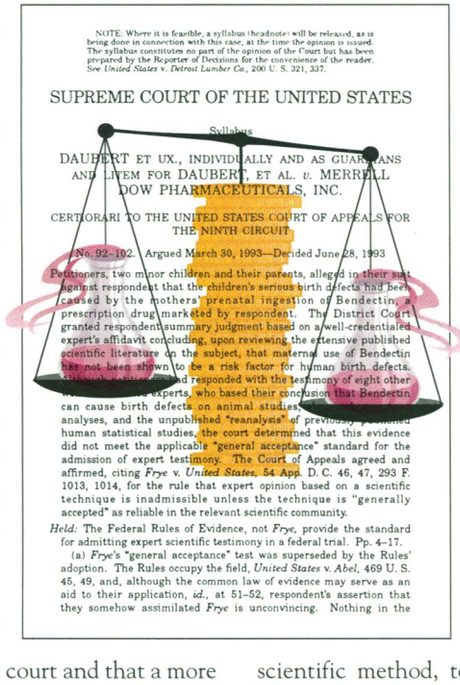
EXPERT TESTIMONY

Supreme Court to Judges: Start Thinking Like Scientists

For 70 years, the Supreme Court has used a standard for admitting scientific testimony into evidence in federal courts based on "general acceptance": A scientific technique had to be generally accepted by the scientific community before evidence derived from it could be admitted. But in a unanimous decision handed down on 28 June, the Court threw out the standard in favor of one that gives judges more latitude—in effect asking them to think like scientists in deciding which experts will be allowed to testify before a jury and what they may discuss.

The case in which the decision came, *Daubert* v. *Merrell Dow Pharmaceuticals*, turned into a wide-ranging debate on what constitutes scientific evidence. It featured dozens of scientific luminaries and professional societies. Those who sided with Merrell Dow argued that tough standards are needed as a barrier against "junk science" in the courtroom. Those who sided with plaintiffs—two children whose lawyers alleged they were harmed by a Dow product—conceded that the current standard excluded much junk science, but they argued that it also suppressed novel approaches and unpopular scientific results in court and that a more flexible standard is needed (*Science*, 29 January, p. 588).



NOTE: Where it is feasible, a syllabus (headnote) will be released, as is being done in connection with this case, at the time the opinion is issued. The syllabus constitutes no part of the opinion of the Court but has been prepared by the Reporter of Decisions for the convenience of the reader. See *United States* v. *Detroit Lumber Co.*, 200 U. S. 321, 337.

SUPREME COURT OF THE UNITED STATES

Syllabus

DAUBERT ET UX., INDIVIDUALLY AND AS GUARDIANS AND LITEM FOR DAUBERT, ET AL. *v.* MERRELL DOW PHARMACEUTICALS, INC.

CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

No. 92–102. Argued March 30, 1993—Decided June 28, 1993

Petitioners, two minor children and their parents, alleged in their suit against respondent that the children's serious birth defects had been caused by the mothers' prenatal ingestion of Bendectin, a prescription drug marketed by respondent. The District Court granted respondent summary judgment based on a well-credentialed expert's affidavit concluding, upon reviewing the extensive published scientific literature on the subject, that maternal use of Bendectin has not been shown to be a risk factor for human birth defects. [illegible] and responded with the testimony of eight other [illegible] experts, who based their conclusion that Bendectin can cause birth defects on animal studies, chemical structure analyses, and the unpublished "reanalysis" of previously published human statistical studies, the court determined that this evidence did not meet the applicable "general acceptance" standard for the admission of expert testimony. The Court of Appeals agreed and affirmed, citing *Frye* v. *United States*, 54 App. D. C. 46, 47, 293 F. 1013, 1014, for the rule that expert opinion based on a scientific technique is inadmissible unless the technique is "generally accepted" as reliable in the relevant scientific community.

Held: The Federal Rules of Evidence, not *Frye*, provide the standard for admitting expert scientific testimony in a federal trial. Pp. 4–17.

