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RHODA B. BILLINGS*

Introduction

This article will examine how Uniform Rules 701 through 706 were changed by the 1999 revisions to the Uniform Rules of Evidence and discuss the reasons for and intended effects of the revisions.1

Article VII of the Uniform Rules of Evidence covers the use of opinions and expert testimony at trial. Rule 701 deals with opinion testimony by a witness who is not testifying as an expert ("Opinion Testimony by Lay Witnesses"). Rules 702, 703, 705, and 706 deal with testimony by experts. Rule 704 applies to all opinion testimony and provides that such testimony "is not objectionable because it embraces an ultimate issue to be decided by the trier of fact."

Opinion Testimony Under the Common Law

Before rules of evidence were adopted by either the federal courts or the states, the courts were called upon to determine when witnesses could go beyond mere descriptions of what they had observed and could relate to the jury their opinions or inferences. When those witnesses were lay witnesses, i.e., witnesses with no specialized knowledge, skill, or training, courts tended to restrict their testimony to "facts" within their personal knowledge.2 However, the line between "fact" and "opinion" or "inference" was difficult to draw,3 and if the opinion was merely a "shorthand rendition of fact,"4 the opinion was admitted. The basis for the prohibition against a witness giving an opinion was that a witness's opinion was not helpful to the jury if it was an inference that the jury was as capable of drawing as

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1. Unless otherwise indicated, all textual references and citations to the "Uniform Rules" or "Uniform Rules of Evidence" refer to the Uniform Rules of Evidence as last revised in 1999.


3. DALE F. STANSBURY, NORTH CAROLINA LAW OF EVIDENCE § 122 (2d ed. 1963).

the witness. Courts were concerned that juries might be swayed by opinions of influential witnesses whose opinions in the community were highly regarded.5

On the other hand, courts recognized that some subjects of litigation were beyond the understanding of jurors and that jurors needed education as well as factual information in order to resolve the issues in those cases.6 Additionally, courts recognized that it was not always possible to educate the jury or supply them with sufficient information to draw their own reliable conclusions or inferences from the facts. In the latter circumstances, courts would permit expert witnesses to testify to their opinions or inferences from the facts, leaving the jury to determine the weight and credibility to give the expert's opinion.

Over time, courts developed rules governing the admissibility of expert testimony. The expert witness could be utilized only if the expert's testimony was helpful to the jury in understanding the facts of the case. Any opinion given by an expert witness, if not based on the witness's personal observations, had to be based on facts established by evidence that had been admitted at the trial.8 If the facts upon which the expert based his opinion were not within the expert's firsthand knowledge, the opinion was to be given in response to a "hypothetical" question, i.e., a question that stated facts supported by evidence introduced at trial, asked the witness to assume they were true, and asked what the witness's opinion on a scientific or technical question would be based upon the existence of those facts.9

An additional question concerned the role of the court in evaluating the reliability of the testimony of expert witnesses. Besides requiring that an expert witness have training or experience that gave the witness expertise beyond the knowledge of the jurors, how much should courts independently evaluate the areas of expertise claimed by the witness or the conclusions that the expert had reached? Was it proper for the court to screen out "pseudoscience," testimony based on no more than speculation or belief of a claimed expert, or should the jury be permitted to hear and judge the evidence without judicial screening?

The Frye Test

Addressing the need for expert witnesses to base their opinions on reliable principles or techniques, the Court of Appeals for the District of Columbia, in the 1923 case, Frye v. United States,11 created a test for judging the reliability of scientific principles or techniques upon which experts base their opinion or inference.

5. STANSBURY, supra note 3, at 282.
6. FED. R. EVID. 702 advisory committee note.
9. See STANSBURY, supra note 3, §§ 136, 137.
10. Id.
11. 293 F. 1013 (D.C. Cir. 1923).
In holding that the results of a "systolic blood pressure deception test" for detecting deception were properly excluded, the Court said:

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 to which it belongs.12

Thereafter known as the Frye test, the standard of "general acceptance" in the relevant scientific community became the standard for admissibility of scientific evidence in the majority of the federal courts13 and in the courts of many states.14

Many commentators questioned the appropriateness of the Frye test,15 asserting that it unnecessarily restricted the use of new but reliable scientific methods.16 In the latter half of the twentieth century, the courts of a number of states restricted or rejected the Frye test.17 Standards for the admissibility of expert testimony in some jurisdictions that rejected the Frye test were extremely lax, allowing almost anyone who claimed to have "specialized knowledge" to testify as an expert and voice opinions. As the use of expert witnesses soared,18 concern increased about the admission of opinions based upon pseudoscience, or so-called "junk science"19 — opinions based on unproved and unprovable hypotheses in claimed areas of expertise that were outside the range of scientific disciplines considered to be legitimate.

