp. 1097 (N.D. Ill. 1991).

363. *Id.* at 1100-01 ("[B]efore I admit the evidence of an expert in a discipline

expert opinions as those that “can be verified or proven in some way.”<sup>364</sup> He described validity as follows:

[V]erification of science is to be found in the accuracy of its predictions. A scientific principle is valid if its use tells us that some defined thing will occur and we perceive that it does occur. . . . Sometimes prediction is subtler: A theory explains a past occurrence and predicts that we will, if we look in a certain place, find proof of this.<sup>365</sup>

The “falsifiability” of a theory or technique and the error rate in applying the technique constitute direct evidence of reliability. Despite its importance, or perhaps because of it, this inquiry is a daunting task for the judge.<sup>366</sup> On remand in *Daubert*, Judge Kozinski spoke for district and appellate court judges everywhere when he described this “heady” responsibility: Federal judges must now “resolve disputes among respected well-credentialed scientists about matters squarely within their expertise in areas where there is no scientific consensus as to what is and what is not ‘good science,’ and occasionally to reject such expert testimony. . . .”<sup>367</sup>

Undoubtedly, judges will gravitate toward the more familiar indicia of reliability: general acceptance, peer review and publication, the qualifications of the expert, and the development and uses of the pertinent theories or techniques outside of the litigation context.<sup>368</sup> For example, the Ninth Circuit, in considering *Daubert* on remand, focused on the lack of peer review and publication of the theories of plaintiffs’ experts and the fact that the theories were not developed independently, but instead were developed specifically for the Bendectin litigation.<sup>369</sup>

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whose acceptance by courts has not been established by binding precedent, I should assess the degree to which the discipline is characterized by reliability among its practitioners and by validation of its theories.”).

364. *Id.* at 1098.

365. *Id.* at 1098-99.

366. See *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 43 F.3d 1311, 1315 (9th Cir. 1995).

367. *Id.*

368. These factors and others are appropriate considerations for the judge. For various factors courts consider, see *Daubert*, 113 S. Ct. at 2796-97; 43 F.3d at 1316-17; *United States v. Downing*, 753 F.2d 1224, 1238-39 (3rd Cir. 1985); *Kelly v. Texas*, 824 S.W.2d 568, 573 (Tex. Crim. App. 1992) (*en banc*).

369. *Daubert*, 43 F.3d at 1317-18.

These factors do provide judges with circumstantial evidence of reliability. They may well be dispositive in many cases. Universal acceptance or rejection of an expert's underlying methodology in the pertinent scientific community should end the inquiry and will likely be appropriate for judicial notice.<sup>370</sup> However, in closer cases judges must resist the temptation to rely on these factors to the exclusion of direct evidence of validity.<sup>371</sup>

ii. Application of Reliability Requirement to Nonscientific Matters

Rule 702 should also require that nonscientific expert testimony be reliable.<sup>372</sup> Many of the same considerations apply. The expert's motivation will still be important. The judge should ask: Is the expert's theory one that was specifically developed for the litigation?<sup>373</sup> Moreover, the acceptance of the expert's theory in the pertinent nonscientific community should also be a factor in the reliability analysis.

In this context, however, the qualifications of the expert will be of particular importance. This is so because in the nonscientific world, theories are often not subject to testing or experimentation.<sup>374</sup> Although the focus of the inquiry must still be on verification of the expert's methodology,<sup>375</sup> the inquiry is more difficult because much nonscientific expert testimony is based on the experience of the expert, instead of experimentation.<sup>376</sup> For example, when a detective testifies as an expert

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370. See *Daubert*, 113 S. Ct. at 2797 (asserting that widespread acceptance by scientists may be a very important factor for court).

371. Strong, *supra* note 333, at 1518-19.

372. See Imwinkelried, *supra* note 350, at 2281 (proposing extension of *Daubert* to nonscientific matters); Linda S. Simard & William G. Young, *Daubert's Gatekeeper: The Role of the District Judge in Admitting Expert Testimony*, 68 TULANE L. REV. 1457, 1471 (1994) (same).

373. Cf. Simard & Young, *supra* note 372, at 1474 ("[p]ractical uses . . . to which [expert's] theory has been put by the expert or others will provide evidence of external scrutiny and validation.").

