The Meaning of "Facts or Data" in Federal Rule of Evidence 703: the Significance of the Supreme Court's Decision to Rely on Federal Rule 702 in Daubert v. Merrell Dow Pharmaceuticals, Inc.

Edward J. Imwinkelried

Follow this and additional works at: http://digitalcommons.law.umaryland.edu/mlr

Part of the Evidence Commons

Recommended Citation
Available at: http://digitalcommons.law.umaryland.edu/mlr/vol54/iss2/4

This Article is brought to you for free and open access by the Academic Journals at DigitalCommons@UM Carey Law. It has been accepted for inclusion in Maryland Law Review by an authorized administrator of DigitalCommons@UM Carey Law. For more information, please contact smccarty@law.umaryland.edu.
THE MEANING OF “FACTS OR DATA” IN FEDERAL RULE OF EVIDENCE 703: THE SIGNIFICANCE OF THE SUPREME COURT’S DECISION TO RELY ON FEDERAL RULE 702 IN DAUBERT v. MERRELL DOW PHARMACEUTICALS, INC.

EDWARD J. IMWINKELRIED*

"Two roads diverged in a wood,
and I—
I took the one less travelled by,
And that has made all the difference."

—ROBERT FROST, THE ROAD NOT TAKEN

INTRODUCTION

In its decision in Daubert v. Merrell Dow Pharmaceuticals, Inc.,¹ the United States Supreme Court joined in the controversy over the admissibility of scientific evidence. The controversy is a product of two phenomena. On the one hand, scientific evidence has increasingly become the method of choice for resolving factual questions posed by legal disputes. If the question is whether O. J. Simpson participated in the killing of his former wife Nicole Simpson and her friend Ronald Goldman, we turn to molecular biologists and DNA typing.² When the issue is whether Lyle Menendez possessed the mens rea for murder when he shot his father and mother, we listen to testimony by mental health professionals.³ In an automobile collision case, accident reconstruction experts are called on to apply the laws of physics.⁴ When an employer has allegedly discriminated in hiring on the basis

* Professor of Law, University of California at Davis; former Chair, Evidence Section, American Association of Law Schools. Professor Imwinkelried consulted with the plaintiffs’ attorneys in preparing the briefs before the United States Supreme Court in the Daubert case.

1. 113 S. Ct. 2786 (1993).
3. See Menendez v. Superior Court, 834 P.2d 786 (Cal. 1992) (discussing scientific expert testimony on the defendant’s state of mind while committing the crime at issue).
of race or sex, a court is likely to hear testimony about regression analysis from statisticians.\(^5\)

On the other hand, however, mounting evidence suggests that scientific testimony is often flawed. Peter Huber of the Manhattan Institute has bluntly charged that much of the expert testimony admitted by American courts is "junk science," based on spurious, unsubstantiated theories.\(^6\) That charge is buttressed by shocking instances in which experts have either overstated their credentials\(^7\) or fabricated test results.\(^8\) Moreover, numerous proficiency studies document a substantial margin of error in scientific analysis.\(^9\)

In the *Daubert* case, the Supreme Court confronted this controversy in microcosm. The plaintiffs included Jason Daubert and his parents, William and Joyce Daubert.\(^10\) Jason was born with serious limb defects, and the plaintiffs alleged that these defects were caused by his mother's use of an anti-nausea drug, Bendectin, manufactured by the defendant.\(^11\) The plaintiffs relied in part on testimony by epidemiologists—experts in the use of statistical techniques—to demonstrate correlations between exposure to certain substances and increased risks of illness.\(^12\)

In simplified form, the testimony was syllogistic in structure.\(^13\) To construct their major premise, the plaintiffs' experts relied on general assumptions about the validity of mathematics, statistics, and epidemi-

---

12. Id. In addition to relying on epidemiological evidence, the plaintiffs presented testimony regarding "in vitro" (test tube) and "in vivo" (live) animal studies as well as pharmacological analyses comparing the chemical structure of Bendectin with that of other substances known to cause birth defects. Id. at 2791-92.
The experts conceded that the published epidemiological studies of Bendectin did not show a statistically significant correlation between its use and congenital limb defects. They contended, however, that pooling data in previous studies and reanalyzing it is a scientifically valid technique. The experts asserted that the re-analysis yielded a statistically significant, and therefore potentially causal, relationship between the use of Bendectin and the type of limb defects Jason suffered.

The plaintiffs' experts then applied this causation theory to the minor premise including reports that Joyce Daubert had ingested Bendectin during her first trimester and that Jason was born with certain limb deformities. The application of the major premise to the minor premise led to the conclusion that the defendant's product had caused Jason's limb defects. The defense attacked this conclusion by questioning both the validity of the epidemiological re-analysis technique and the hypothesis that the maternal use of Bendectin can cause limb deformities.

Although the plaintiffs initially filed their suit in California state court, the defendant had the suit removed to federal court on the basis of diversity of citizenship. In federal court, Merrell Dow filed a pretrial summary judgment motion. The motion was supported by an affidavit executed by a Dr. Lamm. In his affidavit, Dr. Lamm asserted that he had canvassed all the published epidemiological studies of Bendectin. According to the affidavit, none of the studies revealed a statistically significant relationship between the incidence of birth defects and Bendectin use. In its motion for summary judgment, Merrell Dow cited Dr. Lamm's affidavit as proof that the hypothesis that Bendectin causes limb deformities is not generally accepted in scientific circles. The plaintiffs opposed the motion.

15. Daubert, 113 S. Ct. at 2791.
16. Id. at 2792.
17. Id.
18. Id.
19. Id.
20. Id.
21. Id. at 2791.
23. Id. at 575.
24. Id.
25. Id.
Their counter-affidavits described the epidemiological re-analysis conducted by their experts.\textsuperscript{26}

The district court granted Merrell Dow’s motion for summary judgment.\textsuperscript{27} In so doing, the district judge relied heavily on Federal Rule of Evidence 703. That Rule states:

\textbf{RULE 703. BASES OF OPINIONS BY EXPERTS}

\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.\textsuperscript{28}
\end{quote}

The trial judge highlighted the statutory language, “of a type reasonably relied upon by experts in the particular field.”\textsuperscript{29} According to the district judge, that language codified the standard announced in 1923 in \textit{Frye v. United States}.\textsuperscript{30} This standard requires that a foundation for scientific evidence include proof that “the principle upon which it is based [be] sufficiently established to have gained general acceptance in the field to which it belongs.”\textsuperscript{31} The district judge interpreted prior federal decisions as announcing that a finding of “causation in this area” cannot be considered “generally accepted” unless it rests on epidemiological research finding a statistically significant nexus.\textsuperscript{32} The judge granted the motion for summary judgment because none of the published studies found the requisite nexus.

