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"Yer Outa Here!" A Framework for Analyzing the Potential Exclusion of Expert Testimony Under the Federal Rules of Evidence

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ARTICLES

"YER OUTTA HERE!" A FRAMEWORK FOR ANALYZING THE POTENTIAL EXCLUSION OF EXPERT TESTIMONY UNDER THE FEDERAL RULES OF EVIDENCE

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It does not take long for even a casual observer of criminal and civil trials to make two observations about expert witnesses. The first of these observations comes almost immediately: experts are vitally important to the judicial process. In many trials, the outcome largely depends upon which set of impressively credentialed[1] experts the jurors[2] (and the judge[3]) be-

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1. One commentator who has significant experience with experts refers to them as "academically endowed superwitness[es]." Terry O'Reilly, *Ethics and Experts*, 59 J. AIR L. & COM. 113, 113 (1993).

2. *See, e.g.*, United States v. Alexander, 526 F.2d 161, 168 (8th Cir. 1975) (observing that scientific (polygraph) evidence "is likely to be shrouded with an aura of near infallibility, akin to the ancient oracle of Delphi"); United States v. Addison, 498 F.2d 741, 744 (D.C. Cir. 1974) (noting that expert testimony may "assume a posture of mystic infallibility in the eyes of a jury of laymen"); White v. Estelle, 554 F. Supp. 851, 858 (S.D. Tex. 1982) (opining that when a psychiatrist's prediction regarding a person's future dangerousness "is proffered by a witness bearing the title of 'Doctor,' its impact on the jury is much greater than if it were not masquerading as something it is not"), *aff'd*, 720 F.2d 415 (5th Cir. 1983); James E. Starrs, Frye v. United States *Restructured and Revitalized: A Proposal To Amend Federal Evidence Rule 702*, 115 F.R.D. 92, 92 (1987) ("Almost as if it were a shibboleth, it has been said and

lieve.[4] The second observation generally comes later than the first: a significant amount of shoddy "science," phony logic, faulty analysis, sleight of hand, and other assorted junk enters the courtroom dressed up in the emperor's clothes of expert testimony.[5]

Although the second observation generally does not come as quickly as the first, those who know and care about the American justice system usually do come to realize both the danger[6] and the frequency of unsound expert testimony. Trial attorneys,[7] judges,[8] academics,[9] and even non-lawyers[10] have be-

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resaid that trial juries give overweening deference to scientific evidence, regardless of its validity within the scientific community. . . . That the appellate courts have routinely manifested a thorough-going skepticism of the jury's ability to cope with the complexities of scientific evidence is well-documented.") (footnote omitted).

> One legal scholar who is frequently cited on expert witness issues has observed: Scientific evidence impresses lay jurors. They tend to assume it is more accurate and objective than lay testimony. A juror who thinks of scientific evidence visualizes instruments capable of amazingly precise measurement, of findings arrived at by dispassionate scientific tests. In short, in the mind of the typical lay juror, a scientific witness has a special aura of credibility.

Edward J. Inwinkelried, *Evidence Law and Tactics for the Proponents of Scientific Evidence*, *in* SCIENTIFIC AND EXPERT EVIDENCE 33, 37 (Edward J. Inwinkelried ed., 1981), *quoted in* Barefoot v. Estelle, 463 U.S. 880, 926 n.8 (1983) (Blackmun, J., dissenting).

3. *See* United States v. Castillo, 924 F.2d 1227, 1233 (2d Cir. 1991).

The remainder of this article will assume that juries are the fact finders in cases involving expert testimony. This assumption is adopted merely for the convenience of eliminating the necessity of repeatedly referring to "the jury or the judge." In reality, issues regarding the admissibility of expert testimony also arise in bench trials and other proceedings before judges that do not involve juries.

4. Battles among experts are critical in both civil and criminal trials. *See* KENNETH R. FOSTER & PETER W. HUBER, JUDGING SCIENCE: SCIENTIFIC KNOWLEDGE AND THE FEDERAL COURTS 1 (1997) ("In the courtroom, the outcomes of criminal, paternity, first amendment, and civil liability cases (among others) often turn on scientific evidence, the reliability of which may be hotly contested."); Thomas Lyons, *Convincing a Reluctant Judge to Hold a Pretrial* Daubert *Hearing*, TRIALS & TRIBULATIONS, Spring 1997, at 7 ("In litigation today expert testimony is often critical, if not determinative."); Kenneth E. Melson, *Proposed Amendments to the Federal Rules on Admissibility of Scientific Evidence: A Prosecutor's Perspective*, 115 F.R.D. 126, 126 (1987) ("Scientific evidence plays an ever-increasing and important role in prosecutor's cases, and prosecutors view it as an effective tool in taking a bite out of crime.").

5. A court rejecting an experienced expert's testimony declared that the expert's "well-traveled opinions are no more than educated guesses dressed up in evening clothes." Hall v. Baxter Healthcare Corp., 947 F. Supp. 1387, 1407 (D. Or. 1996).

6. *See* Jonathon M. Hoffman, *A Briefcase and an Opinion: Post-'Daubert' Expert Testimony—A Major Shift*, 22 PROD. SAFETY & LIAB. REP. 379, 388 (BNA) (Apr. 8, 1994) ("Bogus science is likely worse than no science at all.").

7. *See, e.g.*, REPORT OF THE TORT POLICY WORKING GROUP ON THE CAUSES, EX-

moaned the frequency with which litigants seek to present

TENT AND POLICY IMPLICATIONS OF THE CURRENT CRISES IN INSURANCE AVAILABILITY AND AFFORDABILITY 35 (Feb. 1986) ("It has become all too common for 'experts' or 'studies' on the fringe of or even well beyond the outer parameters of mainstream scientific or medical views to be presented to juries as valid evidence from which conclusions may be drawn."), *quoted in* 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, 351 n.1 (1992); O'Reilly, *supra* note 1, at 124 (asserting that "the well qualified expert whose opinion challenges accepted wisdom, or worse, who uses the same data as the opposing experts to reach opposite conclusions" is "the problem every Court faces").

Of course, the trial attorneys' lament about the power of unscrupulous experts is at least somewhat hypocritical. As one experienced trial attorney has observed:

> Good lawyers "win" cases by obtaining the best result for their clients. Less successful lawyers fade from the arena. We accept this as the harsh code of trial work. Inevitably this requires the search for the most persuasive experts and their early retention, regardless of the costs. If this is now a lumbering Frankenstein, the truth is that you and I tightened all the screws and turned on the electricity.

O'Reilly, *supra* note 1, at 117.

8. *See, e.g.*, Alevromagiros v. Hechinger Co., 993 F.2d 417, 421 (4th Cir. 1993) ("Like the Fifth Circuit, we are unprepared to agree that 'it is so if an expert says it is so.'") (citing Viterbo v. Dow Chem. Co., 826 F.2d 420, 421 (5th Cir. 1987)); Chaulk by Murphy v. Volkswagen of America, Inc., 808 F.2d 639, 644 (7th Cir. 1986) (Posner, J., dissenting) ("'There is hardly anything not palpably absurd on its face, that cannot now be proved by some so-called "experts."'") (quoting Keegan v. Minneapolis & St. Louis R.R., 78 N.W. 965, 966 (Minn. 1899)); *In re* Air Crash Disaster at New Orleans, La., 795 F.2d 1230, 1234 (5th Cir. 1986) ("[T]he professional expert is now commonplace. That a person spends substantially all of his time consulting with attorneys and testifying is not a disqualification. But experts whose opinions are available to the highest bidder have no place testifying in a court of law, before a jury, and with the imprimatur of the trial judge's decision that he is an 'expert.'"); *In re* Aluminum Phosphide Antitrust Litig., 893 F. Supp. 1497, 1506-07 (D. Kan. 1995) ("Dr. Hoyt's analysis is driven by a desire to enhance the measure of plaintiffs' damages, even at the expense of well-accepted scientific principles and methodology."); Lipsett v. University of P.R., 740 F. Supp. 921, 924 (D.P.R. 1990) (quoting *Air Crash Disaster* and rejecting proffered testimony by experts who were "'available to the highest bidder'"); Jack B. Weinstein, *Improving Expert Testimony*, 20 U. RICH. L. REV. 473, 482 (1986) ("An expert can be found to testify to the truth of almost any factual theory, no matter how frivolous . . . .").

9. *See, e.g.*, Margaret A. Berger, *A Relevancy Approach to Novel Scientific Evidence*, 115 F.R.D. 89, 91 (1987) ("It is quite apparent that experts are readily available to present essentially frivolous theories . . . ."); Michael H. Graham, *Expert Witness Testimony and the Federal Rules of Evidence: Insuring Adequate Assurance of Trustworthiness*, 1986 U. ILL. L. REV. 43, 44; McCarthy, *supra* note 7, at 350 ("Commentators and courts agree on the need for greater control over the use of expert testimony in the courtroom.").

10. *See, e.g.*, FOSTER & HUBER, *supra* note 4, at 17; PETER W. HUBER, GALILEO'S REVENGE: JUNK SCIENCE IN THE COURTROOM (1991); WALTER K. OLSON, THE LITIGATION EXPLOSION 152-66 (1991); Peter Huber, *Junk Science in the Courtroom*, FORBES, July 8, 1991, at 68.

faulty expert testimony, and the potential power of such testimony to lead to incorrect decisions.[11] Almost every attorney who has tried at least one lawsuit has felt (and at least occasionally followed) the urge to demand that the court throw unscrupulous experts out of court. Most judges have been tempted to exercise the baseball umpire's prerogative of looking the offender in the eye, pointing to the nearest exit, and shouting, "Yer outta here!"

Although the reality of faulty expert testimony is widely recognized, the identification of which expert testimony should be disallowed is a hazardous and ill-defined enterprise. Unsound expert testimony tends to be akin to hard core pornography: Lawyers and judges "know it when (they) see it,"[12] but they have not been able to define clear criteria for identifying it.[13]

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11. *See* Barefoot v. Estelle, 463 U.S. 880, 926 (1983) (Blackmun, J., dissenting) ("Indeed, unreliable scientific evidence is widely acknowledged to be prejudicial."); CHARLES A. WRIGHT & KENNETH W. GRAHAM, JR., 22 FEDERAL PRACTICE AND PROCEDURE § 5217 (1978) ("Scientific and technical evidence has great potential for misleading the jury. The low probative worth can often be concealed in the jargon of some expert or masked by the use of technical paraphernalia."); Paul C. Giannelli, *The Admissibility of Novel Scientific Evidence:* Frye v. Unites States, *A Half-Century Later*, 80 COLUM. L. REV. 1197, 1237 (1980) ("The major danger of scientific evidence is its potential to mislead the jury; an aura of scientific infallibility may shroud the evidence and thus lead the jury to accept it without careful scrutiny."); Weinstein, *supra* note 8, at 482 ("Juries and judges can be, and sometimes are, misled by the expert-for-hire.").

12. In an often referenced, but surprisingly seldom cited, passage, Justice Stewart outlined his test for hard core pornography:

> I have reached the conclusion, which I think is confirmed at least by negative implication in the Court's decisions since *Roth* and *Alberts*, that under the First and Fourteenth Amendments criminal laws in this area are constitutionally limited to hard-core pornography. I shall not today attempt further to define the kinds of material I understand to be embraced within that shorthand description; and perhaps I could never succeed in intelligibly doing so. But I know it when I see it, and the motion picture involved in this case is not that.

Jacobellis v. Ohio, 378 U.S. 184, 197 (1964) (Stewart, J., concurring).

13. *See* FOSTER & HUBER, *supra* note 4, at 22 ("Judges can—and will—take their best shot at an answer."); O'Reilly, *supra* note 1, at 125 (noting that "there are few guidelines" for court examination of the validity of the bases of expert opinions); *cf.* Bert Black, *A Unified Theory of Scientific Evidence*, 56 FORDHAM L. REV. 595, 598 (1988) (noting the need for reform in court analysis of proposed expert testimony and observing "there is no consensus on how to achieve these objectives"); Starrs, *supra* note 2, at 93 (observing that judges "need guidance in the reception of scientific evidence").

This article will attempt to fill this breach, by articulating a set of standards that are extracted from federal court opinions which have excluded faulty expert testimony. Part I discusses the importance of the judge's decision to allow or exclude opinion testimony. Part II reviews changing judicial attitudes about expert testimony, which increase the prospects that a judge will disallow expert testimony. Part III outlines the standards for excluding expert testimony in a series of questions that attorneys and judges should ask about proffered opinions. Application of these standards will bring order to the often undisciplined process of analyzing the validity of expert testimony.

I. THE STAKES: THE IMPORTANCE OF EXPERT TESTIMONY

Quite a bit is at stake when judges contemplate whether to allow or exclude expert testimony. Under the Federal Rules of Evidence, expert witnesses are given wide latitude in formulating their opinions. Furthermore, in certain cases, a party must present expert testimony to create a triable issue of fact. Even when expert testimony is not technically required, a party often has little chance of success without it. As a result of these stakes, the parties and the court must review carefully the admissibility of proffered expert testimony.

A. *The Rules of Evidence Give Favorable Treatment to Experts*

Under the Federal Rules of Evidence, experts are given the authority to do things that are strictly forbidden for lay witnesses. The permissive nature of expert witness law, therefore, allows parties to bring matters before the jury through expert testimony that might otherwise be inadmissible.

The common misunderstanding is that experts are allowed to testify about their opinions, and lay witnesses are forbidden from testifying about their opinions. The actual boundaries of permissible testimony for experts and lay witnesses are somewhat less mutually exclusive, but ultimately even more favorable to experts, than this common misunderstanding. Rules 701, 702, and 703 of the Federal Rules of Evidence establish these boundaries.

Under Rule 701, lay witnesses are allowed to testify about their opinions. The opinions or inferences of lay witnesses, however, are admissible only when they are "rationally based on the perception of the witness."[14]

The boundaries for the opinions of expert witnesses are far less restrictive. Under Rule 702, experts are allowed to testify "in the form of an opinion or otherwise" whenever "scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue."[15] This is broad territory indeed.[16] As a practical matter, it may be almost boundless. A wise trial attorney is not likely to risk incurring the wrath of the jury and the judge by attempting to offer expert evidence that is not at least arguably helpful in the determination of a fact in issue. Furthermore, the license to help the fact finder "understand evidence" is an invitation that an experienced expert witness will be anxious to exploit.

In addition, the expert, unlike the fact witness, need not limit her opinions to those based on her own observations.[17] To the contrary, Rule 703 allows her to base her opinions on facts or data "made known to the expert at or before the hearing."[18] These "facts or data" can even include inadmissible evidence, such as hearsay.[19] Moreover, because the facts or data can be

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14. FED. R. EVID. 701(a). Rule 701 also states that lay witness opinions and inferences are admissible only when they are "helpful to a clear understanding of the witness' testimony or the determination of a fact in issue." FED. R. EVID. 701(b). This provision does not meaningfully limit lay witness opinion testimony. Any lay witness opinion testimony that meets the general relevance test of Rule 401 is presumably at least somewhat helpful to the determination of a fact in issue.

15. FED. R. EVID. 702.

16. Except in cases where the ultimate issue of fact is the mental condition of the defendant, the allowable territory for expert witness opinion testimony includes opinions about the ultimate issue to be decided by the trier of fact. *See* FED. R. EVID. 704; discussion *infra* Parts III.N, III.O.

17. *See* Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 592 (1993) ("Unlike an ordinary witness, see Rule 701, an expert is permitted wide latitude to offer opinions, including those that are not based on firsthand knowledge or observation. See Rules 702 and 703.").

18. FED. R. EVID. 703. Of course, the expert, like the fact witness, can base opinions on her own observations. *See id.* (allowing an expert to rely upon the facts or data "perceived by" the expert).

19. *See* FED. R. EVID. 703 (stating that "the facts or data need not be admissible in evidence").

presented to the expert outside of the hearing, a trial attorney can legitimately present the precise set of "facts or data" that the expert needs to reach the opinion the attorney needs, in private!

The only restriction is that the facts or data the expert relies upon must be "of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject."[20] Once again, the Rules attempt to provide a restriction that, unless aggressively and creatively enforced by opposing counsel and the court,[21] is largely vacuous. The expert will undoubtedly freely volunteer that she has based her opinions on valid data and facts.[22] It is almost impossible to imagine an expert witness testifying that, although she relied upon certain facts and data, none of her colleagues would ever rely upon such facts and data.

These liberal provisions regarding expert witnesses, standing alone, make the court's determination of whether an expert will be allowed to testify a monumentous one. If the witness is allowed to serve as an expert, the trial attorney and the party that hired her will be allowed to present information through the expert that they could never dream about otherwise getting to the jury. This information may even include hearsay and other inadmissible evidence, as long as that hearsay is incorporated into the expert witnesses' "opinion(s) or inferences."[23] All of this leeway is lost, however, if the court excludes the expert testimony.

B. *For Some Litigants, Expert Testimony Is a Necessity*

In some instances, even more is at stake when the court decides whether to exclude expert testimony. When the law or practical realities require expert testimony, an expert who can

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20. *Id.*

21. For discussion of efforts to put teeth into this restriction, see *infra* Parts III.C.4, III.S.

22. At least one court has found that declarations by experts that their methodology was "usually and generally followed by physicians and scientists" was enough to shield the experts' testimony from exclusion by the trial court. Joiner v. General Elec. Co., 78 F.3d 524, 532 (11th Cir. 1996), *rev'd*, 118 S. Ct. 512 (1997).

23. FED. R. EVID. 703.

survive attempts to exclude her testimony is a requirement, not a luxury.

In some areas of tort law, plaintiffs must present expert testimony to survive motions for summary judgment. Products liability law provides perhaps the most prominent examples of mandatory expert testimony. In many cases, courts have first determined that a plaintiff's proffered expert testimony regarding product defect or injury causation was inadmissible, then dismissed the underlying actions.[24] In a similar vein, courts in environmental torts cases have excluded expert testimony that attempted to tie plaintiffs' injuries to environmental hazards and then dismissed the underlying actions.[25] In medical or other professional malpractice actions based upon the law of some states, plaintiffs must present admissible expert testimony about the standard of care and the defendant's failure to meet this standard.[26] In still other cases, the exclusion of expert

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24. *See, e.g.,* Sorensen by Dunbar v. Shaklee Corp., 31 F.3d 638, 639 (8th Cir. 1994) (affirming exclusion of expert testimony regarding allegedly defective chemically-treated alfalfa tablets and thereby affirming summary judgment of dismissal); Porter v. Whitehall Lab., Inc., 9 F.3d 607, 609 (7th Cir. 1993) (affirming exclusion of expert medical testimony regarding damages allegedly caused from ingestion of Ibuprofen and thereby affirming summary judgment of dismissal); Estate of Mitchell v. Gencorp, Inc., 968 F. Supp. 592 (D. Kan. 1997) (excluding expert testimony and granting summary judgment of dismissal); Haggerty v. Upjohn Co., 950 F. Supp. 1160, 1168 (S.D. Fla. 1996) (rejecting plaintiff's expert testimony regarding causation and granting summary judgment of dismissal); Stalnaker v. General Motors Corp., 934 F. Supp. 179, 181 (D. Md. 1996) (excluding plaintiff's expert testimony regarding alleged product defect and causation, then granting defendant's motion for summary judgment), *aff'd*, 120 F.3d 262 (4th Cir. 1997); Meyerhoff v. Michelin Tire Corp., 852 F. Supp. 933, 948 (D. Kan. 1994) (excluding expert testimony and granting defendant's renewed motion for judgment of dismissal), *aff'd*, 70 F.3d 1175 (10th Cir. 1995).

25. *See* Claar v. Burlington N. R.R. Co., 29 F.3d 499, 500 (9th Cir. 1994) (affirming exclusion of expert testimony and thereby affirming summary judgment of dismissal due to plaintiffs' failure to establish causal link between work place chemical exposure and injuries); Cuevas v. E. I. DuPont De Nemours & Co., 956 F. Supp. 1306, 1313 (S.D. Miss. 1997) ("[S]ince the defective condition and causation opinion of the plaintiffs' expert witnesses is inadmissible, the Court must grant the defendant's Motion for Summary Judgment."); *In re* TMI Litig. Consol. Proc., 927 F. Supp. 834, 870 (M.D. Pa. 1996) ("Plaintiffs have neither presented direct evidence that they were exposed to doses of radiation greater than 10 rems, nor have they presented indirect evidence capable of supporting the inference that they were exposed to cancer inducing levels of radiation. Accordingly, the court will grant Defendants' motion for summary judgment in its entirety."); Trail v. Civil Eng'r. Corps, 849 F. Supp. 766, 768 (W.D. Wash. 1994) (excluding expert evidence regarding health effects of contamination and granting summary judgment of dismissal).

26. *See* 1 LAWYERS' MEDICAL CYCLOPEDIA §§ 2.41, 2.42 (Richard M. Patterson ed.,

testimony also has led to summary judgment because expert testimony was needed to create a material factual issue.[27] In any case where expert testimony is required as a matter of law, the court's decision regarding whether to exclude expert testimony may decide the entire case.