374. Imwinkelried, *supra* note 350, at 2280.

375. See Simard & Young, *supra* note 372, at 1471.

376. See Imwinkelried, *supra* note 350, at 2289 ("[e]xperience is to nonscientific experts as experimentation is to experts."); John W. Strong, *Language and Logic in Expert Testimony: Limiting Expert Testimony by Restorations of Function, Reliability, and Form*, 71 OR. L. REV. 349, 368 (1992) (Nonscientific experts espouse "general propositions . . . [that] have undergone no process of verification other than daily

on the *modus operandi* of a drug dealer,<sup>377</sup> the detective's theory is that there is a certain consistency with which drug dealers act. What is the basis for his theory? The detective's basis is his experience observing and participating in drug transactions.<sup>378</sup> The same is true for an accountant testifying in a professional malpractice case or a banker testifying about the "commercial reasonableness" of a secured party under Section 9-504 of the Uniform Commercial Code or a stockbroker testifying about the suitability of an investment. The theories on which these experts base their opinions are largely the result of their experiences.

Accordingly, as Professor Imwinkleried has written, the judge must ensure that the expert's experience is sufficient both in terms of quantity (the number of times the expert has had the experience) and quality (the similarity of the experiences the expert has had to the subject of the expert's testimony).<sup>379</sup> In these situations, there is a remarkable convergence of Rule 702's three prongs: qualification of the expert, reliable theories and techniques, and assistance to the jury in deciding an issue. An expert without sufficient experience in number or kind should not be allowed to offer an opinion because she is not qualified, her opinion would not be reliable, and it would not help the jury.

### iii. Two Concerns About Application of the Reliability Requirement

One notable concern about using experience as the benchmark for judging the validity of nonscientific experts is that courts will fall back on the bare-bones requirements of Rule 702 and allow any self-proclaimed expert to say anything. To avoid this, the judge should require a clear articulation of the expert's theory and a complete disclosure of the basis of the

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observation.") (citing James E. Starrs, *Frye v. United States Restructured and Revitalized: A Proposal to Amend Federal Evidence Rule 702*, 26 JURIMETRICS J. 249, 252-53 (1986)).

377. See *United States v. Castillo*, 924 F.2d 1227, 1232 (2d Cir. 1991) (involving expert testimony about the operations of narcotics dealers).

378. Cf. *United States v. Locascio*, 6 F.3d 924, 937 (2d Cir. 1993) (qualifying an FBI agent as an expert on the inner workings of an organized crime family by 17 years experience as an agent and five years in the FBI's Organized Crime Program).

379. Imwinkleried, *supra* note 350, at 2290-94.

expert's opinions. The purpose is two-fold: (1) to insure that the subject matter of the expert's theory is properly the subject of expert witness testimony; and (2) to provide the judge the information needed for an epistemological analysis of the expert's theory.<sup>380</sup>

Undoubtedly, even diligent judges will find their newly acquired responsibility to be taxing. At least part of the difficulty exists because even a uniform standard of admission does not allow for a uniform analysis of every expert's testimony, as has been demonstrated above. Flexibility will be critical for judges as they encounter new fields of knowledge and revisit old ones.<sup>381</sup>

For example, in *United States v. Starzecpyzel*<sup>382</sup> Judge McKenna faced a very old type of expert in a very new context. He had to decide whether, after *Daubert*, a forensic document examiner's (FDE) expert testimony constitutes scientific knowledge and, if so, whether it is based on reliable theories and methodologies.<sup>383</sup> The difficulty of the task can be measured in part by the prolixity of Judge McKenna's opinion. It took twenty-three pages for the judge to decide that forensic document examination is *not* scientific knowledge and that it satisfies the requirements of Rule 702 for "technical or other specialized knowledge." Forensic document examination is a practical skill, and thus, not subject to *Daubert*.<sup>384</sup>

Judge McKenna's opinion is admirable for the care and thought with which he approached and decided the issue. He held a "*Daubert* hearing," carefully considered the expert testimony from the hearing and scholarly writings about forensic document examination, rigorously analyzed the evidence under

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380. See Simard & Young, *supra* note 372, at 1471-72 ("[E]pistemological analysis begins by clearly identifying the theory on which the expert proposes to base her testimony."). Epistemology is the "branch of philosophy that investigates the origin, nature, methods, and limits of human knowledge." *Id.*; see Imwinkleried, *supra* note 350, at 2275-76 (describing history of modern epistemology as developed by John Locke).

381. *Daubert*, 113 S. Ct. at 2927 ("The inquiry envisioned by Rule 702 is . . . a flexible one.").

382. 880 F. Supp. 1027 (S.D.N.Y. 1995).

383. *Id.* at 1028-29. Judge McKenna is a federal district court judge in the Southern District of New York. *Id.* at 1027.