The plaintiffs appealed to the Court of Appeals for the Ninth Circuit. Though the Ninth Circuit affirmed the ruling of the district court, its conclusion rested on a different rationale.\textsuperscript{33} The court did not cite any provisions of the \textit{Federal Rules of Evidence} as authority. Rather, the court explicitly relied on the common law “general acceptance” standard announced in \textit{Frye}.\textsuperscript{34} Though the court acknowledged that the epidemiological re-analysis lent some support to the plaintiffs’ position, it noted that the re-analysis had not been published in a

\begin{thebibliography}{10}
\bibitem{26} Id. at 571.
\bibitem{27} Id. at 570.
\bibitem{28} \textit{Fed. R. Evid.} 703.
\bibitem{29} \textit{Daubert}, 727 F. Supp. at 572.
\bibitem{31} \textit{Frye}, 293 F. at 1014.
\bibitem{32} \textit{Daubert}, 727 F. Supp. at 575.
\bibitem{33} Daubert v. Merrell Dow Pharmaceuticals, Inc., 951 F.2d 1128 (9th Cir. 1991).
\bibitem{34} Id. at 1129-30.
\end{thebibliography}
The court asserted that re-analyses are accepted “only when” they are “subjected to . . . scrutiny by others in the field.” Therefore, the re-analysis did not pass muster under Frye and it could not be deemed “generally accepted.”

After losing in both the district court and the court of appeals, the plaintiffs sought a writ of certiorari from the Supreme Court. The Court granted the writ and reversed. Writing for the majority, Justice Blackmun held that the enactment of the Federal Rules of Evidence in 1975 had undercut Frye. He also concluded that the Ninth Circuit had erred in turning to the common law rather than searching for a controlling standard in the text of the Federal Rules of Evidence.

One of the key provisions of the Federal Rules is Rule 402. That rule states that all logically relevant evidence is admissible “except as otherwise provided by the Constitution of the United States, by Act of Congress, by these rules, or by other rules prescribed by the Supreme Court pursuant to statutory authority.” The Rule makes no mention of case or decisional law. The Rule implies that federal courts may no longer invoke uncodified exclusionary rules of evidence to bar the introduction of logically relevant evidence. Justice Blackmun approvingly quoted a passage from an article written by the late Professor Edward Cleary, the Reporter for the Federal Rules: “In principle, under the Federal Rules no common law of evidence remains.” The majority could not find language in any of the Federal Rules susceptible to the interpretation that the drafters had codified the “general acceptance” test. Frye was dead, seemingly clearing the way for courts to employ even novel scientific techniques as the method of choice for resolving factual disputes.

The Daubert majority acknowledged, however, the mounting evidence that much scientific testimony is inaccurate. Justice Blackmun emphasized that overruling Frye did not mean that federal courts will admit purportedly scientific testimony willy nilly. Quite to the con-

35. Id. at 1130.
36. Id. at 1131.
37. Id.
40. Id. at 2793-95.
41. Id. at 2794.
42. FED. R. EVID. 402.
43. Daubert, 113 S. Ct. at 2794 (citing Edward Cleary, Preliminary Notes on Reading the Rules of Evidence, 57 Neb. L. Rev. 908 (1978)).
44. Daubert, 113 S. Ct. at 2794.
45. Id. at 2794-95.
trary, he underscored that under the Federal Rules, trial judges have a vital gatekeeping function to perform. However, unlike the trial judge in Daubert, the majority did not rely on Federal Rule of Evidence 703 to define that function. Instead, the majority deduced restrictions on the admission of scientific evidence from Rule 702. That Rule reads:

RULE 702. 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.

Justice Blackmun focused on the expression, "scientific ... knowledge." He explained that science is a process rather than a static body of propositions. He added that, "in order to qualify as 'scientific knowledge' [within the intendment of Rule 702], an inference or assertion must be derived by the scientific method." According to the majority, the scientific method is a validation technique, consisting in the formulation of hypotheses, followed by observation or experimentation to test the hypotheses. Whenever a litigant claims that a particular scientific theory or technique is valid, that claim is a hypothesis requiring empirical verification. It is incumbent upon the trial judge to determine whether expert testimony satisfies the validation standard. The majority then instructed trial judges to consider the following factors, inter alia, in making that determination: whether the hypothesis has been tested, whether the technique has been subjected to peer review and publication, whether the technique has an ascertainable error rate, and whether the methodology used to generate the conclusion is generally accepted. In concluding, Justice Blackmun added the caveat that "[t]he focus ... must be solely on [underlying] principles and methodology, not on the conclusions that they generate." Hence, so long as the conclusion rests on sound scientific methodology, the conclusion is admissible under Rule 702 even if the conclusion is novel and controversial.

46. Id.
47. Id.
48. FED. R. EVID. 702.
49. Daubert, 113 S. Ct. at 2795.
50. Id.
51. Id.; see Ernest E. Snyder, History of the Physical Sciences ch. 4 (1969) (discussing traditional methods of validating scientific hypotheses).
52. Daubert, 113 S. Ct. at 2796-97.
53. Id. at 2797.
Although the *Daubert* decision is just over a year old, the decision has already generated a massive body of commentary.\(^{54}\) The principal theme of the commentary has been the difference between the *Frye* "general acceptance" test and the scientific validation standard announced in *Daubert*. However, the commentary has largely overlooked a more fundamental issue: To which parts of the scientist's reasoning process does the *Daubert* standard apply?

