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Thomas G. Field Jr.
Professor Emeritus, University of New Hampshire School of Law

Colleen M. Keegan

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Daubert's Significance

Thomas G. Field, Jr. & Colleen M. Keegan*

The U.S. Supreme Court recently decided *Daubert*, possibly the most important case to involve scientific evidence in seventy years.¹ That case has received² and continues to receive³ much attention. However, it is easy to overestimate its importance and difficult to know its implications — particularly for engineers, physicians and scientists.

Background

The earlier case widely used to determine whether expert testimony should be considered at trial, and was so used by lower courts in *Daubert*,⁴ was *Frye*. That case had held:⁵

[W]hile courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs.

In *Daubert*, plaintiffs sought recovery for serious birth defects allegedly suffered because two boys' mothers had used defendant's anti-nausea drug. Defendant moved for summary judgment⁶ based on an expert's affidavit that:⁷

* Mr. Field is Professor of Law and Ms. Keegan is candidate for the J.D., both at Franklin Pierce Law Center.

¹ *Daubert v. Merrell Dow Pharmaceuticals (Daubert)*, 61 U.S.L.W. 4805 (U.S. June 29, 1993).

² *Id.*, at 4810 (Rehnquist, J., dissenting) (twenty-two briefs were filed by others than parties). One was filed by the Carnegie Commission on Science, Technology, and Government, author of a March, 1993 report entitled SCIENCE AND TECHNOLOGY IN JUDICIAL DECISION MAKING: CREATING OPPORTUNITIES AND MEETING CHALLENGES, *id.* at 82, n. 17.

³ See, e.g., Kenneth R. Foster, David E. Bernstein & Peter W. Huber, *Science and the Toxic Tort*, 261 SCIENCE 1509 (1993).

⁴ See, e.g., *Daubert*, 61 U.S.L.W. at 4807.

⁵ *Frye v. U.S. (Frye)*, 293 F. 1013, 1014 (D.C. Cir. 1923) (emphasis added).

⁶ Summary judgment is proper if a trial is not needed to resolve issues of fact.

he had reviewed all the literature... [and] concluded that maternal use of Bendectin... has not been shown to be a risk factor for human birth defects.

Based on *Frye*, evidence to the contrary was ruled inadmissible because it had not been peer reviewed. After the trial court granted defendant's motion, the Court of Appeals affirmed. Ultimately the Supreme Court vacated the judgment and remanded for further proceedings.⁸

The Court's Opinions

Writing for the majority, Justice Blackmun observed:⁹

The merits of the *Frye* test have been much debated, and scholarship on its proper scope and application is legion. Petitioners' primary attack, however, is not on the content but on the continuing authority of the rule. They contend that the *Frye* test was superseded by the adoption of the Federal Rules of Evidence. We agree.

He then quoted Rule 402 of the Federal Rules of Evidence:¹⁰ "All relevant evidence is admissible, except as otherwise provided.... Evidence which is not relevant is not admissible." Mentioning that such rules supersede earlier law except to the extent that the latter may help to understand them, he also quoted Rule 702 as most pertinent.¹¹

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 then stated that the "austere standard" represented by *Frye*, "absent from and incompatible with the Federal Rules of Evidence, should not be applied in federal trials."¹² Yet, he began the next section of his opinion by stating:¹³

⁷ *Daubert*, 61 U.S.L.W. at 4806.

⁸ *Id.* (more detailed procedural history).

⁹ *Id.* at 4807.

¹⁰ *Id.*

¹¹ *Id.*

¹² *Id.* at 4808.

That the *Frye* test was displaced... does not mean, however, that the Rules themselves place no limits on the admissibility of purportedly scientific evidence. Nor is the trial judge disabled from screening such evidence. To the contrary, under the Rules the trial judge must ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable.

In favor of liberal admissibility, Justice Blackmun noted that “scientists do not assert that they know what is immutably ‘true’ — they are committed to searching for new, temporary theories to explain, as best they can, phenomena”¹⁴ and that science “represents a *process* for proposing and refining theoretical explanations about the world that are subject to further testing and refinement.”¹⁵ Thus, judges make a “preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue.”¹⁶ Jurors determine the credibility of what survives.

Finally, to answer *Frye* proponents, Justice Blackmun stated:¹⁷

We conclude by briefly addressing what appear to be two underlying concerns.... Respondent expresses apprehension that abandonment of “general acceptance”... will result in a “free-for-all” in which befuddled juries are confounded by absurd and irrational pseudoscientific assertions. In this regard respondent seems to us to be overly pessimistic about the capabilities of the jury, and of the adversary system generally. Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.

Only with regard to factors judges might use in screening evidence did Justice Rehnquist dissent.¹⁸ He was disturbed by a statement that “the criterion of the scientific status of a theory is its falsifiability, or

¹³ *Id.*

¹⁴ *Id.* (quoting the amicus brief for Nicholas Bloemberger et al.).

¹⁵ *Id.* (quoting the amicus brief for the American Association for the Advancement of Science and the National Academy of Sciences).

¹⁶ *Id.* at 4809.

¹⁷ *Id.*

¹⁸ *Id.* at 4810 (he was joined only by Justice Stevens).

refutability, or testability,"¹⁹ and wrote, e.g., that, while he has great respect for federal judges, "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."²⁰

Assuming the Demise of *Frye*

The limited reach of *Daubert* must be appreciated. Most tort or criminal cases that might use scientific evidence are governed by state law, and the Supreme Court's interpretation of *federal* rules of evidence, in contrast with its cases decided under the U.S. Constitution, binds neither state courts nor legislatures. In short, whether states follow *Daubert* remains to be seen.

Without discussing such matters, one article has assumed the general demise of *Frye* and issued what seems to be a call to arms. With a cautionary, but obscure, reference to antitrust law, it suggests that professional technical societies should generate codes that "address directly or indirectly the problems of eccentric and unreliable testimony."²¹

Assuming that muzzling or ostracizing mavericks and quacks could or would work as intended, valuable resources might nevertheless be directed elsewhere. It seems more productive in the short term for members of such societies to direct their efforts toward developing and testing materials useful for helping judges and juries distinguish science from pseudoscience.²² Indeed, if all technically trained people were, over the longer term, to actively champion deeper and broader science literacy, we would have far less need for concerns dismissed at the end of *Daubert*, and society as a whole would generally be better off.



¹⁹ *Id.* at 4811.

²⁰ *Id.*

²¹ Foster et al., *supra* note 3, at 1614.

²² An unusually solid step in that direction is represented by THOMAS GILOVICH, *HOW WE KNOW WHAT ISN'T SO: THE FALLIBILITY OF REASON IN EVERYDAY LIFE* (1991), reviewed at 3 RISK 179 (1992).