Even when expert testimony is not technically required,[28] it may be necessary as a practical matter. For example, a prosecutor who must tie the defendant to the scene of the crime without the benefit of eyewitness testimony may need to present DNA or other scientific evidence, establishing the link between the defendant and the crime scene. A criminal defense attorney who has just watched the prosecutor present such evidence had better be ready with her own expert witness testimony establishing doubts about the reliability of the prosecutor's evidence. A plaintiff's attorney in a negligence action arising out of a severe automobile collision where responsibility for causing the accident is hotly contested may not technically be "required" to present expert testimony, but she will stand little chance of success without an accident reconstructionist's explanation of how the accident happened. Once she presents this expert testimony, only a foolhardy defense attorney would rest on the burden of proof rather than present her own accident reconstruction expert to explain the defendant's version of the accident's dynamics.[29] In any such

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4th ed. 1996); RONALD E. MALLEN & JEFFREY M. SMITH, LEGAL MALPRACTICE § 32.16 (4th ed. 1996).

27. *See, e.g.*, Salas v. Carpenter, 980 F.2d 299, 305, 311 (5th Cir. 1992) (excluding expert testimony about defendant's alleged deliberate indifference and conscious disregard for the plaintiff's safety, then directing entry of summary judgment of dismissal); Zarecki v. National R.R. Passenger Corp., 914 F. Supp. 1566 (N.D. Ill. 1996); Collier v. Varco-Pruden Bldgs., 911 F. Supp. 189, 191 (D.S.C. 1995) ("The court finds [the expert's opinion] to be too speculative to create a genuine issue of material fact as to whether the oil on the panels was a patent danger.").

28. Although there are cases where the law requires the presentation of expert witness testimony, such circumstances are admittedly rather unusual. In what certainly must be the majority of cases, the law does not require expert testimony. *See, e.g.*, Paris Adult Theater I v. Slaton, 413 U.S. 49, 56 (1973) ("Nor was it error to fail to require 'expert' affirmative evidence that the materials were obscene when the materials themselves were actually placed in evidence.").

29. Even when expert witness testimony may not really be needed, parties and their attorneys often feel the need to call expert witnesses. One commentator who is familiar with the realities of life in the modern expert-driven courtroom has noted that "the trial attorney [is] often vulnerable to the very real fear that he must have an expert on any given subject, no matter how obvious, or run the risk that his

instance, a successful motion to exclude expert testimony can effectively, if not technically, gut an opponent's case.

C. *In Some Instances, Exclusion of One Expert's Testimony Can Lead to the Exclusion of Other Expert Testimony*

Occasionally, a "domino effect" may occur whereby more than the testimony of a single expert is at stake when a party seeks to exclude that expert's testimony. When a litigant plans to call numerous expert witnesses, the testimony of several expert witnesses may be based upon the conclusions of a single expert witness. If the critical expert's testimony is excluded, the testimony of the other experts may also be excluded.[30]

II. JUDICIAL ATTITUDES: A RECENT SHIFT

As the discussion in Part I documents, the court's decision about whether to admit or exclude proffered expert testimony is, in various instances, significant, important, critical, or even cataclysmic. Perhaps because they knew a party would suffer so much if expert testimony was excluded, judges, until quite recently, have been reluctant to do so. Guidance, however, from

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opponent will call such an expert and the case will be lost." O'Reilly, *supra* note 1, at 121.

30. *See, e.g.*, Dennis v. Pertec Computer Corp., 927 F. Supp. 156, 162 (D.N.J. 1996) ("Defendants' position with regard to Glucksberg is simply: 'the foundation for Dr. Glucksberg's opinion is illusory . . . [because his] entire testimony rests on the opinions of . . . Drs. Kroemer and Thompson.' . . . In light of the court's previous findings [excluding the testimony of these two experts] and the absence of any discussion demonstrating the independent reliability of Glucksberg's report, the court is compelled to exclude Dr. Glucksberg's testimony."); Henry v. Hess Oil Virgin Islands Corp., 163 F.R.D. 237, 247 (D.V.I. 1995) ("We conclude, therefore, that Dr. Copemann's statement limiting plaintiff's post-injury earnings to the minimum wage or slightly greater was unreliable and lacked an adequate factual foundation under FED. R. [EVID.] 702 and 703. . . . Rule 703 permits us to look behind Professor Roberts testimony to the underlying data supporting his calculations. Since Professor Roberts' built his wage loss edifice on Dr. Copemann's unfounded conclusions about plaintiff's post-injury earning capacity, his testimony on economic damages was itself unreliable and thus inadmissible."); *cf.* National Bank of Commerce v. Dow Chem. Co., 965 F. Supp. 1490, 1526-27 (E.D. Ark. 1996) ("The plaintiffs' other four causation experts have relied to varying degrees upon the opinions and publications of those two.").

no less an authority than the United States Supreme Court is starting to change this judicial reluctance.

A. *The Traditional View: Admit Expert Opinions "For Whatever They Are Worth"*

Until quite recently, a party that sought to exclude expert testimony on almost any ground, no matter how solid, was quite likely to have the judge allow the expert to testify.[31] While rejecting the party's motion in limine or other objection to the opposing expert's testimony, the judge would usually state that the objections merely "went to the weight of the testimony," not to its admissibility,[32] or that the testimony would be admitted "for whatever it is worth," leaving for the jurors the determination of what the testimony was indeed worth.[33]

The judicial reluctance to exclude expert testimony might be explained by district court fear of reversal. Trial judges might have believed that a decision excluding any evidence offered by a party might increase the chances of a successful appeal.[34]

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31. As recently as 1993, one commentator noted that the "exclusion of experts does occur . . . , but these cases are very much in the minority." O'Reilly, *supra* note 1, at 121.

32. *See, e.g.*, Christophersen v. Allied-Signal Corp., 939 F.2d 1106, 1109 (5th Cir. 1991) ("As a general rule, questions relating to the bases and sources of an expert's opinion affect the weight to be assigned that opinion rather than its admissibility and should be left for the jury's consideration."); Viterbo v. Dow Chemical Co., 826 F.2d 420, 422 (5th Cir. 1987) ("The district court should, initially, approach its inquiry with the proper deference to the jury's role as the arbiter of disputes between conflicting opinions. As a general rule, questions relating to the bases and sources of an expert's opinion affect the weight to be assigned that opinion rather than its admissibility and should be left for the jury's consideration."); United States v. Roark, 753 F.2d 991 (11th Cir. 1985) (allowing testimony from a psychologist about whether the defendant meant what she said when she confessed because objections to the testimony went to weight rather than admissibility).

33. *See, e.g.*, Richmond Steel, Inc. v. Puerto Rican Am. Ins. Co., 954 F.2d 19, 21 (1st Cir. 1992) ("Richmond correctly states that we have upheld the admissibility of maladroit 'expert' testimony on the ground that it was for the jury to determine the witness' credibility."); *In re* Air Crash Disaster at New Orleans, La., 795 F.2d 1230, 1233 (5th Cir. 1986) ("[W]e recognize the temptation to answer objections to receipt of expert testimony with the short-hand remark that the jury will give it 'the weight it deserves.' This nigh reflexive reaction may be sound in some cases . . . ."); *cf. Roark*, 753 F.2d at 994 (reversing due to exclusion of expert testimony because "[w]hether Dr. Cabrera-Mendez's testimony will be persuasive is for the jury").

34. *See* Hoffman, *supra* note 6, at 387 (noting that "trial judges formerly believed

After all, it is quite easy for a judge to expect a party who loses a trial to put the blame for this loss squarely on excluded evidence, which will be portrayed on appeal as the one critical piece of evidence that would have swayed the jury. It seems more difficult for a party who loses at trial after an unsuccessful motion to exclude her opponent's evidence to point to one piece of evidence that was introduced, along with many other pieces of evidence, as the one critical piece that destroyed her case.

If judicial reluctance to exclude faulty expert evidence did indeed result from concerns about reversal, these concerns have not been well placed. Although an industrious researcher can find an occasional case reversing a trial court for excluding expert testimony,[35] the casebooks are full of appellate court decisions reiterating that trial courts have significant discretion in making decisions about expert witnesses, and that these decisions will not be reversed absent an abuse of that discretion.[36] Despite this appellate court reluctance to second guess

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that the yellow brick road on the path to affirmance lay in the admission of borderline testimony").

35. *See* Roback v. V.I.P. Transp., Inc., 90 F.3d 1207 (7th Cir. 1996); United States v. Diallo, 40 F.3d 32 (2d Cir. 1994); *Roark*, 753 F.2d at 996.

36. *See, e.g.*, Cummins v. Lyle Indus., 93 F.3d 362, 367 (7th Cir. 1996) (Because "the decision to allow or to exclude expert testimony is committed to the sound discretion of the district court," the appellate court will not reverse unless the district court findings were manifestly erroneous.); United States v. Sinclair, 74 F.3d 753, 757 (7th Cir. 1996) ("Rulings on the admissibility of expert testimony are entitled to the same deference as evidentiary rulings generally."); Hardin v. Ski Venture, Inc., 50 F.3d 1291, 1296 (4th Cir. 1995) ("[A]ppellant's contentions overlook the wide range of discretion accorded to trial courts in these matters."); United States v. Marsh, 26 F.3d 1496, 1502 (9th Cir. 1994) ("We review for abuse of discretion the district court's refusal to allow an expert witness to testify regarding a witness's psychiatric condition."); Taylor v. Illinois Cent. R.R. Co., 8 F.3d 584, 585 (7th Cir. 1993) ("The district court has broad discretion to admit or exclude expert testimony and we will not disturb its ruling unless it is 'manifestly erroneous.'"); United States v. Cantrell, 999 F.2d 1290, 1292 (8th Cir. 1993) (similar); United States v. Hoac, 990 F.2d 1099, 1103 (9th Cir. 1993) ("A trial court's exclusion of expert testimony is reviewed for manifest error or abuse of discretion."); United States v. DiDomenico, 985 F.2d 1159, 1163 (2d Cir. 1993) ("[T]here has been one recurrent tide coursing through the cases: the admissibility of (expert) evidence is generally best left to trial judges."); United States v. Larkin, 978 F.2d 964, 971 (7th Cir. 1992) ("Trial courts have broad discretion over whether to admit or exclude such [expert] evidence, and their rulings will be upheld absent an abuse of that discretion."); Acoustical Design, Inc. v. Control Elec. Co., 932 F.2d 939, 942 (Fed. Cir. 1991) (similar); Persinger v. Norfolk & W. Ry. Co., 920 F.2d 1185, 1187 (4th Cir. 1990) (similar); United States v. Marabelles, 724 F.2d 1374, 1381

the decisions of the trial court judges who were in the best position to evaluate expert testimony,[37] trial court judges remained reluctant to seriously consider excluding such testimony.

B. *The Post-*Daubert *View: As Gatekeepers, Judges Must Exclude Faulty Expert Opinions*

Although a party seeking to exclude expert testimony still faces an uphill battle under the liberal Federal Rules of Evidence, the steepness of that hill has been reduced somewhat in recent years. In 1993, the United States Supreme Court reminded district court judges, in no uncertain terms, that they have a responsibility under the Rules to evaluate all evidence, including expert testimony, and to exclude invalid evidence.

In *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,[38] the Supreme Court instructed district court judges that Rule 104(a) of the Federal Rules of Evidence[39] requires them to make preliminary determinations regarding the "reliability," and therefore the admissibility, of expert testimony.[40] The Court outlined the

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(9th Cir. 1984) ("On review, our Court will reverse only if the District Court abused its wide discretion or committed 'manifest error' in excluding that kind of testimony.").

37. It is interesting to note that some appellate courts reversing the admission of expert testimony refused to grant the usual deference to trial courts precisely because they believed that the trial courts had refused to seriously consider whether the expert testimony should have been considered. One frequently cited decision stated:

> In sum, we adhere to the deferential standard for review of decisions regarding the admission of expert testimony by experts. Nevertheless, we take this occasion to caution that the standard leaves appellate judges with a considerable task. We will turn to that task with a sharp eye, particularly in those instances, hopefully few, where the record makes it evident that the decision to receive expert testimony was simply tossed off to the jury under a 'let it all in' philosophy. Our message to our able trial colleagues: it is time to take hold of expert testimony in federal trials.

Air Crash Disaster, 795 F.2d at 1234; *accord* Joy v. Bell Helicopter Textron, Inc., 999 F.2d 549, 569 (D.C. Cir. 1993); Lipsett v. University of P.R., 740 F. Supp. 921, 922-23 (D.P.R. 1990).

38. 509 U.S. 579 (1993).

39. Rule 104(a) provides, in part, "Preliminary questions concerning the qualifications of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court . . . ." FED. R. EVID. 104(a).

40. *See Daubert*, 509 U.S. at 589 ("Nor is the trial judge disabled from screening

decision that trial courts must make regarding expert testimony:

> Faced with a proffer of expert scientific testimony, then, the trial judge must determine at the outset, pursuant to 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. This entails a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue. We are confident that federal judges possess the capacity to undertake this review.[41]

In outlining this "gatekeeping role"[42] for trial court judges, the Supreme Court noted that trial court judges must exercise even "more control over expert witnesses than over lay witnesses."[43]

This instruction has not gone unheeded. In the years since *Daubert*, trial court judges have demonstrated new zeal for their gatekeeping responsibility.[44] At least in reported decisions, judges have traded in their "let it in for what it is worth" attitude for a healthy dose of skepticism that leads to a legitimate review of the reliability of expert opinions and an increased willingness to exclude faulty expert testimony.[45] One early tally reported that almost two-thirds of reported post-*Daubert* decisions excluded expert testimony.[46] Although reported decisions are perhaps more likely to exclude testimony

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such evidence. To the contrary, under the Rules the trial judge must ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable.").

41. *Id.* at 592-93.

42. *Id.* at 597.

43. *Id.* at 595 (quoting renowned evidence expert Judge Weinstein) ("'[T]he judge in weighing possible prejudice against probative force under Rule 403 of the present rules exercises more control over experts than over lay witnesses.'").

44. *See* Quentin F. Urquhart, Jr. & Brett A. North, Joiner v. General Electric: *The Next Chapter in the Supreme Court's Handling of Expert Testimony*, FOR THE DEFENSE, Sept. 1997, at 9.

45. *See* Hoffman, *supra* note 6, at 388 ("It seems apparent that *Daubert* presages the beginning of the end of the 'let-it-in-for-what-it's-worth' philosophy of expert testimony—likely to be replaced by the 'careful and meticulous' review advocated by the Tenth Circuit and already practiced by the Fifth and Seventh Circuits.").

46. *See id.* at 387. According to this report, many decisions excluding expert testimony after *Daubert* "address testimony which would likely have been admitted in the past." *Id.*

than unreported "run-of-the-mill" decisions allowing this testimony,[47] the reported cases nonetheless document a significant change in judicial attitudes about expert testimony.

Given the changes following *Daubert*, several aspects of the judicial decision-making process regarding the admissibility of expert testimony deserve mention. First, it is the party offering expert testimony who carries the burden of establishing the reliability of that testimony.[48] Second, judges should not shirk their responsibility to carefully scrutinize proffered expert testimony.[49] Third, this review should often take place in a prelim-

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47. *See id.*

48. *See, e.g.*, National Bank of Commerce v. Dow Chem. Co., 965 F. Supp. 1490, 1497 (E.D. Ark. 1996) ("[T]he plaintiffs must establish by a preponderance of the evidence that their expert testimony meets the *Daubert* standards of scientific reliability."); Dennis v. Pertec Computer Corp., 927 F. Supp. 156, 161 (D.N.J. 1996) ("Under Rule 104(a), it is the proponent of the evidence that must demonstrate the reliability of the evidence."); *In re* Aluminum Phosphide Antitrust Litig., 893 F. Supp. 1497, 1506 (D. Kan. 1995) ("Under *Daubert*, plaintiffs bear the burden of demonstrating by a preponderance of the evidence that Dr. Hoyt is proposing to testify to (1) economic knowledge that (2) will assist the trier of fact to understand or determine a fact in issue."); TRW Title Ins. Co. v. Security Union Title Ins. Co., 887 F. Supp. 1029, 1030 (N.D. Ill. 1995) ("The proponent of the proffered expert testimony . . . bears the burden of establishing its admissibility by a preponderance of the evidence."); Schmaltz v. Norfolk & W. Ry. Co., 878 F. Supp. 1119, 1120 (N.D. Ill. 1995) ("The proponent of the proffered expert testimony . . . bears the burden of establishing its admissibility by a preponderance of proof.").

49. The Seventh Circuit noted that the liberality of the Federal Rules of Evidence regarding expert witness testimony requires increased judicial screening of proffered expert testimony:

> [T]he consequence of this liberality is not, or at least should not be, a free-for-all. The elimination of formal barriers to expert testimony has merely shifted to the trial judge the responsibility for keeping "junk science" out of the courtroom. It is a responsibility to be taken seriously. If the judge is not persuaded that a so called expert has genuine knowledge that can be genuinely helpful to the jury, he should not let him testify.

Wilson v. Chicago, 6 F.3d 1233, 1238-39 (7th Cir. 1993) (citations omitted).

In its consideration of the *Daubert* expert testimony on remand from the Supreme Court, the Ninth Circuit noted that the gatekeeping task facing federal courts, though substantial, could not be avoided:

> Our responsibility, then, unless we badly misread the Supreme Court's opinion, is to 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 because it was not "derived by the scientific method." Mindful of our position in the hierarchy of the federal judiciary, we take a deep breath and proceed with this heady task.

Daubert v. Merrell Dow Pharm., 43 F.3d 1311, 1316 (9th Cir. 1995) [Daubert II].

inary proceeding outside the trial itself.[50] Fourth, the judge's gatekeeping responsibility should extend to all aspects of expert testimony, so that any deficiency should result in exclusion of the testimony.[51] Finally, trial court decisions regarding the admissibility of expert testimony should be accorded deferential review by appellate courts, since trial courts are better able to evaluate the reliability of expert testimony.[52] Given these as-

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50. *See generally* Lyons, *supra* note 4; *cf.* Daubert II, 43 F.3d at 1318-19 n.10 ("Where the opposing party . . . raises a material dispute as to the admissibility of expert scientific evidence, the district court must hold an in limine hearing (a so-called *Daubert* hearing) to consider the conflicting evidence and make findings about the soundness and reliability of the methodology employed by the scientific experts.").

51. *See* Rice v. Cincinnati, New Orleans & Pac. Ry. Co., 920 F. Supp. 732, 737 (E.D. Ky. 1996) ("[T]he 'gatekeeping' function is applicable to all aspects of expert testimony, including the qualifications of the witness."); David L. Faigman, *Mapping the Labyrinth of Scientific Evidence*, 46 HASTINGS L.J. 555 (1995) (discussing the scope of the judge's gatekeeping responsibility).

52. Following *Daubert*, a substantial majority of the circuit courts adopted deferential review of district court decisions regarding the admissibility of expert testimony. *See, e.g.*, Bogosian v. Mercedes-Benz of N. Am., Inc., 104 F.3d 472, 476 (1st Cir. 1997); Duffee v. Murray Ohio Mfg. Co., 91 F.3d 1410, 1411 (10th Cir. 1996); Lust v. Merrell Dow Pharm., Inc., 89 F.3d 594, 597-98 (9th Cir. 1996); Cavallo v. Star Enter., 100 F.3d 1150, 1153-54 (4th Cir. 1996); Buckner v. Sam's Club, Inc., 75 F.3d 290, 292 (7th Cir. 1996); Pedraza v. Jones, 71 F.3d 194, 197 (5th Cir. 1995); Pestel v. Vermeer Mfg. Co., 64 F.3d 382, 384 (8th Cir. 1995); McCullock v. H.B. Fuller Co., 61 F.3d 1038, 1042 (2d Cir. 1995); Government of the V.I. v. Sanes, 57 F.3d 338, 341 (3d Cir. 1995); American & Foreign Ins. Co. v. General Elec. Co., 45 F.3d 135, 137 (6th Cir. 1995); Joy v. Bell Helicopter Textron, Inc., 999 F.2d 549, 567 (D.C. Cir. 1993).

Deferential review was not unanimous among the circuit courts, however. The Third Circuit held that it gave a "hard look" to decisions excluding expert testimony under "more stringent review." *In re* Paoli R.R. Yard PCB Litig., 35 F.3d 717, 749-50 (3d Cir. 1994), *cert. denied*, 115 S. Ct. 1253 (1995). Similarly, the Eleventh Circuit indicated that it "appl[ied] a particularly stringent standard of review to the trial judge's exclusion of expert testimony." Joiner v. General Elec. Co., 78 F.3d 524, 529 (11th Cir. 1996), *cert. granted*, 117 S. Ct. 1243 (1997).