Examining the *Daubert* case itself, two things seem clear. First, the trial judge should apply the *Daubert* test to determine whether an opinion generated by epidemiological re-analysis can ever qualify as "scientific knowledge" under Rule 702. As previously stated, in *Daubert*, the plaintiffs' epidemiological experts conducted a re-analysis of the published studies.\(^{55}\) The experts assumed that epidemiological re-analysis of pooled data is a valid technique, applied that technique to a certain quantum of previously reported research, and thereby discovered a statistically significant correlation.\(^{56}\) It is clear that in order to justify the admission of their evidence, the plaintiffs must prove that epidemiological re-analysis is a valid scientific technique under Rule 702.\(^{57}\) Justice Blackmun's caveat cautions trial judges to focus on underlying "principles and methodology" in applying the new *Daubert* standard.\(^{58}\) Whatever else the reference to "methodology" encompasses, it must mean that the plaintiffs are obliged to demonstrate the general validity of unpublished epidemiological re-analyses.

Conversely, the *Daubert* standard does not apply to the later stages in the expert's chain of reasoning, namely the case-specific assumptions that Joyce Daubert had ingested Bendectin and that her son was born with limb deformities. That type of information certainly constitutes "facts or data in the particular case" under Rule 703.

The unsettled question is which other parts of the expert's reasoning process are governed by the *Daubert* validation standard. In particular, does the standard extend to such questions as whether the studies pooled were sufficiently comparable to permit a meta-analysis, whether the size of the underlying database was large enough; and whether the experts correctly applied statistical significance techniques to evaluate the research data? Should the trial judge address


\(^{55}\) See supra text accompanying notes 16-17.

\(^{56}\) Id.

\(^{57}\) *Daubert*, 113 S. Ct. at 2795; see supra text accompanying note 47.

\(^{58}\) See supra text accompanying note 53.
those questions as part of the determination whether the plaintiff's proffered testimony qualifies as "scientific knowledge" under Rule 702, or are those questions part of the decision whether the expert has "reasonably relied" on proper "facts or data" under Rule 703? In the final analysis, the answer turns on the proper interpretation of "facts or data." Are "[t]he facts or data in the particular case" limited to case-specific information such as Mrs. Daubert's use of Bendectin, or more broadly, do they include the underlying research data which the plaintiffs' epidemiologists re-analyzed? As Part I of this Article demonstrates, the Rule 703 standard differs radically from Daubert's Rule 702 test. For that reason, classifying questions of the use or quality of data as falling under Rule 703 rather than 702 can easily determine the outcome of a case.

The thesis of this Article is that Rule 702 controls these questions; they are scientific questions that should be subjected to the validation standard decreed in Daubert. Part I of this Article describes the current, sharp split of authority over the treatment of research data supporting scientific opinions. Part II explains the importance of the split of authority and contrasts the Daubert test with the standards applied in various jurisdictions under Rule 703. The third and final part of the Article argues that "facts or data" in Rule 703 should be construed narrowly and that questions related to the quality and quantity of scientific data must be assigned to Rule 702.

In Daubert, the district court judge premised his decision largely on Rule 703.59 In their rebuttal brief to the Supreme Court, the plaintiffs pleaded with the Court to derive an admissibility standard from Rule 703 rather than Rule 702.60 The plaintiffs pointed out that in the past, most lower courts had looked to Rule 703.61 In the face of the district court opinion and the plaintiffs' entreaty, the Court chose Rule 702, a "less travelled road" to admissibility standards. This Article argues that the Court's choice was sound and that such a choice should make a difference in the interpretation of Rule 703.

61. Id.
I. THE SPLIT OF AUTHORITY OVER THE CLASSIFICATION OF QUESTIONS RELATING TO THE QUALITY AND QUANTITY OF RESEARCH DATA SUPPORTING A SCIENTIFIC OPINION

Many courts have read Rule 703 expansively to apply not only to case-specific data such as whether Joyce Daubert ingested Bendectin (rather than another drug), but also to research data such as the factual information about patients collected in the published epidemiological studies of Bendectin. For example, in another Bendectin case, *Richardson v. Richardson-Merrell Inc.*, the D.C. Circuit evaluated the plaintiffs’ animal, in vitro, and epidemiological studies under the aegis of Rule 703. Numerous courts have treated Rule 703 as supplying the analytic frame of reference for assessing the literature, scientific research, statistical analyses, laboratory tests, and other studies supporting the scientist’s opinion.

However, a few courts have limited the scope of Rule 703 to case-specific information. In a 1991 Alaska case involving a state evidence code patterned on the Federal Rules, the opponent challenged the general acceptance and validity of the scientific theory underpinning an expert opinion. The opponent pressed the challenge under Rule 703. In rejecting that argument, the court rejoined that although the challenge had been couched “in terms of Evidence Rule 703 . . . ,

64. *Richardson*, 857 F.2d at 829.
65. See Bauman v. Centex Corp., 611 F.2d 1115, 1120 n.6 (5th Cir. 1980); State v. Valley, 571 A.2d 579, 582 n.3 (Vt. 1989) (stating that the state equivalent to Fed. R. Evid. 703 would supply the foundational requirements for assessing expert testimony based on literature).
66. See Capps v. Manhart, 458 N.W.2d 742, 746 (Neb. 1990) (assessing research used as the basis of an expert opinion under the state equivalent of Fed. R. Evid. 703).
67. See State v. Rolls, 389 A.2d 824, 829 (Me. 1978) (using the Maine equivalent to Fed. R. Evid. 703); State v. Payne, 402 S.E.2d 582, 594 (N.C. 1991) (holding that statistical analyses were sufficient to form the basis of expert testimony under Rule 703).
68. See *In re Swine Flu Immunization Prods. Liab. Litig. (Bean)*, 533 F. Supp. 567, 578 (D. Colo. 1980) (holding that a physician could properly base his testimony on tests conducted by a laboratory).
71. *Id.* at 1216.
the appropriate challenge . . . falls under Evidence Rule 702." The court indicated that while it could entertain an objection to case-specific data under Rule 703, objections to the scientific data are cognizable under Rule 702.

