

January 1995

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Recommended Citation

Brian W. Burke, *The Admissibility of Novel Scientific Evidence in New York State: Has New York Been Left Out to Frye?*, 15 Pace L. Rev. 539 (1995)

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Comment

The Admissibility of Novel Scientific Evidence in New York State: Has New York Been Left Out to *Frye*?

"No one will deny that the law should in some way effectively use expert knowledge wherever it will aid in settling disputes. The only question is as to how it can do so best."¹

I. Introduction

For the past seventy years, the majority standard by which the admissibility of novel scientific evidence has been adjudged is the *Frye* standard.² Introduced by the landmark decision of *Frye v. United States*,³ the standard has evolved in most courts to require any novel scientific theory or technique to be generally accepted by the scientific community before being admitted into evidence.⁴ The *Frye* standard has been used to determine the admissibility of polygraph examinations,⁵ voiceprint analy-

1. Learned Hand, *Historical and Practical Considerations Regarding Expert Testimony*, 15 HARV. L. REV. 40, 40 (1901).

2. The literature existent on the *Frye* standard and its effects on such admissibility is extensive and pervasive. See, e.g., PAUL C. GIANNELLI & EDWARD J. IMWINKELRIED, SCIENTIFIC EVIDENCE § 1-5, at 9-31 (1986 & Supp. 1991); Paul C. Giannelli, *The Admissibility of Novel Scientific Evidence: Frye v. United States, a Half-Century Later*, 80 COLUM. L. REV. 1197 (1980).

3. 293 F. 1013 (D.C. Cir. 1923).

4. GIANNELLI & IMWINKELRIED, *supra* note 2, § 1-5, at 9-10; Giannelli, *supra* note 2, at 1204-05.

5. See *Frye v. United States*, 293 F. 1013 (1923) (concluding that the results of a polygraph examination were not generally accepted, and thus not admissible). See also *People v. Leone*, 25 N.Y.2d 511, 255 N.E.2d 696, 307 N.Y.S.2d 430 (1969); *People v. Forte*, 167 Misc. 868, 4 N.Y.S.2d 913 (Kings County Ct. 1938); *People v. Kenny*, 167 Misc. 51, 3 N.Y.S.2d 348 (Queens County Ct. 1938). One effect of the

sis,⁶ neutron activation analysis,⁷ hypnosis,⁸ DNA fingerprinting tests,⁹ drug influence tests,¹⁰ electrophoresis,¹¹ rape trauma syndrome,¹² acute grief syndrome,¹³ psychological factors regarding witness perception and memory,¹⁴ and other scientific techniques.¹⁵

Although the *Frye* standard has been traditionally applied by the majority of federal¹⁶ and state¹⁷ courts, the test has been criticized by academic commentators,¹⁸ and courts on both the

holding in *Frye* is that polygraph evidence is now generally rejected by the majority of courts. *United States v. Addison*, 498 F.2d 741, 743 (D.C. Cir. 1974).

6. See *United States v. Addison*, 498 F.2d 741 (D.C. Cir. 1974); *People v. Kelly*, 549 P.2d 1240 (Cal. 1976); *People v. Collins*, 94 Misc. 2d 704, 405 N.Y.S.2d 365 (Sup. Ct. Crim. T. Bronx County 1978); *People v. Rogers*, 86 Misc. 2d 868, 385 N.Y.S.2d 228 (Sup. Ct. Crim. T. Bronx County 1976).

7. *United States v. Stifel*, 433 F.2d 431 (6th Cir. 1970), *cert. denied*, 401 U.S. 994 (1971); *State v. Stout*, 478 S.W.2d 368, 371 (Mo. 1972); *State v. Coolidge*, 260 A.2d 547 (N.H. 1969), *rev'd on other grounds*, 403 U.S. 443 (1971).

8. See *State ex rel. Collins v. Superior Court*, 644 P.2d 1266 (Ariz. 1982); *People v. Shirley*, 723 P.2d 1354 (Cal.), *cert. denied*, 459 U.S. 860 (1982); *State v. Hurd*, 432 A.2d 86 (N.J. 1981); *People v. Hults*, 76 N.Y.2d 190, 556 N.E.2d 1077, 557 N.Y.S.2d 270 (1990); *People v. Hughes*, 59 N.Y.2d 523, 453 N.E.2d 484, 466 N.Y.S.2d 255 (1983).