The Supreme Court recently resolved this conflict among the circuits in its review and reversal of the Eleventh Circuit's *Joiner* decision. The Court held that "abuse of discretion" is the proper standard of appellate review for district court evidentiary rulings regarding the admissibility of expert testimony. General Elec. Co. v. Joiner, 118 S. Ct. 512 (1997). The Court emphasized that the standard of review must not vary with the effect of the district court's decision:

> A court of appeals applying "abuse of discretion" review to such rulings may not categorically distinguish between rulings allowing expert testimony and rulings which disallow it . . . . We likewise reject respondent's arguments that because the granting of summary judgment in this case was "outcome determinative," it should have been subjected to a more searching standard of review. On a motion for summary judgment, disputed issues of fact are resolved against the moving party—here, peti-

pects of the judicial gatekeeping role, a party who believes that opposing expert testimony is faulty now has reason to pursue a motion in limine or objection to that testimony, with at least some hope of success.

III. THE FRAMEWORK: TWENTY QUESTIONS FOR THE EVALUATION OF EXPERT TESTIMONY

Both the judges exercising their new found muscles regarding expert witnesses and the attorneys who urge them to use those muscles to exclude certain experts would benefit from a framework for analyzing the excludibility of expert testimony. Although the decision about whether to exclude expert testimony, like many other evidentiary decisions facing judges, is somewhat fact-specific,[53] careful review of decisions excluding expert testimony[54] does reveal patterns that can constitute such a framework.

> tioners. But the question of admissibility of expert testimony is not such an issue of fact, and is reviewable under the abuse of discretion standard.

Id. at 514-15.

53. *See* Bogosian v. Mercedes-Benz of N. Am., Inc., 104 F.3d 472, 476 (1st Cir. 1997).

54. A review of reported decisions regarding the admissibility of expert testimony undoubtedly would reveal many decisions admitting this testimony. *See, e.g.*, Hopkins v. Dow Corning Corp., 33 F.3d 1116 (9th Cir. 1994); Glaser v. Thompson Med. Co., 32 F.3d 969 (6th Cir. 1994); Cella v. United States, 998 F.2d 418 (7th Cir. 1993), *overruled by* Mars v. United States, 25 F.3d 1383 (1994); Waldorf v. Shuta, 916 F. Supp. 423, 429-31 (D.N.J. 1996); Chapple v. Ganger, 851 F. Supp. 1481, 1496 (E.D. Wash. 1994); Hoffman, *supra* note 6, at 379-381 (discussing several cases admitting expert testimony).

This article, however, focuses on judicial decisions excluding expert testimony. The goal of this article is to set out a series of questions that should alert judges and trial attorneys to potential problems with expert testimony and cause judges to at least consider the possibility of excluding that testimony. This article does not take on the daunting task of reviewing reported cases to define the fine lines between exclusion and admission of expert testimony under each of the potential bases for excluding expert testimony. For example, the article notes that discovery and disclosure problems may justify exclusion of expert testimony (*see infra* Part III.R), but does not pretend to outline a demarcation between acceptable discovery and disclosure problems and those that are substantial enough to require exclusion of the expert. Drawing these lines would require more space than a single law review article can occupy. Given the fact-specific nature of evidence decisions and conflicts among decisions of various judges, drawing these lines may indeed be impossible.

This section outlines a somewhat expansive[55] set of questions that a judge must answer when considering whether to exclude proffered expert testimony.[56] Whenever any of these questions is answered "no," the judge should give serious consideration to keeping the expert off the stand or limiting her testimony.[57] If each question is answered either "yes" or "not applicable," the expert testimony is admissible, absent a limitation from a legal doctrine outside the scope of this article.

A. *Does the Jury Need Expert Testimony?*

The first, often overlooked, question is whether expert testimony will help the jurors. Under the Federal Rules of Evidence, expert testimony is admissible only when "scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue."[58] If the jurors can understand the evidence and decide facts on their own, expert testimony should not be allowed. The more

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55. Anyone who tries to outline significant inquiries covering as broad a range as expert testimony would be foolish to claim that the resulting list is comprehensive. The number of reported decisions concerning expert witness testimony is staggering. A check of West Group's Key Cite system reveals that courts have already cited *Daubert* over 1,000 times, less than five years after the Supreme Court wrote it. This author does not claim that every expert witness decision has been reviewed for this article. While the list of questions in this article is designed to cover the major themes regarding the potential exclusion of expert testimony, it is certainly not comprehensive.

Despite the admitted lack of complete comprehensiveness of the list of questions, the questions do overlap considerably. For example, compare Part III.D with Part III.F and Part III.G with Part III.H. Any attempt to be at least somewhat thorough in an area with as many published opinions as evidence law is almost certainly doomed to be both moderately incomplete and somewhat redundant.

56. For the convenience of attorneys and judges, these questions are repeated in the Appendix.

57. The Third Circuit has noted that any flaw in an expert's analysis renders the expert's conclusions suspect.

> *[A]ny* step that renders the analysis unreliable under the *Daubert factors renders the expert's testimony inadmissible. This is true whether the step completely changes a reliable methodology or merely misapplies that methodology.*

In re Paoli R.R. Yard PCB Litig., 35 F.3d 717, 745 (3d Cir. 1994) (emphasis in original); *see also* National Bank of Commerce v. Dow Chem. Co., 965 F. Supp. 1490, 1496 (E.D. Ark. 1996) ("Each step of the expert's methodology must be scientifically valid.").

58. FED. R. EVID. 702.

basic an issue, the less likely that an expert actually would be helpful.[59]

Despite this fundamental requirement for expert testimony, parties often attempt to use experts merely to bolster or package the other evidence that they have introduced, without adding any actual expertise.[60] Courts should and do rebuff these attempts to gild the lily.

In this regard, judges have excluded the proffered testimony of: human factors experts who would have offered opinions about how human beings interact with their environment and how accidents occurred;[61] a "memory expert" who would have

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59. The Advisory Committee notes to Rule 702 outline the test as follows:

> Whether the situation is a proper one for expert testimony is to be determined on the basis of assisting the trier [of fact]. "There is no more certain test for determining when experts may be used than the common sense inquiry whether the untrained layman would be qualified to determine intelligently and to the best possible degree the particular issue without enlightenment from those having a specialized understanding of the subject involved in the dispute." Mason Ladd, *Expert Testimony*, 5 VAND. L. REV. 414, 418 (1952).

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

In outlining the Rule 702 test, the Seventh Circuit cited another leading commentator on evidence issues, Judge Weinstein, who himself quotes still another leading evidence commentator, Professor Wigmore:

> The crucial question is, "'On *this subject* can a jury from *this person* receive appreciable help.'" 3 JACK B. WEINSTEIN & MARGARET A. BERGER, WEINSTEIN'S EVIDENCE ¶ 702[1], at 702-7 to 702-8 (1990) (quoting John Henry Wigmore, Evidence § 1923, at 21 (3d ed. 1940)) (emphasis supplied by Wigmore). An expert's opinion is helpful only to the extent the expert draws on some special skill, knowledge, or experience to formulate that opinion; the opinion must be an *expert* opinion (that is, an opinion informed by the witness' expertise) rather than simply an opinion broached by a purported expert.

United States v. Benson, 941 F.2d 598, 604 (7th Cir. 1991) (emphasis in original).

60. *See, e.g., Benson*, 941 F.2d at 603 ("Cantzler's purpose was to summarize the government's trial evidence and give his expert opinion as to why that evidence showed that Benson was required to file income tax returns in 1980 and 1981."); United States v. Castillo, 924 F.2d 1227, 1233-34 (2d Cir. 1991) ("In fact, as became all too apparent in the government's summations, the purpose of the [expert] testimony was actually to corroborate Johnson's testimony and provide a foundation for what we conclude to be an inappropriate guilt by alleged association argument.").

61. Courts have perhaps issued more Rule 702 exclusion orders for human factors experts, who have a tendency to "state the obvious," Persinger v. Norfolk & W. Ry. Co., 920 F.2d 1185, 1188 (4th Cir. 1990), than for any other group.

One court rejected the testimony of a human factors expert who would have testified that water would freeze at thirty-two degrees and presented an opinion regarding how a slip and fall occurred. *See* Stepney v. Dildy, 128 F.R.D. 77, 80 (D. Md.

testified that, over time, people forget things;[62] a criminal de-

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1989).

> In a similar case, another judge also rejected human factors testimony:
> [T]he court found that the testimony of plaintiff's expert witness Keith Vidal would not assist the jury's understanding of the evidence or determination of the fact issues. Mr. Vidal, a forensic engineer, proposed to testify to the co-efficient of friction, the effect of temperature on moisture, proper mat placement, and human reaction to particular signage, as these various facts related to the degree of safety of the wet floor on the day in question. The court found that the normal life experiences and qualifications of the jury would permit it to draw its own conclusions concerning the safety of the floor, based upon the lay testimony of eyewitnesses.

Getter v. Wal-Mart Stores, Inc., 829 F. Supp. 1237, 1238 (D. Kan. 1993), *aff'd*, 66 F.3d 1119 (10th Cir. 1995).

In another case involving a slip and fall, the Second Circuit reversed a judgment for the plaintiff because the district court improperly admitted similar expert testimony:

> Starting with his comments about the condition of the railroad platform from which Andres fell, Shanok was permitted to testify repeatedly about matters that were neither scientific nor in any way beyond the jury's ken. . . . Andres testified that the station was dirty, filthy and kind of icy, that the platform had trash and ice on it and that the lighting was very dim. The jury needed no special training or expertise to decide whether the platform thus was a "safe place"; yet, over the objection of defense counsel, Shanok was permitted to testify that it was not.

Andrews v. Metro N. Commuter R.R. Co., 882 F.2d 705, 708 (2d Cir. 1989).

In yet another case, the Fourth Circuit affirmed the decision of a district court that first allowed the testimony of the plaintiff's human factors expert, then reversed itself after trial and granted the defendant's motion for new trial. *Persinger*, 920 F.2d at 1186. The Fourth Circuit explained:

> When stripped of its technical gloss, however, Dr. Kroemer's testimony did no more than state the obvious. He testified that he applies an industry safety formula to determine the weight that Persinger could safely lift. The formula, however, was based on several basic variables including the distance of the lift, and the distance from the body at which the weight was held. The typical juror knows that it is more difficult to lift objects from a seated position, especially when the lift is away from the body rather than close to the body. In fact, even Dr. Kroemer admitted the industry formula represented a "commonly expressed" principle. Accordingly, we cannot say that the district judge abused his discretion in finding that the evidence should not have been admitted, especially given his previously expressed doubts.

Id. at 1188.

62. *See* United States v. Affleck, 776 F.2d 1451, 1458 (10th Cir. 1985). The Tenth Circuit explained that the proposed testimony was within the jury's ordinary knowledge:

> Affleck also argues that the trial court erroneously prohibited a "memory expert" from testifying. Here, the expert purportedly would have explained how well or how poorly people are able to remember events over the course of time and why they remember things the way that

fense attorney who would have testified that criminal defendants who stand to garner reduced sentences under the federal Sentencing Guidelines' "substantial assistance" provisions have an incentive to incriminate other criminal defendants;[63] gender and race discrimination "experts" who would have testified about whether a plaintiff was mistreated;[64] accountants who would have made certain inferences from the evidence and performed simple arithmetic;[65] a psychologist who would have discussed problems with witness identifications;[66] and an "un-

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> they do. Under Fed. R. Evid. 702, an expert may be allowed to testify if an untrained layman would not be able to make an intelligent evaluation of the evidence without such expert testimony. Specialized testimony explaining memory, however, is improper. The average person is able to understand that people forget; thus, a faulty memory is a matter for cross-examination. The trial court properly refused to admit the testimony of appellant's expert witness.

Id. at 1458.

63. *See* United States v. French, 12 F.3d 114, 116 (8th Cir. 1993) (affirming exclusion of expert because expert testimony is only "appropriate when it relates to issues that are beyond the ken of people of ordinary intelligence").

64. *See* Smith v. Colorado Interstate Gas Co., 794 F. Supp. 1035, 1044 (D. Colo. 1992).

65. *See* TRW Title Ins. Co. v. Security Union Title Ins. Co., 887 F. Supp. 1029, 1032 (N.D. Ill. 1995) ("Mr. Perks' 'expert' opinion will be excluded because it does not rely on any expertise but is comprised of inferences from the record that he is no more qualified than the jury to draw."); *see also* United States v. Benson, 941 F.2d 598, 604 (7th Cir. 1991) ("Much of [Internal Revenue Agent] Cantzler's testimony consists of nothing more than drawing inferences that he was no more qualified than the jury to draw."); De Jager Constr., Inc. v. Schleininger, 938 F. Supp. 446, 449 (W.D. Mich. 1996) ("It is of limited assistance to a jury for a CPA to do simple mathematical calculations which a reasonable juror or lawyer could perform."); Israel Travel Advisory Serv., Inc. v. Israel Identity Tours Inc., No. 92C 2379, 1993 WL 387346, at *1-2 (N.D. Ill. Sept. 23, 1993) (rejecting the testimony of a proposed expert because a junior high student could have done the expert's averaging).

66. *See* United States v. Hudson, 884 F.2d 1016 (7th Cir. 1989). The Seventh Circuit outlined the proposed expert testimony:

> At trial, defendants offered the testimony of Dr. Patricia Devine, a psychologist, to show: (1) the effect of stress upon identification; (2) the difficulty of cross-racial identification; (3) an overview of the memory process; and (4) the impact of a short viewing period upon the accuracy of an identification.

Id. at 1023. The circuit court affirmed the district court's exclusion of this testimony:

> We need not revisit the question whether this type of testimony is sufficiently reliable in general to go to the jury. It properly is excludable in any event under Rule 702 because it will not assist the trier of fact. Such expert testimony will not aid the jury because it addresses an issue of which the jury already generally is aware, and it will not contribute to their understanding of the particular dispute.

Id. at 1024.

safe ballast conditions" expert who would have testified that smaller rocks are better than larger rocks for those building railroad tracks.[67]

In some cases, courts excluding expert testimony have concluded that the expert would not add to the local knowledge possessed by jurors. In a New York drug trafficking case, a court concluded that the jury did not need the testimony of a police officer who would have testified about common street deals.[68] In a Maine moose-automobile accident case, the court rejected the testimony of a witness who discussed the "foreseeability that cars and animals will collide with ensuing injuries."[69]

The Seventh Circuit again reached the same result in affirming a district court's refusal of a criminal defendant's request for the appointment of "an expert witness to testify about the undependability of eyewitness identification under stressful circumstances." United States v. Larkin, 978 F.2d 964, 971 (7th Cir. 1992) ("These hazards are well within the ken of most lay jurors, and Larkin's counsel was granted ample opportunity at trial to discuss those hazards and cast doubt upon the witnesses' eyewitness identification of his client.").

67. *See* Taylor v. Illinois Cent. R.R. Co., 8 F.3d 584, 585 (7th Cir. 1993). The Seventh Circuit noted:

> Taylor contends that Dipprey would have testified that smaller caliber yard ballast would have provided safer footing than the larger mainline ballast, and that smaller caliber ballast had been used in other rail systems. This issue, already before the jury in several instances, boils down to whether a pile of large rocks is harder to stand on than a pile of smaller rocks. Notwithstanding Dipprey's lengthy experience in the railway industry, any lay juror could understand this issue without the assistance of expert testimony. Therefore it was proper for the district court to exclude Dipprey's testimony.

Id. at 585-86.

68. *See* United States v. Castillo, 924 F.2d 1227 (2d Cir. 1991). In *Castillo*, the Second Circuit reversed a criminal conviction due to the admission of the police officer's testimony:

> Simply stated, we are not convinced that New York jurors in today's climate, flush with daily news of the latest drug bust, need an expert to enlighten them as to such elementary issues as the function of a scale or index card in a drug deal. . . . We are equally confident that the purpose of forcing customers to snort cocaine—to flush out undercover police officers—was the most obvious, and indeed, perhaps only real explanation for the practice and certainly well within the reach of any juror's common sense.

Id. at 1233.

69. Brawn v. Fuji Heavy Indus., Ltd., 817 F. Supp. 184, 186 (D. Me. 1993). The court also rejected the expert's testimony about whether the product at issue met the promises made in the manufacturer's advertising:

> [T]he jury is able to read or hear for itself any advertising that I find is

B. *Is the Witness Qualified To Serve as an Expert?*

Under the Federal Rules of Evidence, all that one needs to serve as an expert witness is "knowledge, skill, experience, training, or education."[70] It is significant that this list is joined by the disjunctive "or," not the conjunctive "and." Therefore, a witness who wishes to present expert testimony only needs to show that she possesses one of these five items.

Given this generous list of ways for witnesses to qualify as experts, it seems improbable that anyone whom a party would bother to offer as an expert witness would not qualify to serve in that capacity.[71] Nonetheless, courts have with somewhat surprising frequency found that proffered experts do not possess the qualifications necessary to present "scientific, technical, or other specialized knowledge."[72]

A review of these cases reveals the creativity of would-be expert witnesses, the zealousness of the parties who would call them to the stand, and the willingness of judges to thwart those who would stretch the concept of "knowledge, skill, experience, training, or education"[73] too far. Courts have refused to allow the testimony of: a heroin addict who wanted to explain heroin withdrawal;[74] a pathologist who studied torture in his

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> admissible and to determine whether the defendants' conduct lives up to that advertising. I find no way in which testimony by Mr. Kelley on this subject would be helpful.

Id. at 186.

70. FED. R. EVID. 702.

71. In an article discussing the potential bases for exclusion of expert testimony, it is perhaps important to note that these bases do not include the lack of a license to practice the profession that the witness is practicing when she testifies. Courts have held that the lack of a state-mandated license is not a barrier to expert testimony. *See, e.g.*, Plywood Property Assocs. v. National Flood Ins. Program, 928 F. Supp. 500, 508 (D.N.J. 1996) (discussing experts in structural engineering, architecture, and building design) ("Prior qualification as an expert witness, specialized degrees, licenses or publications in their field, while all commendable, are not required to be possessed by every witness acting as an expert."); Dickerson v. Cushman, Inc., 909 F. Supp. 1467, 1472 (M.D. Ala. 1995) (product design) ("In general, the fact that an expert does not have a degree or license in his or her professed specialty goes to the weight of his or her testimony rather than its admissibility.").

72. FED. R. EVID. 702.

73. *Id.*

74. *See* Pedraza v. Jones, 71 F.3d 194, 197 (5th Cir. 1995).

spare time and wished to testify about the physiology of torture;[75] an ecologist who would have testified about chromosomal damage from exposure to hazardous substances;[76] an experienced horsewoman who offered to testify about the "behavioral propensities of horses that are blind in one eye";[77] a mechanical engineer who attempted to testify about electrical engineering issues;[78] a psychologist who offered opinions regarding medicine and toxicology;[79] railroad trainmen who desired to testify about the design of railroad engine cabs;[80] a pulmonologist who wished to testify about allergies;[81] a master mechanic who wished to use his experience as a full-time "consultant in forensic automotive mechanics" to justify testifying about alleged automotive design defects;[82] engineers who had limited or no experience with the products at issue, but were nonetheless ready to testify about the design of those products;[83] a psychologist who offered criticisms of product de-

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75. *See* Wilson v. City of Chicago, 6 F.3d 1233, 1238-39 (7th Cir. 1993).

76. *See* Barrett v. Atlantic Richfield Co., 95 F.3d 375, 382 (5th Cir. 1996).

77. Ansick v. Hillenbrand Indus., Inc., 933 F. Supp. 773 (S.D. Ind. 1996). This case establishes that even rather extensive experience is not enough to qualify one as an expert, if that experience is not in the precise field about which the expert wishes to opine:

> In an effort to establish her expert qualifications, Draper states that she has 25 years experience riding horses, 15 years experience boarding horses, 10 years experience training horses, and 5 years experience riding horses competitively; and then states in a conclusory fashion, "I am an expert regarding the care and training of American Quarter Horses". [sic] (Draper Aff., ¶¶ 2-6). Draper does not state what, if any, experience she has had with horses that are partially blind, or what, if any, training, education, or other form of credentials she has with regard to horse training.

Id. at 780.

78. *See* Trumps v. Toastmaster, Inc., 969 F. Supp. 247, 251-53 (S.D.N.Y. 1997).

79. *See* Summers v. Missouri Pac. R.R. Sys., 897 F. Supp. 533, 540 (E.D. Okla. 1995).

80. *See* Rice v. Cincinnati, New Orleans & Pac. Ry. Co., 920 F. Supp. 732, 737 (E.D. Ky. 1996).

81. *See* Diaz v. Johnson Matthey, Inc., 893 F. Supp. 358, 373 (D.N.J. 1995) ("[T]he Court finds Dr. Auerbach unqualified to testify because he totally lacks experience in treating or diagnosing patients with platinum salt allergy and has at best a limited familiarity with the small amount of literature in the field which deals with the still contested issue of whether platinum salt allergy can cause long term health problems even after the patient is no longer exposed to chloroplatinate salts.").