384. *Id.* at 1028-50.



Rules 702 and 403, and admitted the testimony under conditions designed to avoid unfair prejudice and to ensure reliability.<sup>385</sup>

Yet, the fundamental ruling—that forensic document examination is not “scientific knowledge”—contradicts prior case law,<sup>386</sup> the characterization of FDE’s themselves,<sup>387</sup> and the opinions of both recent and ancient legal commentators.<sup>388</sup> Moreover, as Judge McKenna readily recognized, forensic document examination is testable, has been tested, has an error rate that may be quite high (although that fact is highly disputed), and its theories have been subjected to very limited peer review.<sup>389</sup> All of this convinced the judge that *Daubert* would require exclusion of the FDE’s testimony, and thus, he simply opted to not apply *Daubert*.<sup>390</sup>

Despite his well-crafted opinion, Judge McKenna’s conclusion is subject to criticism. Many scientific theories or techniques

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385. *Id.* The *Daubert* hearing lasted from February 28 through March 2, 1995 and included testimony from three experts. *Id.* at 1028. Judge McKenna described the testimony in some detail. *See id.* at 1036, 1044 nn.21-25. He also analyzed each of the four “guidelines” from *Daubert* and ultimately concluded that forensic document examination was a “practical skill” and not scientific and that its admission would help the jury determine the authenticity of a document. *Id.* at 1029, 1045-46. Finally, the court took several measures to ameliorate concerns about unfair prejudice under Rule 403, including preparing a jury instruction about the nature of forensic document examination and limiting the definitiveness of the expert’s opinion. *Id.* at 1048-49.

386. *See, e.g.*, United States v. Buck, No. 84 CR 220-CSH, 1987 WL 19300, at \*3-4 (S.D.N.Y. 1987) (finding forensic document examination to be scientific by using the relevancy test, which applies only to scientific evidence).

387. As Judge McKenna noted, the literature is replete with references to forensic document examination as a science. *See Starzeczyzel*, 880 F. Supp. at 1048 n.28 (citing DAVID ELLEN, THE SCIENTIFIC EXAMINATION OF DOCUMENTS (1989); ORDWAY HILTON, SCIENTIFIC EXAMINATION OF QUESTIONED DOCUMENTS (1982); AND WILSON R. HARRISON, SUSPECT DOCUMENTS: THEIR SCIENTIFIC EXAMINATION (1958)).

388. *See, e.g.*, PAUL C. GIANNELLI & EDWARD S. IMWINKLERIED, SCIENTIFIC EVIDENCE 789-851 (1986) (discussing questioned document examination as one kind of scientific evidence); ROGERS, *supra* note 311, at 292 (noting that “there is such a thing as a science of handwriting”).

389. *See Starzeczyzel*, 880 F. Supp. at 1036-38. Michael J. Saks testified at the *Daubert* hearing that one study showed that document examiners reached the correct answer 52% of the time as opposed to 50% for laypeople. *Id.* at 1037. In another study only 13% of the examiners reached the correct result. *See* D. Michael Risinger, et al., *Exorcism of Ignorance as a Proxy for Rational Knowledge: The Lessons of Handwriting Identification “Expertise,”* 137 U. PA. L. REV. 731, 746 (1989).

390. *See* 880 F. Supp. at 1028.

rely on the experience or training of an individual to interpret or apply the underlying scientific principles. Opinions of experts using firearms identifications, fingerprint analysis, and bitemark identification are based on the experience of the expert and, although based on objective data, involve elements of subjectivity.<sup>391</sup> An even more analogous technique is voice identification, which is based on the same basic propositions as forensic document examination: that every individual is unique in the way they speak or write and that no one speaks or writes exactly the same way from one time to the next.<sup>392</sup> In addition, just as a voice identification expert knows that individuals are capable of disguising or changing their voices,<sup>393</sup> FDEs have to account for the fact that a person can modify their handwriting. Yet, voice identification is recognized as a science and has been subjected to judicial scrutiny accordingly.<sup>394</sup>

The subjectivity of the technique does not change the technique's essential scientific character. Instead, it necessitates paying particular attention to the qualifications of the expert in each instance and is an additional factor the court should con-

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391. GIANELLI & IMWINKLERIED, *supra* note 388, § 13-3, 374-75.