9. See *People v. Wesley*, 83 N.Y.2d 417, 633 N.E.2d 451, 611 N.Y.S.2d 97 (1994); *People v. Castro*, 144 Misc. 2d 956, 545 N.Y.S.2d 985 (Sup. Ct. Crim. T. Bronx County 1989).

10. *People v. Quinn*, 153 Misc. 2d 139, 580 N.Y.S.2d 818 (Dist. Ct. Suffolk County 1991).

11. Electrophoresis is the testing of blood for genetic markers, which can be used to exclude or include suspects or decedents. See *People v. Seda*, 139 Misc. 2d 834, 529 N.Y.S.2d 931 (Sup. Ct. N.Y. County 1988).

12. See *People v. Taylor*, 75 N.Y.2d 277, 552 N.E.2d 131, 552 N.Y.S.2d 883 (1990); *Gutierrez v. Iulo*, 156 Misc. 2d 79, 591 N.Y.S.2d 711 (Sup. Ct. N.Y. County 1992).

13. *People v. Burton*, 153 Misc. 2d 681, 590 N.Y.S.2d 972 (Sup. Ct. Bronx County 1992).

14. *People v. Mooney*, 76 N.Y.2d 827, 559 N.E.2d 1274, 560 N.Y.S.2d 115 (1990) (per curiam) (Kaye, J., dissenting).

15. See generally GIANNELLI & IMWINKELRIED, *supra* note 2, § 1-5, at 11-13; Giannelli, *supra* note 2, at 1205-06.

16. See *United States v. St. Pierre*, 812 F.2d 417 (8th Cir. 1987); *United States v. Tranowski*, 659 F.2d 750 (7th Cir. 1981); *United States v. Hendershot*, 614 F.2d 648 (9th Cir. 1980); *United States v. Addison*, 498 F.2d 741 (D.C. Cir. 1974); *United States v. Stifel*, 433 F.2d 431 (6th Cir. 1970), *cert. denied*, 401 U.S. 991 (1971).

17. See *infra* note 82 and accompanying text.

18. See *infra* notes 44-60 and accompanying text. See also Giannelli, *supra* note 2, at 1250; JOHN W. STRONG, MCCORMICK ON EVIDENCE § 203, at 363-64 (4th ed. 1992); 3 JACK A. WEINSTEIN & MARGARET A. BERGER, WEINSTEIN'S EVIDENCE ¶

federal and state level have either modified the standard¹⁹ or have rejected it completely.²⁰

New York trial courts adopted the *Frye* test with little discussion,²¹ and the New York Court of Appeals formally embraced the standard fifteen years after *Frye*.²² In 1993, the United States Supreme Court decided *Daubert v. Merrell Dow Pharmaceuticals*,²³ which held that the *Frye* test was superseded by the Federal Rules of Evidence, and that a relevancy standard applied instead.²⁴ The New York Court of Appeals recently declined to follow *Daubert*, and again affirmed the *Frye* test as the applicable standard in New York.²⁵

This Comment will argue that the *Frye* standard as developed in New York case law contains serious flaws, and that the standard outlined in *Daubert*²⁶ offers a more flexible approach based on the relevance and reliability of novel scientific evidence.²⁷ Despite the New York Court of Appeals's refusal to fol-

702[03], at 702-35 (1988). See generally GIANNELLI & IMWINKELRIED, *supra* note 2, § 1-5(E), at 25-28, for an extensive list of critics of the standard.

19. As Giannelli notes, the test has been applied in several different ways. Giannelli, *supra* note 2, at 1228. Some courts have applied *Frye* strictly. See, e.g., *United State v. Addison*, 498 F.2d 741 (D.C. Cir. 1974). Other courts have applied *Frye* by limiting the field of experts to those who have familiarity with the particular technique at issue. See, e.g., *People v. Williams*, 331 P.2d 251 (Cal. App. Dep't Super. Ct. 1958). Still other courts have applied the holding in *Williams* in differing ways. See *Commonwealth v. Lykus*, 327 N.E.2d 671, 678 n.6 (Mass. 1975) (assigning greater weight to those experts who had "direct and empirical experience" in voice spectrographs than those who had a theoretical knowledge of the test). These differing applications of *Frye* have lead Giannelli to conclude that there are "several *Frye* tests, not one." Giannelli, *supra* note 2, at 1228. These differing versions of the test manifest how the ambiguity of the standard leads to inconsistent applications and inconsistent results. See discussion *infra* part IV.A.