The Federal Rules of Evidence (1975)

In the Federal Rules of Evidence, which became effective July 1, 1975, lay witnesses were permitted to testify in the form of opinion or inference only if those opinions or inferences were "(a) rationally based on the perception of the witness and

12. Id. at 1014.
16. GRAHAM C. LILLY, AN INTRODUCTION TO THE LAW OF EVIDENCE 566 (3d ed. 1996); 1 MCCORMICK ON EVIDENCE, supra note 2, § 203, at 869-76.
17. "[I]n the 1970s and 1980s, a strong minority of jurisdictions expressly repudiated Frye." MCCORMICK ON EVIDENCE, supra note 2, § 203, at 306.
18. "In a Rand study of California Superior Court trials in the late 1980s, experts appeared in 86% of the trials; and on average, there were 3.3 experts per trial." Id. § 13, at 23 (citing Samuel R. Gross, Expert Evidence, 1991 Wis. L. REV. 1113, 1118-19 (1991)).
(b) helpful to a clear understanding of the witness' testimony or the determination of a fact in issue.\textsuperscript{20} However, the requirement that expert opinions be based on facts within the witness's firsthand knowledge or facts that had been received into evidence was replaced with Rule 703,\textsuperscript{21} permitting the expert to base her opinion or inference on facts or data "perceived by or made known to the expert at or before the hearing." If the facts or data were "of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject,"\textsuperscript{22} not only did the facts or data not need to be admitted into evidence, they did not have to be admissible. Questioning by use of the hypothetical question method was no longer required.\textsuperscript{23}

Nothing in the Federal Rules of Evidence spoke explicitly to the issue addressed by the Frye test — the issue of reliability of the techniques, principles, or methods relied upon by the expert. While some federal courts continued, even after adoption of the Federal Rules of Evidence, to apply the Frye standard of general acceptance in determining the admissibility of expert testimony,\textsuperscript{24} others concluded that the Federal Rules of Evidence had displaced the "generally accepted" standard.\textsuperscript{25}

The original Uniform Rules of Evidence were produced in 1953. In its 1974 revision of the Uniform Rules of Evidence, the National Conference of Commissioners on Uniform State Laws conformed its rules of evidence to the then-proposed Federal Rules, including their treatment of opinion testimony, both lay and expert.

\textit{Daubert and Kumho Tire}

An important impetus for the most recent revisions of the Uniform Rules of Evidence was the Supreme Court's 1993 recent decision in \textit{Daubert v. Merrill Dow Pharmaceuticals, Inc.},\textsuperscript{26} in which the Court considered the effect of Rule 702 of the Federal Rules of Evidence on the Frye test for evaluation of the admissibility of scientific evidence. Because of the identity between the Federal Rules of Evidence and the Uniform Rules of Evidence, the U.S. Supreme Court's interpretation of the Federal Rules served as a potential model for the interpretation of state rules on the admissibility of scientific evidence in states that had adopted rules of evidence based either on the Uniform or the Federal Rules.

\textsuperscript{20} \textit{Fed. R. Evid.} 701.
\textsuperscript{21} The Federal Rule states:
\begin{quote}
  The facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to the expert at or before the hearing. If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence.
\end{quote}
\textit{Fed. R. Evid.} 703.
\textsuperscript{22} \textit{Id.; see also infra} note 60.
\textsuperscript{23} \textit{Fed. R. Evid.} 702 advisory committee notes.
\textsuperscript{24} DeLuca \textit{v.} Merrell Dow Pharm., Inc., 911 F.2d 941, 955 (3d Cir. 1990); United States \textit{v.} Shorter, 809 F.2d 54, 59-60 (D.C. Cir. 1987); United States \textit{v.} Williams, 583 F.2d 1194, 1198 (2d Cir. 1978).
\textsuperscript{25} Christophersen \textit{v.} Allied-Signal Corp., 939 F.2d 1106, 1115-16 (5th Cir. 1991); United States \textit{v.} Solomon, 753 F.2d 1522, 1526 (9th Cir. 1985).
\textsuperscript{26} 509 U.S. 579 (1993).
The Court concluded in Daubert that Rule 702 of the Federal Rules of Evidence had indeed replaced the Frye test for admissibility of scientific evidence and that scientific evidence was not inadmissible simply because it had not been generally accepted. Rather, Rule 702 places upon the trial judge the responsibility, as "gatekeeper," of determining whether proffered scientific evidence is sufficiently reliable to be considered by the finder of fact. In making that determination, the judge is to determine whether (1) the reasoning or method applied to the facts is scientifically valid, i.e., has "evidentiary reliability," (2) the facts to which the method was applied are reliable, and (3) the reasoning or method was appropriately applied to the facts of the case, i.e., is relevant to, or "fits," the facts of the case. General acceptance within the relevant scientific community is one factor that may be considered in deciding whether the reasoning or method employed is scientifically valid. If, however, after evaluating the principle or method underlying the proffered testimony by a nonexclusive list of factors set out in the Court's opinion, the judge concludes that the principle or method is reliable and has been appropriately applied to reliable facts, the judge should admit the testimony whether or not the method has gained general acceptance. The opponent of the evidence can rely upon traditional means, such as cross-examination, contrary evidence, and instructions on the burden of proof, to attack "shaky but admissible evidence."