392. Compare *id.* § 10-2, 311 with *Starzeczyzel*, 880 F. Supp. at 1031. This phenomenon is referred to as interspeaker or writer variation, meaning that no two people write or speak in the same way, and intraspeaker or writer variation, meaning that a person never pronounces or writes the same word exactly the same way. See GIANELLI & IMWINKLERIED, *supra* note 388, § 10-2, 311. This fundamental premise, according to one of the expert witnesses in *Starzeczyzel*, "is based on little more than the faith of those who subscribe to it." Michael J. Saks, *Implications of the Daubert Test for Forensic Identification Science*, 1 SHEPARD'S EXPERT & SCI. EVIDENCE Q. 427 (1994).

393. In *Starzeczyzel*, the court noted the subjectivity of forensic document examination, resulting from natural variation and other factors such as disease, intoxication, the passage of time and the ability to purposefully disguise one's handwriting as support for its conclusion that FDE is not scientific. 880 F. Supp. at 1038-41. The same concerns apply to voiceprint analysis. See Brian R. Clifford, *Voice Identification by Human Listeners: On Earwitness Reliability*, 4 LAW & HUM. BEHAV. 373, 380 (1980). While these variations make the techniques less reliable, they do not change their essential nature. *Cf. id.* (showing that experts matched disguised voices only 21.6 to 23.3% of the time). In fact, the *Reference Manual on Scientific Evidence* notes that voiceprint evidence has "gradually faded from the courtroom" after a committee of the National Academy of Sciences raised questions about its accuracy. FEDERAL JUDICIAL CENTER, REFERENCE MANUAL ON SCIENTIFIC EVIDENCE 75 (1995) (citing COMMITTEE ON EVALUATION OF SOUND SPECTROGRAMS, NATIONAL RESEARCH COUNCIL, ON THE THEORY AND PRACTICE OF VOICE IDENTIFICATION 10 (1979)).

394. See GIANELLI & IMWINKLERIED, *supra* note 388, § 10-1, at 309-27.

sider in deciding whether to exclude the testimony as unreliable.<sup>395</sup> *Starzecpyzel* illustrates the consequence of not extending the reliability requirement to all expert testimony and, at the same time, the difficult questions that arise from any attempt to categorize expert testimony as scientific and nonscientific. Perhaps the most important lesson of *Starzecpyzel*, however, is that *Daubert*, if properly applied, may well exclude expert testimony that courts have grown accustomed to admitting.<sup>396</sup>

#### b. The Necessity Requirement

When the reliability of the expert's theories or techniques is marginal, Rule 702 should require that the jury needs the testimony before it is admitted. The necessity requirement would reverse the "presumption of helpfulness" that many courts employ when reviewing expert testimony.<sup>397</sup> Thus, instead of the current practice of admitting expert testimony when in doubt, a decidedly ill-advised policy in light of the many dangers of expert testimony, the amendment would require the proponent of the testimony to demonstrate that the jury needs expert assistance to resolve an issue. Marginally reliable testimony would require a greater showing of need than other expert testimony.

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395. See *id.* § 10-2, at 313 (Application of voice identification technique "depends[s] heavily on the qualifications of the particular examiner."); *id.* § 21-7(E), at 848 (Examinations by unqualified "secondary experts" result in no better than 50% accuracy in handwriting analysis.).

396. Randolph N. Jonakait, *The Meaning of Daubert and What That Means for Forensic Science*, 15 CARDOZO L. REV. 2103, 2117 (1994) ("[I]f *Daubert* is taken seriously, then much of forensic science is in serious trouble.").

397. Others have previously proposed a more stringent helpfulness requirement. For example, in May 1992 the Advisory Committee on the Federal Rules of Civil Procedure proposed that Rule 702 be amended to provide, in pertinent part, the following:

Testimony providing scientific, technical, or other specialized information, in the form of an opinion or otherwise, may be received if (1) it is reasonably reliable and will, if credited, substantially assist the trier of fact to understand the evidence or to determine a fact in issue. . . .

WEINSTEIN ET AL., *supra* note 339, at 84. The addition of the word "substantially" before "assist" would obviously increase the level of helpfulness required of expert testimony.

Professor McElhaney, in the wake of *Daubert*, proposed that Rule 702 be amended to make expert testimony "only admissible when it is necessary to a fair resolution of the issues in the case." McElhaney, *supra* note 12, at 55.

In some ways, this proposal invokes the common law requirement that expert testimony is appropriate only on matters that are beyond the jury's comprehension.<sup>398</sup> Thus, expert testimony about the meaning of certain words<sup>399</sup> or the amount of punitive damages necessary to punish a corporate defendant<sup>400</sup> would be excluded as unnecessary. On the other hand, issues on which the jury needs great assistance, such as the standard of care in a professional malpractice case<sup>401</sup> or forensic DNA testing,<sup>402</sup> would be admitted upon a showing of reliability.