20. *State v. Hall*, 297 N.W.2d 80 (Iowa 1980), *cert. denied*, 450 U.S. 1384 (1981); *State v. Williams*, 388 A.2d 500 (Me. 1978); *State v. Dorsey*, 539 P.2d 204 (N.M. 1975).

21. See generally *People v. Forte*, 167 Misc. 868, 4 N.Y.S.2d 913 (Kings County Ct. 1938); *People v. Kenny*, 167 Misc. 51, 3 N.Y.S.2d 348 (Queens County Ct. 1938).

22. *People v. Forte*, 279 N.Y. 204, 18 N.E.2d 31 (1938).

23. 113 S. Ct. 2786 (1993).

24. *Id.* at 2794-95.

25. *People v. Wesley*, 83 N.Y.2d 417, 423, 633 N.E.2d 451, 454, 611 N.Y.S.2d 97, 100 (1994).

26. 113 S.Ct. at 2796.

27. See discussion *infra* part IV.B.

low the *Daubert* approach,²⁸ such a relevancy approach would solve many of these flaws. Part I of this Comment examines *Frye* and the use of the standard in federal courts, along with an outline of the major criticisms of, and competing rationales for, continued use of the test. Part II outlines a history of the use of the *Frye* standard in New York state courts. Part III analyzes the Supreme Court's holding in *Daubert*. Part IV analyzes *Daubert's* impact on New York and conclude that many of the problems confronted and never fully resolved by New York courts may be better resolved by the flexible standard outlined in *Daubert*.

II. Background

A. *Frye v. United States*

James Alphonso Frye was accused of second degree murder.²⁹ During trial Frye offered the testimony of an expert on the results of a deception test³⁰ taken by the defendant.³¹ The court sustained the prosecution's objection and precluded the evidence from being admitted.³² Frye was subsequently convicted.³³

On appeal, the sole question for the Court of Appeals for the District of Columbia was whether the proffered evidence should have been admitted.³⁴ The court acknowledged that determining the admissibility of deception test results was an issue of first impression in the courts.³⁵ The court framed its analysis with the common law rule that "[w]hen [a] question involved does not lie within the range of common experience or

28. See *Wesley*, 83 N.Y.2d at 423 n.2, 633 N.E.2d at 454 n.2, 611 N.Y.S.2d at 100 n.2.

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

30. The deception test was an early form of the lie detector test which measured changes in blood pressure. See Giannelli, *supra* note 2, at 1204 n.41. Deception is supposedly marked by a rise in the blood pressure "in a curve, which corresponds exactly to the struggle going on in the subject's mind . . ." *Frye*, 293 F. at 1013. Appellate courts in New York first used *Frye* as precedent in considering whether similar deception tests should be admitted as evidence. See *People v. Forte*, 279 N.Y. 204, 18 N.E.2d 31 (1938).

31. *Frye*, 293 F. at 1013.

32. *Id.* at 1014.

33. *Id.* at 1013.

34. *Id.*

35. *Id.* at 1014.

common knowledge, but requires special experience or special knowledge, then the opinions of witnesses skilled in that particular science, art, or trade to which the question relates are admissible in evidence."³⁶

The court then outlined the standard to be satisfied before such scientific evidence is to be admitted:

Just when a scientific principle or discovery crosses the line between the experimental and the 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 in which it belongs.³⁷

Concluding that the systolic blood pressure deception test had not yet been generally accepted by the scientific community, the court affirmed the conviction.³⁸

The approach in *Frye* relies on certain assumptions about the relationship of science to law. First, the general acceptance requirement in *Frye* attempts to distinguish between the experimental phase of a new scientific technique, where it would face heightened scientific scrutiny, and the demonstrable phase, where it would have obtained general scientific acceptance.³⁹ Under this rationale, admissibility of novel scientific evidence is not solely dependent on its relevance to a material issue in the case.⁴⁰ As pointed out, *Frye* applies a stricter standard:⁴¹ the test requires that any novel scientific evidence must be generally accepted in the scientific community to be admitted.⁴² This standard reflects the court's fear that unreliable scientific evi-

36. *Id.*

37. *Id.*

38. *Id.* It is interesting to note that, although the court in *Frye* concluded that the test was not generally accepted in the scientific community, the case is devoid of any discussion of scientific literature establishing the lack of such scientific acceptance. See *infra* notes 237-38 and accompanying text.