82. Bogosian v. Mercedes-Benz of N. Am., Inc., 104 F.3d 472, 477 (1st Cir. 1997) (noting that the would-be expert "conceded that he had never professionally designed a component part for an automobile, although he had done so 'in the courtroom.'").

83. *See, e.g.*, Watkins v. Telsmith, Inc., 121 F.3d 984, 987 (5th Cir. 1997) ("Wil-

sign;[84] an impressively credentialed epidemiologist and occupational health specialist who proposed to testify about health physics issues that he apparently could not comprehend;[85] a witness who might have been qualified to estimate the quantity of minerals on property, but wished to testify about the value of the minerals on a given piece of property;[86] a certified public accountant who had not "dealt with a construction enterprise comparable in size, magnitude, and number of projects" for ten years;[87] and a landlord who was ready to testify about real estate appraisal issues.[88]

In other cases, courts have allowed witnesses to serve as experts in specific fields, but disallowed testimony outside those specific fields of expertise. Courts have refused to allow: a recreational safety expert to present opinions regarding snowmaking at a ski resort;[89] a bank loan expert to testify

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liams lacks education in mechanical engineering, and his experience in machine design is limited to a project he conducted in one of his engineering classes in which he designed the base of a chair. He has never designed a conveyor, although he claimed to have designed 'nuts and bolts and that kind of thing one at a time.'"); Diviero v. Uniroyal Goodrich Tire Co., 919 F. Supp. 1353, 1356-58 (D. Ariz. 1996) (tire engineer who had no experience with steel belted radial tires not allowed to testify that a steel belted radial tire was defective), *aff'd*, 114 F.3d 851 (9th Cir. 1997); Linn v. Laidig, Inc., No. MJG-94-3252 (D. Md. 1996), *discussed in Industrial Machinery: Testimony Excluded*, 24 PROD. SAFETY & LIAB. REP. 379, 379 (BNA) (Apr. 12, 1996) (a mechanical engineer with no experience involving similar machines was not allowed to testify about the design of a silo unloader); Delaney v. Merchants River Transp., 829 F. Supp. 186, 189-90 (W.D. La. 1993) (an alleged design expert who had limited experience in designing barges was not allowed to testify that the lack of a permanent ladder was a design defect), *aff'd*, 16 F.3d 1214 (5th Cir. 1994).

84. *See* Jaurequi v. John Deere Co., 971 F. Supp. 416, 425 (E.D. Mo. 1997).

85. *See* Whiting v. Boston Edison Co., 891 F. Supp. 12, 17 (D. Mass. 1995) ("As was made painfully clear in his deposition testimony, Dr. Shalat has difficulty with even elementary concepts of health physics.").

86. *See* McLendon v. Georgia Kaolin Co., 841 F. Supp. 415, 419-20 (N.D. Ga. 1994).

87. Richmond Steel Inc. v. Puerto Rican Am. Ins. Co., 954 F.2d 19, 22 (1st Cir. 1992); *cf.* Rosado v. Deters, 5 F.3d 119, 124 (5th Cir. 1993) ("As the district court pointed out, Katsaris was last qualified as an accident reconstructionist in 1965. Since that time, Katsaris had not taken any refresher courses.").

88. *See* Zlotlow v. United States, 35 Fed. Cl. 133, 138 (1996).

89. *See* Hardin v. Ski Venture, Inc., 50 F.3d 1291, 1296 (4th Cir. 1995) ("When Dr. Caskey was sworn in, the court carefully reviewed his qualifications as an expert. It canvassed his educational background, skills, association memberships, publications, and prior work experience. Ultimately, the trial court limited Dr. Caskey to testimony about recreational safety policies, which bore the most direct relationship to his education and background in recreation. He was not allowed to discuss snowmaking.").

about taxation and painting industry issues;[90] a pharmacologist to testify about causation in a products liability case against a drug manufacturer;[91] an expert in the cause and origin of fires to testify about automobile design;[92] a meteorologist to testify about dose estimates;[93] and both physicians[94] and engineers[95] to present theories about how injuries were caused.

The reported cases rejecting proffered expert testimony reveal several other interesting principles. First, given the frequency with which professional expert witnesses open their testimony by proudly proclaiming that they have presented expert testi-

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90. *See* United States v. Marabelles, 724 F.2d 1374 (9th Cir. 1984). The Ninth Circuit outlined the deficiencies in the witness's credentials:

> The District Court concluded that the witness was an expert on bank loans. There was no showing, however, that the witness was an expert in taxation or in the painting business . . . .
>
> . . . .
>
> Finally, there was no showing that the witness had sufficient expertise to convert the loan application statistics to reflect accurately Marabelles' proper tax deductions or proper tax liability in a manner that would reasonably assist the jury.

Id. at 1381.

91. *See* Wade-Greaux v. Whitehall Lab., Inc., 874 F. Supp. 1441, 1477 (D.V.I. 1994) ("While Dr. Palmer's background as a pharmacologist may qualify him to offer opinions as to the properties or mechanism of action of a drug, it does not qualify him to offer ultimate opinions as to causation in this action."), *aff'd*, 46 F.3d 1120 (3d Cir. 1994).

92. *See* Smith v. Ford Motor Co., 882 F. Supp. 770, 772-73 (N.D. Ind. 1995).

93. *See In re* TMI Litig. Cases Consol. II, 911 F. Supp. 775, 797-98 (M.D. Pa. 1996).

94. *See* Watkins v. Schriver, 52 F.3d 769, 771 (8th Cir. 1995) ("Watkins fails to adequately explain how Dr. Knox's expertise as a neurologist enables him to testify that the injury was more consistent with being thrown into a wall than with a stumble into the corner."); *cf.* Will v. Richardson-Merrell, Inc., 647 F. Supp. 544, 548-49 (S.D. Ga. 1986) ("In short, Dr. Cowen was a plastic surgeon with relatively little, if any, scientific knowledge regarding Bendectin, its components or its effects. . . . The Court properly excluded Dr. Cowen's opinion regarding the causation issue.").

The fact that a physician treated a plaintiff does not relieve the physician of the responsibility of establishing that she is qualified to discuss causation of the plaintiff's medical condition. *See* O'Conner v. Commonwealth Edison Co., 13 F.3d 1090, 1105 n.14 (7th Cir. 1994) ("[W]e do not distinguish the treating physician from other experts when the treating physician is offering expert testimony regarding causation.").

95. *See* Hoover v. Bell Sports, Inc., No. 92-87212-CIV-Moreno (M.D. Fla. 1995), *discussed in Judge Finds Engineer Unqualified To Testify on Medical Causation Issue and Dismisses Suit*, 23 PROD. SAFETY & LIAB. REP. 1008, 1008 (BNA) (Sept. 22, 1995).

mony in other courtrooms, it is significant to note that experience as an expert witness does not, standing alone, qualify a witness to serve as an expert in a later case.[96] In fact, some courts are especially willing to exclude the testimony of "hired gun" experts who frequently appear in litigation.[97] The courts also seem to apply something of a sliding scale in evaluating expert testimony, with increased scrutiny for would-be experts who possess only minimal qualifications.[98]

In the final analysis, courts must carefully evaluate the qualifications regarding those who would serve as expert witnesses, despite Rule 702's liberality regarding qualifications. In the words of the Seventh Circuit, "[T]he consequence of . . . liberality is not, or at least should not be, a free-for-all."[99] Indeed, the

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96. *See* Bogosian v. Mercedes-Benz of N. Am., Inc., 104 F.3d 472, 477 (1st Cir. 1997) (rejecting opinion of witness who testified as an expert 126 times); Hardin v. Ski Venture, Inc., 50 F.3d 1291, 1296 (4th Cir. 1995); Rosado v. Deters, 5 F.3d 119, 124 (5th Cir. 1993); Thomas J. Kline, Inc. v. Lorillard, Inc., 878 F.2d 791, 800 (4th Cir. 1989) (noting that "it would be absurd to conclude that one can become an expert simply by accumulating experience in testifying").

Conversely, lack of prior experience as an expert witness does not render one ineligible to testify as an expert. *See* United States v. Locascio, 6 F.3d 924, 937 (2d Cir. 1993) ("Although [the expert] had never before been qualified as an expert witness, even the most qualified expert must have his first day in court.").

97. *See, e.g., In re* Aluminum Phosphide Antitrust Litig., 893 F. Supp. 1497, 1500 & n.5 (D. Kan. 1995) (disparaging a witness as "an expert for hire" and noting that "he has devoted his career to partisan adjudicatory purposes"); Lipsett v. University of P.R., 740 F. Supp. 921, 924 (D.P.R. 1990); *supra* note 9.

98. *See* Habecker v. Clark Equip. Co., 36 F.3d 278, 289 n.20 (3d Cir. 1994) (agreeing with district court's exclusion of a government safety expert's testimony where the expert "cautioned that his training did not involve engineering or physics and that the government would hire a specialist in that area if that expertise was needed"); Andrews v. Metro N. Commuter R.R. Co., 882 F.2d 705, 709 (2d Cir. 1989) (vacating the District Court's judgment due to improper admission of expert testimony) ("We find the admission of Shanok's authoritative pronouncement that the defendants were negligent particularly troublesome because his qualifications as an expert in this area were questionable at best."); Trumps v. Toastmaster, Inc., 969 F. Supp. 247, 253 (S.D.N.Y. 1997) ("I am satisfied that Kaufmann's lack of qualifications in electrical engineering, and the inadequacies of his methodology (a factor which probably flows from the first), viewed separately or in combination, constrain me to hold that . . . Kaufmann cannot testify to the proffered opinions at trial."); Diaz v. Johnson Matthey, Inc., 893 F. Supp. 358, 373 (D.N.J. 1995) ("Dr. Auerbach's lack of qualifications . . . is also relevant to the reliability analysis and is a factor tending to discredit reliability."); Chikovsky v. Ortho Pharm. Corp., 832 F. Supp. 341, 346 (S.D. Fla. 1993) ("In addition, Dr. Bertman is not a geneticist.").

99. Wilson v. City of Chicago, 6 F.3d 1233, 1238 (7th Cir. 1993).

liberality of Rule 702 may require judges to exercise increased caution when evaluating the credentials of expert witnesses.[100]

C. *Is the Expert's Testimony Based upon Valid Science (or Other Technical or Specialized Knowledge)?*

The *Daubert*[101] case did more than simply instruct trial court judges that they must carefully scrutinize proposed expert testimony. It also outlined some, though admittedly not all,[102] of the analysis that judges should use in their scrutiny of this testimony.

Under *Daubert*, the critical question is whether the expert's opinion is based upon valid science.[103] The Court outlined the trial court judge's "flexible"[104] analysis of proposed expert testimony:

> Faced with a proffer of expert scientific testimony, then, the trial judge must determine at the outset, pursuant to 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. This entails a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue.[105]

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100. The Seventh Circuit is among the courts that believe Rule 702's liberality requires judges to review carefully the qualifications of proposed experts. With regard to qualifications, the court in *Wilson* stated:

> The elimination of formal barriers to expert testimony has merely shifted to the trial judge the responsibility for keeping "junk science" out of the courtroom. It is a responsibility to be taken seriously. If the judge is not persuaded that a so called expert has genuine knowledge that can be genuinely helpful to the jury, he should not let him testify.

Id. at 1238-39.

101. 509 U.S. 579 (1993).

102. According to the *Daubert* Court, "[m]any factors will bear on the inquiry" about whether proposed expert testimony is admissible, and "we do not presume to set out a definitive checklist or test." *Id.* at 593.

103. *See id.* at 594-95 (The "overarching subject (of the trial court's inquiry into proposed expert testimony) is the scientific validity—and thus the evidentiary relevance and reliability—of the principles that underlie a proposed submission.").

104. *Id.* at 594.

105. *Id.* at 592-93.

Although some have expressed doubt about whether trial court judges are capable of evaluating the validity of scientific analysis,[106] the Court indicated that it was "confident" that they were up to this task.[107]

Although *Daubert* makes specific reference to science, its reasoning is not applicable only to scientific expert testimony. Because the proposed expert testimony in *Daubert* involved science, the decision states that the appropriate inquiry is whether an opinion is based upon valid science.[108] Trial courts should engage in a similar analysis whenever expert testimony is offered.[109] In other words, all expert testimony must be

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106. *See generally* Edward J. Imwinkelried, *Evidence Law Visits Jurassic Park: The Far-Reaching Implication of the* Daubert *Court's Recognition of the Uncertainty of the Scientific Enterprise*, 81 IOWA L. REV. 55 (1995).

107. *See Daubert*, 509 U.S. at 593.

108. *See id.* at 592-93.

109. *See, e.g.*, Rincon v. United States, 510 U.S. 801 (1993) (vacating case below and remanding for a determination of the admissibility of expert testimony on the issue of the reliability of eyewitness identification, in light of *Daubert*), *appeal after remand*, 28 F.3d 921 (9th Cir. 1994); Berry v. City of Detroit, 25 F.3d 1342, 1349-50 (6th Cir. 1994) (outlining the distinction between scientific and non-scientific expert testimony, then holding that the *Daubert* requirement of underlying validity applied to both categories); *In re* Aluminum Phosphide Antitrust Litig., 893 F. Supp. 1497, 1506 (D. Kan. 1995); *cf.* United States v. Lee, 25 F.3d 997, 999 ("Thus, on its own terms, *Daubert* applies not only to testimony about scientific concepts but also to testimony about the actual applications of those concepts."). For a lengthy list of cases applying *Daubert* to a variety of scientific and non-scientific expert testimony, see *Sorensen by Dunbar v. Shaklee Corp.*, 31 F.3d 638, 647 n.15 (8th Cir. 1994).

In a recent opinion, the Fifth Circuit explained why the *Daubert* analysis should be applied to non-scientific expert testimony:

> [W]hile *Daubert* dealt with expert scientific evidence, the decision's focus on a standard of evidentiary reliability and the requirement that proposed expert testimony must be appropriately validated are criteria equally applicable to "technical, or other specialized knowledge . . . ." Moreover, the nonexclusive list of factors relevant under *Daubert* to assessing scientific methodology—testing, peer review, and "general acceptance"—are also relevant to assessing other types of expert evidence. Whether the expert would opine on economic valuation, advertising psychology, or engineering, application of the *Daubert* factors is germane to evaluating whether the expert is a hired gun or a person whose opinion in the courtroom will withstand the same scrutiny that it would among his professional peers.

Watkins v. Telsmith, Inc., 121 F.3d 984, 991 (5th Cir. 1997) (citations omitted).

Although the *Daubert* case involved expert testimony based upon "novel" science, the Court indicated that its underlying validity test was not to be used only in such cases. *See Daubert*, 509 U.S. at 592 n.11 (explaining "we do not read the requirements of Rule 702 to apply specially or exclusively to unconventional evidence"); *see also Watkins*, 121 F.3d at 991 ("*Daubert* expressly denies that the precepts of

based upon valid technical or other specialized knowledge.[110] The courts have therefore held, for example, that: accounting evidence must be based upon valid accounting principles;[111] economic testimony must be based upon valid economic principles;[112] engineering evidence must be based upon valid engineering principles;[113] and testimony about crime schemes must be based upon valid criminological principles.[114]

To guide trial courts in their analysis of whether expert opinions are based upon valid science or other technical or specialized knowledge, the Court outlined a non-definitive[115] list of factors for courts to consider.[116] These factors, plus another factor added by the Ninth Circuit in its reconsideration of *Daubert* upon remand from the Supreme Court, provide several questions for courts to answer when determining whether expert testimony is based upon valid science or other technical or specialized knowledge. The remainder of this subpart will discuss these questions.

Rule 702 apply only to unconventional evidence.").

110. Although many courts have held that the *Daubert* test of technical validity applies to non-scientific evidence, this view is not universal. *See* McKendall v. Crown Control Corp., 122 F.3d 803 (9th Cir. 1997); Compton v. Subaru of Am., Inc., 82 F.3d 1513 (10th Cir.), *cert. denied*, 117 S. Ct. 611 (1996). *But cf.* Bogosian v. Mercedes-Benz of N. Am., Inc., 104 F.3d 472, 479 (1st Cir. 1997) ("[E]ven if *Daubert*'s specific discussion of the admissibility of scientific principles did not strictly apply to Davidson's testimony, the admissibility of the testimony was still controlled by the requirement of factual relevance and foundational reliability.")

111. *See* Frymire-Brinati v. KPMG Peat Marwick, 2 F.3d 183, 186-87 (7th Cir. 1993); De Jager Constr., Inc. v. Schleininger, 938 F. Supp. 446, 448-49 (W.D. Mich. 1996).

112. *See, e.g.*, Joy v. Bell Helicopter Textron, Inc., 999 F.2d 549, 567-70 (D.C. Cir. 1993) (future earning capacity); Petruzzi's IGA Supermarkets, Inc. v. Darling-Delaware Co., 998 F.2d 1224, 1236-41 (3d Cir. 1993); *Aluminum Phosphide*, 893 F. Supp. at 1506-07.

113. *See* Peitzmeier v. Hennesy Indus., Inc., 97 F.3d 293, 297 (8th Cir. 1996) ("As a threshold matter, the Peitzmeiers argue that *Daubert* is inapplicable to Milner's testimony, contending that his opinions are founded on basic engineering principles, whereas *Daubert* applies only to novel scientific testimony. This argument fails, for our Court has not given *Daubert* so narrow a reading. [Citations omitted.] We conclude that the *Daubert* analysis is properly applied to Milner's proffered [engineering] testimony."), *cert. denied*, 117 S. Ct. 1552 (1997).

114. *See* United States v. Johnson, 28 F.3d 1487, 1496-97 (8th Cir. 1994) (drug trafficking and gang activity); United States v. Locascio, 6 F.3d 924, 937 (2d Cir. 1993).

115. *See Daubert*, 509 U.S. at 593.

116. *See id.* at 593-94.

1. Has the Expert's Theory or Technique Been Tested?

The first factor mentioned by the *Daubert* Court is whether the underlying theory that the expert bases her theory upon "can be (and has been) tested."[117] Several courts have identified testing validating the expert's opinion as the most important factor in the analysis of expert testimony and have rejected proposed expert testimony that was based upon untested theories or techniques.[118] As one court noted, "the history of engineering and science is filled with finely conceived ideas that are unworkable in practice."[119] Other courts have based their rejection of proffered expert testimony in part upon the absence of testing of the underlying theory or technique.[120]

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117. *Id.* at 593. One court has stated this question as, "Is the Methodology Based Upon a Testable Hypothesis?" *In re* TMI Litig. Cases Consol. II, 911 F. Supp. 775, 793 (M.D. Pa. 1996).

118. *See, e.g.*, Bradley v. Brown, 42 F.3d 434, 438 (7th Cir. 1994); Zarecki v. National R.R. Passenger Corp., 914 F. Supp. 1566, 1574 (N.D. Ill. 1996) ("Of these four factors [listed in *Daubert*], the first—whether the proffered theory has been tested—has been deemed the most important."); Schmaltz v. Norfolk & W. Ry. Co., 878 F. Supp. 1119, 1121-22 (N.D. Ill. 1995); Stanczyk v. Black & Decker, Inc., 836 F. Supp. 565, 567 (N.D. Ill. 1993) (rejecting expert testimony regarding alleged design defect in part because "the evidence here is that [the expert]'s design will not work").

119. *Stanczyk*, 836 F. Supp. at 567.

120. *See, e.g.*, Deimer v. Cincinnati Sub-Zero Prods., Inc., 58 F.3d 341, 344 (7th Cir. 1995) (affirming exclusion of expert testimony where "the record supports the district court's conclusion that the witness did not conduct any studies or analysis to substantiate his opinion"); Wheat v. Pfizer, Inc., 31 F.3d 340, 343 (5th Cir. 1994) ("Key to this [*Daubert*] test is whether the expert's hypotheses can be and has been tested."); Kelley v. American Heyer-Schulte Corp., 957 F. Supp. 873, 881 (W.D. Tex. 1997); National Bank of Commerce v. Dow Chem. Co., 965 F. Supp. 1490, 1525 (E.D. Ark. 1996); Cabrera v. Cordis Corp., 945 F. Supp. 209, 214 (D. Nev. 1996); City of Tuscaloosa v. Harcros Chems., Inc., 877 F. Supp. 1504, 1527 (N.D. Ala. 1995) (excluding expert opinions that "have not and cannot be tested").