In Daubert, the U.S. Supreme Court dealt specifically with the question of the admissibility of expert witness testimony based on new or "novel" scientific methods that had not been generally accepted by the relevant scientific community. However, nothing in the opinion limited its reach to new or novel principles or methods, and the opinion has been understood to control the admissibility of scientific evidence generally. Federal judges have assumed that Daubert requires them to reconsider the reliability of types of expert evidence that have been used in courts for years and to re-examine the reliability in each case.
Daubert's interpretation of the effect of Federal Rule 702 raised additional questions. For example, it was unclear whether the "gatekeeping" function of the federal judge was to operate in the same way when the expert witness's testimony was based, not on "scientific" knowledge, but on "technical or other specialized" knowledge. This question was answered by Kumho Tire Co. v. Carmichael, in which the Court held that the basic gatekeeping function of the trial judge remains the same whether the evidence is based on scientific knowledge or on technical or other specialized knowledge, although the factors utilized to determine reliability may differ depending on the type of expertise upon which the witness's testimony is based. A second question was resolved in General Electric Co. v. Joiner, in which the Court ruled that the trial judge's decision to admit or exclude expert testimony is discretionary and is reversible only for abuse of discretion.

As an interpretation of federal law, not a constitutional requirement, the Daubert decision does not apply to cases in state courts. However, the majority of states have adopted rules of evidence based on the Federal Rules of Evidence or the virtually identical pre-1999 Uniform Rules of Evidence. Would the courts of the states that had adopted rules similar or identical to the Federal Rules interpret their own rules as the U.S. Supreme Court had interpreted the Federal Rules? Before Daubert, the courts of the states that had adopted rules of evidence had interpreted their similarly worded rules as follows: some continued to apply the Frye test; some rejected Frye and adopted different standards for admissibility of scientific evidence; and

determination "because it may be useful to other courts." Id. at 850; see also United States v. Mitchell, No. 95-00252-03, 1999 U.S. Dist. LEXIS 18848 (E.D. Pa. Nov. 30, 1999) (rejecting a challenge to latent fingerprint identification after an evidentiary hearing lasting several days); United States v. Alteme, No. 99-8131-CR (S.D. Fla. Apr. 7, 2000) (unpublished report and recommendation by the magistrate judge also rejecting a similar challenge).

37. Id. at 152. Kumho Tire applied Daubert to the conclusions of an expert in a tire failure analysis that a defect in the tire's manufacture and design had caused the tread of the tire to separate from its inner steel-belted carcass. His conclusion was based on a "visual inspection," a method conceded to have widespread acceptance. Id. at 154-56. However, the expert's analysis of the data obtained by visual inspection was found by the trial judge to lack reliability, and the United States Supreme Court affirmed the trial judge's decision to exclude the conclusion. Id. at 158.
39. Id. at 137. In Joiner, the expert witnesses drew their conclusion — that the adult plaintiff's exposure to small concentration of PCBs in dielectric fluid contributed to the development of his cancer — on the basis of animal studies in which infant mice were injected with massive doses of PCBs. The Court said that the issue was not whether animal studies can be a proper foundation for an expert's opinion, but whether the experts' opinions were sufficiently supported by the animal studies on which they relied. Because of the dissimilarity between the facts in the litigation and the animal studies, the district court's rejection of the experts' reliance on the studies was not an abuse of discretion. Id. at 144-45.
40. The Record of Passage of Uniform and Model Acts, as of September 30, 2000, compiled by the National Conference of Commissioners on Uniform State Laws and published in its 2000-2001 Reference Book, lists thirty-two states plus Puerto Rico and the U.S. Virgin Islands as jurisdictions that have enacted either the original or pre-1999 amended version of the Uniform Rules of Evidence.

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some applied Frye to only certain types of cases or issues. Among those states that had not adopted rules of evidence, most applied the Frye test for admissibility of scientific evidence. Thus, even before the Daubert decision, uniformity among the states, sought by the Uniform Rules, and uniformity between the state and federal courts, sought by conforming the Uniform Rules to the Federal Rules, had not been achieved in the area of testimony of expert witnesses. In a recent survey of states, Professor Leo H. Whinery found that, since the Daubert decision, "21 states still apply the general acceptance test, 18 states have adopted the Daubert standard, 8 states use pre-Daubert reliability standards, three states have some other standard, and five states' approaches remain uncertain."

If an effort was made to effectuate the goal of uniformity among the states by revising the Uniform Rules to provide a more explicit test for determining admissibility of expert opinion testimony, should the Frye test be explicitly embraced or rejected? Should the approach taken by the U.S. Supreme Court in Daubert be incorporated into the Uniform Rules? Was either the Frye or the Daubert approach superior to alternative approaches taken by some states and thus an approach that all states should be encouraged to embrace?

As lawyers and judges at both the federal and state level studied Daubert and its progeny, many raised questions about the ability of judges to evaluate the reliability of methods used in a discipline in which they themselves were not experts — an


43. Goodwin & Gurule, supra note 41.


45. Alfred P. Murrah Professor of Law, the University of Oklahoma College of Law, and Reporter, Drafting Committee to Revise the Uniform Rules of Evidence.


47. Note the dissenting opinion of Chief Justice Rehnquist, joined by Justice Stevens, in Daubert: "I defer to no one in my confidence in federal judges; but I am at a loss to know what is meant when it is said that the scientific status of a theory depends on its 'falsifiability,' and I suspect some of them will be, too." Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 600 (1993). The Ninth Circuit, on remand, also recognized a number of questions raised by application of the Daubert standard.