Several federal judges drew the same distinction in one of the most famous toxic tort cases, Christophersen v. Allied-Signal Corp. In Christophersen, the plaintiffs were the survivors of a deceased former employee of Marathon Manufacturing Company. The decedent's death was caused by small-cell cancer that originated in his colon and metastasized to his liver. During his tenure as a Marathon employee, the decedent had been exposed to nickel and cadmium fumes. The plaintiffs alleged that this exposure caused the decedent's cancer. The defense challenged the admissibility of the scientific evidence which purported to show that exposure to such fumes can cause small-cell cancer of the colon. In his concurring opinion, Chief Judge Clark urged a narrow interpretation of Rule 703. His view was that Rule 703 "does not address [scientific] 'methodology.'" In their dissent in Christophersen, Judges Reavley, King, Johnson, and Weiner echoed that view.

In summary, while there exists respectable authority that Rule 703 applies only to case-specific information, it would be fair to say that this authority represents a distinct minority view. The body of cases applying Rule 703 to evaluate scientific data dwarfs the number of cases holding that the scope of Rule 703 is limited to case-specific information. However, as Part II explains, prior to the Daubert decision, it was relatively unimportant to resolve this split of authority.

72. Id.
73. Id.
75. Christophersen, 939 F.2d at 1108.
76. Id.
77. Id. at 1109.
78. Id. at 1117-19 (Clark, C.J., concurring).
79. Id. at 1118.
80. Id. at 1129-32 (Reavley, J., dissenting); see also Claar v. Burlington N. R.R. Co., 29 F.3d 499 (9th Cir. 1994) (rejecting the trial judge's reliance on Rule 703 to scrutinize the reasoning and methodology employed by the plaintiffs' experts).
II. THE SUDDEN IMPORTANCE OF RESOLVING THE SPLIT OF AUTHORITY

Until the Supreme Court handed down its decision in *Daubert*, the dispute over the scope of Rule 703 could perhaps be dismissed as "much ado about nothing." There was no felt need to define the scope of Rule 703 because the standards under 703 were roughly congruent with the test for the permissibility of testimony based upon a scientific theory or technique.81

Prior to the *Daubert* decision, the majority of jurisdictions applied the *Frye* test to determine whether a given theory or technique could serve as the predicate for scientific testimony.82 *Frye* was not only the leading common law test; it was also the prevailing view among federal courts and the states with evidence codes modeled after the *Federal Rules.*83 In *Frye*, the court excluded testimony about the systolic blood pressure test, a forerunner of the polygraph.84 The court wrote:

> 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 the 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.85

As the Ninth Circuit observed in its opinion in *Daubert*, the critical inquiry for the trial judge under *Frye* is whether there is a consensus within the specialty that the theory or technique in question is accurate.86 The trial judge must determine whether the theory or technique "has gained a certain degree of popularity in relevant scientific circles."87 If a consensus exists, the theory or technique may serve as a

---


82. See I PAUL C. GIANNELLI & EDWARD J. IMWINKELRIED, *SCIENTIFIC EVIDENCE* § 1-5 (2d ed. 1993) (indicating that a majority of federal and state courts had adopted the general acceptance test set forth in *Frye*).

83. Id.

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

85. Id.


premise in the expert’s reasoning leading to an admissible, final opinion.

Likewise, most jurisdictions have treated the existence of consensus as wholly or largely determinative under Rule 703.88 The language of that Rule permits an expert to rely on a source or type of information for “facts or data” if “experts in the particular field” “reasonably rely[y]” on that source or type of data.89 The courts have riveted on the words, “reasonably rely.” Some courts actually equated “reasonably” with “customarily.”90 These courts require trial judges to defer to the customary practice of the specialty.91 Under Federal Rule of Evidence 104(a), the judge makes a factual determination as to whether there is a consensus among the experts within the discipline.92 If the trial judge finds that the consensus exists, the judge must permit the expert to rely on the kind of information in question; the judge may not second-guess the reasonableness of the specialty’s practice.93 In other jurisdictions, while the existence of a custom or consensus is not dispositive, proof of a consensus triggers a rebuttable presumption that reliance on that type of information is reasonable.94 In still other jurisdictions, while the courts have not formally announced that the existence of a consensus is decisive, the courts’ opinions concentrate exclusively or largely on the question of whether the experts “commonly,”95 “customarily,”96 “normally,”97 “ordinarily,”98

89. Fed. R. Evid. 703.
90. See In re Japanese Elec. Prods. Antitrust Litig., 723 F.2d 238, 276-77 (3d Cir. 1983), rev’d on other grounds, 475 U.S. 574 (1986) (stating that the test for admissibility under Rule 703 is to inquire as to whether it is “typical” for experts in a particular field to rely on the type of data in question). Then District Court Judge Edward Becker wrote the lower court opinion overturned by the 1983 opinion. Judge Becker has since been elevated to the Court of Appeals for the Third Circuit. On August 31, 1994, he handed down the Third Circuit decision in In re Paoli R.R. Yard PCB Litig., 35 F.3d 717 (3d Cir. 1994), overruling the 1983 opinion.
92. Fed. R. Evid. 104(a) states in pertinent part: “Preliminary questions concerning the . . . admissibility of evidence shall be determined by the court . . . .”
94. See Ryan v. KDI Sylvan Pools, Inc., 579 A.2d 1241, 1248 (N.J. 1990) (holding that a court may overrule the presumption of reliability only under extreme circumstances).
"regularly,"99 or "usually"100 consider information from that kind of source.

Given the congruence of these bodies of law, courts found little or no need to delimit Rule 703. Whether a court characterized scientific research data as "facts or data" under Rule 703 or as part of the evaluation of the scientific theory under Frye, the question of the validity of the evidence was the same. The outcome usually turned on the proponent's ability to prove the existence of a consensus within the pertinent scientific community.