Of course, often these matters are not black and white. Some issues are matters that the jury is able to decide without assistance, but about which expert testimony would deepen the jury's understanding or identify misconceptions the jury may hold.<sup>403</sup> It is in this netherland that the amendment would have its greatest impact. Perhaps it would be felt most directly by experts on matters of human behavior, such as sociologists, psychologists, psychiatrists, human factors engineers, and the like.

Social science expertise is now a frequent voice in the courtroom. For example: a psychologist espouses theories about how people respond to certain experiences (so-called syndrome testimony)<sup>404</sup> and explains the unreliability of eyewitness identifications,<sup>405</sup> a psychiatrist predicts a person's future con-

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398. See *supra* notes 63-64 and accompanying text.

399. *World Boxing Council v. Howard Cosell*, 715 F. Supp. 1259, 1264-65 (S.D.N.Y. 1989) (holding that the jury was capable of reading Cosell's book and comparing it to articles he claimed to have relied on without the assistance of plaintiff's expert, an expert in media relations and communications research).

400. See *Farrall v. A.C. & S. Co.*, 558 A.2d 1078, 1082-83 (Del. Super. Ct. 1989).

401. *Savage v. Christian Hosp. Northwest*, 543 F.2d 44, 47 (8th Cir. 1976).

402. See *Arizona v. Bible*, 858 P.2d 1152, 1183 (Ariz. 1993) (DNA is not an area where the jury can easily penetrate the "aura of infallibility").

403. See 3 WEINSTEIN'S EVIDENCE, *supra* note 30, at 702-15 (There is no "bright line separating issues within the comprehension of jurors from those that are not."); Strong, *supra* note 376, at 356 ("The 'beyond the ken' rule . . . somewhat unrealistically suggested a division of subjects into those about which the jury was informed and those which it was not.").

404. *E.g.*, *United States v. Brown*, 891 F. Supp. 1501, 1505 (D. Kan. 1995) (admitting "battered woman syndrome" evidence offered through psychologist to explain how women who are battered typically act); *Steward v. State*, 652 N.E.2d 490, 492 (Ind. 1995) (allowing a clinical psychologist to testify that the victim exhibited symptoms that are commonly found in teenagers who have experienced sexual abuse, concluding that the victim suffered from "child sexual abuse syndrome").

405. *E.g.*, *United States v. Downing*, 753 F.2d 1224, 1231 (3d Cir. 1985) (admitting

duct,<sup>406</sup> and a human factors engineer describes for the jury how reasonable people behave.<sup>407</sup> The scientific basis for much of this testimony is suspect, leading one commentator to label it "suppositional science."<sup>408</sup> Yet, it is more and more frequently admitted purportedly because it will assist the jury.<sup>409</sup> The theory seems to be that more information is always better for the jury. It is not.

This kind of testimony, perhaps more than any other, is susceptible to partisanship and the ills that accompany it. Syndrome testimony, for example, consists of an expert describing for the jury the typical response of a person who has had a particular experience or experiences, such as child abuse, rape, or spousal abuse, for the purpose of convincing the jury that the experience took place or that the victim should be believed.<sup>410</sup> Thus, the profile is subject to manipulation by the expert to fit the circumstances of the case. The expert becomes an advocate, telling the jury in scientific terms about why the jury should believe the victim, a matter the jury is capable of evaluating without help.<sup>411</sup> Even though courts will often not

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expert testimony on eyewitness identification); *Arizona v. Chapple*, 660 P.2d 1208, 1218 (Ariz. 1983) (holding that a psychologist should have been allowed to testify about the unreliability of eyewitness identifications); *California v. McDonald*, 690 P.2d 709, 726 (Cal. 1984) (admitting expert testimony on eyewitness identification). The psychologist in *Chapple*, Dr. Elizabeth Loftus, has written a book about her experiences as an expert witness on matters of human perception and memory. See ELIZABETH LOFTUS & KATHERINE KETCHAN, *WITNESS FOR THE DEFENSE* 4-13 (1991).

406. See *supra* notes 194-97 and accompanying text.

407. See generally Douglas R. Richmond, *Human Factors Experts in Personal Injury Litigation*, 46 ARK. L. REV. 338-49 (1993) (describing the uses of human factors engineers in cases involving diving injuries, slip and falls, and product liability cases on issues of design and warning defects).