In affirming the exclusion of expert testimony about alternative braking system design, the Seventh Circuit outlined the testing issue:

> We do not mean to suggest, of course, that hands-on testing is an absolute prerequisite to the admission of expert testimony. Rule 702 is designed to ensure that, when expert witnesses testify in court, they adhere to the same standards of intellectual rigor that are demanded in their professional work. [Citations omitted.] This objective can be accomplished in a number of different ways, including through the review of experimental, statistical, or other scientific data generated by others in the field. Indeed, in *Porter v. Whitehall Labs., Inc.*, 9 F.3d 607 (7th Cir. 1993), we acknowledged that "there may be a situation in which personal experiments or observations meet the requirements of *Daubert*." *Id.* at

2. Has the Expert's Theory or Technique Been Subjected to Peer Review and Publication?

The *Daubert* decision's second listed "pertinent consideration" for evaluating expert opinions is whether the underlying theory or technique has been published in peer reviewed journals for the applicable profession.[121] The Court noted that, although publication in a peer reviewed journal was not absolutely necessary,[122] subjection of a theory or technique to scrutiny by other professionals was useful because such scrutiny provides an opportunity for identification of substantive flaws in the theory or technique.[123]

Several lower courts have excluded expert testimony that was based upon theories or techniques that had not been subjected to peer review and published.[124] Other decisions demonstrate

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> 614 n.6. As in *Porter*, however, the opinions offered by Dr. Carpenter in this case clearly lend themselves to testing and substantiation by the scientific method. The district court clearly acted well within its discretion in concluding that the absence of such testing indicated that the witness' proffered opinions could not fairly be characterized as scientific knowledge.

Cummins v. Lyle Indus., 93 F.3d 362, 369 (7th Cir. 1996).

Another court held that the important question is not whether the theory could be tested, but whether it actually had been tested: "In this case, the ultimate conclusion that latex paint causes asthma and its various component hypotheses certainly *could* be tested. However, it is conceded that these hypotheses have not been subjected to this kind of scientific scrutiny." Cartwright v. Home Depot U.S.A., Inc., 936 F. Supp. 900, 905 (M.D. Fla. 1996).

121. *See Daubert*, 509 U.S. at 593.

122. *See id.* at 594 ("The fact of publication (or lack thereof) in a peer reviewed journal . . . will be a relevant, though not dispositive, consideration in assessing the scientific validity of a particular technique or methodology on which an opinion is premised.").

123. *See id.* at 593. For an in-depth analysis of peer review, see Effie J. Chan, Note, *The "Brave New World" of* Daubert*: True Peer Review, Editorial Peer Review, and Scientific Validity*, 70 N.Y.U. L. REV. 100 (1995).

124. *See, e.g.*, Lust v. Merrell Dow Pharm., Inc., 89 F.3d 594, 597 (9th Cir. 1996); Wheat v. Pfizer, 31 F.3d 340, 343 (5th Cir. 1994); Cuevas v. E.I. DuPont De Nemours & Co., 956 F. Supp. 1306, 1312 (S.D. Miss. 1997); Kelley v. American Heyer-Schulte Corp., 957 F. Supp. 873, 881 (W.D. Tex. 1997); Haggerty v. Upjohn Co., 950 F. Supp. 1160, 1164 (S.D. Fla. 1996); Cabrera v. Cordis Corp., 945 F. Supp. 209, 214 (D. Nev. 1996) ("[T]he opinions expressed by Dr. Blais . . . have not been subjected to . . . peer review."); City of Tuscaloosa v. Harcross Chems., Inc., 877 F. Supp. 1504, 1526 (N.D. Ala. 1995); Stanczyk v. Black & Decker, Inc., 836 F. Supp. 565, 567 (N.D. Ill. 1993); *cf.* Navarro v. Fuji Heavy Indus., 925 F. Supp. 1323, 1329

that courts should not take experts at their word when they claim that peer reviewed publications support their opinions, because allegedly supportive publications do not always actually support the expert's conclusions.[125]

(N.D. Ill. 1996) ("Hales has not provided adequate scientific support for [his] damning conclusions. He cites no published journals, studies, reports, or treatises, nor has he set forth the methodology employed in reaching his conclusions. He does not identify testing or research techniques. There is no reference to peer review of any results reached by Hales."), *aff'd*, 117 F.3d 1027 (7th Cir. 1997).

In a decision which predated *Daubert*, the Fifth Circuit noted the value of the peer review process in weeding out insufficiently supported theories:

> [M]any experts are members of the academic community who supplement their teaching salaries with consulting work. We know from our judicial experience that many such able persons 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. We think that is one important signal, along with many others, that ought to be considered in deciding whether to accept expert testimony.

In re Air Crash Disaster at New Orleans, La., 795 F.2d 1230, 1234 (5th Cir. 1986); *see also* Peitzmeier v. Hennessy Indus., 97 F.3d 293, 297 (8th Cir. 1996) ("We reject the suggestion that cross-examination at trial and the number of Milner's appearances in design-defect cases can take the place of scientific peer review."), *cert. denied*, 117 S. Ct. 1552 (1997); Dennis v. Pertec Computer Corp., 927 F. Supp. 156, 162 (D.N.J. 1996) (noting with disdain an expert's "decision to restrict the use of the report to the judicial forum rather than subject his opinion to peer review").

125. *See* O'Conner v. Commonwealth Edison Co., 13 F.3d 1090, 1106 (7th Cir. 1994) ("Dr. Cheribel cites several sources that allegedly support this methodology. However, none of these sources indicates that radiation-induced cataracts can be identified by mere observation."); Cartwright v. Home Depot U.S.A., Inc., 936 F. Supp. 900, 904 (M.D. Fla. 1996) ("The published literature relied on by Dr. McKay and indirectly by Dr. Brooks provide little, if any, support for the opinions expressed."); Rutigliano v. Valley Bus. Forms, 929 F. Supp. 779, 785 (D.N.J. 1996) ("The case law also warns against use of medical literature to draw conclusions not drawn in the literature itself. . . . Reliance upon medical literature for conclusions not drawn therein is not an accepted scientific methodology."), *aff'd*, 118 F.3d 1577 (3d Cir. 1997); Cavallo v. Star Enter., 892 F. Supp. 756, 762 (E.D. Va. 1995) ("[T]he plaintiff's expert could not cite any documented cases where exposure to these chemicals caused the alleged illness. Rather, he relied on studies where high doses of atrazine caused eye irritation in rabbits."), *aff'd in part and rev'd in part on other grounds*, 100 F.3d 1150 (4th Cir. 1996); *cf.* National Bank of Commerce v. Dow Chem. Co., 965 F. Supp. 1490, 1517 (E.D. Ark. 1996) ("Plaintiffs claim Dr. Sherman's articles were peer reviewed. But her potential bias because of her direct involvement in litigation in the four cases on which she reported was not disclosed in her articles. Nor did she disclose the opinion of experts attributing the birth defects to genetic causes. And the opinions she expressed in the articles do not go to the same extent as the opinions she would put before the jury. So the court discounts the value of any peer review that might have occurred with respect to those articles."); *id.* at 1525 ("Although Dr. Sherman has published reports about four cases involved in litigation, she has not published her protocols, reasoning or methodology for peer review.").

3. Is the Known or Potential Rate of Error for the Expert's Technique Minimal?

Next, the *Daubert* decision somewhat cryptically states, "in the case of a particular scientific technique, the court ordinarily should consider the known or potential rate of error . . . and the existence of standards controlling the technique's operation."[126] This "rate of error"[127] factor may be the least understood and least applied of the factors outlined in *Daubert*,[128] perhaps because a party challenging opposing expert testimony often claims that the underlying theory or technique is overly subjective and, therefore, does not have any quantifiable rate of error.[129]

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126. *Daubert*, 509 U.S. at 594.

127. For a discussion of the effect of an expert's ignoring of standards, see *infra* Part III.E.

128. For examples of courts applying the rate of error test, see *In re TMI Litig. Cases Consol. II*, 911 F. Supp. 775, 795 (M.D. Pa. 1996) ("The court finds the potential rate of error to be high.") and *Wade-Greaux v. Whitehall Lab., Inc.*, 874 F. Supp. 1441, 1480 (D.V.I. 1994) ("[T]he theory of plaintiff's expert witnesses that they can directly extrapolate from experimental animal studies without supportive positive human studies to opine as to causation in humans is one that has an extraordinarily high rate of error, [citation omitted], and this fact weighs against the admissibility of opinions based upon those methodologies."), *aff'd*, 46 F.3d 1120 (3d Cir. 1994).

For a discussion of the *Daubert* rate of error factor, see FOSTER & HUBER, *supra* note 4, at 69-109.

129. *See* Peitzmeier v. Hennessy Indus., 97 F.3d 293, 298 (8th Cir. 1996) ("Because Milner has not conducted any experiments or testing of any kind, there cannot be a known rate of error for his results. Likewise, no evidence is offered concerning a 'potential' rate of error."), *cert. denied*, 117 S. Ct. 1552 (1997); Frank v. New York, 972 F. Supp. 130, 135 (N.D.N.Y. 1997) ("the lack of an objective testing method for MCS [multiple chemical sensitivity] gives rise to high probability of error in MCS diagnoses"); Haggerty v. Upjohn Co., 950 F. Supp. 1160, 1164 (S.D. Fla. 1996) ("As for the third *Daubert* factor, Dr. Mash's causation methodology has no known or acceptable rate of error because her hypothesis is untested."); Cartwright v. Home Depot U.S.A., Inc., 936 F. Supp. 900, 905 (M.D. Fla. 1996) ("The third *Daubert* factor, known or potential error rate, is inapplicable here because Plaintiffs' theories are vague and untested. Thus no rate of error in identification of victims can be ascertained."); City of Tuscaloosa v. Harcross Chem., Inc., 877 F. Supp. 1504, 1526 (N.D. Ala. 1995) (excluding expert testimony based upon the expert's "subjective beliefs" in part because such opinions "cannot have a known or potential rate of error").

4. Is the Expert's Theory or Technique Generally Accepted Within the Relevant Professional Community?

The final factor outlined in the Supreme Court's *Daubert* opinion is whether the theory or technique underlying the expert's opinion is generally accepted as reliable by the relevant professional community.[130] The listing of this factor by the Supreme Court is particularly significant, because the *Daubert* case overruled a lengthy series of federal cases stating that the *Frye v. United States*[131] "general acceptance" test was the sole factor in determining the admissibility of expert testimony.[132] After rejecting *Frye*'s general acceptance test as the sole means for determining the admissibility of expert testimony, however, the *Daubert* Court noted that "'general acceptance' can yet have a bearing on the inquiry."[133]

Old habits do indeed die hard. General acceptance remains an important consideration. Several lower federal courts have determined that proposed expert testimony was not based upon generally accepted theories or techniques, then excluded the testimony.[134]

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130. *See Daubert*, 509 U.S. at 594.

131. 293 F. 1013, 1014 (1923). The *Frye* test provided:

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

Id. at 1014.

132. *See Daubert*, 509 U.S. 585-89.

133. *Id.* at 594 (citation omitted).

134. *See, e.g.*, Kelley v. American Heyer-Schulte Corp., 957 F. Supp. 873, 881 (W.D. Tex. 1997) (rejecting an expert's testimony because "his theory regarding general causation is not generally accepted in the medical community"); Haggerty v. Upjohn Co., 950 F. Supp. 1160, 1164 (S.D. Fla. 1996) ("[T]here is no general acceptance or support for Dr. Mash's causation methodology in the scientific community."); Cabrera v. Cordis Corp., 945 F. Supp. 209, 214 (D. Nev. 1996); Stalnaker v. General Motors Corp., 934 F. Supp. 179, 181 (D. Md. 1996) ("[T]he Court agrees with the defendant that the plaintiff's expert witnesses do not present sufficient evidence from which a jury could reasonably conclude that there was a defect in the product, and that the so-called 'skip-lock' theory is indeed a theory that is 'scientific,' in the sense that it relies on basic principles of physics and mechanics. Yet, it is in itself obvious-

5. Did the Expert's Theory Exist Before Litigation Began?

Following the Supreme Court's remand of the *Daubert* case to the United States Court of Appeals for the Ninth Circuit,[135] the Ninth Circuit added a factor to the Supreme Court's list of items to be analyzed by courts engaging in the "flexible" inquiry.[136] According to the Ninth Circuit, "[o]ne very significant fact to be considered is whether the experts are proposing to testify about matters growing naturally and directly out of research they have conducted independent of the litigation, or whether they have developed their opinions expressly for the purposes of testifying."[137] Based in part upon its finding that

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ly so far afield from any recognized scientific principle to be completely inadmissible under the current standard for admissibility of expert testimony, as established in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 113 S. Ct. 2786, 125 L.Ed.2d 469 (1993)."), *aff'd*, 120 F.3d 262 (4th Cir. 1997); Wade-Greaux v. Whitehall Lab., Inc., 874 F. Supp. 1441, 1477 (D.V.I. 1994) ("[E]ach of plaintiff's expert witnesses used a methodology not recognized by the relevant scientific community, and not subject to scientific verification. Therefore, each of their opinions was not helpful and must be excluded."), *aff'd*, 46 F.3d 1120 (3d Cir. 1994); Dennis v. Pertec Computer Corp., 927 F. Supp. 156, 162 (D.N.J. 1996) (rejecting an expert's opinion because it "has simply not gained general acceptance"); *In re* TMI Litig. Cases Consol. II, 911 F. Supp. 775, 798-99 (M.D. Pa. 1996); Kurncz v. Honda N. Am., Inc., 166 F.R.D. 386, 388 (W.D. Mich. 1996) ("Mr. Smith's method has been subject to peer review and he is well published. The peer review, however, has not led to general acceptance—the fourth [*Daubert*] factor."); Cavallo v. Star Enter., 892 F. Supp. 756, 773 (E.D. Va. 1995) ("In sum, neither Dr. Monroe nor Dr. Belanti sufficiently adhered to the established toxicology methodology in forming their conclusions . . . ."), *aff'd in part and rev'd in part on other grounds*, 100 F.3d 1150 (4th Cir. 1996); Chikovsky v. Ortho Pharm. Corp., 832 F. Supp. 341, 346 (S.D. Fla. 1993); *City of Tuscaloosa*, 877 F. Supp. at 1526; *cf.* Dodd-Anderson v. Stevens, Nos. 92-1015-MLB & 92-1016-MLB, 1994 WL 26922 (D. Kan. Jan. 5, 1994) (rejecting a defendant's request for a dental examination of the plaintiff to review the relationship between enamel defects and cerebral palsy, because studies did not indicate any relationship between the two conditions); FOSTER & HUBER, *supra* note 4, at 226 ("When all is said and done, a great number of judges applying the new terms will end up making calls very similar to those they would have made under *Frye*.").

It is important to note that at least one court has recognized that "an expert cannot establish that a fact is generally accepted merely by saying so." Grimes v. Hoffmann-LaRoche, Inc., 907 F. Supp. 33, 38 (D.N.H. 1995).

135. *See Daubert*, 509 U.S. at 597-98.

136. *Id.* at 594. Although the Supreme Court's *Daubert* decision listed only four factors, the Court explicitly stated that its opinion was not a "definitive," all-inclusive checklist. *Id.* at 593.

137. Daubert v. Merrell Dow Pharm., Inc., 43 F.3d 1311, 1317 (9th Cir. 1995) [Daubert II].

the expert testimony at issue was developed solely for litigation, the Ninth Circuit rejected the testimony.[138]

Following the lead of the *Daubert II* decision, other reported decisions indicate that courts have rejected proposed expert testimony that was based upon theories developed solely for litigation.[139] Given the frequency with which experts are retained to analyze issues for litigation, judicial distaste for theories developed solely for litigation is significant.[140]

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138. *See id.* at 1317 ("While plaintiffs' scientists are all experts in their respective fields, none claims to have studied the effect of Bendectin on limb reduction defects before being hired to testify in this or related cases.").

139. *See* Lust v. Merrell Dow Pharm., Inc., 89 F.3d 594, 597 (9th Cir. 1996); Braun v. Lorillard, Inc., 84 F.3d 230, 234 (7th Cir. 1996) ("Dr. Schwartz had never tested human or animal tissues for the presence of asbestos fibers (or, so far as appears, for anything else) before being hired by the plaintiff's lawyer."), *cert. denied*, 117 S. Ct. 480 (1996); Estate of Mitchell v. Gencorp, Inc., 968 F. Supp. 592, 600 (D. Kan. 1997) ("We . . . find it significant that all of plaintiff's experts developed their opinions expressly for the purpose of testifying. None of the witnesses has done any research on his theories outside the context of this suit."); Cuevas v. E.I. DuPont De Nemours & Co., 956 F. Supp. 1306, 1312 (S.D. Miss. 1997) ("Dr. Parent was specifically employed by plaintiffs to state an opinion concerning Oust. . . . None of his opinions are an outflow of natural research done prior to being employed by the plaintiffs."); Cabrera v. Cordis Corp., 945 F. Supp. 209, 214 (D. Nev. 1996) ("[I]t appears that Cordis is correct that Dr. Brautbar has developed his opinions expressly for purposes of testifying in this case and that he has not himself performed any tests nor can he rely on other published tests or data regarding brain shunts to substantiate his theories. Under the circumstances and in accord with *Daubert*, the Court concludes that his expert testimony should be excluded."); Valentine v. Pioneer Chlorine Alkali Co., 921 F. Supp. 666, 670-71 & n.3 (D. Nev. 1996) (referring to *Daubert II* in excluding expert testimony despite the fact that "one of the physicians who examined the plaintiffs in this case published the results of his examination of the plaintiffs" in an obscure medical journal); *In re* TMI Litig. Cases Consol. II, 911 F. Supp. 775, 798 (M.D. Pa. 1996) (allowing expert to testify about generally accepted techniques, but not about "methodology . . . derived solely in connection with this litigation"); Casey v. Ohio Med. Prods., 877 F. Supp. 1380, 1384 (N.D. Cal. 1995) (excluding expert testimony where the expert "did not formulate his opinion on whether halothane can cause plaintiff's disease before working on this litigation"); Wade-Greaux v. Whitehall Lab., Inc., 874 F. Supp. 1441, 1479 (D.V.I. 1994) ("In evaluating the scientific validity or reliability of a particular methodology, it is also appropriate for a trial court to consider whether the methodology is used in a non-judicial setting. If a methodology has not been put to any non-judicial use, that weighs against admissibility. . . . There is no evidence that any of the methodologies employed by plaintiff's expert witnesses has been put to any use outside of the courtroom."), *aff'd*, 46 F.3d 1120 (3d Cir. 1994); *cf.* Wilson v. Merrell Dow Pharm., Inc., No. 82-CV-710-H (N.D. Okla. filed May 28, 1996), *discussed in Summary Judgment Granted to Manufacturer; Plaintiffs' Proof Inadmissible Under Daubert*, 24 PROD. SAFETY & LIAB. REP. 571, 571 (noting that the U.S. District Court for the Northern District of Oklahoma followed the Ninth Circuit's *Daubert II* decision).

140. The Ninth Circuit's *Daubert II* opinion outlines one court's distaste for theo-

D. *Does the Expert's Theory or Technique "Fit" the Facts of the Case?*

A scientifically or technically valid theory or technique, while necessary, is not sufficient. Expert testimony is permissible only when a valid theory or technique can legitimately be applied to the facts at issue in the litigation. In *Daubert*, the Supreme Court referred to this relevance issue as a consideration of "fit."[141]

As the *Daubert* Court observed, "'[f]it' is not always obvious, and scientific validity for one purpose is not necessarily scientific validity for other, unrelated purposes."[142] Judging from the experience of federal courts applying *Daubert*'s fit test, the Court was right. Numerous federal courts have excluded proposed expert testimony because the theory or technique underlying the testimony did not adequately fit the facts at issue. Examples of non-fitting expert testimony include: a hedonic

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ries developed solely for litigation:

> Bendectin litigation has been pending in the courts for over a decade, yet the only review the plaintiffs' experts' work has received has been by judges and juries, and the only place their theories and studies have been published is in the pages of federal and state reporters. None of the plaintiffs' experts has published his work on Bendectin in a scientific journal or solicited formal review by his colleagues. Despite the many years the controversy has been brewing, no one in the scientific community—except defendant's experts—has deemed these studies worthy of verification, refutation or even comment. It's as if there were a tacit understanding within the scientific community that what's going on here is not science at all, but litigation.

43 F.3d at 1318. To support this holding, the Ninth Circuit cited Eleventh Circuit Judge Frank Johnson's observation that "the examination of a scientific study by a cadre of lawyers is not the same as its examination by others trained in the field of science or medicine." Perry v. United States, 755 F.2d 888, 892 (11th Cir. 1985), *quoted in* Daubert II, 43 F.3d at 1318 n.8.

141. *Daubert*, 509 U.S. at 591.

142. *Id.* The Court also provided an example of its "fit" test:

> The study of the phases of the moon, for example, may provide valid scientific "knowledge" about whether a certain night was dark, and if darkness is a fact in issue, the knowledge will assist the trier of fact. However (absent creditable grounds supporting such a link), evidence that the moon was full on a certain night will not assist the trier of fact in determining whether an individual was unusually likely to have behaved irrationally on that night.