39. See Giannelli, *supra* note 2, at 1205.

40. See *infra* part II.C for a discussion of the relevancy standard used in some federal courts.

41. 293 F. at 1014.

42. GIANNELLI & IMWINKELRIED, *supra* note 2, § 1-5, at 10; Giannelli, *supra* note 2, at 1205.

dence, if admitted, would improperly affect the outcome of the trial.⁴³

B. *Criticism of the Frye Standard*

Criticism of the *Frye* standard by courts and commentators has grown markedly over the years as new scientific techniques have continually tested the viability of the standard.⁴⁴ The criticisms of the test have focused on four general areas. First, courts and commentators have found *Frye* to unnecessarily restrict the admissibility of reliable evidence.⁴⁵ Instead of admitting evidence strictly on the basis of its reliability for a material issue at trial, the *Frye* standard also requires that the test or theory be generally accepted by the scientific community.⁴⁶ This can lead to evidence which, though relevant, may not be admitted for jury consideration.⁴⁷ One reason for this conservative approach is the test's own assumption that once a theory or technique is generally accepted by the scientific community, it is proven to be reliable in the context of a legal dispute.⁴⁸

43. See *supra* text accompanying note 37.

44. See generally Giannelli, *supra* note 2, at 1208-23 for a discussion of attacks on the *Frye* tests, as well as factors which may have sparked a critical reexamination of the test.

45. United States v. Downing, 753 F.2d 1224, 1236 (3d Cir. 1985) ("Under *Frye* . . . courts may be required to exclude such probative and reliable information from the jury's consideration, thereby unnecessarily impeding the truth-seeking function of litigation."); United States v. Sample, 378 F. Supp. 44, 53 (E.D. Pa. 1974) (discussing that the standard "precludes too much relevant evidence"); GIANNELLI & IMWINKELRIED, *supra* note 2, § 1-5(E), at 27; Paul C. Giannelli, *Frye v. United States*, 99 F.R.D. 189, 192 (1983) (stating that "the heavy burden demanded by the *Frye* test deprives courts of relevant evidence").

46. See United States v. Sample, 378 F. Supp. 44, 53 (E.D. Pa. 1974).

47. See *supra* note 45 and authorities cited therein. Some courts have acknowledged the conservative nature of the test, and consider it a key advantage. See, e.g., United States v. Addison, 498 F.2d 741, 743 (D.C. Cir. 1974). The "primary advantage . . . of the *Frye* test lies in its essentially conservative nature." GIANNELLI & IMWINKELRIED, *supra* note 2, § 1-5(E), at 27 (quoting *People v. Kelly*, 549 P.2d 1240, 1245 (Cal. 1976)). But see *infra* text accompanying notes 244-45.

48. See Giannelli, *supra* note 2, at 1205 (stating that "[a] novel technique must pass through an 'experimental stage in which it is scrutinized by the scientific community. Only after the technique has been tested successfully in this stage and has passed into the 'demonstrable' stage will it receive judicial recognition."); GIANNELLI & IMWINKELRIED, *supra* note 2, § 1-5(E), at 27 (noting that "[a] literal reading of *Frye v. United States* would require that the courts always await the passing of a 'cultural lag' during which period the new method will have had sufficient time to diffuse through scientific discipline and create the requisite body

The second criticism of courts⁴⁹ and commentators⁵⁰ is that the test is ambiguous as to whether "scientific community" means only those who use the technique, or if it includes other related fields. The amorphous definition of "scientific community" contributes to the possibility that a scientific test may be admissible in one court, but rejected in another. If a court concludes that the scientific community includes scientists in related fields, the usual result is that such evidence is deemed inadmissible, either because the number of experts is not enough to constitute "general acceptance"⁵¹ or because the scientists in related fields have expressed doubts as to the test's reliability.⁵² Thus, the construction of a "scientific community" by the court can influence the probability of the evidence being admitted.⁵³

of scientific opinion needed for acceptability") (quoting Constantine J. Maletskos & Stephen J. Spielman, *Introduction of New Scientific Methods in Court*, in *LAW ENFORCEMENT, SCIENCE AND TECHNOLOGY* 957, 958 (S.A. Yetsky ed., 1967)). This assumption thus blocks out new forms of evidence which might be reliable, but which have not had enough time to generate the volume of writings needed to demonstrate "general acceptance." See *supra* text accompanying notes 39-43.