408. See David L. Faigman, *To Have and Have Not: Assessing the Value of Social Science to the Law as Science and Policy*, 38 EMORY L.J. 1005, 1013 (1989) (stating that social science findings that have not undergone scientific testing or have been tested inadequately are identified as "suppositional science").

409. See *Steward v. State*, 652 N.E.2d 490, 493-94 (Ind. 1995) (stating that child sexual abuse syndrome has been admitted by many state courts); Wayne T. Westling, *The Case for Expert Witness Assistance to the Jury in Eyewitness Identification Cases*, 71 OR. L. REV. 93, 93-99 (1992) (describing increased judicial acceptance of expert testimony as eyewitness identifications).

410. See *Steward*, 652 N.E.2d at 493-94 (identifying the purposes for which child sexual abuse syndrome testimony has been admitted).

411. The context in which this testimony is typically used may contribute to a loss of objectivity by the expert. See *Michigan v. Beckley*, 456 N.W.2d 391, 408 (Mich. 1990). The Michigan Supreme Court identified this concern as follows:

allow the expert to draw the final inference that the event took place or that the victim is believable when she says the event took place,<sup>412</sup> the effect is the same. The problem is that most psychologists agree that there is no "typical response."<sup>413</sup>

A necessity requirement would help judges focus on whether the expert witness brings to the stand more than their own suppositions or beliefs and more than "mere" argument about who the jury should or should not believe. In that way the necessity requirement is similar to the amendment to Rule 702 recently passed by the House of Representatives, which requires that the probative value of expert testimony outweigh the Rule 403 dangers.<sup>414</sup> Under that proposal, marginal expert testimony would often be excluded because of its low probative value when balanced against concerns of unfair prejudice, confusing or misleading the jury, and wasting the court's time.<sup>415</sup> However, the amendment applies to civil cases only, which is too narrow, and creates a rule of exclusion typically utilized only when a risk of extreme prejudice is presented by the introduction of the evidence, a standard which is too broad to apply to all civil expert testimony.<sup>416</sup> The necessity requirement is pref-

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Given the abhorrence of the crime, it is inevitable that those who treat a child victim will have an emotional inclination toward protecting the child victim. The expert who treats a child victim may lose some objectivity concerning a particular case. Therefore, . . . we caution the trial court to carefully scrutinize the treating professional's ability to aid the trier of fact when exercising discretion and qualifying such an expert witness.

*Id.*

412. *Id.* at 405.

413. See *Pennsylvania v. Dunkle*, 602 A.2d 830, 832 (Pa. 1992) ("[a]bused children act in a myriad of ways that may not only be dissimilar from other sexually abused children, but may be the very same behaviors as children exhibit who are not abused."); see also *New Hampshire v. Cressey*, 628 A.2d 696, 700 (N.H. 1993) (same concerns).

414. See H.R. 988, 104th Cong. 1st Sess. § 3(2)(b) (1995); *supra* notes 339-47 and accompanying text.

415. See FED. R. EVID. 403.

416. Under Rule 412(b)(2) the standard of probative outweighs prejudice is applied to prior sexual conduct by the victim of sexual assault. The purpose of the exclusionary standard in that context is to encourage victims to come forward and to limit their humiliation when doing so. FED. R. EVID. 412(b)(2) & advisory committee's note. Rule 609(a)(1) protects criminal defendants from the extreme prejudice that often accompanies the admission of a prior felony conviction. See FED. R. EVID. 609(a)(1). No similar social policy concerns are present with most expert testimony. Yet, the standard might well be appropriate if it was limited to novel scientific mat-

erable because it is a familiar standard in evidence law generally, and expert witness testimony specifically, and it strikes the appropriate balance for admission of expert testimony.

In a case involving reliable expert testimony, "necessity" would encompass the relevancy requirement that courts currently apply to experts under Rule 702's helpfulness provision. Most important in this regard is *Daubert's* instruction that proposed expert testimony must "fit" an issue in the case.<sup>417</sup> Thus, the Ninth Circuit on remand found that testimony by plaintiffs' experts in *Daubert* did not satisfy the "fit" requirement because they could not testify that Bendectin more than doubled the risk of birth defects, which California law required. The testimony was not helpful (and certainly not needed) because, even if taken as true, it did not support a verdict for plaintiffs.<sup>418</sup> The syndrome testimony, discussed earlier, and other expert testimony about human behavior, should be carefully scrutinized for fit. The syndrome profiles, for example, have been developed to assist psychologists in the therapy setting and were never intended to be used to identify an abuser.<sup>419</sup> In that way, the syndromes may not help the jury.