As we read the Supreme Court's teaching in Daubert, therefore, though we are largely untrained in science and certainly no match for any of the witnesses whose testimony we are reviewing, it is our responsibility to determine whether those experts' proposed testimony amounts to "scientific knowledge," constitutes "good science," and was "derived by the scientific method."

... [H]ow do we determine whether the rate of error is acceptable, and by what standard? Or, what should we infer from the fact that the methodology has been tested, but only by the party's only expert or experts? Do we ask whether the methodology they employ to test their methodology is itself methodologically sound? Such questions only underscore the basic problem, which is that we must devise standards for acceptability where respected scientists disagree on what's acceptable.

Daubert v. Merrell Dow Pharm., Inc., 43 F.3d 1311, 1316 & n.3 (9th Cir. 1995); see also 2 Leo H. Whinery, Oklahoma Evidence, Commentary on the Law of Evidence § 26.06, at 618-20 (2d ed. 2000).
evaluation that had not been necessary under the Frye test but that would be necessary if judges were to be responsible for an independent evaluation of reliability. A recent national survey of state trial judges "indicates that although they are confident that they should serve as gatekeepers for scientific evidence, they do not have the 'scientific literacy' required for application of the standards announced" in Daubert.48

At the time the Drafting Committee to Revise the Uniform Rules of Evidence was considering possible revisions to Rules 701-710, the Federal Advisory Committee on the Rules of Evidence also was considering the impact of Daubert on the Federal Rules and whether to suggest amendments. In fact, each group was kept apprized of the work of the other, and reporters from each attended meetings of the other. Inevitably, as work progressed and differences in approaches emerged, the question arose as to whether the Uniform Laws Conference would continue to conform its rules to the Federal Rules in those areas where both sets of rules covered the same issues. A decision was finally made that, for the entire set of rules, in regard to matters of substance, style, and organization, the Drafting Committee to Revise the Uniform Rules of Evidence would make its decisions independently of the Federal Advisory Committee and would no longer conform the Uniform Rules to the Federal Rules for the sake of mere conformity.

In the area of expert testimony, the decision of the Drafting Committee, eventually endorsed by the Conference as a whole,49 resulted in significant differences in the wording of Rules 701-706 between the Uniform Rules of Evidence, as last revised in 1999, and the Federal Rules of Evidence, as proposed to Congress by the Supreme Court and adopted effective December 1, 2000.50 However, both reacted to the Daubert decision and were influenced by its approach to admissibility of scientific and other expert testimony.

Once the Drafting Committee decided that the style and substance of the Uniform Rules would no longer necessarily conform to the Federal Rules, the Drafting Committee, sometimes at the suggestion of the Uniform Laws Conference Committee on Style, recommended revisions to all of the rules in article VII except Rule 704. Those revisions, adopted by the Uniform Laws Conference and the American Bar Association,51 are discussed below.

48. Evidence: Survey Shows Judges Lack Skills Needed to Rule on Admissibility of Scientific Evidence, 68 CRIM. L. REP. (BNA) 79 (Oct. 25, 2000) (reporting on a presentation on October 12, 2000, at the National Conference on Science and the Law in San Diego, California, of a survey funded by the State Justice Institute, the Federal Judicial Center, the National Judicial College, the University of Nevada at Reno, and the National Counsel of Juvenile and Family Court Judges).

49. The Uniform Rules of Evidence, as last revised in 1999, were approved by the National Conference of Commissioners on Uniform State Laws at its Annual Conference, July 23-31, 1999, in Denver, Colorado.

50. By order of the Supreme Court of the United States dated April 17, 2000, Federal Rules of Evidence 103, 404, 702, 703, 803(b), and 902 were amended, effective December 1, 2000.

51. The Uniform Rules of Evidence, as last revised in 1999, were approved by the House of Delegates of the American Bar Association at its 2001 midyear meeting in San Diego, California.
Revisions to Uniform Rule 701 — Opinion Testimony by Lay Witnesses

The first change to Uniform Rule 701 was not intended to change its substance but to express more clearly what had been intended by the existing version. The revised rule makes clear that witnesses are not categorized as "expert" or "lay," but that the testimony of any witness and the determination of what rules apply to the testimony depend upon whether the witness's testimony is based on "scientific, technical, or other specialized knowledge within the scope of Rule 702." Thus, a single witness may give testimony that is based upon the witness's specialized knowledge or expertise and also may give testimony as a lay or fact witness who does not draw upon specialized knowledge. The portion of the witness's testimony that is not based upon the witness's expertise is subject to Rule 701, which allows testimony in the form of opinion or inference only if the opinion or inference is based on the witness's firsthand knowledge and is helpful to the jury. Admissibility of the portion of the witness's testimony based on the witness's expertise is judged by Rule 702.

Other changes to Rule 701 are purely stylistic. These include a minor grammatical change and the use of gender-neutral language.

Revisions to Uniform Rule 702 — Testimony by Experts

The Drafting Committee completely rewrote Uniform Rule 702. Although Daubert and Kumho Tire prompted the majority of the changes in Rule 702, the new rule in some ways significantly modifies the analysis described by the Supreme Court in those cases.