49. See *United States v. Williams*, 583 F.2d 1194, 1198 (2d Cir. 1978) ("A determination of reliability cannot rest solely on a process of 'counting (scientific) noses.' . . . Selection of the 'relevant scientific community,' appears to influence the result."), *cert. denied*, 439 U.S. 1117 (1979).

Courts have recognized this inherent ambiguity. In *People v. Collins*, 94 Misc. 2d 704, 405 N.Y.S.2d 365, (Sup. Ct. Crim. T. Bronx County 1978), the court, in discussing the admissibility of voice spectrography, discussed whether the scientific community under *Frye* included "those scientists who actually employ the spectrograph for voice identification, or whether the field should be widened to include those scientists who use the spectrograph for other purposes in connection with the human voice." *Id.* at 708, 404 N.Y.S.2d at 368. See also *People v. Leone*, 25 N.Y.2d 511, 516, 255 N.E.2d 696, 699, 307 N.Y.S.2d 430, 433 (1969) (observing that "proponents of the machine . . . believe that lying causes measurable physical reactions which the polygraph can record," whereas "opponents of the polygraph are equally strong in their belief that a lie detector is unreliable").

50. Giannelli, *supra* note 2, at 1208 ("Many scientific techniques do not fall within the domain of a single academic discipline or professional field."); John W. Strong, *Questions Affecting the Admissibility of Scientific Evidence*, 1970 U. ILL. L.F. 1, 12.

51. *Leone*, 25 N.Y.2d at 516, 255 N.E.2d at 699, 307 N.Y.S.2d at 433 (noting that "the use of the polygraph touches areas in medicine, psychology, and sociology; yet most examiners have no training in those sciences"); *Collins*, 94 Misc. 2d at 707-10, 405 N.Y.S.2d at 367-69 (holding that reliance only on "personal opinions" does not "bespeak general scientific acceptance").

52. *Collins*, 94 Misc. 2d at 710, 405 N.Y.S.2d at 369.

53. Some commentators have proposed that the inherent ambiguity of "scientific acceptance" allows courts to manipulate the standard, and thus admit or ex-

A third criticism is that it is unclear if "general acceptance" means a simple majority of experts, a higher percentage, or near universal acceptance.⁵⁴ Thus, the conclusion a court draws as to what constitutes "general acceptance" can also affect admissibility, since a strict standard requiring a high percentage is more difficult to satisfy than a standard requiring a simple majority.⁵⁵

A fourth area of criticism is that it is unclear whether the standard should be applied to "soft"⁵⁶ scientific evidence, such as psychiatric or psychological profiles, in the same way as "hard"⁵⁷ scientific theories and techniques.⁵⁸ The technique in *Frye* was a primitive form of the lie detector test, and the court did not suggest that the test be used to determine the admissibility of psychiatric or psychological evidence at trial.⁵⁹ Many commentators have discussed this problem.⁶⁰

clude novel scientific evidence. See GIANNELLI & IMWINKELRIED, *supra* note 2, § 1-5(E), at 25 ("One criticism is that the general acceptance test is applied selectively."); Giannelli, *supra* note 2, at 1219 ("[T]he selective application of the general acceptance standard is one of its most notable features—inconsistencies in application abound.").

54. See *People v. Middleton*, 54 N.Y.2d 42, 429 N.E.2d 100, 444 N.Y.S.2d 581 (1981); *People v. Bethune*, 105 A.D.2d 262, 484 N.Y.S.2d 577 (2d Dep't 1984).

55. In *Middleton*, the Court of Appeals declared that general acceptance is not determined by "whether a particular procedure is unanimously indorsed by the scientific community, but whether it is generally acceptable as reliable." 54 N.Y.2d at 49, 429 N.E.2d at 103, 444 N.Y.S.2d at 584. In its opinion, the court suggested that a simple majority constituted general acceptance of the technique. *Id.* But see *infra* note 222. The ambiguity of "general acceptance" is also the basis for selective application of the standard. See generally discussion *infra* part IV.A.

56. "Soft" is defined as "being or based on interpretative or speculative data" and "utilized or based on soft data." WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 1120 (9th ed. 1985).

