Admissibility of Scientific Evidence

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ANNOTATED SCIENTIFIC EVIDENCE REFERENCE MANUAL

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ADMISSIBILITY OF SCIENTIFIC EVIDENCE*

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The problem of defining standards for admitting scientific expert testimony is one with a venerable history and, in all likelihood, an enduring future. Although modern science's roots lie in the eighteenth century, only in the twentieth did it spread and bloom across virtually the entire human landscape. Science and technology will only grow in importance in the twenty-first century. The courtroom, never an isolated corner of the societal landscape, has similarly felt science's impact. Over the years, courts have tried various methods to respond to the increasing influx of science.

Under virtually all evidence codes, trial courts must evaluate the admissibility of proffered expert testimony. The manner in which they accomplish this task, however, varies greatly among jurisdictions. This variability revolves around two basic aspects of the admissibility determination. The first concerns the nature and rigor of the legal test to be applied. Courts differ substantially in the ways they define the judge’s role concerning scientific evidence, with some adopting an active role in screening the evidence and others taking little or no responsibility to check the evidence. The second concerns the criteria used to assess the expertise under whatever legal test is adopted. Some courts use criteria that call for deference to the professional opinion of experts from the respective field, whereas others assume the responsibility themselves to evaluate the scientific basis of the proffered opinion.

Legal standards vary from rigorous to permissive. The more permissive the legal standard, the greater the quantum of expert testimony that will be heard by the trier of fact. A jurisdiction’s decision regarding how high the bar should be set for experts typically depends on its resolution of the classic problem of defining the proper roles for judges and juries in the trial

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process. A high threshold indicates a relatively active judicial role in screening expert opinion for the jury. A low threshold leaves the weighing functions to jurors – a task that might include, of course, according some expert evidence a weight of zero.

The second basic matter involves the manner by which a jurisdiction evaluates the probative value of proffered expertise. Some jurisdictions, for example, are highly deferential to the proffered expert and rely principally on qualifications or credentials. Other jurisdictions also consult the particular field from which the expert comes, requiring it to achieve some consensus regarding the proffered opinion. Finally, some jurisdictions, while considering the expert’s qualifications and the field’s acceptance of the basis for the opinion, also consider directly the theoretical principles, research methods, and accumulated data behind the expert’s opinion.

In this chapter we consider the various approaches courts have taken to evaluating expert testimony. We have structured our analysis around the two principal tests employed by courts today. The first is the general acceptance test originally formulated in Frye v. United States\(^4\) in 1923. The second, and our primary focus, is the rule set forth in Daubert v. Merrell Dow Pharmaceuticals, Inc.,\(^5\) a rule further developed in two subsequent cases,\(^6\) and finally codified in the Federal Rules of Evidence in 2000. Both tests answer in varying ways the basic issue presented by scientific evidence: what threshold showing should be required for the admission of scientific evidence.

§ 1–2.0 THE GENERAL ACCEPTANCE STANDARD OF FRYE

§ 1–2.1 Before Frye

Courts in the nineteenth and early twentieth centuries queried only whether the expert was "qualified" before the expert's testimony could be admitted.\(^1\) If the expert was an expert, then opinion testimony was "entitled" to be admitted as evidence (given, of course, its apparent relevance to the issues to be determined at trial).\(^2\) A more sophisticated version of this pre-Frye

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\(^4\) 293 F. 1013 (D.C. Cir. 1923).


\(^6\) Often referred to as parts of the Daubert trilogy, the two cases that complete the triad are General Electric Co. v. Joiner, 522 U.S. 136 (1997) and Kumho Tire, Ltd. v. Carmichael, 526 U.S. 137 (1999).

\(^1\) For an examination of the modern application of the qualifications requirement, see infra § 1–3.2.

\(^2\) Albert S. Osborn, Reasons and Reasoning in Expert Testimony, 2 LAW & CONTEMP. PROBS., 488, 489 (1935). Conditioning the admission of expert testimony on nothing more than the expert's "qualifications" went on before Frye, after Frye, after the Federal Rules, and perhaps will after Daubert. See generally, Paul C. Giannelli, The Admissibility of Novel Scientific Evidence: Frye v. United States, a Half Century Later, 80 COLUM. L. REV. 1197, 1210 (1980). However, this approach is erroneous under either Frye or Daubert.