Id.

damages expert's testimony based upon studies that had no relevance to the plaintiff's loss of enjoyment of life;[143] a safety expert's simulation that did not match the facts of the accident;[144] an environmental expert's conclusions regarding the probable sources of hazardous wastes that had no factual basis in how the defendant actually conducted its operations;[145] an expert's proposed use of an unrelated movie and model to theorize about dispersion of the plume after the Three Mile Island nuclear accident;[146] and several medical experts' opinions regarding causation of medical conditions, where the underlying experiments or data did not adequately establish the causal link.[147] Even before *Daubert*, some courts rejected expert testi-

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143. *See* Sullivan v. United States Gypsum Co., 862 F. Supp. 317, 321 (D. Kan. 1994).

144. *See* Habecker v. Clark Equip. Co., 36 F.3d 278, 289-90 (3d Cir. 1994).

145. *See* Textron, Inc. v. Barber-Colman Co., 903 F. Supp. 1546, 1554 (W.D.N.C. 1995) ("Koon asserts that given certain waste-producing operations at the plant, metal-working and cooling water discharge, it is reasonable to infer that heavy metals would be present in Burlington's wastewater tank 'probably all of the time.' But Koon has no factual basis concerning how metal-working operations performed at the Burlington plant contributed heavy metals to the wastewater stream. His opinion reflects this absence of foundation."); *see also id.* at 1556 ("[T]he perigee of Koon's 'expert opinion' is his assertion that BTEX probably entered Burlington's wastewater system because Burlington's employees probably dumped Varsol down sinks and toilets at the plant."), *id.* at 1557 ("[T]he Court finds that studies relied upon by Koon, and therefore his opinion in this matter, are not sufficiently tied to the facts of this case.").

146. *See In re* TMI Litig. Cases Consol. II, 911 F. Supp. 775 (M.D. Pa. 1996). The court explained its rejection of the expert testimony as a matter of inadequately established fit:

> The plume movie does not "fit" within the case because it is based upon an undefined source term, fails to account for weather readings on the TMI weather tower, and fails to incorporate all primary data. Thus, it cannot be found to bear a valid relationship to the TMI accident. Similarly, the water model does not take into account the actual topography of the TMI area. Any demonstration performed using the water model, therefore, would not bear a close relationship to the way a substance would be dispersed into the atmosphere around TMI.

Id. at 798.

147. *See, e.g.*, Allen v. Pennsylvania Eng'g. Corp., 102 F.3d 194, 197 (5th Cir. 1996) (rejecting expert testimony based upon rat studies, because rat results were not even predictive of mouse results, let alone human results); Deimer v. Cincinnati Sub-Zero Prod., Inc., 58 F.3d 341, 345 (7th Cir. 1995) ("Ms. Deimer's witness, Dr. Ruhl, had the responsibility to apply his analysis to the facts of this case—a case involving mobile medical equipment. Because of his lack of experience, this responsibility was not fulfilled. [Citation omitted]. Consequently, there was no 'fit' with Dr. Ruhl's testimony, and the district court properly precluded the testimony under the second-step of the *Daubert* inquiry."); *Daubert II*, 43 F.3d at 1322 ("[W]hat plaintiffs must prove

mony when it was based upon experiments or data that were not sufficiently related to the facts at issue.[148]

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is not that Bendectin causes some birth defects, but that it caused *their* birth defects. To show this, plaintiffs' experts would have had to testify either that Bendectin actually caused plaintiffs' injuries (which they could not say) or that Bendectin more than doubled the likelihood of limb reduction birth defects (which they did not say)."); National Bank of Commerce v. Dow Chem. Co., 965 F. Supp. 1490, 1527 (E.D. Ark. 1996) ("The Court agrees with the defendants that the methodologies of Dr. Sherman and Dr. Bidanset do not 'fit' the plaintiffs' case."); Hall v. Baxter Healthcare Corp., 947 F. Supp. 1387, 1414 (D. Or. 1996) ("[I]n the absence of proof of general causation, Dr. Bennett's testimony regarding his differential diagnosis does not 'fit' LeaAnn Hall's case because there will be no evidence that silicone gel breast implants are a legitimate possible cause of Ms. Hall's disease."); Grimes v. Hoffmann-LaRoche, Inc., 907 F. Supp. 33, 38 (D.N.H. 1995) ("[E]ven if it were generally accepted that *some* photosensitive chemicals will produce cataracts if they become photobound to lens protein, that general proposition would not fit the facts of this case unless one could reliably draw an analogy between those photosensitive chemicals and Accutane. . . . Finally, even if it could reliably be claimed that all photosensitive chemicals that become photobound to lens protein will produce cataracts if they are present *in certain concentrations*, that proposition would be irrelevant here unless there were some basis in the record to conclude that Grimes had taken a sufficient dose of Accutane to produce cataracts. Dr. Lerman has not attempted to determine the amount of Accutane that he claims reached Grimes' lenses."); *cf.* Cavello v. Star Enter., 892 F. Supp. 756, 762-63 (E.D. Va. 1995) (rejecting expert testimony about exposure to toxic substances) ("[I]t is apparent that a determination regarding the scientific validity of a particular theory requires not only an examination of the trustworthiness of the tested principles on which the expert opinion rests, but also an analysis of the reliability of an expert's *application* of the tested principals [sic] to the particular set of facts at issue."), *aff'd in part and rev'd in part on other grounds*, 100 F.3d 1150 (4th Cir. 1996).

For a review of several cases involving expert testimony about causation of alleged medical conditions, see *National Bank of Commerce v. Dow Chem. Co.*, 965 F. Supp. 1490, 1501-07 (E.D. Ark. 1996).

148. In 1987, the Fifth Circuit affirmed a district court's grant of summary judgment for a chemical company defendant in a suit for recovery of damages allegedly caused by a toxic herbicide. Although the Fifth Circuit did not use the word "fit," this concept was critical to its holding:

> Dr. Johnson relied on a study of the effect of picloram on rats that showed that when exposed to large amounts of the chemical, the rats developed cancerous tumors and died. He admitted that the effects of chemicals differ between humans and rats. Here, of course, there was no evidence Viterbo had been exposed to comparable amounts, nor that his symptoms were similar in any respect. We then are left to conclude that the study, at most, is only evidence that picloram may produce some unidentified effect on humans. Such evidence is clearly not sufficient to provide a source of support for an opinion that Tordon 10K caused Viterbo's depression, nervousness, hypertension, renal failure and other ailments.

Viterbo v. Dow Chem. Co., 826 F.2d 420, 424 (5th Cir. 1987).

In a products liability case arising out of a collision between a vehicle and a moose, the United States District Court for the District of Maine allowed expert testi-

E. *Did the Expert Properly Apply Applicable Standards?*

If an expert is testifying about a subject matter that is covered by industry or professional standards, a court may exclude testimony that does not apply these standards.[149] For example, courts have rejected: a design engineer's testimony about an alleged design defect, when the product met applicable standards;[150] a forensic engineer's testimony that ignored the "widely accepted doctrine" of railroad law that a locomotive engineer can assume that a pedestrian will heed a proper alarm;[151] an economist's selection of a benchmark period that was inconsistent with sound economic principles;[152] and an

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mony based upon a simulated moose crash, but excluded testimony based upon a static test. The court's explanation of its exclusion of the static test reveals concerns about fit:

> In apparent response to the plaintiffs' expert Dr. Newman's suggestion that two measures would have strengthened the Subaru XT roof header, specifically front and rear welding and a greater thickness of steel (60/1000 gauge rolled steel, boxed cell), Dr. Perl undertook to perform a static test evaluating this proposal. He did not use an actual header from a Subaru or any other car. Instead, he selected a piece of metal of the same gauge as is used in the Subaru XT header and a piece of metal of the gauge approved by Dr. Newman and established his own apparatus. The apparatus does not reflect the actual shape of the Subaru header.

Brawn v. Fuji Heavy Indus., 817 F. Supp. 191, 191-92 (D. Me. 1993).

149. Decisions rejecting expert testimony that ignores applicable standards are a complement to, but somewhat different than, the *Daubert* opinion's suggestion that courts "ordinarily should consider . . . the existence and maintenance of standards controlling [a] technique's operation." *Daubert*, 509 U.S. at 594. The *Daubert* Court seemed to be suggesting that the absence of applicable standards should weigh against the admission of expert testimony. The decisions discussed in this subpart reject testimony where applicable standards exist, but the experts did not apply these standards. These decisions may be more directly related to the *Daubert* opinion's discussion of general acceptance than its discussion of standards.

150. *See* Alveromagiros v. Hechinger Co., 993 F.2d 417, 419 (4th Cir. 1993) ("We affirm the district court's decision, holding that a directed verdict in a products liability case is appropriate where an expert witness fails to prove that advisory industry standards have been violated or that those standards fall below an acceptable level."); *cf.* Stanczyk v. Black & Decker, Inc., 836 F. Supp. 565, 567 (N.D. Ill. 1993) ("[T]o the extent there are controlling design standards, they offer no support to Clark's opinion.").

151. *See* Andrews v. Metro N. Commuter R.R. Co., 882 F.2d 705, 709-10 (2d Cir. 1989).

152. *See In re* Aluminum Phosphide Antitrust Litig., 893 F. Supp. 1497, 1503 (D. Kan. 1995); *see also* United Phosphorus, Ltd. v. Midland Fumigant, Inc., 173 F.R.D. 675, 683 (D. Kan. 1997) (noting that "Hoyt violated a fundamental principle of eco-

accountant's estimates of market value that were not based upon sound valuation methodology.[153]

F. *Are the Expert's Assumptions Reasonable?*

In many instances, experts must make factual assumptions to reach their ultimate conclusions. When an expert makes unwarranted assumptions that favor the party that retained her, she runs the risk of having her testimony excluded. Courts have rejected the proffered testimony of: an epidemiologist and occupational health specialist who made "unproven assumptions" about a plaintiff's exposure to radiation;[154] a forensic engineer who "assumed facts that were not in evidence" considering the condition of a railroad platform;[155] a physician who made assumptions based upon the plaintiff's version of disputed facts in a case involving the adequacy of medical care provided to an inmate;[156] and several economists who made unjustified assumptions that favored the parties that hired them.[157]

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nomics").

153. *See* Frymire-Brinati v. KPMG Peat Marwick, 2 F.3d 183, 186 (7th Cir. 1993).

154. *See* Whiting v. Boston Edison Co., 891 F. Supp. 12, 19 (D. Mass. 1995) (excluding the expert's testimony where "his explication of the basis of [his] opinion is so riddled with factual inaccuracies and unproven assumptions that no reasonable jury could give his opinion credence"); *see also* Muzzey v. Kerr-McGee Chem. Corp., 921 F. Supp. 511, 519 (N.D. Ill. 1996) (excluding testimony about exposure to hazardous waste where "[t]he experts have also relied on untrustworthy data in reaching their conclusions . . . . The newspaper accounts of the Savannah River data, relied on by all three experts, are inaccurate, as recognized by both the subsequent retractions by the newspaper and the admissions of the experts themselves.").

155. *See* Andrews v. Metro N. Commuter R.R., 882 F.2d 705, 708 (2d Cir. 1989).

156. The Sixth Circuit outlined the reason for exclusion of the doctor's testimony:

> The trial court excluded the testimony because it was based on assumptions not in evidence, but rather assumptions based on plaintiff's version of events. The trial judge correctly stated that it was the jury's province to determine disputed facts, such as whether the officers made the required inspection every half hour and whether the decedent screamed and banged the doors for hours. It was the jury's prerogative to decide those issues based upon the credibility of the testimony.

Shahid v. City of Detroit, 889 F.2d 1543, 1547 (6th Cir. 1989); *see also* National Bank of Commerce v. Dow Chem. Co., 965 F. Supp. 1490, 1524 (E.D. Ark. 1996) ("Dr. Miers does not know the level of exposure or dose of Mrs. Smits or Ashley even though she is convinced that it was significant.").

157. *See* Boucher v. U.S. Suzuki Motor Corp., 73 F.3d 18, 21 (2d Cir. 1996) ("Where lost future earnings are at issue, an expert's testimony should be excluded as speculative if it is based on unrealistic assumptions regarding the plaintiff's future employment prospects."); Joy v. Bell Helicopter, Textron, Inc., 999 F.2d 549, 569 (D.C.

G. *Has the Expert Avoided Mere Speculation?*

In a matter akin to unreasonable assumptions, courts have also prohibited expert testimony that was merely speculation. The "mere speculation" cases, however, extend beyond concerns about baseless factual assumptions. In many of these cases, an admittedly qualified expert has simply reviewed available information, or some portion of this information, and reached a conclusion that favors her client. The expert's speculation often encompasses not only disputed facts, but analysis of these facts.

Examples of rejected testimony include: a human factors expert's conclusion that the defendant probably caused an airplane accident by inadvertently retracting the airplane's landing gear;[158] several medical experts' hypotheses about exposure to dangerous substances and the conditions that may have resulted from this exposure;[159] an engineer's claim of misalignment

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Cir. 1993) ("[T]here is little, if any, basis in the record for Dr. Glennie's estimates of Mr. Joy's future earning capacity. Most prominently, the assumption that Mr. Joy would move into consulting and wholesaling appears to be wholly speculative. Indeed, Dr. Glennie simply made up new lines of work for Mr. Joy."); *In re* Air Crash Disaster at New Orleans, La., 795 F.2d 1230, 1234 (5th Cir. 1986) ("[W]e find an assumed 8% annual salary increase continuing over almost 40 years to be unsupported by the record and completely incredible."); Henry v. Hess Oil V.I. Corp., 163 F.R.D. 237, 247 (D.V.I. 1995) ("Dr. Copemann's Report assumed that because of his injuries, plaintiff could no longer work as a turnaround foreman and would have to pursue another vocation; but there was no reason to assume, as Dr. Copemann did, that this alternative vocation need be with another employer.").

158. *See* Jetcraft Corp. v. Flight Safety Int'l, 16 F.3d 362, 366 (10th Cir. 1993) (affirming and adopting the district court's rejection of the proffered expert testimony and stating, "But, seems to me, to come in after the fact as in this case and to take into account contrary denials and, in the absence of any evidence from the plaintiff as to what he did, to opine that the event was the inadvertent retraction by Kimball is just professional speculation.").

159. *See* Wright v. Willamette Indus., 91 F.3d 1105, 1108 (8th Cir. 1996) (reversing judgment for plaintiffs because their expert's "testimony regarding the probable cause of the Wrights' claimed injuries was simply speculation"); Rosen v. Ciba-Geigy Corp., 78 F.3d 316, 319 (7th Cir. 1996) ("Dr. Fozzard's deposition, while expressing what may be an insightful, even an inspired, hunch concerning the cause of the heart attack that Rosen experienced in June of 1992, lacks scientific rigor. . . . [T]he courtroom is not the place for scientific guesswork, even of the inspired sort."), *cert. denied*, 117 S. Ct. 73 (1996); Claar v. Burlington N. R.R. Co., 29 F.3d 499, 502 (9th Cir. 1994) (affirming district court decision excluding testimony tying plaintiffs' medical conditions to exposure to chemicals at work where "the toxicology sections of the affidavits, which summarize the scientific literature discussing evidence that particular chemicals can cause particular injuries (and which thus are a necessary foundation

of gears that was reached without a comparison of the alignment to design specifications;[160] a prefabricated building expert's theory that a building installer "may have no knowledge regarding the oily substance on the metal roofing panels";[161] an ergonomist's tying of keystroking to the development of upper extremity disease that was based upon "unrecorded mental methodology";[162] an odorization expert's theories about odorizing a gas used to sterilize medical equipment that were based upon experimentation that "appears to show some promise for the future, [but] at this point in time remains futuristic and speculative";[163] and two psychiatrists' hypotheses

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for any conclusions the experts might draw), fail to discuss the majority of the medical conditions alleged by plaintiffs. Consequently, the court correctly determined that there is no evidence that the experts' conclusions about the cause of these conditions are based on anything more than subjective belief and unsupported speculation."); Frank v. New York, 972 F. Supp. 130, 136-37 (N.D.N.Y. 1997) ("[T]he theory underlying MCS [multiple chemical sensitivity] is untested, speculative, and far from general acceptance in the medical or toxicological community."); Treadwell v. Dow-United Techs., 970 F. Supp. 974, 982 (M.D. Ala 1997) ("In the instant action, the court adopts the reasoning and conclusions of the [other] courts, which found that 'the "science" of MCS's etiology has not progressed from the plausible, that is, the hypothetical, to knowledge capable of assisting a fact-finder, jury or judge.'"); Haggerty v. Upjohn Co., 950 F. Supp. 1160, 1167 (S.D. Fla. 1996) ("Dr. Mash's causation testimony is based upon speculation."); Muzzey v. Kerr-McGee Chem. Corp., 921 F. Supp. 511, 522 (N.D. Ill. 1996) (holding that a doctor's "guess that Muzzey was exposed prenatally is pure speculation"); Trail v. Civil Eng'r Corps, 849 F. Supp. 766, 768 (W.D. Wash. 1994); *see also* Williams v. Mead Corp., No. 94 C 5823 (N.D. Ill. filed June 6, 1997), *discussed in Judgment Granted on "Daubert" Grounds in Death from Hypersensitivity Pneumonitis*, 25 PROD. SAFETY & LIAB. REP. 606 (BNA) (June 27, 1997) (excluding testimony linking cashew nut oil in friction paper to plaintiff's condition as "completely speculative"); *cf.* Rutigliano v. Valley Bus. Forms, 929 F. Supp. 779, 786 (D.N.J. 1996) ("Dr. Pantiz's conclusions derive from her unquantifiable personal experience and instinct, not from scientific theory and reasoning. This is not the type of expert scientific reasoning that the Court may submit to a jury."), *aff'd*, 118 F.3d 1577 (3d Cir. 1997).

160. *See* Stalnaker v. General Motors Corp., 934 F. Supp. 179, 180 (D. Md. 1996), *aff'd*, 120 F.3d 262 (4th Cir. 1997).

161. Collier v. Varco-Pruden Bldgs., 911 F. Supp. 189, 191 (D.S.C. 1995) (citation omitted) ("The court finds this statement to be too speculative to create a genuine issue of material fact as to whether the oil on the panels was a patent danger.").

162. Dennis v. Pertec Computer Corp., 927 F. Supp. 156, 161 (D.N.J. 1996) (excluding the testimony as "nothing more than unsupported speculation"); *cf.* Zarecki v. National R.R. Passenger Corp., 914 F. Supp. 1566, 1574 (N.D. Ind. 1996) (excluding the testimony of an expert who tied plaintiff's work environment to her carpal tunnel syndrome because "Dr. Farrell's conclusions can only be characterized as his own subjective beliefs as to the cause of Zarecki's carpal tunnel syndrome").

163. Mediger v. Liquid Air Corp., 926 F. Supp. 152, 155 (D. Or. 1995).

regarding a plaintiff's mental health fourteen years prior to their treatment of the plaintiff.[164]

In some opinions, courts discuss not the "mere speculation" test, but whether experts have established that their opinions are reliable to a "reasonable degree of professional certainty."[165] Physicians, in particular, seem to be held to the requirement of establishing that their opinions are reliable, in words familiar to any personal injury attorney, to a reasonable degree of medical certainty.[166]

H. *Did the Expert Adequately Investigate the Facts?*

Some experts make not just factual assumptions, but factual mistakes. An expert who reaches an opinion without sufficiently investigating the facts runs the risk of having a court exclude

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164. *See* Goomar v. Centennial Life Ins. Co., 855 F. Supp. 319, 326 (S.D. Cal. 1994), *aff'd*, 76 F.3d 1059 (9th Cir. 1996).

165. *In re* TMI Litig. Consol. Proceedings, 927 F. Supp. 834, 867-68 (M.D. Pa. 1996) ("While the law does not require Lochbaum to state his expert opinion with unwavering certainty, it does require him to state his expert opinion with a reasonable degree of professional certainty.").