57. "Hard" is defined as "being, schooled in, or using the methods of one or more branches of mathematics, the life sciences, or the physical sciences." WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 552 (9th ed. 1985).

58. The problems surrounding the use of the *Frye* standard to determine the admissibility of psychiatric evidence are manifold. The *Frye* test was devised to ensure reliability of the scientific technique. But psychiatric profiles, attained primarily through the use of clinical interviews, are difficult to quantify. If concluding that the standard applies to "soft" scientific evidence, its failure to be quantified may reduce its chances of admissibility. *People v. Burton*, 153 Misc. 2d 681, 688-90, 590 N.Y.S.2d 972, 976-78 (Sup. Ct. Bronx County 1992).

59. *Frye*, 293 F. at 1013.

60. See, e.g., 22 CHARLES WRIGHT & KENNETH GRAHAM, FEDERAL PRACTICE AND PROCEDURE § 5168, at 87 n.10 (1978) ("What is 'scientific evidence' to which the test applies? When a witness testifies that he saw the defendant throw a rock

As criticism of the standard has grown, proponents have articulated several rationales in defense of the *Frye* test. First, the general acceptance standard guarantees a reserve of experts who can testify as to the reliability or validity of such evidence.⁶¹ Second, the *Frye* test in theory promotes a uniformity of decisions, since courts will look to the same scientific materials and legal opinions to determine the admissibility of such evidence.⁶² Third, the standard also eliminates the possibility that the validity or reliability of a novel technique will become the central issue at trial.⁶³ But the principal justification for the test is that it establishes a method to help ensure the reliability of scientific evidence, and to preclude the admissibility of unreliable evidence.⁶⁴ The conflict over the continued viability of the test escalated with the passage of the Federal Rules of Evidence.⁶⁵

C. *Use of Frye in Federal Courts*

After *Frye* was decided, most federal and state courts initially subscribed to the *Frye* standard in determining whether

at the victim, the inferences to be drawn from this testimony involve a number of principles of physics, but few courts would apply the *Frye* test.”); GIANNELLI & IMWINKELRIED, *supra* note 2, § 1-5(E), at 25 (citing WRIGHT & GRAHM, *supra*, at 87 n.10).

61. *United States v. Addison*, 498 F.2d 741, 744 (D.C. Cir. 1974) (“[T]he *Frye* test protects prosecution and defense alike by assuring that a minimal reserve of experts exists who can critically examine the validity of a scientific determination in a particular case.”); *see generally* GIANNELLI & IMWINKELRIED, *supra* note 2, § 1-5(A), at 15.

62. *See* GIANNELLI & IMWINKELRIED, *supra* note 2, § 1-5(A), at 15. A point of criticism growing out of this rationale is that some courts rely primarily on other court decisions admitting the evidence to determine admissibility in its own courtroom. “This use of prior judicial decisions undercuts the primary rationale supporting *Frye*—that those *most qualified* to judge the validity of a technique should have the determinative voice.” Giannelli, *supra* note 2, at 1218-19. *See also* *People v. Rogers*, 86 Misc. 2d 868, 385 N.Y.S.2d 228 (Sup. Ct. Crim. T. Kings County 1976).

63. *See* GIANNELLI & IMWINKELRIED, *supra* note 2, § 1-5(A), at 15.

64. *Id.*; Giannelli, *supra* note 2, at 1207 (The test “establishes a *method* for ensuring the reliability of scientific evidence.”). Proponents argue that scientists are in the most knowledgeable position to judge whether a scientific technique is sufficiently reliable. *See Addison*, 498 F.2d at 743-44 (“The requirement of general acceptance in the scientific community assures that those most qualified to assess the general validity of a scientific method will have the determinative voice.”).

65. *See infra* notes 66-78 and accompanying text.

novel scientific evidence should be admitted.⁶⁶ Upon approval of the Federal Rules of Evidence in 1975,⁶⁷ circuits disagreed as to whether the Rules incorporated the *Frye* standard. The *Frye* standard was not explicitly codified in the rules covering the admissibility of scientific evidence,⁶⁸ nor was reference made to the standard in the comments, Advisory Committee's Notes, or hearings on the Federal Rules.⁶⁹ Some courts, noting that the Rules did not explicitly overrule the standard, continued to apply the test.⁷⁰

Other courts, looking instead to the lack of an explicit adoption of the test in the Rules or the comments, reason that the Federal Rules of Evidence superseded the *Frye* test,⁷¹ and that admissibility should be determined by applying Rules 702,⁷² 703,⁷³ and 403.⁷⁴ The novelty of a particular scientific technique

66. See Giannelli, *supra* note 2, at 1204.

67. Act of Jan. 2, 1975, Pub. L. No. 93-595, 88 Stat. 1926 (codified as amended at 28 U.S.C. app. (1988 & Supp. IV 1992)).