Revised Uniform Rule 702 has been divided into five subdivisions, (a) through (e). Subsection (a), "General rule," expresses the limitation of the rule to testimony "based on scientific, technical, or other specialized knowledge." Just as the change in wording of Uniform Rule 701 clarified that the subject of the testimony, rather than the status of the witness, determines the applicability of Rule 701, the wording of revised Uniform Rule 702(a) identifies "a witness's testimony" based on expertise as the subject of the rule. The new rule carries forward the provision that testimony based on scientific, technical, or other specialized knowledge may be given in the form of opinion "or otherwise," allowing the expert witness to give.

52. "If the a witness's is not testifying as an expert, his testimony is not based on scientific, technical, or other specialized knowledge within the scope of Rule 702, ...." Unif. R. Evid. 701 (italicized material added in 1999 revisions).
53. "[W]hich" is changed to "that" because the antecedent is not remote. Id.
54. "[H]is" is changed to "a witness's" or "the witness's." Id.
55. The rule provides: (a) General rule. If a witness's testimony is based on scientific, technical, or other specialized knowledge, the witness may testify in the form of opinion or otherwise if the court determines the following are satisfied: .... " Unif. R. Evid. 702(a). Formerly, Uniform Rule 702 read as follows: "If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise." Unif. R. Evid. 702, 13B U.L.A. pt. 1A, at 354 (2000).
56. Unif. R. Evid. 702(a).
both nonopinion and opinion testimony. It also continues to require that such testimony "assist the trier of fact to understand evidence or determine a fact in issue" and be given only by a witness "qualified by knowledge, skill, experience, training, or education as an expert in the scientific, technical, or other specialized field." Prompted by and consistent with the Daubert decision, three new requirements were added to the general rule on admissibility of expert testimony. Rule 702 specifically provides that the proposed testimony must satisfy the Daubert requirements that (1) the principle or method upon which the testimony is based be reliable, (2) the facts or data upon which the testimony is based be sufficient and reliable, and (3) the witness have applied the principle or method reliably to the facts of the case.

These additions are almost identical to the additions made to Federal Rule 702 effective December 1, 2000. While the Advisory Committee for the Federal Rules


58. UNIF. R. EVID. 702(a)(2).

59. UNIF. R. EVID. 702(a)(3). The Daubert Court said that the reference in the opinion to reliability was "to evidentiary reliability — that is, trustworthiness." Daubert, 509 U.S. at 590 n.9.

60. UNIF. R. EVID. 702(a)(4). The Daubert opinion notes but does not discuss methods for determining reliability of facts or data other than to point out that "expert opinions based on otherwise inadmissible hearsay are to be admitted only if the facts or data are 'of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject,'" referencing Federal Rule 703. Daubert, 509 U.S. at 595. For further elaboration, see the discussion, infra, of Uniform Rule 703.

61. UNIF. R. EVID. 702(a)(5). Federal Rule of Evidence 702(3) and Uniform Rule of Evidence 702(a)(5) reflect the portion of the Daubert opinion that discusses the relevance of the expert testimony to the facts of the case, otherwise described by the Court as "fit." In finding that the Federal Rules of Evidence require the trial judge to determine whether the expert evidence or testimony is relevant, the Daubert Court relied upon the requirement of then-existing Rule 702 that the evidence or testimony "assist the trier of fact to understand the evidence or to determine a fact in issue." 509 U.S. at 591. The requirement that testimony "assist the trier of fact" is retained in both the Federal Rules and the Uniform Rules, although both add a separate requirement that "the witness has applied the principles and methods reliably to the facts of the case." FED. R. EVID. 702(3); UNIF. R. EVID. 702(a)(5). While an expert witness's proffered testimony based upon a reliable method might be relevant to the facts of a case, it might not be helpful to the jury for other reasons. For example, in General Electric Co. v. Joiner, 522 U.S. 136, 146 (1997), the Court observed that although evidence is relevant to the facts of the case, "[a] court may conclude that there is simply too great an analytical gap between the data and the opinion proffered" for the evidence to "fit" the case. See also Mueller & Kirkpatrick, Evidence, § 7.6 (1st ed. 1995). Thus, the new versions of Rule 702 require that the judge make these as separate inquiries.

62. Federal Rule 702 now provides:

Testimony by Experts. If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

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of Evidence chose merely to recommend codification of the Daubert and Kumho Tire rules, the Drafting Committee to Revise the Uniform Rules of Evidence chose to combine a modified Frye test with the reliability standard of Daubert. The Drafting Committee also sought to include procedural devices that could be used by state judges to avoid unnecessary, repetitious reliability evaluations once a principle or method's reliability had been satisfactorily demonstrated and no new or additional information relating to reliability had become available.

In attempting to provide guidance and procedures for the states, the Drafting Committee examined the Frye, Daubert, and Kumho Tire decisions, various state courts' approaches to determining reliability, and recommendations of legal scholars. It decided to add provisions to Uniform Rule 702 that were not in the previous version of Uniform Rule 702 or in the proposed amendments to Federal Rule 702. New subdivisions (b), (c), and (d) divide the principles or methods used to arrive at an expert opinion into three categories for the purpose of determining their reliability.