(a) *Frye*'s "general acceptance" test was superseded by the Rules' adoption. The Rules occupy the field, *United States* v. *Abel*, 469 U. S. 45, 49, and, although the common law of evidence may serve as an aid to their application, *id.*, at 51–52, respondent's assertion that they somehow assimilated *Frye* is unconvincing. Nothing in the

The decision would seem to favor the plaintiffs, but the issues are complex enough, and the language broad enough, for both sides to say they're pleased with the outcome. "It's totally satisfactory for us," says Charles Fried of Harvard University, who argued the case for Merrell Dow. "I'm confident that if the district court applies this new standard, then the evidence [the plaintiffs wanted to present in the *Daubert* case] won't ever go to a jury." "We're very happy," says Kenneth Chesebro, lead counsel for the plaintiffs. "The decision makes it utterly clear that the focus must be solely on the principles and methodologies that scientists use, not on the conclusions that they reach."

How can both sides claim victory? The answer lies in the complexities of the case. The plaintiffs are the families of two children with serious birth defects alleged to have been caused by their mothers' use of the antinausea drug Bendectin during pregnancy. Two lower courts rejected animal data on the teratogenic properties of the drug presented by expert witnesses for the plaintiffs, ruling that the data were not backed up by credible epidemiological studies of humans. This week the high court granted the plaintiffs the right to another hearing. But at the same time, the court dealt the plaintiffs a blow by accepting a key contention of the defense: that judges must have the right to exclude testimony when that the testimony fails to meet appropriate standards.

In giving judges such latitude, the court undid a standard stemming from a 1923 case, *Frye* v. *United States*, in which a federal judge refused to admit evidence based on the results of a polygraph test because of a lack of consensus on the value of the then-new technique in measuring truth or falsehood. The legal principle that grew out of the ruling held that a scientific method, technique, or approach had to be generally acceptable to the scientific community before evidence derived from it could be presented in a courtroom. One obvious test of scientific acceptance is publication in peer-reviewed journals, and in the *Daubert* case, the Ninth Circuit Court of Appeals based its ruling in large measure on the lack of published data supporting the plaintiffs' experts.

Although the two sides disagreed on whether the evidence from the plaintiffs' experts should be admitted, neither the principals in the case nor the organizations filing amicus briefs concentrated on preserving the *Frye* test. Instead, the participants offered other ways to decide whether expert scientific testimony should be admitted.

In explaining its unanimous vote to reject *Frye*, Justice Harry Blackmun, who wrote the opinion, called it an "austere standard" that "should not be applied" exclusively. But the justices had a somewhat more difficult time agreeing on the next step. In a 7-2 vote, with Chief Justice William Rehnquist and Justice John Paul Stevens dissenting, the court decided that "federal judges possess the capacity" to assess "whether the reasoning or methodology underlying the testimony is scientifically valid...and can be applied to the facts in issue."

The ruling is expected to force the courts to look more closely at the scientific principles that underpin testimony from expert witnesses. The fact that a particular technique is controversial, for example, will no longer be sufficient to disqualify it; what is now paramount, according to the court, is the way the research was carried out. "It puts scientific validity front and center in deciding whether to admit or exclude evidence," says Bert Black, an attorney with the Baltimore firm of Weinberg and Greene and a member of the National Conference of Lawyers and Scientists sponsored by the American Bar Association and the American Association for the Advancement of Science (AAAS), publisher of *Science*. (AAAS filed a brief on behalf of the defendants.)

But giving judges the power to decide which scientific testimony to admit raises a host of new questions, since judges have to be given guidance on what is and isn't scientifically valid. One source of help is a report issued this spring by a task force of the Carnegie Commission on Science, Technology, and Government on "Science and Technology in Judicial Decision Making." Although the commission officially went out of business this week, panel members are still working on a manual to help federal judges negotiate this new terrain.

Steven Gallagher, a senior staff member for the commission, said "we want to help by spelling out some of the questions they should be asking. What the court has said is that it's procedure and process that counts, not content." The new path will not be an easy one for judges to walk. "The threshhold isn't higher or lower than with *Frye*," says Marilyn Berger, a professor of law at Brooklyn Law School and a consultant to the Carnegie panel. "But it's more concrete and specific. A qualified expert with a nice CV isn't going to be enough anymore."

Just what will be enough to ensure admission of scientific evidence, however, isn't perfectly clear. The recent decision is "the latest word, not the last word," says Gallagher. And most experts say it will take considerable time to measure the impact of the court's new standard on the quality of scientific witnesses in the courtroom

–Jeffrey Mervis