However, the Supreme Court shattered this congruence when it decided Daubert. While the majority opinion mentions general acceptance as a factor that the judge should consider in deciding whether the proffered testimony rests on "scientific knowledge" under Rule 702,101 it depreciates the importance of general acceptance and consensus.102 Under Daubert, a showing of consensus is neither necessary nor sufficient. After listing general acceptance as a factor, Justice Blackmun explicitly states that the new test "does not require" proof of "a particular degree of acceptance."103 In a footnote, he also indicates that proof of widespread acceptance does not suffice to ensure the admission of the testimony.104 He points out that while the Frye test was restricted to novel theories and techniques, the new Rule 702 standard does not "apply specially or exclusively to unconventional evidence."105 In short, even traditionally accepted theories and techniques will have to run the gauntlet of the new validation standard.106

The new scientific validation standard not only superficially differs from the traditional "general acceptance" test; the new test is plainly inappropriate for evaluating some types of information that indisputably fall within the ambit of Rule 703. The Advisory Committee Note to Rule 703 states that the Rule authorizes a physician to base

102. Id. at 2794.
103. Id. at 2797 (quoting United States v. Downing, 753 F.2d 1224, 1238 (3d Cir. 1985)).
104. Daubert, 113 S. Ct. at 2796 n.11.
105. Id.
an opinion in part on a statement by the patient.\textsuperscript{107} Thus, a medical expert in \textit{Daubert} could consider Mrs. Daubert's statement that the product she took was Bendectin rather than a competing anti-nausea drug. It may make sense to inquire whether physicians customarily consider such patient statements in forming diagnoses and prescribing treatment, but Mrs. Daubert's statement cannot be scientifically validated in the manner dictated by the \textit{Daubert} Court. The Note also raises the possibility that bystanders' statements may sometimes serve as a partial basis for an opinion under Rule 703.\textsuperscript{108} The courts sometimes permit accident reconstruction experts to rely on such statements.\textsuperscript{109} Hence, an expert might consider a bystander's statement that she saw the plaintiff give a hand signal to indicate a left turn. A trial judge could conceivably conduct an evidentiary hearing to determine whether it is routine practice for accident reconstruction experts to consider that type of statement, but the nature of the statement is such that its content defies validation in the \textit{Daubert} sense.

The upshot is that the \textit{Daubert} case has forced the issue of the scope of Rule 703. Prior to \textit{Daubert}, the courts could gloss over the question of the classification of scientific data. It was immaterial whether the data fell under Rule 703 or was governed by \textit{Frye}, in either case, the focal point of the inquiry was the existence of a consensus within the scientific circle.\textsuperscript{110} The virtual equality of the standards tended to moot the question. That is no longer the case. It now makes a difference whether Rule 703 or Rule 702 controls. Those Rules prescribe different standards and in a given case, that difference could be outcome determinative. The courts can no longer avoid the task of defining Rule 703's expression, "[t]he facts or data in the particular case." Part III of this Article undertakes that task.

III. The Resolution of the Split of Authority

Part I of this Article pointed out that before \textit{Daubert}, only a handful of courts had drawn a boundary between Rules 702 and 703, restricting Rule 703 to case-specific information. Although this narrow view of Rule 703 has always been the minority view, it is still the sounder construction of Rules 702 and 703. The text of Rule 703, its context, its legislative history, and the judicial gloss in \textit{Daubert} all point to this conclusion.

\begin{footnotesize}
\begin{enumerate}
\item[107.] FED. R. EVID. 703 advisory committee's note.
\item[108.] \textit{See id.}
\item[109.] 2 GIANNELLI \& IMWINKELRIED, \textit{supra} note 82, at \S 27-10(C).
\item[110.] \textit{See supra} text accompanying notes 86-100.
\end{enumerate}
\end{footnotesize}
A. The Text of Rule 703

Rule 703 does not simply refer to "facts or data" in a generic sense. Rather, that language is followed by the qualifying phrase, "in the particular case." This qualifying phrase strengthens the case for the minority view. When a statute incorporates a term with an ordinary usage, the courts presume that the legislature intended that usage.\(^1\) The courts assume that the legislature contemplated the dictionary meaning of the term.\(^1\) The dictionary meaning of "particular" is "relating to a particular person or thing" or "distinctive."\(^3\)

To draw on Professor Kenneth Culp Davis's classic definition of "adjudicative facts," the facts "in the particular case" are those "concerning the immediate parties—who did what, where, when, how, and with what motive or intent."\(^4\) Information about Jason Daubert's injuries and Joyce Daubert's medication fall within that category. However, when an expert witness cites scientific data supporting the validity of a theory or technique used by the expert, it cannot be said that the information is "particular" to the case. Consider, for example, the testimony about the epidemiological re-analysis in Daubert. Although the information about Jason Daubert's limb defects and Mrs. Daubert's ingestion of Bendectin was "particular" to the Daubert lawsuit, the testimony about the re-analysis was not. Over 2000 Bendectin lawsuits were filed.\(^5\) The re-analysis would be equally relevant and admissible in any of the lawsuits as it was in Daubert. Testimony about the re-analysis could be proffered in any case in which plaintiff family members alleged that Bendectin had caused a baby born to that family to suffer congenital limb deformities. The testimony is in no way "distinctive" or peculiar to the Daubert lawsuit. The


\(^3\) WEBSTER'S SEVENTH NEW COLLEGIATE DICTIONARY 614 (1972).

\(^4\) 2 KENNETH F. DAVIS, ADMINISTRATIVE LAW TREATISE § 15.03 (1958), quoted in FED. R. EVID. 201 (a) advisory committee's note.

testimony tends to validate a general scientific theory of wide applicability.

B. The Context of Rule 703—Rules 702 and 705

American courts have long recognized the need to construe statutes in context. The Supreme Court itself has emphasized the importance of contextual statutory construction. Noscitur a sociis is a hoary maxim of statutory interpretation. A single term can draw meaning from accompanying words; similarly, one part of a statutory framework can shed light on the interpretation of another part of the same statutory scheme. Consequently, Rule 703 must be read in light of Rules 702 and 705. All three statutes are not only parts of the Federal Rules of Evidence but are also, more significantly, all components of Article VII governing the admission of expert testimony. They must be harmonized to ensure the coherence of Article VII.

Unlike Rule 703, Rule 702 has no language limiting its mission to regulate information “in the particular case.” Like noscitur a sociis, expressio unius is a well-accepted canon of statutory construction. If the legislature includes a qualification in one statute but omits the qualification in another, related statute, the courts assume that the omission was intentional; the courts infer that the legislature in-


117. See King v. St. Vincent’s Hosp., 112 S. Ct. 570, 574 (1991) (stating that “the meaning of statutory language, plain or not, depends on context”).