The first category includes principles or methods approved by controlling legislation or judicial decision. Revised Uniform Rule 702(b) provides:

Reliability deemed to exist. A principle or method is reasonably reliable if its reliability has been established by controlling legislation or judicial decision.

If a principle or method's reliability has been established by controlling legislation or judicial decision, the judge, in performing the gatekeeping function, will not need

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to re-examine the reliability of the principle or method itself. The judge will, of course, still determine whether the witness qualifies as an expert and whether the principle or method is relevant and has been reliably applied to sufficient and reliable facts or data.

Statutes in many states recognize and approve the admission of evidence derived from the application of specific scientific devices based upon recognized principles or methods. For example, results of measurements of the speed of moving automobiles by speed measuring devices66 and results of measurement of blood alcohol levels by breathalyzers67 have for years been legislatively approved for admission in evidence, so long as the results produced by use of the device are supported by testimony of a witness whose opinion, based on observation of the speeding automobile or intoxicated driver, is consistent with the results produced by the device.64 Admissibility of the results of blood-grouping tests and opinions based thereon in cases involving contested paternity has been approved by legislatures across the nation.69 When a state statute recognizes the reliability of a device that is based on a scientific principle or method and approves admission into evidence of the results of application of the device, it should not be necessary for the proponent of the evidence to convince the trial judge that the scientific principle applied to produce the device or the results produced by a properly functioning and properly applied device of that kind are scientifically reliable.70 That decision has been made by the legislature.

The U.S. Supreme Court in Daubert was not faced with the admissibility of evidence based upon a legislatively approved method or device and thus had no occasion to address the effect of such legislation. However, in the absence of an assertion that the method or device is so unreliable that its use violates a constitutional guarantee, such as due process, courts would be bound to apply the statutory law. While that result probably needed no affirmation in the Uniform Rules of Evidence, express recognition that legislatively approved scientific or technical evidence is admissible without an independent judicial review of the reliability of the underlying principle or method avoids any confusion about conflict between the rules and legislation.

Similarly, if a particular scientific or other principle or method has been upheld as reliable by a controlling judicial decision,71 its reliability should not have to be

67. See, e.g., id. § 20-139.1.
68. See, e.g., id. § 8-50.2.
70. The obligation of courts to apply legislative mandates, unless the mandate violates some principle of constitutional law such as due process, probably needs no specific recognition in the rules.
71. See, e.g., Taylor v. State, 1995 OK CR 10, 889 P.2d 319 (holding DNA profiling evidence was
relitigated every time evidence based upon its use is offered. Application of this portion of Uniform Rule 702 is more difficult than application of the rule regarding statutorily approved evidence because of the difficulty of determining when a judicial decision is "controlling." The U.S. Supreme Court in Joiner held that decisions by federal trial judges regarding what factors to use in determining the reliability of a principle or method, as well as the ultimate determination of reliability, are discretionary decisions, reversible only if "the ruling is manifestly erroneous,"72 regardless of whether the decision is to admit or to exclude the evidence. Therefore, most appellate opinions will not be "controlling" if the jurisdiction in which the opinion is rendered follows the Joiner abuse of discretion approach. The Uniform Rules of Evidence, as last revised in 1999, do not address the standard for review of reliability determinations.

Even if the standard for review is abuse of discretion, decisions by appellate courts of a jurisdiction would be binding upon the trial courts in a number of circumstances: (1) when a trial judge found that evidence was based upon reliable principles or methods, but the appellate court reversed on the basis that the trial judge's decision was unreasonable, and no additional evidence of reliability is introduced; (2) when an appellate court reverses exclusion of evidence, holding that the evidence established the reliability of a principle or method and the contrary conclusion was unreasonable; or (3) when a trial judge admits evidence on the basis that reliability of the principle or method is subject to judicial notice, and the appellate court affirms.

Whether appellate decisions of a particular state rendered before that state's adoption of the 1999 version of Uniform Rule 702 are "controlling" thereafter also requires consideration of a number of factors. One factor, of course, is whether, in upholding or reversing admission or exclusion of the evidence, the appellate court at that time treated the evidentiary ruling as discretionary or as reviewable as a matter of law. Another factor is whether the standard for admissibility of expert witness testimony at the time of the decision was the Frye test or some other test, and whether that test was more or less stringent than the test required by the new rule.

The second category, set out in Rule 702(c), includes those principles or methods that have received "substantial acceptance within the relevant scientific, technical, or specialized community." The Drafting Committee concluded that a test similar to the Frye test, but that relies upon "substantial" rather than "general" acceptance by the relevant community of experts, is a reliable and manageable threshold test for judging reliability. The amended test is subject to other evidence indicating that, despite substantial acceptance, the principle or method nevertheless is unreliable.73

73. Rule 702 provides:
Presumption of reliability. A principle or method is presumed to be reasonably reliable if it has substantial acceptance within the relevant scientific, technical, or specialized community. A party may rebut the presumption by proving that it is more probable than not that the principle or method is not reasonably reliable.
Application of this portion of the rule requires the judge to determine three questions from evidence presented: (1) What is the relevant scientific, technical, or specialized community whose acceptance counts? (2) To what extent have members of that community accepted the principle or method? and (3) Is the portion of the identified community that has accepted the principle or method "substantial"? By changing the standard for judging reliability from "general" to "substantial," and by providing that proof of the required level of acceptance creates only a presumption, rebuttable by other evidence, of the principle or method's reliability, revised Uniform Rule 702 addresses the criticism of the Frye test that it is too restrictive of the use of reliable new scientific methods.