### c. Objections to Changes in Rule 702

There are at least two obvious concerns about amending Rule 702 in the manner I have proposed. The first concern is whether greater restriction on the content of expert testimony is appropriate, as opposed to the adoption of procedures to enhance understanding and comprehension of expert testimony<sup>420</sup> and

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ters, which hold the greatest potential for misuse. See Berger, *supra* note 20, at 245 (proposing adoption of probative standard instead of prejudice standard in Rule 702 for application to novel scientific evidence).

417. *Daubert*, 113 S. Ct. at 2796.

418. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 43 F. 3d 1311, 1320-21 (9th Cir. 1995).

419. See Faigman, *supra* note 408, at 1057.

420. See Sanders, *supra* note 238, at 1435-37 (restrictive admissibility rulings are an inappropriate solution to the jury's problems with complex scientific testimony). Although Professor Sanders fully recognizes the difficulties encountered by the juries in the Bendectin cases, he believes that the problems were caused by deficiencies in how the evidence was presented, not with the fact that the evidence was admitted at all. See Sanders, *supra* note 170, at 27. Nevertheless, on more than one occasion Sanders has noted the possibility of using "blue ribbon juries" or science courts to decide complex cases. Sanders, *supra* note 238, at 1439; Sanders, *supra* note 170, at 81. This suggests the depth of Sanders concern about the jury. I would prefer to

rulings by the judge on the sufficiency of the evidence. Undoubtedly, much could be done to enhance the jury's ability to evaluate experts and many excellent reforms have been proposed.<sup>421</sup> Nevertheless, the fundamental problems cannot be changed: experts are often powerful witnesses; they are partisan; they add a significant cost to litigation when used; and they give testimony that is difficult if not impossible for the lay jury to accurately evaluate.

Limiting expert testimony to that which is shown to be reliable and necessary will directly reduce, though surely not eliminate, the significance of those problems. It makes good sense, not to mention good evidentiary policy, to exclude expert testimony that is based on unreliable theories or techniques so that jurors can choose between reliable methodologies in reaching their verdict. Substantial costs are added to the system by liberal rules of admission through more protracted litigation (because of the ability to avoid summary judgment with the aid of an expert), inflated settlement values, and greater litigation costs (brought on by the need to retain rebuttal experts). The liberal rules also create uncertainty in decisionmaking, which causes a loss of confidence in the system.

The second concern arises from the first: Should the judge or the jury decide questions of reliability when there is a reasonable dispute?<sup>422</sup> Most judges have no scientific training. How can they make these often complex, sometimes imponderable, decisions? Justice Rehnquist in *Daubert* dissented from the majority's discussion of how federal judges should determine reliability for that very reason. He expressed concern about judges having to become "amateur scientists."<sup>423</sup>

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adopt more restrictive rules of admission than to take the issue away from the jury altogether. Moreover, some of the proposed refinements, such as juror note-taking and question-asking, may help with recall by the jury, but I do not believe it would suddenly enable the jury to decipher the evidence. Similarly, structural changes, such as bifurcated trials, will help focus the jury's attention on the pertinent issue, but it will not better equip the jury to distinguish what is reliable from what is not.

421. See Gross, *supra* note 2, at 1269-80; Sanders, *supra* note 170, at 61-75.

422. Black, *supra* note 23, at 787.

423. *Daubert*, 113 S. Ct. at 2800 (Rehnquist, J., concurring in part and dissenting in part).



Yet, judges are better suited than juries to make these difficult decisions about which testimony is based on reliable theories and which is not. Despite some commentators who suggest that the judge is no better than the jury in evaluating these matters and despite the occasional error made by judges,<sup>424</sup> common sense and logic point in favor of the judge.<sup>425</sup> The judge has many advantages: (1) the judge is more proficient in engaging in critical analysis than the jury; (2) the judge has the benefit of experience—over time the judge will develop an understanding of the critical factors necessary to distinguish the valid from the invalid beyond the understanding of the uninitiated jury;<sup>426</sup> and (3) the judge has procedural advantages over the jury—he can obtain assistance from a variety of sources, including briefs of the parties, pertinent articles, transcripts of witnesses, and other material such as the Federal Judicial Center's Reference Manual on Scientific Evidence,<sup>427</sup> and he can control expert testimony through his management of the case.<sup>428</sup>