118. See Smith v. City of Chester, 842 F. Supp. 147, 151 (E.D. Pa. 1994) (explaining noscitur a sociis as “the meaning of a certain word is derived from the words accompanying it”).

119. Id.

120. See Inte BDT Farms, Inc., 21 F.3d 1019 (10th Cir. 1994); Lambert Steel v. Heller Fin., 20 Cal. Rptr. 2d 453, 457 (Cal. Ct. App. 1993) (reasoning that in light of other statutes, the phrase “residential units or other structures” refers to non-residential buildings); People v. Jimenez, 10 Cal. Rptr. 2d 281, 283-84 (Cal. Ct. App. 1992).

121. See William N. Eskridge, Jr., Overriding Supreme Court Statutory Interpretation Decisions, 101 YALE L.J. 331, 373-74 (1991) (stressing the importance and preference of coherence in statutory interpretations).


tended that the qualification would not apply to the latter statute.\textsuperscript{124} The canon is a product of logic and common sense,\textsuperscript{125} and it has special force when the statutory scheme was carefully drafted.\textsuperscript{126} The \textit{Federal Rules of Evidence} were carefully sculpted; they are a product of a judicial and legislative drafting process which began in 1961 and concluded in 1975.\textsuperscript{127}

The drafter’s use of “in the particular case” in Rule 703, but not in 702 makes sense when one considers the function of expert testimony at trial. In most cases, when a litigant calls a scientist to the stand, the litigant wants the scientist to give the jury an expert insight into the significance of the facts in the case.\textsuperscript{128} The litigant calls the scientist as a witness precisely because the scientist can draw inferences beyond the lay jurors’ capability.\textsuperscript{129} The scientist generates these inferences by applying a general explanatory theory to the specific facts of the pending case.\textsuperscript{130} While Rule 703 contains the qualifying phrase, “in the particular case,” there is no comparable language in Rule 702.\textsuperscript{131} The omission of the qualification in Rule 702, coupled with its inclusion in Rule 703, implies that Rule 702 governs all aspects of the general explanatory theory while 703 controls the manner in which the specific facts of the pending case are factored into the expert’s reasoning.

Rule 705 strengthens the implication that the domain of Rule 703 is confined to the case-specific information.\textsuperscript{132} Rule 705 provides:

\textsuperscript{124} Id. at 519-20.
\textsuperscript{125} Id. at 520-26.
\textsuperscript{127} \textit{Ronald L. Carlson et al., Evidence in the Nineties} 23-26 (3d ed. 1991).
\textsuperscript{128}\textit{United States v. Green}, 548 F.2d 1148, 1153 (9th Cir. 1973).
\textsuperscript{129} \textit{See supra} text accompanying notes 28, 48.
\textsuperscript{130} \textit{Imwinkelried, “Bases” of Expert Testimony, supra} note 13, at 17.
RULE 705. DISCLOSURE OF FACTS OR DATA UNDERLYING EXPERT OPINION

The expert may testify in terms of opinion or inference and give reasons therefor without first testifying to the underlying facts or data, unless the court requires otherwise. The expert may in any event be required to disclose the underlying facts or data on cross-examination.133

Rule 705 uses the same language as Rule 703, "the . . . facts or data." When a legislature uses identical language in two statutes, the courts assume that the legislature intended that the language would have the same meaning in both statutes.134 On that assumption, the wording of Rule 705 cuts strongly in favor of the conclusion that Rule 703 applies only to case-specific data.

On its face, the text of Rule 705 distinguishes between "the facts or data" "underlying" an opinion and the "reasons" for the opinion. The first sentence of Rule 705 requires the direct examiner to elicit the opinion and the "reasons" for the opinion while allowing the omission of "the underlying facts or data." Construing "the facts or data" to include the scientific data as well as the case-specific data would reduce Rule 705 to an absurdity. Rule 705 explicitly requires the direct examiner to elicit the "reasons" for the opinion, but construing "the facts or data" expansively renders that requirement meaningless. If "the facts or data" include both the scientific research underlying the expert's theory or technique and the case-specific information, there is virtually no information left to which the term "reasons" can apply. As a practical matter, a broad interpretation of "the facts or data" obliterates the distinction Rule 705 is obviously attempting to make. Rule 705 makes much more sense if "the . . . facts or data" mean only the case-specific information—"who did what, where, when, how, and with what motive or intent;"135 a narrow interpretation of "the facts or data" makes the distinction between that information and the "reasons" for the opinion a meaningful one. As parts of the same statutory scheme, Rules 703 and 705 must be harmonized. Rather than reconciling the two Rules, a broad interpretation of the expression "the facts or data" reduces Rule 705 to an absurdity.

133. Fed. R. Evid. 705.
134. See Barnson v. United States, 816 F.2d 549, 554 (10th Cir.), cert. denied, 484 U.S. 896 (1987); Doctors Hosp., Inc. v. Bowen, 811 F.2d 1448, 1452 (11th Cir. 1987).
135. Fed. R. Evid. 201(a) advisory committee's note; see also text accompanying note 114.
The courts abhor interpretations which lead to absurd consequences.136

C. The Contemporaneous Legislative History of Rule 703—the Advisory Committee Note Accompanying Rule 703

While the majority of the Supreme Court Justices favor a textualist or plain meaning approach to the construction of statutes, including the Federal Rules of Evidence,137 the Court has embraced a moderate version of textualism and routinely considers extrinsic legislative materials.138 In particular, the Court has attached great weight to the Advisory Committee Notes prepared by the drafters of the Federal Rules.139

There is an official Note accompanying Rule 703. Concededly, the interpretation of the Note is not entirely free from doubt.140 How-

---


139. See, e.g., Beech Aircraft Corp. v. Rainey, 488 U.S. 153 (1988) (relying heavily on the Advisory Committee Note to FED. R. EVID. 803(8)); see also Williamson v. United States, 114 S. Ct. 2431, 2442 (1994) (Kennedy, J., concurring) (relying in part on the Advisory Committee Note to FED. R. EVID. 804(b)(3)).