166. *See, e.g.*, Novak v. United States, 865 F.2d 718, 722 (6th Cir. 1989) ("Indeed, no witness for the plaintiff could say with scientific or medical certainty that the particular vaccine at issue here caused Novak's disorder."); Rutigliano v. Valley Bus. Forms, 929 F. Supp. 779, 791 (D.N.J. 1996) (excluding physician's causation testimony where she was unable to exclude other possible explanations), *aff'd*, 118 F.3d 1577 (3d Cir. 1997); Rosen v. Ciba-Geigy Corp., 892 F. Supp. 208, 211 (N.D. Ill. 1995) ("Dr. Fozzard admitted in his deposition that he cannot state within a reasonable degree of medical certainty that use of a nicotine patch caused the plaintiff's heart attack."), *aff'd*, 78 F.3d 316 (7th Cir. 1996), *cert. denied*, 117 S. Ct. 73 (1996); *cf.* Allen v. Pennsylvania Eng'g Corp., 102 F.3d 194, 197 (5th Cir. 1996) ("While appellants' experts acknowledge the lack of statistically significant epidemiological evidence, they rely on certain studies as 'suggestive' of a link between EtO exposure and brain cancer. 'Suggestiveness' is not by the experts' own admission statistical significance, nor did the appellants' experts show why and how mere 'suggestiveness' scientifically supports a causal connection; this basis for their scientific opinion must be rejected."); National Bank of Commerce v. Dow Chem. Co., 965 F. Supp. 1490, 1523 (E.D. Ark. 1996) ("[P]laintiffs have no qualified expert to offer an opinion to a jury which would permit that jury to conclude that genetics have been ruled out as a possible cause of Ashley's birth defects."); Wade-Greaux v. Whitehall Lab., Inc., 874 F. Supp. 1441, 1469 (D.V.I. 1994) ("A positive animal study merely suggests that there might be a need to study the agent in humans. Done Test., Tr. 11/16/93 (Mid-Morning) at 42. For these reasons, Dr. Done cannot reasonably rely upon Dr. Gilbert's chick studies or rabbit study to render an admissible opinion that Primatene Mist or Tablet ingredients are teratogenic in humans."), *aff'd*, 46 F.3d 1120 (3d Cir. 1994).

her testimony if the insufficient investigation leads to factual errors or omissions that render her conclusions unhelpful to the jurors. The official reporters contain substantial numbers of cases excluding expert opinions due to factual mistakes[167] or incomplete factual investigations[168] by experts. The frequency

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167. *See* Whiting v. Boston Edison Co., 891 F. Supp. 12, 19 (D. Mass. 1995) (holding that an expert's analysis was "riddled with factual inaccuracies").

168. *See, e.g.*, Watkins v. Telsmith, Inc., 121 F.3d 984, 992 (5th Cir. 1997) ("Williams did not investigate designs of other conveyors available today or those available in 1943. When directly asked about his efforts to find similar conveyors, Williams stated: 'I've looked around.' His testimony about his prior experiences with conveyors was similarly vague. Where an expert bases his opinion in part on his experience with similar machines, we cannot fault the court for demanding a more detailed recollection of the expert's review and understanding of similar machines than was reported by Williams."); Alevromagiros v. Hechinger Co., 993 F.2d 417, 419 (4th Cir. 1993) ("Kalin never conducted a physical examination of an identical but undamaged ladder to determine its safe or unsafe design."); United States v. Hoac, 990 F.2d 1099, 1103 (9th Cir. 1993) (affirming the exclusion of a clinical forensic psychologist's proposed testimony about defendant's naivete when the psychologist had examined the defendant on only two occasions); Viterbo v. Dow Chem. Co., 826 F.2d 420, 423 (5th Cir. 1987) ("Although a patient's oral history is generally considered reliable, . . . the history Dr. Johnson used lacked reliability because it was incomplete in a critical area."); United States v. Sorrentino, 726 F.2d 876, 885 (1st Cir. 1984) (affirming trial court's exclusion of the testimony of an appraiser who had not viewed and written a description of each antique, but remanding on other issues); Jaurequi v. John Deere Co., 971 F. Supp. 416, 425 (E.D. Mo. 1997) ("While [the expert] attempts to state what the precise defect in the corn head is, he has not even seen the corn head in operation."); Cabrera v. Cordis Corp., 945 F. Supp. 209, 214 (D. Nev. 1996) ("[A]bsent studies or other evidence tending to support the testimony of Dr. Blais, the Court and the jury would be left with nothing more than the opinion of Dr. Blais that the brain shunt implanted in Cabrera is not safe. Cabrera would offer such testimony from Dr. Blais notwithstanding the fact that Dr. Blais concedes he does not know the chemical composition of Cabrera's brain shunt . . . ."); Ansick v. Hillenbrand Indus., 933 F. Supp. 773, 781 (S.D. Ind. 1996) (excluding expert's testimony where her "affidavit provides nothing which might explain why this particular horse, which had never before displayed dangerous or skittish behavior and had never reared or bucked, acted as it did on May 29, 1993"); Bennett v. PRC Pub. Sector, Inc., 931 F. Supp. 484, 500 (S.D. Tex. 1996) (agreeing with defendant's allegation that plaintiffs' expert's testimony "should be held inadmissible because it is based on such limited information about each of the Plaintiffs"); Dennis v. Pertec Computer Corp., 927 F. Supp. 156, 161 (D.N.J. 1996) ("Indeed, Dr. Thompson, according to defendants, never inquired into the maintenance or repair of the keyboard to determine if that particular keyboard was an anomaly. In addition, defendants indicate that Dr. Thompson never removed the cover of the keyboard to inspect the keys."); Henry v. Hess Oil V.I. Corp., 163 F.R.D. 237, 247 (D.V.I. 1995) (excluding expert testimony about lost income due to expert's failure to investigate availability of jobs, expected wages, and retraining); Callas v. Trane CAC, Inc., 776 F. Supp. 1117, 1120 (W.D. Va. 1990) ("Beaver never personally inspected the Callases' unit despite having had access to it during the months it was in Mr. Fitch's possession."), *aff'd*, 940 F.2d 651 (4th Cir. 1991).

of these decisions suggests that attorneys and judges should be alert to the possibility of factual sloppiness by experts.

I. *Is the Expert's Testimony Relevant?*

In addition to the requirements applicable only to them, expert witnesses are subject to most of the other requirements in the Federal Rules of Evidence. Given the power of expert witnesses,[169] it is perhaps not surprising that attorneys attempt to use them to present evidence that violates these restrictions. Opposing attorneys and judges should be mindful of this temptation and of the evidence law restrictions that apply equally to lay and expert testimony.

The most basic restriction, of course, is relevance. Under Rule 402 of the Federal Rules of Evidence, irrelevant evidence is not admissible.[170] Although relevant evidence is defined quite broadly under the Rules,[171] it is not without bounds. Attorneys have been known to try to introduce irrelevant material through experts, and courts have thwarted these efforts. In a wrongful death action, the court excluded a hedonic damages expert's testimony about the decedent's loss of enjoyment of life, because damages were allowed only for diminishment of the survivors' enjoyment of life.[172] In an attempted extortion case, the court excluded a psychiatrist's opinion that the crime victim suffered from "dependent personality disorder," because the victim's state of mind had no bearing on the defendant's guilt.[173] In an action between title insurers, the court excluded expert testimony about the plaintiff's alleged opportunity to

169. *See supra* notes 2-5 and accompanying text.

170. *See* FED. R. EVID. 402.

171. Under the Federal Rules of Evidence, "'Relevant evidence' means 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.

172. *See* Livingston v. United States, 817 F. Supp. 601, 606 (E.D.N.C. 1993) ("[T]he sole basis for recovery under the plaintiffs' hedonic theory is that there was a relationship between the decedent and his parents. Dr. Albrecht's testimony is devoid of any indication of the extent to which the Livingston's pleasure of life has deteriorated as a result of their son's death.").

173. *See* United States v. Marsh, 26 F.3d 1496, 1503 (9th Cir. 1994) ("Any relationship between the proffered psychiatric evidence and Marsh's state of mind in making his economic threats is far too attenuated to compel its admission.").

mitigate damages, because the plaintiff did not learn about this opportunity until after it had passed.[174] In a prosecution for embezzling union funds, the court prohibited a union expert's opinion that the defendants' actions were authorized by the union's constitution and bylaws, because "[l]ack of union authorization was not an essential element of the case."[175] In a products liability action against the seller of chemically altered alfalfa tablets, the court prohibited expert testimony tying children's mental retardation to their parents' exposure to EtO residue because the plaintiffs "produced no evidence showing or providing a reliable inference that the [defendant's] alfalfa tablets taken by their parents contained any EtO residue."[176]

J. *Does the Expert Avoid Relying upon Unproduced Hearsay?*

Hearsay concerns also can be the reason for exclusion of expert testimony. Although the Federal Rules of Evidence allow expert opinions to be based upon inadmissible evidence of a type relied upon by other experts in the same field,[177] the Federal Rules of Civil Procedure allow parties to discover "the data or other information considered" by the expert in forming her opinion.[178] When experts' opinions are based upon hearsay that has not been produced, or cannot be produced, in discovery, courts have excluded them.[179]

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174. *See* TRW Title Ins. Co. v. Security Union Title Ins. Co., 887 F. Supp. 1029, 1030-31 (N.D. Ill. 1995).

175. United States v. Cantrell, 999 F.2d 1290, 1292 (8th Cir. 1993).

176. Sorensen by Dunbar v. Shaklee Corp., 31 F.3d 638, 648 (8th Cir. 1994); *see also* Cabrera v. Cordis Corp., 945 F. Supp. 209, 213 (D. Nev. 1996) ("Simply put, Puszkin looked at tissue through a microscope and observed a giant cell reaction to a foreign body which he could not identify at all, let alone as silicone. As such, Dr. Puszkin's testimony is simply irrelevant under F.R.E. 401 . . . .").

177. *See* FED. R. EVID. 703.

178. FED. R. CIV. P. 26(a)(2)(B).

179. One example involved a Missouri Department of Revenue criminal investigator who specialized in vehicle theft and odometer fraud. *See* Pelster v. Ray, 987 F.2d 514, 518 (8th Cir. 1993). The Eighth Circuit held that the district court improperly admitted the criminal investigator's testimony and reversed a judgment for the buyers of a used car. The Eighth Circuit held that the investigator's opinion, which relied heavily upon hearsay, was therefore itself hearsay:

> Ley admitted in his testimony that he had obtained his information (oral and written) from numerous out-of-court sources, including previous owners, dealers, auctions, state agencies, a "confidential informant," and various individuals connected with U.S. Wholesales. During most of his

K. *Does the Probative Value of the Expert's Testimony Outweigh Its Danger of Unfair Prejudice?*

As the *Daubert* Court noted, expert testimony is also subject to the strictures of Rule 403.[180] Under this Rule, relevant evidence "may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice."[181] It is important to note that the *Daubert* Court reminded trial judges that, because expert testimony is potentially both powerful and misleading, they must exercise more Rule 403 control over expert testimony than over lay testimony.[182]

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testimony, it was unclear upon which of those sources of information Ley was basing his testimony. Presumably, Ley's ultimate conclusions that 300 of 350 cars auctioned at South Central had been rolled back and that U.S. Wholesales had been responsible for 204 of those 300 rolled-back cars were based on all of the sources he identified.

We find that Ley's testimony constituted inadmissible hearsay. The out-of-court documents and declarants "stated" that a particular vehicle's odometer registered a specific number of miles on a given date. Another document or declarant told Ley that the same vehicle's odometer registered a smaller number of miles on a later date. From those two out-of-court statements, Ley testified that the odometer had been rolled back in the intervening period of time. Neither the Mortons nor the jury, however, had an opportunity to examine those out-of-court statements.

Id. at 525.

In another example, a court struck the testimony of a certified public accountant who did not supply the documentation for his audit conclusions: "To introduce evidence on Richmond's damages, Ruiz testified about his audit of Bird's expenditures during the interim period when Richmond had suspended its steel shipments. The court ruled that the underlying documents needed to be available before Ruiz could present a summary." Richmond Steel Inc. v. Puerto Rican Am. Ins. Co., 954 F.2d 19, 21 (1st Cir. 1992); *see also* De Jager Constr., Inc. v. Schleininger, 938 F. Supp. 446, 449 (W.D. Mich. 1996) ("[I]f the plaintiff intends to prove the existence of kickbacks and other types of wrongful behavior, plaintiff must do so by using facts introduced into evidence, as distinguished from an expert opinion based upon facts which may or may not have been admitted into evidence.").

180. See *Daubert*, 509 U.S. at 579.

181. FED. R. EVID. 403.

182. The Court quoted an admonition from a well-known authority on evidence issues: "Expert evidence can be both powerful and quite misleading because of the difficulty in evaluating it. Because of this risk, the judge in weighing possible prejudice against probative force under Rule 403 of the present rules exercises more control over experts than over lay witnesses." *Daubert*, 509 U.S. at 595 (quoting Jack B. Weinstein, *Rule 702 of the Federal Rules of Evidence is Sound; It Should Not Be Amended*, 138 F.R.D. 631, 632 (1991)).

This reminder has not gone unheeded. Several courts have rejected proffered expert testimony because its probative value was substantially outweighed by its risk of unfair prejudice.[183] Although the inherently case-by-case nature of probative value versus potential for prejudice determinations makes it difficult to draw universal conclusions from these decisions, neither attorneys nor judges should forget the need to apply this test when expert testimony carries the risk of unfair prejudice.

L. *Does the Probative Value of the Expert's Testimony Outweigh Its Danger of Confusing the Issues or Misleading the Jury?*

The *Daubert* Court's reminder about the importance of Rule 403 was not limited to the Rule's probative value versus unfair prejudice balancing. Instead, the *Daubert* opinion also explicitly referenced the provisions of Rule 403 that allow the exclusion of expert testimony when its probative value is substantially outweighed by the danger of "'confusion of the issues, or misleading the jury . . . .'"[184] Again, the lower federal courts have duly noted this advice. On several occasions, these courts have

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183. *See, e.g.*, Brock v. Caterpillar, Inc., 94 F.3d 220, 226 (6th Cir. 1996) ("We find error . . . in allowing him to testify as to the comparison between Caterpillar bulldozers that were substantially different or marketed and sold at a considerably later time."), *cert. denied*, 117 S. Ct. 1428 (1997); United States v. Sinclair, 74 F.3d 753, 757 (7th Cir. 1996) ("The court ruled under Federal Rule of Evidence 403 that the prejudicial effect of Wayne's testimony would outweigh its probative value."); Kurncz v. Honda N. Am., Inc., 166 F.R.D. 386, 390 (W.D. Mich. 1996) (excluding hedonic damages expert testimony because it "would be unduly prejudicial under Rule 403"); Ayers v. Robinson, 887 F. Supp. 1049, 1063 (N.D. Ill. 1995) (excluding hedonic damages expert's opinion because "the low probative value of such testimony (ill-fitting data) is substantially outweighed by the danger of unfair prejudice (a false appearance of tailoring to the individual case)"); *cf.* United States v. Evans, 910 F.2d 790, 803-04 (11th Cir. 1990) ("In refusing to admit the expert's charts as a summary pursuant to Fed. R. Evid. 1006, the court found that certain of the headings of the charts impermissibly reflected the expert's opinion as to the content of the recorded testimony that had previously been presented to the jury. We hold that the district court did not abuse its discretion in refusing to admit the proffered charts on this basis, as a summary of the tapes would necessarily entail judgments about the content of the conversations."), *aff'd*, 504 U.S. 255 (1992).

Even before *Daubert*, Rule 403's "probative value versus the danger of unfair prejudice" test had been applied to expert testimony. *See* Viterbo v. Dow Chem. Co., 826 F.2d 420, 422 (5th Cir. 1987) (noting that an expert opinion's "lack of reliable support may render it more prejudicial than probative, making it inadmissible under Fed. R. Evid. 403").

184. *Daubert*, 509 U.S. at 595 (quoting FED. R. EVID. 403).

repudiated expert opinions because they would have confused or misled the jury.[185]

The trial court's authority to disallow testimony that it finds to be confusing or misleading gives it rather awesome power over expert testimony. After all, Rule 403 only applies to relevant evidence.[186] Therefore, when a court rejects testimony after balancing its probative value against its danger of confusing or misleading the jury, it is by definition rejecting relevant expert testimony that presumably has at least some probative value.[187]

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185. *See, e.g.*, United States v. Sinclair, 74 F.3d 753, 757 (7th Cir. 1996) ("The district court thought that this evidence could confuse or distract the jury."); United States v. Rincon, 28 F.3d 921, 925 (9th Cir. 1994) ("In this case, the district court found that Dr. Pezdek's testimony would not assist the trier of fact and that it would likely confuse or mislead the jury. . . . We decline to disturb the district court's ruling."); *cf.* United States v. One Parcel of Property Located at 31-33 York Street, Hartford, Conn., 930 F.2d 139, 141 (2d Cir. 1991) ("The sole issue at trial was whether appellant had knowledge of her sons' activities at 31-33 York Street. This was a simple question for which the jury needed no help. Before this last-minute attempt to obscure the issue there was no serious contention that appellant could not comprehend what her sons were doing. The psychiatrist's testimony would only complicate, not assist, the jury's decision."); United States v. Evans, 910 F.2d 790, 803 (11th Cir. 1990) ("[T]he court found that the testimony could be confusing and misleading to the jurors because it took matters out of context and, in some instances, was in the nature of conclusions regarding the appropriate interpretations to make of the recorded conversations."), *aff'd*, 504 U.S. 255 (1992); Kurncz v. Honda N. Am., Inc., 166 F.R.D. 386, 390 (W.D. Mich. 1996) ("The methodology debate may simply confuse the issues."); Wade-Greaux v. Whitehall Lab., Inc., 874 F. Supp. 1441, 1484-85 (D.V.I. 1994) ("[T]he methodologies of plaintiff's expert witnesses ignore the question of therapeutic dosage. I conclude that, in light of that fact, opinions from those witnesses that therapeutic dosages of Primatene® Tablets and Mist are teratogenic would confuse, mislead, and overwhelm the jury, and that Fed. R. Evid. 403 warrants the exclusion of those opinions independent of Fed.R.Evid. 702 and 703."), *aff'd*, 46 F.3d 1120 (3d Cir. 1994).

Courts recognized the importance of probative value versus danger of confusion or misleading of the jury balancing before *Daubert*. *See* Alevromagiros v. Hechinger Co., 993 F.2d 417, 422 (4th Cir. 1993) ("The jurors easily could have been mislead or confused by the assumption that one competing product represented the relevant industry-wide standard. Therefore, the judge did not abuse his discretion in refusing to admit the competing product into evidence."); United States v. Nguyen, 793 F. Supp. 497, 521 (D.N.J. 1992) ("Absent a thorough explanation of the studies, the jury would have had to accept Penrod's conclusions as accurate. Thus there would be a strong possibility of misleading the jury.").

186. *See* FED. R. EVID. 403 ("Although relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of . . . confusion of the issues . . . or misleading the jury . . . .").

187. *See* United States v. Ricon, 28 F.3d 921, 925 (9th Cir. 1994).

M. *Does the Probative Value of the Expert's Testimony Outweigh Considerations of Undue Delay, Waste of Time, or Needless Presentation of Cumulative Evidence?*

The remainder of Rule 403 allows judges to exclude relevant evidence, including expert testimony, when its probative value is substantially outweighed by considerations of "undue delay, waste of time, or needless presentation of cumulative evidence."[188] Like the other portions in Rule 403, these provisions frequently have resulted in exclusion of expert opinions.[189]

N. *Does the Expert Avoid Impermissibly Testifying About Legal Opinions?*

The courts have not uniformly outlined the permissible scope of expert opinions on legal issues.[190] While some courts have declared rather broadly that experts cannot opine about legal

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188. FED. R. EVID. 403.

189. *See, e.g.*, Thompson v. State Farm Fire and Cas. Co., 34 F.3d 932, 941 (10th Cir. 1994) (noting "it is plainly within the trial court's discretion to rule . . . [expert] testimony inadmissible because it would not even marginally 'assist the trier of fact,' while it must be viewed as a 'needless presentation' (Fed. R. Evid. 403)"); United States v. Marabelles, 724 F.2d 1374, 1382 (9th Cir. 1983) ("The exclusion of relevant, but cumulative, evidence is within the sound exercise of the trial court's discretion."); Kurncz v. Honda N. Am., Inc., 166 F.R.D. 386, 390 (W.D. Mich. 1996) ("Finally, Rule 403 takes into account such matters as waste of time and general confusion of the issues, not to mention unfair prejudice. Where there is so much flux in the applicable 'science,' much time will be spent debating its merits. Where the case itself does not turn on the issue, jurors traditionally have done without the evidence, and the Court will be instructing the jurors that they need not accept any expert's opinion anyway, the time will not be well spent."); *cf.* United States v. Marsh, 26 F.3d 1496, 1503 (9th Cir. 1994) ("[T]he nature of the relationship between Marsh and Doe was fully set out for the jury. . . . At least with respect to the crime of attempted extortion, the district court in the exercise of its discretion properly could have concluded that the expert evidence would not have been of assistance to the jury."); United States v. DiDomenico, 985 F.2d 1159, 1163 (2d Cir. 1993) ("It should be remembered that the district court did admit lay testimony . . . concerning both DiDomenico's emotional state at the time of the crime and Parsons' Svengalian personality. The jury heard testimony that covered virtually the entire ground of Dr. Grove's expert testimony.").