68. See *infra* notes 72-78 and accompanying text for a discussion of Federal Rules of Evidence §§ 702, 703, and 403.

69. See GIANNELLI & IMWINKELRIED, *supra* note 2, § 1-5(F), at 28-29.

70. See *Christophersen v. Allied-Signal Corp.*, 939 F.2d 1106, 1115 (5th Cir. 1991) (en banc) (per curiam), *cert. denied*, 112 S. Ct. 1280 (1992); *United States v. Two Bulls*, 918 F.2d 56, 61 (8th Cir. 1990); *United States v. Smith*, 869 F.2d 348, 351 (7th Cir. 1989); *United States v. Addison*, 498 F.2d 741, 743 (D.C. Cir. 1974); *United States v. Stifel*, 433 F.2d 431, 441 (6th Cir. 1970), *cert. denied*, 401 U.S. 994 (1971); *United States v. Hearst*, 412 F. Supp. 893, 895 (N.D. Cal. 1976), *aff'd on other grounds*, 563 F.2d 1331 (9th Cir. 1977), *cert. denied*, 435 U.S. 1000 (1978).

71. See, e.g., *United States v. Jakobetz*, 955 F.2d 786 (2d Cir.), *cert. denied*, 113 S. Ct. 104 (1992); *United States v. Downing*, 753 F.2d 1224 (3d Cir. 1985); *United States v. Williams*, 583 F.2d 1194 (2d Cir. 1978), *cert. denied*, 439 U.S. 1117 (1979); *United States v. Baller*, 519 F.2d 463 (4th Cir.), *cert. denied*, 423 U.S. 1019 (1975).

72. Rule 702 provides: "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." FED. R. EVID. 702. This rule has liberalized the standard for admissibility, and has arguably left the question of reliability to the judge and the weight of such evidence to the jury. See GIANNELLI AND IMWINKELRIED, *supra* note 2, at 28-31. So long as reliable and relevant, expert testimony may be admitted. *Id.*

73. Rule 703 provides:

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.

goes to the weight of the evidence,⁷⁵ and the Federal Rules of Evidence require a more liberal approach to admissibility.⁷⁶ Scientific evidence, like any other type of relevant⁷⁷ evidence, should thus be admitted if its probative value is not substantially outweighed by unfair prejudice.⁷⁸

Unlike most states, New York has not adopted a code of evidence modeled after the Federal example.⁷⁹ The *Frye* standard was judicially adopted by the Court of Appeals in 1938,⁸⁰ and continues to be used as the standard for admissibility.⁸¹ A detailed discussion of the standard as used in New York will follow.

D. *The Frye Standard in New York*

The application of the *Frye* test in New York, like in most other states,⁸² has exhibited problems with the standard, as

FED. R. EVID. 703.

74. Rule 403 states: "Although relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading of the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence." FED. R. EVID. 403.

75. See *United States v. Williams*, 583 F.2d 1194, 1198 (2d Cir. 1978), cert. denied, 439 U.S. 1117 (1979).

76. *Id.* ("[T]he established considerations applicable to the admissibility of evidence come into play."). See *United States v. Downing*, 753 F.2d 1224, 1237 (3d Cir. 1985) ("The language of Fed. R. Evid. 702, the spirit of the Federal Rules of Evidence in general, and the experience with the *Frye* test suggest the appropriateness of a more flexible approach to the admissibility of novel scientific evidence.").

77. In *Williams*, for example, the court suggested that the main issues regarding admissibility of novel scientific evidence are the test's reliability and its tendency to mislead the jury. *Williams*, 583 F.2d at 1198-1200.

78. See FED. R. EVID. 403; *Williams*, 583 F.2d at 1198 (stating that "the probativeness, materiality, and reliability of the evidence, on the one side, and any tendency to mislead, prejudice, or confuse the jury on the other, must be the focal points of inquiry").