140. The Advisory Committee Note to Federal Rule of Evidence 703 includes the following passage: "The rule also offers a more satisfactory basis for ruling upon the admissibility of public opinion poll evidence. Attention is directed to the validity of the techniques employed rather than to relatively fruitless inquiries whether hearsay is involved." Merrell Dow seized on this passage in its brief to argue that Rule 703 governs the question of "the validity of the [scientific] techniques employed" by the expert witness. Brief for Respondent at 39-34, Daubert v. Merrell Dow Pharmaceuticals, Inc., 113 S. Ct. 2786 (1993) (No. 92-102). However, the passage in question is perfectly consistent with the interpretation of Rule 703 urged in this article. Suppose that in a trademark infringement case, the plaintiff conducts a public opinion poll to demonstrate that the members of the public confuse the plaintiff's mark with a mark recently adopted by the defendant. Or assume that to support a motion for a change of venue, the accused conducts a poll to demonstrate that most local citizens have already formed the opinion that the accused is guilty. Unlike the opinion that Bendectin can cause birth defects, these opinions are "particular" to the pending
ever, in several respects, the Note supports a narrow interpretation of “[t]he facts or data” in Rule 703. To give the reader a sense of the intended scope of Rule 703, in the Advisory Committee Note the drafters provided several examples of proper bases for opinions. The first paragraph of the Note refers to “statements by patients and relatives, reports and opinions from nurses, technicians and other doctors, hospital records, and X-rays.” The paragraph makes no mention of scientific texts or studies. All of these examples are illustrations of case-specific data—a patient’s statement that he experienced pain, a report by a relative that the patient complained about pain, a nurse’s opinion that the patient was in pain, a hospital record quoting the patient’s complaint about pain, or an X-ray showing the possible cause of the pain. The third paragraph of the Note indicates that in some cases, an expert might be able to base an opinion on a statement by a bystander if the statement is “of a type reasonably relied upon by experts in [the] particular field.” A bystander’s statement about a traffic accident would necessarily be information peculiar to the case. By no stretch of the imagination could a bystander’s statement be characterized as part of the scientific data.

In addition to providing illustrations of the intended scope of Rule 703, the Advisory Committee Note explains the purpose of enacting Rule 703. The initial paragraph of the Note makes it abundantly clear that a major purpose of adopting Rule 703 was to create an alternative to using the hypothetical question. Consider two possible hypothetical questions in the Daubert case. On direct examination of one of their epidemiological experts, the plaintiffs’ attorney might ask:

Professor, I want you to assume the following facts. (1) Mrs. Daubert regularly ingested an anti-nausea drug during her cases. The researcher will testify that her poll shows that most consumers confuse the defendant’s mark with this specific plaintiff’s logo or that most potential jurors believe that this specific accused is guilty of the pending charge. The Advisory Committee Note to Rule 703 does not say that Rule 703 governs the question of the validity of the expert’s polling methodology. Rather, the Note says only that attention can be directed to that question because Rule 703 eliminates the hearsay objection to the respondents’ statements to the pollster. Rule 703 has the effect of clearing the way for the courts to focus on the question of the validity of scientific polling methodology used by eliminating the hearsay objection that had previously led several courts to exclude poll evidence. Under Daubert though, Rule 702 should govern the question of what constitutes sound polling methodology.

141. Fed. R. Evid. 703 advisory committee’s note.
142. Id.
143. Id. Merrell Dow Pharmaceuticals made this point in its brief. Brief for Respondent at 18, Daubert (No. 92-102).
first trimester. (2) That drug was Bendectin. (3) Jason Daubert was born as a result of that pregnancy. And (4) at the time of birth, Jason’s limbs were deformed. Based on those facts, do you have an opinion as to the cause of Jason’s limb defects?

That phrasing is clearly proper. All the facts enumerated in the hypothesis are case-specific information, and the form of the question would be unobjectionable. Alternatively, if the witness were a treating doctor with personal knowledge of these facts—he had prescribed the Bendectin for Mrs. Daubert and had delivered Jason—Rule 703 would be satisfied. As the first paragraph of the Note indicates, the expert could rely on hearsay reports from the patient, relatives, and other doctors as the basis for assuming these facts. Under Rule 703, personally known facts, reliable hearsay reports, and hypothetically assumed facts all are permissible bases for expert opinion testimony.

However, vary the wording of the hypothesis and there is a different result. Assume now that the plaintiffs’ attorney phrased the question in this manner:

Professor, I want you to assume the following facts. (1) Mrs. Daubert regularly ingested an anti-nausea drug during her first trimester. (2) That drug was Bendectin. (3) Jason Daubert was born as a result of that pregnancy. (4) At the time of birth, Jason’s limbs were deformed. And (5) epidemiologic studies show that there is a statistically significant relationship between maternal use of Bendectin and birth defects. Based on those facts, do you have an opinion as to the cause of Jason’s limb defects?

Common sense dictates that this phrasing is improper. The expert’s scientific knowledge is what he or she contributes to the factfinding process. This attorney’s hypothesis specifies “[t]he facts or data in the particular case,” and the “scientific knowledge” that the expert should apply to evaluate the significance of the facts. It is wrong-minded for the attorney’s hypothesis to tell the expert what scientific data to assume. Selecting the scientific data is the province of the expert, and this phrasing of the hypothesis reverses the roles of the expert witness and questioning attorney.

Rule 703 merely identifies three methods of presenting the same type of information to the expert. If, in using one method, it would be improper for the questioner to specify the scientific propositions the expert may rely on, it would be improper to do so in using any method. Rule 703 was never intended as the mechanism for supplying and regulating the scientific data underlying the expert’s opinion;
its limited function is regulation of the input of the case-specific information that the expert is asked to evaluate.