For years, courts applying the Frye test have had to identify the "relevant" community of experts whose acceptance of a principle or method will determine the method's reliability. This is the first determination necessary for application of Uniform Rule 702(c). The second determination, the extent to which the principle or method has been accepted within that community, should be a fairly straightforward factual determination based on evidence presented by the parties. In making the third determination, the judge will exercise discretion in deciding what constitutes "substantial" if less than the majority of persons within the relevant community have accepted the principle or method. Once substantial acceptance has been established, a presumption arises that the principle or method is reliable. The burden then shifts to the party opposing admission of evidence derived from the principle or method to satisfy the judge "that it is more probable than not that the principle or method is not reasonably reliable." If the judge is satisfied that, in spite of its substantial acceptance, the principle or method is not reliable, the judge should not admit evidence derived from application of the principle or method.

Because the new rule does not require "general" acceptance, it is possible that two opposing principles or methods will have gained sufficient acceptance to raise a presumption of reliability. In that case, it will not be necessary for the judge to choose between the two principles or methods. Rather, if neither is otherwise found to be unreliable, experts on both sides may be permitted to testify to their opinions, and the jury will decide which is more convincing.

If a principle or method has attained general acceptance within the relevant community, it would seem highly unlikely that a judge would find, contrary to the

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74. Although not relied upon by the Drafting Committee, in an early edition of Professor McCormick's treatise on evidence, he recommended that the Frye standard be deflated "to the normal standard which simply demands that the theory or device be accepted by a substantial body of scientific opinion." CHARLES MCCORMICK, EVIDENCE § 174 (1st ed. 1954) (emphasis added).


76. UNIF. R. EVID. 702(c).

77. Id. In determining whether a principle or method is unreliable despite its having substantial acceptance within the relevant community of experts, the judge will consider "all relevant additional factors" that are presented by the party opposing the evidence. UNIF. R. EVID. 702(e).
community of experts in the field, that the principle or method is not reliable.\textsuperscript{78} However, utilizing Rule 702(e)(7), the judge can find unreliability on the basis that the witness's \textit{specialized field of knowledge} has not gained acceptance within the \textit{general scientific, technical, or specialized community.}\textsuperscript{79}

The third category includes all other principles or methods — those that have not been approved by controlling legislation or judicial decision and have not received substantial acceptance within the relevant scientific, technical, or specialized community. This category of principles or methods was the subject of both \textit{Frye} and \textit{Daubert}. Rule 702(d) provides that a principle or method that has not received substantial acceptance within the relevant scientific, technical, or specialized community is presumed not to be reasonably reliable and, nothing else appearing,\textsuperscript{80} evidence based upon its application must be excluded. This presumption is rebuttable by proof that "it is more probable than not that the principle or method is reasonably reliable."

In attempting to rebut either presumption or support the reliability or unreliability presumed, the parties may present and the judge is to consider "all relevant additional factors."\textsuperscript{81} Rule 702(e) contains a nonexclusive list of additional factors for the judge to consider in determining reliability, most of which were taken from the \textit{Daubert} and \textit{Kumho Tire} opinions.

As noted by the U.S. Supreme Court in \textit{Daubert}, whether the requirements for admissibility of evidence are satisfied is, pursuant to Federal Rule 104(a), a matter to be determined by the trial judge.\textsuperscript{82} Uniform Rule 104(a) places the same responsibility on the judge, and revisions to the Uniform Rules do not change this judicial function.\textsuperscript{83}

\textsuperscript{78} The Court in \textit{Daubert} suggested that some theories "are so firmly established as to have attained the status of scientific law, such as the laws of thermodynamics . . . [and thus are] subject to judicial notice under Federal Rule of Evidence 201." Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 592 n.11 (1993). Nothing in the revised Uniform Rule 702 makes inappropriate the application of Rule 201 to the determination of reliability of a principle or method used by an expert witness.

\textsuperscript{79} The Supreme Court stated in \textit{Kumho Tire}, "Nor, on the other hand, does the presence of \textit{Daubert}'s general acceptance factor help show that an expert's testimony is reliable where the discipline itself lacks reliability, as, for example, do theories grounded in any so-called generally accepted principle of astrology or necromancy." Kumho Tire Co. v. Carmichael, 526 U.S. 137, 151 (1999).

\textsuperscript{80} Rule 702 provides as follows:

\textbf{Presumption of unreliability.} A principle or method is presumed not to be reasonably reliable if it does not have substantial acceptance within the relevant scientific, technical, or specialized community. A party may rebut the presumption by proving that it is more probable than not that the principle or method is reasonably reliable.