Nevertheless, even with substantial experience and assistance, judges may occasionally need additional help in making reliability decisions. That additional assistance could come from court appointed experts under Rule 706 or, perhaps more effectively, from a new position called "court adjunct" or "judge's technical aid" who would assist the judge by overseeing the

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424. *E.g.*, Imwinkleried, *supra* note 212, at 560. A commonly cited example of judicial error is *Wells v. Ortho Pharmaceutical Corp.*, 615 F. Supp. 262 (N.D. Ga. 1985), wherein a federal district court judge erroneously concluded that Orth-Gynol Contraceptive Jelly causes birth defects, contrary to the available scientific data. See Gross, *supra* note 2, at 1124 (discussing *Wells* and district court's analysis); see also *supra* notes 382-96 and accompanying text (criticizing Judge McKenna's conclusion in *United States v. Starzecpyzel*).

425. See Black, *supra* note 23, at 787 ("[W]e agree with Daubert's preference for preliminary judicial screening only because judges are in a better position than juries to acquire and consider the kind of information that bears on the resolution of such disputes."). Cf. Faigman, *supra* note 408, at 1014 (asserting that judges are capable of understanding and evaluating scientific reliability).

426. Black, *supra* note 23, at 787-90; see Strong, *supra* note 334, at 1512; see also *E.I. du Pont de Nemours and Co. v. Robinson*, No. 94-0843, 1995 WL 359024, at \*9-10 (Tex. Jun. 15, 1995) (concluding that on the whole judges are competent to evaluate reliability).

427. This manual is a product of a joint effort by the Federal Judicial Center, a federal agency established by Congress in 1967 and the Carnegie Corporation of New York. See 28 U.S.C. §§ 620-29 (1988 & Supp. V 1993).

428. See Black, *supra* note 23, at 787-90; Strong, *supra* note 333, at 1517-18.

expert testimony in the case and helping the judge understand difficult or complex issues.<sup>429</sup> This role would be more administrator than witness, like a specialized magistrate, and would almost certainly require statutory amendments. Although such a proposal is not new, it is more pressing now because of the responsibility *Daubert* places on judges and the ever-expanding universe of topics for expert testimony.

## V. CONCLUSION

Soon after the Federal Rules of Evidence were enacted, Professor Graham gave a most unflattering description of expert witness practices:

A glib and unscrupulous expert witness with no qualification in his professed field other than a willingness to sell any opinion to anyone who wants it will frequently out sell the conscientious, well-trained and careful expert who gives no opinion that he cannot back up. The concept that the . . . jury can detect a fraud is absurd.<sup>430</sup>

Now, almost two decades later, the expert witness industry has grown exponentially and with it the misuse of experts as mere partisan mouthpieces.

Yet, lawyers have the ability to slow the madness by using experts responsibly and by respecting experts for their important role in the adjudication of disputes. This new relationship calls lawyers to a vision of the expert as "expert" and not as advocate and team member. Judges have a role to play as well. They must take seriously their role as "gatekeepers" and commit to the difficult, but critical, task of separating the reliable from the unreliable. Cautious admission of expert testimony, as

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429. See Robert S. Thompson, *Decision, Disciplined Inferences and the Adversary Process*, 13 CARDOZO L. REV. 725, 777-79 (1991) (proposing use of experts as adjuncts in a "civil law format," wherein the expert would "receive the reports of the adversarial expert's pretrial, seek clarification where indicated, determine where the reports diverged and suggest areas of further inquiry"). For a similar proposal, see Edward V. DiLello, Note, *Fighting Fire with Firefighters: A Proposal for Expert Judges at the Trial Level*, 93 COLUM. L. REV. 473, 493-507 (1993) (proposing creation of Magistrate Judge Experts (MJE) to assist the judge with difficult evidence).

430. Michael H. Graham, *Discovery of Experts Under Rule 26(b)(4) of the FRCP: Part Two, An Empirical Study and a Proposal*, 1977 U. ILL. L.F. 169, 189 n.44.

opposed to the reckless acceptance permitted under the Federal Rules, is not only appropriate in light of the evidentiary policy of ensuring that evidence has sufficient indicia of reliability before it is admitted, but also is necessary due to the rampant partisanship of experts and the limitations of the adversary system.

In many ways these proposals contemplate a step back to a time when experts were viewed by lawyers and judges with skepticism, and when the common law placed limits on expert testimony in many ways. Adopting this outlook will help courts more effectively meet the challenges that expert testimony will surely present in the future. At the same time, however, courts must recognize the need to take on the new task of deciding expert reliability issues for themselves. This will ensure the preservation of the fundamental values of the adversary system.