D. The Subsequent Gloss on Article VII—The Daubert Decision

We now have the benefit of the Supreme Court's pronouncements on Article VII in the Daubert case. As previously noted, after describing the new validation test, Justice Blackmun commented that "[t]he focus . . . must be solely on principles and methodology." There is agreement that, at the very least, this focus includes the question of the general validity of the "methodology" of unpublished epidemiological re-analysis. The validity of that methodology may be the starting point of the plaintiffs' experts' reasoning, but the scientific reasoning does not end there. The plaintiffs' experts proposed to apply that methodology to the previously reported epidemiological research data on Bendectin. The point of disagreement is whether "[t]he focus" of the Daubert validation standard applies not only to the general validity of epidemiological re-analysis but also to the balance of the expert's scientific reasoning. In order to reach the final conclusion that maternal use of Bendectin can cause limb defects, the experts must rely on intermediate conclusions as to the quality of the research data collected, the adequacy of the quantity of research data, and the strength of the inference of statistical significance. Does the Daubert Rule 702 standard apply to those questions, or are they "data" subsumed under Rule 703?

If Rule 702 governs the validity of the starting point, by parity of reasoning it must also govern the validity of the intermediate reasoning steps. Like the starting point, those steps are necessary, technical components of the witness's chain of scientific reasoning.

As a matter of scientific logic, the truth of the intermediate reasoning steps is just as essential to the validity of the final conclusion that the ingestion of Bendectin during the first trimester can cause limb defects at birth, as the truth of the starting assumption about epidemiological re-analysis. If any of the links in that chain of reasoning is flawed, the final conclusion is invalid.

Furthermore, the nature of the intermediate questions is indistinguishable from the nature of the initial question about the validity of epidemiological re-analysis. None of these questions falls within the

145. Id. at 2797.
146. Id.
147. Imwinkelried, supra note 14, at 496-99.
normal ken of laypersons; these questions differ qualitatively from the concerns about case-specific information that undeniably falls under Rule 703. The answer to each question requires technical expertise. *Daubert* certainly requires the plaintiffs to establish the scientific validity of epidemiological re-analysis.\(^{148}\) However, there are also scientific standards governing the collection of research data,\(^{149}\) the requisite size of the database to support particular inferences,\(^{150}\) and the proper statistical methods for inferring correlation.\(^{151}\) The character of the question of the validity of re-analysis is the same as the character of the intermediate reasoning steps. If *Daubert* supplies the standard for answering the former question, its validation standard ought to be equally applicable to the latter issues.

**Conclusion**

In *Daubert*, the Supreme Court chose the "less travelled" road. Prior to *Daubert*, most lower courts had either applied the common law *Frye* standard to gauge the admissibility of scientific evidence, or they had endeavored to derive admissibility standards from Rule 703. In their reply brief, the plaintiffs urged the Supreme Court to follow the well travelled road.\(^{152}\) However, the *Daubert* Court ultimately decided to derive validation standards from the expression, "scientific knowledge," in Rule 702. That decision should make "all the difference" in terms of statutory construction and evidentiary policy.

As a matter of statutory construction, the *Daubert* Court opted to rest its decision on at least the general validity of epidemiological analysis under Rule 702.\(^{153}\) In turn, that decision hopefully will persuade the lower courts to assign the other relevant decisions—the quality and quantity of the epidemiological research data and the permissibility of the inference of statistical significance—to Rule 702. Once that assignment has been made, Article VII will form a coherent whole. Rule 702 will govern the issues of whether the witness qualifies as a scientific expert and whether all the essential steps in the witness's scientific reasoning process have been validated; Rule 703 will control only the question of whether there is a proper source for the case-specific data to which the witness applies her general theory. Rule 704 will regulate the phrasing of the final opinion. A narrow interpreta-

\(^{148}\) Id. at 500.

\(^{149}\) 1 GIANNELLI & IMWINKELRIED, supra note 82, § 15-4.

\(^{150}\) Id. at § 15-4(B).

\(^{151}\) Id. at § 15-6(A).

\(^{152}\) Brief for Petitioner at 30-33, *Daubert* (No. 92-102).

tion of “facts or data” in Rule 703 will enable the courts to piece together a rational conception of Article VII.

In contrast, an expansive interpretation of that phrase in Rule 703 makes a shambles of the structure of Article VII. If “facts or data” includes scientific data, it will be well nigh impossible to draw an intelligent boundary between Rules 702 and 703. While Rule 702 would control the question of the validity of the expert’s starting point (namely, the reliability of epidemiological re-analysis), all the related questions such as the quality and quantity of the research database would fall under Rule 703. All of these questions lend themselves to the scientific validation standard announced in Daubert. Affirmative answers to all of these questions are equally essential to ensure that an expert’s final conclusion deserves the appellation “scientific knowledge.” Yet some would arbitrarily allocate these questions to Rule 703. Moreover, a broad construction of Rule 703 wreaks havoc with the interpretation of Rule 705. A broad interpretation of “the facts or data” in Rule 705 would drain almost all of the meaning from the term “reasons” in that Rule. The expression must be narrowly construed in Rule 705, and there is no evident reason to construe the expression otherwise in Rule 703.

Assigning these questions to Rule 702 is just as vital to guarantee that expert testimony law rests on sound evidentiary policy. In Daubert, the Court abandoned the traditional “general acceptance” test. 154 Frye was “a crude, unscientific criterion for gauging scientific testimony; it amounts to assessing validity by counting heads. To prove a hypothesis a researcher must do more than poll colleagues or ask for a show of hands at a scientific convention.” 155 The Daubert decision represents an advance precisely because it mandates that trial judges refocus their attention on “direct measures of scientific validity” such as “the extent and quality of the experimental verification of the theory or technique being offered.” 156 Like the validity of epidemiological re-analysis, the questions concerning the research data about Bendectin are “direct” determinants of the scientific merit of the plaintiffs’ contention that Bendectin can cause limb deformities. A narrow interpretation of Rule 703 will prompt trial judges to analyze those questions under Rule 702.

In Daubert, the Court chose the right road by opting to derive validation standards from Rule 702. However, that choice will not

154. Id. at 2793.
156. Id.
have its full beneficial impact—it will not make "all the difference"—unless Rule 703 is limited and all the essential components of the scientist's major premise are tested by Daubert's validation standard. Under a broad interpretation of Rule 703, courts might continue to subject those components of the scientific reasoning process to Frye's popularity test. If consensus and popularity are not the criterion for passing on the general validity of epidemiological re-analysis, they surely should not be the litmus test for these other components. A narrow reading of Rule 703 is a legal and scientific imperative.