UNIF. R. EVID. 702(d) (emphasis added).

\textsuperscript{81} UNIF. R. EVID. 702(e).

\textsuperscript{82} Daubert, 509 U.S. at 592.

\textsuperscript{83} The revisions to Rule 104 are as follows:

\textbf{Rule 104. Preliminary Questions.} Questions of admissibility generally. Preliminary questions concerning the qualifications of a person as an individual to be a witness, the existence of a privilege, or the admissibility of evidence shall \textbf{must} be determined by the court, subject to the provisions of subdivision (b).

UNIF. R. EVID. 104 (italicized material added in 1999 revision).
Revisions to Uniform Rules 703 Through 706

With two exceptions, the revisions to Rules 703 through 706 of the Uniform Rules of Evidence were not intended to work any substantive change. All are stylistic changes intended either to make the rules gender neutral, to correct grammar, or to bring the rules into conformity with the style of acts by the National Conference of Commissioners on Uniform State Law.

One substantive revision attempts to make clear that Rule 703 ("Basis of Opinion Testimony by Expert"), which allows an expert witness to base an opinion or inference on facts or data not admissible in evidence, is not authorization for admission of those facts or data. The second sentence of Rule 703 was amended to read: "If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence for the opinion or inference to be admissible." 84

The other revision is to the caption of Uniform Rule 706, changing it from "Court Appointed Experts" to "Court Appointed Expert Witness." As noted in the official commentary to the Uniform Rules of Evidence, "Rule 706 thus applies only to expert witnesses and not to expert consultants appointed by the trial judge in performing the gatekeeping function in admitting scientific, technical or specialized knowledge under Uniform Rule 702." 85

No change was made to the portion of Rule 703 that permits the use by experts of facts or data that, although not admissible in evidence, are "reasonably relied upon by experts in the particular field in forming opinions or inferences," even though there has been some disagreement among courts about the intended effect of the requirement that the reliance be "reasonable." While some courts construe the rule to require that the judge make an independent decision whether reliance upon the information is reasonable, others defer to the experts and admit evidence based upon facts or data if evidence shows that experts in the field use facts or data of the type in question. 86 By adding to Rule 702(a)(4) a requirement that the judge find the facts or data underlying an expert witness's testimony not only "sufficient" but also "reliable," 87 it is arguable that the 1999 version of Uniform Rule 702 has adopted the view that the judge must determine the reasonableness of the reliance.

Conclusion

The Drafting Committee to Revise the Uniform Rules of Evidence tried to accomplish two goals: (1) to draft standards for admissibility of expert testimony that provide some guidance to state judges in accurately making difficult reliability assessments; and (2) to draft rules acceptable as a model for state-rule drafters in the interest of achieving a high degree of uniformity among the states.

84. UNIF. R. EVID. 703 (italicized material added in 1999 revisions).
85. UNIF. R. EVID. 706 reporter's notes (emphasis added).
86. MUELLER & KIRKPATRICK, supra note 61, § 7.6.
87. See supra note 61 and accompanying text.
Responding to uncertainty and nonuniformity among the states regarding the standards for admissibility of expert testimony at trial, the Drafting Committee concluded that the approach taken by the United States Supreme Court in Daubert v. Merrell Dow Pharmaceuticals, Inc. was an appropriate starting point for redrafting Uniform Rules 702 through 706. The Daubert approach to determining admissibility of scientific or other expert testimony, by placing upon the trial judge the responsibility for determining the reliability of the basis for the testimony, overcomes a major criticism that the Frye test was too restrictive and excluded reliable and helpful evidence. On the other hand, the Daubert approach leaves open a number of questions and appears to require unending re-examination of reliability of principles or methods underlying expert testimony. New Uniform Rule 702 departs from Daubert, therefore, by explicitly recognizing the binding effect of controlling legislation or judicial decisions on reliability determinations. It further gives strong weight, in the form of a presumption, to acceptance or rejection by significant portions of relevant scientific or other expert communities of principles or methods within their fields of expertise. At the same time, Rule 702 leaves room for the admission of testimony based upon new principles or methods when their reliability is sufficiently proven, as well as rejection of evidence based upon unreliable principles or methods despite their acceptance by a substantial portion of a relevant community of experts.

The drafters of the Uniform Rules of Evidence do not contend that adoption of the revised versions of Rules 702 and 703 will make the task of state trial judges in evaluating the reliability of expert testimony an easy one. State trial judges still must answer difficult questions, such as: (1) Is a judicial decision that upholds a trial court's ruling admitting or excluding expert testimony "controlling"? (2) What factors are appropriate for determining whether the principle relied upon or the method used by the expert witness is reliable? (3) What "community" is appropriate in determining whether the principle or method has attained acceptance in the community sufficient to raise a presumption of reliability, and what constitutes "substantial" acceptance? (4) How does one determine whether the witness's specialized field of knowledge has gained acceptance within the general scientific community? (5) Has the expert applied the principles or methods "reliably" to the facts of the case? (6) Will the expert testimony be helpful to the jury, or is the probative value of the evidence substantially outweighed by the risk of unfair prejudice, confusion, or waste of time?

88. Unif. R. Evid. 403.
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