190. *See* United States v. Sinclair, 74 F.3d 753, 757-58 n.1 (7th Cir. 1996).

issues,[191] other courts have allowed experts to give such opinions under some circumstances.[192]

The confusion about the proper scope of expert testimony about legal issues stems in part from Rule 704, which provides (with an exception that will be discussed in the next subpart) that "testimony 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."[193] Despite this provision,[194] courts have ruled that experts cannot state opinions regarding such "legal issues"[195] as a manufacturer's standard

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191. *See* Peterson v. City of Plymouth, 60 F.3d 469, 475 (8th Cir. 1995) (excluding expert testimony that "was not a fact-based opinion, but a statement of legal conclusion"); Shahid v. City of Detroit, 889 F.2d 1543, 1547 (6th Cir. 1989) (excluding an expert opinion because it "amount[ed] to a 'legal conclusion'"); United Phosphorus v. Midland Fumigant, Inc., 173 F.R.D. 675, 688 (D. Kan. 1997) ("To the extent Harrison is purporting to give legal conclusions and opinions, such testimony is inadmissible."); AUSA Life Ins. Co. v. Dwyer, 899 F. Supp. 1200, 1202 (S.D.N.Y. 1995) ("[A]lthough an expert may give his opinion on an issue of fact that the jury will eventually decide, 'he may not give testimony stating ultimate legal conclusions based on those facts.'); Traumann v. Southland Corp., 858 F. Supp. 979, 985 (N.D. Cal. 1994) ("Expert testimony must embrace factual issues and may not include legal opinions or conclusions."); Smith v. Colorado Interstate Gas Co., 794 F. Supp. 1035, 1044 (D. Colo. 1992) ("Although an expert can couch testimony in legal terms to aid the factfinder in understanding facts in evidence, he or she cannot set forth legal conclusions."); Nationwide Mut. Ins. Co. v. American Reinsurance Co., 796 F. Supp. 275, 281 (S.D. Ohio 1991) ("[E]xpert testimony on matters of law is generally not admissible. . . . "), *aff'd*, 961 F.2d 1578 (6th Cir. 1992).

192. *See Sinclair*, 74 F.3d at 758 n.1; Andrews v. Metro N. Commuter R.R. Co., 882 F.2d 705, 709 (2d Cir. 1989).

193. FED. R. EVID. 704(a).

194. Those who are tempted to read Rule 704 too broadly should review the Advisory Committee notes, which state:

> The abolition of the ultimate issue rule does not lower the bars so as to admit all opinions. Under Rules 701 and 702, opinions must be helpful to the trier of fact, and Rule 403 provides for exclusion of evidence which wastes time. These provisions afford ample assurances against the admission of opinions which would merely tell the jury what result to reach, somewhat in the manner of the oath-helpers of an earlier day. They also stand ready to exclude opinions phrased in terms of inadequately explored legal criteria. Thus the question, "Did T have capacity to make a will?" would be excluded, while the question, "Did T have sufficient mental capacity to know the nature and extent of his property and the natural objects of his bounty and to formulate a rational scheme of distribution?" would be allowed. McCormick § 12.

FED. R. EVID. 704 advisory committee's note.

195. According to one district court, "the Second Circuit has shown itself to be especially concerned with testimony that tracks the language of particular statutes or legal standards." AUSA Life Ins. Co. v. Dwyer, 899 F. Supp. 1200, 1202 n.2 (S.D.N.Y.

of care and obligation to provide crashworthy vehicles,[196] whether law enforcement officers responding to a hostage crisis acted with "deliberate indifference and conscious disregard" for the plaintiff's safety,[197] a state's franchise laws and their application to the facts at issue,[198] probable cause and qualified immunity under the United States Constitution,[199] a defendant's alleged discrimination against a plaintiff who was a member of a racial minority group,[200] and whether a defendant in a slip and fall case was negligent.[201]

In other cases, courts have focused on whether the proposed expert testimony invades upon the court's duty and authority to instruct the jury on the appropriate law to be applied by the jury. When courts believe the expert opinion might present the jury with an alternative to the judge's instructions about the law, they have excluded the opinion.[202]

1995).

196. *See* Brawn v. Fuji Heavy Indus., 817 F. Supp. 184, 186 (D. Me. 1993).

197. Salas v. Carpenter, 980 F.2d 299, 305 (5th Cir. 1992). The Fifth Circuit explained its exclusion of the proffered testimony as a matter inappropriate for expert opinions:

> As an expert in the field of hostage negotiation, Dr. Greenstone can properly offer evidence on effective methods and explain to a jury faults in the methods employed by a police force. On the other hand, Dr. Greenstone is not in a better position than a juror to conclude whether Carpenter's actions demonstrated such a lack of concern for Hermosillo's safety as to constitute deliberate indifference or conscious disregard. Opening the door to ultimate issues did not "open the door to all opinions."

Id. (citation omitted).

198. *See* Traumann v. Southland Corp., 858 F. Supp. 979, 985 (N.D. Cal. 1994).

199. *See* Peterson v. City of Plymouth, 60 F.3d 469, 475 (8th Cir. 1995).

200. *See* Smith v. Colorado Interstate Gas Co., 794 F. Supp. 1035, 1044 (D. Colo. 1992).

201. *See* Andrews v. Metro N. Commuter R.R. Co., 882 F.2d 705, 709 (2d Cir. 1989).

202. *See* United States v. Sinclair, 74 F.3d 753, 758 n.1 (7th Cir. 1996) ("Our own cases have determined that Federal Rules of Evidence 702 and 704 prohibit experts from offering opinions about legal issues that will determine the outcome of a case. That is, they cannot testify about legal issues on which the judge will instruct the jury."); *Peterson*, 60 F.3d at 475 ("The legal conclusions were for the court to make. It was an abuse of discretion to allow the testimony."); Shahid v. City of Detroit, 889 F.2d 1543, 1547 (6th Cir. 1989), 889 F.2d at 1548 (quoting an earlier case providing, "[i]t is not for the witness to instruct the jury as to applicable principles of law, but for the judge"); Brawn v. Fuji Heavy Indus., 817 F. Supp. 184, 186 (D. Me., 1993) (excluding expert testimony that "infringe[d] upon the role of the judge so far as the law is concerned").

It would be disingenuous to suggest that the cases reflect a nationally uniform definition of the permissible parameters of expert opinions that stray near or across the line of legal opinions. Despite or perhaps because of this lack of uniformity, attorneys and judges faced with expert testimony that wanders in this area must consider whether the testimony is an impermissible legal opinion under the controlling law of the relevant jurisdiction.

O. *Does the Expert Avoid Testifying About a Criminal Defendant's Mental State When It Constitutes an Element of the Crime or of the Defense?*

The exception to Rule 704 states:

> No expert witness testifying with respect to the mental 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. Such ultimate issues are matters for the trier of fact alone.[203]

This provision substantially restricts ultimate issue testimony about the defendant's mental condition.[204]

P. *Does the Expert Avoid Attempting to Bolster the Credibility of Other Witnesses?*

The credibility of other witnesses is another forbidden zone for expert witnesses. Because the jury is responsible for making credibility determinations, courts do not permit expert testimony that is offered to bolster the credibility of other witnesses.[205]

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203. FED. R. EVID. 704(b).

204. For an application of this restriction, see *United States v. DiDomenico*, 985 F.2d 1159, 1164-65 (2d Cir. 1993).

205. *See, e.g.*, United States v. Benson, 941 F.2d 598, 604 (7th Cir. 1991) ("Credibility is not a proper subject for expert testimony; the jury does not need an expert to tell it whom to believe, and the expert's 'stamp of approval' on a particular witness' testimony may unduly influence the jury."); United States v. Azure, 801 F.2d 336, 340 (8th Cir. 1986) (explaining that "putting an impressively qualified expert's

Q. In a Products Liability Design Defect Case, Has the Plaintiff's Design Expert Established the Existence of an Alternative Feasible Design?

Several courts have held that experts who wish to criticize the design of a product must present credible evidence of an alternative feasible design for the product.[206] A theoretical alternative design is not enough. Courts have excluded testimony criticizing product design when the testifying expert's alternate design has not been tested.[207]

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stamp of truthfulness on a witness' story goes too far."); De Jager Constr., Inc. v. Schleininger, 938 F. Supp. 446, 449 (W.D. Mich 1996) ("Much of plaintiff's case will turn on the jury's determination as to the credibility of witnesses. Expert testimony is not needed to determine whether a declarant or witness is telling the truth.").

206. *See, e.g.*, Peitzmeier v. Hennessy Indus., 97 F.3d 293, 297 (8th Cir. 1996) (noting that expert had "never designed, built, or tested a platform that has been shown to reduce the launch effect of an exploding tire and wheel assembly while adequately supporting the tire and wheel assembly during the tire-changing process"), *cert. denied*, 117 S. Ct. 1552 (1997); Lawrence v. General Motors Corp., 73 F.3d 587, 590 (5th Cir. 1996) (noting that expert "'did not address the burdens or adverse utility effects of'" his alternative design); Allen v. Minnstar, Inc., 8 F.3d 1470, 1479-81 (10th Cir. 1993) (insufficient evidence about alternative design); Mediger v. Liquid Air Corp., 926 F. Supp. 152, 155 (D. Or. 1995) ("Because there is no genuine issue of material fact as to the availability of a safer, feasible, and practicable alternative design during the time in question, defendants' motion for summary judgment is GRANTED.").

The proposed final draft of the products liability Restatement adopts the alternative feasible design requirement. *See* RESTATEMENT OF TORTS: PRODUCTS LIABILITY § 2(b) (Proposed Final Draft, 1997) ("A product . . . is defective in design when the foreseeable risks of harm posed by the product could have been reduced or avoided by the adoption of a reasonable alternative design . . . and the omission of the alternative design renders the product not reasonably safe.")

207. *See* Watkins v. Telsmith, Inc., 121 F.3d 984, 992 (5th Cir. 1997) ("[T]he proper methodology for proposing alternative designs includes more than just conceptualizing possibilities. The district court appropriately noted the lack of testing of any of the proposed alternatives. . . . This is not to say that alternative product designs must always be tested by a plaintiff's expert, but in this case, both Neathery and Williams acknowledged the importance of testing in design."); Cummins v. Lyle Indus., 93 F.3d 362, 368-70 (7th Cir. 1996); Stanczyk v. Black & Decker, Inc., 836 F. Supp. 565, 568 (N.D. Ill. 1993).

R. *Did the Party Offering the Expert's Testimony Comply with all Discovery and Other Pretrial Disclosure Requirements?*

The Federal Rules of Civil Procedure require parties to make certain disclosures, with and without discovery requests by their opponents, regarding the identity of expert witnesses, their opinions, and the bases of these opinions.[208] In addition, both the Federal Rules of Civil Procedure and the local rules, standing orders, or special orders of many federal courts require parties to list expert witnesses and their exhibits in pretrial statements.[209] A party who fails to comply with these requirements runs the risk of having the court exclude undisclosed expert testimony.[210]

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208. *See* FED. R. CIV. P. 26(a)(2), (b)(4), (e)(1). This provision of Rule 26 was added in 1993. Several district courts have adapted rules to nullify this provision. For a discussion of district court action concerning the 1993 amendments to Rule 26, see 1997 U.S.C.C.A.N. Pamphlet No. 4, at G120.

209. *See* FED. R. CIV. P. 26(a)(3); Rules 200-5, 235, Rules of Procedure of the United States District Court for the District of Montana; Rule 43.1, Local Rules of the United States District Court for the District of North Dakota; *see also* Barrett v. Atlantic Richfield Co., 95 F.3d 375, 379 (5th Cir. 1996) (outlining terms of special discovery order).

210. *See* FED. R. CIV. P. 37(c)(1) ("A party that without substantial justification fails to disclose information required by Rule 26(a) or 26(e)(1) shall not, unless such failure is harmless, be permitted to use as evidence at a trial, at a hearing, or on a motion any witness or information not so disclosed."); *Barrett*, 95 F.3d at 379-82 (affirming exclusion of expert testimony due to violation of discovery orders); Habecker v. Clark Equip. Co., 36 F.3d 278, 289 (3d Cir. 1994) ("Wile was never listed in a discovery response or pretrial memorandum as an expert witness, and as a result, the district court refused to recognize Wile as an expert. The district court was certainly entitled to enforce its pretrial order, requiring the listing of witnesses in compliance with discovery requests by limiting Habecker to the experts identified in the witness list and in responses to interrogatories requesting the identity of experts and the substance of their testimony."); United Phosphorus, Ltd. v. Midland Fumigant, Ltd., 173 F.R.D. 675, 677-78 (D. Kan. 1997) (restricting evidence to that which was presented in Rule 26(a)(2)(B) report); Thompson v. State Farm Fire & Cas. Co., 34 F.3d 932, 940 (10th Cir. 1994) (affirming trial court's exclusion of expert witness who had been "inadvertent[ly]" omitted from party's pretrial witness list); United States v. Padilla, 908 F. Supp. 923, 930 (S.D. Fla. 1995) ("Plaintiff has requested that Padilla provide further information about Mr. Jurney. . . . Such information should be readily available to Padilla, and should be turned over with all due speed. Although the Court has concluded that Mr. Jurney possesses significant qualifications, failure of Padilla to turn over this information may force the Court to reconsider its finding."); *cf.* Pacific Employers Ins. Co. v. P.B. Hoidale Co., 142 F.R.D. 171, 174 (D. Kan. 1992) ("The court will . . . allow these listed experts to testify, subject to the limitation that the experts for whom Employers has only provided 'deposition reports' may only

S. *Has the Expert Adequately Explained the Bases for Her Opinion?*

Many of the questions outlined above concern the legitimacy of the bases of an expert's opinion. An expert cannot escape scrutiny about the bases of her opinion by masking these bases. Courts regularly exclude the testimony of expert witnesses who cannot or do not explain the bases for their conclusions.[211]

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testify to matters that are within the scope of the deposition testimony.").

211. *See, e.g.*, Watkins v. Telsmith, Inc., 121 F.3d 984, 992 (5th Cir. 1997) ("Perhaps a design defect case can be mounted without calculations to support an expert's theories, but the district court did not err in concluding that some such calculations were necessary to demonstrate the feasibility of Williams's ideas. Although he claimed experience in analyzing stresses and the appropriate safety factors in cable wires, Williams did not perform any such calculations (that he thought were important enough to retain) about the load put on the wire in this conveyor, or about the loads the wire was capable of sustaining, or about the effect of improper maintenance, or about the marginal safety factor of an additional wire or any of the other redundant systems he proposed."); Lust v. Merrell Dow Pharm., Inc., 89 F.3d 594, 597 (9th Cir. 1996) ("Done could have convinced the district court that his methodology was . . . scientific if he had explained how he went about reaching his conclusions and had pointed to an objective source demonstrating that his method and premises were generally accepted by or espoused by a recognized minority of teratologists. But he failed to do so."); Pries v. Honda Motor Co., 31 F.3d 543, 545 (7th Cir. 1994) (excluding "test" of opening a seat belt latch by dropping it on a hard surface, because the expert did not know what forces caused the buckle to open or whether these forces were commonly present in crashes); United States v. Rincon, 28 F.3d 921, 924 (9th Cir. 1994) ("The declaration of Rincon's counsel which accompanied the motion expanded on each of these matters, with statements such as: 'There is a wealth of research supporting this point . . . '; 'The research is clear . . . '; 'The research suggests . . . .' However, none of the research was submitted or described so that the district court could determine if the studies were indeed scientific . . . ."); Rosado v. Deters, 5 F.3d 119, 124 (5th Cir. 1993) (excluding expert testimony where the expert could not establish the mathematical and physical bases for his opinion); Griffin v. City of Clanton, 932 F. Supp. 1357, 1358 (M.D. Ala. 1996) ("Dr. Barker does not define the commonly accepted police standards that he cites to, and he provides no information on the relevant policies and procedures of the City of Clanton that he contends were violated by the officers. Additionally, Dr. Barker does not explain why he characterizes the force used by Officer Bearden as 'unnecessary and unreasonable,' and he does not explain why he characterized the officers' conduct as 'careless,' 'reckless,' 'unreasonable,' and exhibiting 'deliberate indifference.' He merely states these opinions in conclusory fashion with no explanation."); Valentine v. Pioneer Chlorine Alkali Co., 921 F. Supp. 666, 671-72 (D. Nev. 1996) (excluding inadequately explained expert testimony).

T. *Is the Expert Offering Something More than a Résumé and an Opinion?*

Exasperated judges have penned acerbate comments about the inadequate analysis of well-credentialed experts. One court rejected the testimony of an expert who "brought to court little more than his credentials and a subjective opinion."[212] Another somewhat bitterly noted, "We've been presented with only the experts' qualifications, their conclusions and their assurances of reliability. Under *Daubert*, that's not enough."[213] Still another outlined its irritation:

> Don't we have to have more than just somebody saying, I am an industrial engineer and I have looked at this ladder, it is the only one I have really looked at for this purpose, but I don't like it, there ought to be something else done to it? Doesn't there have to be more than that to make out a case of defective design?[214]

Another court provided one answer to these questions, declaring, "not every opinion offered by an expert is an expert opinion."[215]

Although these statements often seem to come from frustrated courts that desire to add exclamation points to their deci-

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212. Viterbo v. Dow Chem. Co., 826 F.2d 420, 421 (5th Cir. 1987).

213. *Daubert II*, 43 F.3d at 1319.

214. Alevromagiros v. Hechinger Co., 993 F.2d 417, 420 (4th Cir. 1993) (quoting the district court decision).

215. Textron Inc. v. Barber-Colman Co., 903 F. Supp. 1546, 1552 (W.D.N.C. 1995). The court continued, "Put another way, an expert's opinion 'must be an "expert" opinion (that is, an opinion informed by the witness' expertise) rather than simply an opinion broached by a purported expert.'" *Id.* (quoting United States v. Benson, 941 F.2d 598, 604 (7th Cir. 1991)).

In a similar vein, the United States District Court for the District of Kansas held:

> In this court's view, a person cannot, after suffering an accident, simply draw up a warning limited to the dangers involved in that accident and argue that that warning *should* have been conveyed by the manufacturer or seller without first also establishing that that warning is adequate and that it actually *could* have been communicated in the manner proposed.

Meyerhoff v. Michelin Tire Corp., 852 F. Supp. 933, 947 (D. Kan. 1994), *aff'd*, 70 F.3d 1175 (10th Cir. 1995).

sions excluding expert testimony, these declarations are nonetheless significant. After all, it is not uncommon for trial attorneys to select expert witnesses based not upon the quality of their analyses, but upon the quality of their résumés. In the post-*Daubert* world of significant judicial scrutiny of expert testimony, these attorneys run the risk of watching courts exclude critical expert testimony.

IV. CONCLUSION

Once witnesses are allowed to testify as experts, they have the run of the courtroom. Some of the most important restrictions that apply to other witnesses can be freely ignored by experts. In addition, they often present testimony on the crucial issues in dispute and thereby have tremendous potential to sway jurors.

Before an expert is given this power, the judge should meaningfully scrutinize her credentials, the scope of her proposed testimony, the underlying bases of her opinions, and her factual assumptions and investigation. If any of these necessary building blocks is found wanting, courts can, should, and indeed must exclude her testimony. Anything short of this rigorous and consequence-laden analysis might and indeed will result in an expert-driven mockery of the truth-seeking process.

APPENDIX

TWENTY QUESTIONS FOR ATTORNEYS AND JUDGES TO ANSWER CONCERNING EXPERT TESTIMONY

When confronted with expert testimony of questionable validity, attorneys and judges should answer the following questions. A "no" answer to any of these questions indicates that the court should seriously consider excluding the expert testimony. If all questions are answered "yes" or "not applicable," the court should admit the expert testimony, unless some other legal doctrine requires exclusion of the testimony.

1. Does the jury need expert testimony?

2. Is the witness qualified to serve as an expert?

3. Is the expert's testimony based upon valid science (or other technical or specialized knowledge)?

a. Has the expert's theory or technique been tested?

b. Has the expert's theory or technique been subjected to peer review and publication?

c. Is the known or potential rate of error for the expert's technique minimal?

d. Is the expert's theory or technique generally accepted within the relevant professional community?

e. Did the expert's theory exist before litigation began?

4. Does the expert's theory or technique "fit" the facts of the case?

5. Did the expert properly apply applicable standards?

6. Are the expert's assumptions reasonable?

7. Has the expert avoided mere speculation?

8. Did the expert adequately investigate the facts?

9. Is the expert's testimony relevant?

10. Does the expert avoid relying upon unproduced hearsay?

11. Does the probative value of the expert's testimony outweigh its danger of unfair prejudice?

12. Does the probative value of the expert's testimony outweigh its danger of confusing the issues or misleading the jury?

13. Does the probative value of the expert's testimony outweigh considerations of undue delay, waste of time, or needless presentation of cumulative evidence?

14. Does the expert avoid impermissibly testifying about legal opinions?

15. Does the expert avoid testifying about a criminal defendant's mental state when it constitutes an element of the crime or of the defense?

16. Does the expert avoid attempting to bolster the credibility of other witnesses?

17. In a products liability design defect case, has the plaintiff's design expert established the existence of an alternative feasible design?

18. Did the party offering the expert's testimony comply with all discovery and other pretrial disclosure requirements?

19. Has the expert adequately explained the bases for her opinion?

20. Is the expert offering something more than a résumé and an opinion?