79. See *infra* notes 239-40 and accompanying text.

80. *People v. Forte*, 279 N.Y. 204, 18 N.E.2d 31 (1938), reh'g denied, 279 N.Y. 788, 18 N.E.2d 870 (1939).

81. *People v. Wesley*, 83 N.Y.2d 417, 633 N.E.2d 451, 611 N.Y.S.2d 97 (1994).

82. After the *Frye* decision, the majority of state courts adopted the standard for use in determining the admissibility of novel scientific evidence. *Rivers v. Black*, 68 So. 2d 2 (Ala. 1953); *State ex rel. Collins v. Superior Court*, 644 P.2d 1266 (Ariz. 1982); *People v. Kelly*, 549 P.2d 1240 (Cal. 1976); *People v. Milone*, 356 N.E.2d 1350 (Ill. 1976); *State v. Washington*, 622 P.2d 986 (Kan. 1981); *Reed v. State*, 391 A.2d 364 (Md. 1978); *People v. Barbara*, 255 N.W.2d 171 (Mich. 1977); *State v. Stout*, 478 S.W.2d 368 (Mo. 1972); *State v. Sager*, 600 S.W.2d 541 (Mo. Ct.

well as reasons for its continued use.⁸³ The test has been modified by case law to address some of the criticisms associated with application of the test,⁸⁴ but these modifications may have led to other problems and misapplications with the test.⁸⁵ Also, some flaws in the test still have gone unaddressed, and these flaws have led to a sometimes unclear and inconsistent application of the test.⁸⁶

1. *Acceptance of the Standard*

New York trial courts did not discuss the test's efficacy upon adoption.⁸⁷ The first trial court adopting the standard with little discussion was *Beuschel v. Manowitz*.⁸⁸ The plaintiff in *Beuschel* brought an action for damages against defendant for a "carnal assault" which allegedly caused plaintiff to bear a child.⁸⁹ The defendant moved for an order to have the plaintiff and child submit to a Landsteiner blood-grouping test to help resolve the issue of paternity.⁹⁰ The court required the plaintiff

App. 1980), *cert. denied*, 450 U.S. 910 (1981); *State v. Palmer*, 313 N.W.2d 648 (Neb. 1981); *State v. Coolidge*, 260 A.2d 547 (N.H. 1969), *rev'd on other grounds*, 403 U.S. 443 (1971); *State v. Sinnott*, 132 A.2d 298 (N.J. 1957); *Montoya v. Metropolitan Court*, 651 P.2d 1260 (N.M. 1982); *State v. Smith*, 362 N.E.2d 1239 (Ohio 1976); *Henderson v. State*, 230 P.2d 495 (Okla. Crim. App.), *cert. denied*, 342 U.S. 898 (1951); *Commonwealth v. Topa*, 369 A.2d 1277 (Pa. 1977); *State v. Helmer*, 278 N.W.2d 808 (S.D. 1979).

Other courts have ultimately rejected the standard. *See Whalen v. State*, 434 A.2d 1346 (Del. 1980), *cert. denied*, 455 U.S. 910 (1982); *Harper v. State*, 292 S.E.2d 389 (Ga. 1982); *State v. Hall*, 297 N.W.2d 80 (Iowa 1980), *cert. denied*, 450 U.S. 927 (1981); *State v. Williams*, 388 A.2d 500 (Me. 1978); *State v. Brown*, 687 P.2d 751 (Or. 1984).

Another complication is that the majority of states have adopted codes of evidence modeled after the Federal Rules. *See generally* Giannelli, *supra* note 2, at 1228-29. The decision in *Daubert*, discussed *infra* part III, has convinced some states that have not already done so to now officially abandon the *Frye* standard. *See, e.g.*, *State v. Hofer*, 512 N.W.2d 482, 484 (S.D. 1994); *Wilt v. Buracker*, 443 S.E.2d 196, 203 (W. Va.), *cert. denied*, 114 S. Ct. 2137 (1994).

83. *See supra* part II.B for a discussion on the criticism of, and supporting rationale for, the *Frye* test.

84. *See supra* part II.D.2.

85. *See* discussion *infra* part IV.A.

86. *See* discussion *infra* part IV.A.

87. *See* *People v. Forte*, 167 Misc. 868, 4 N.Y.S.2d 913 (Kings County Ct. 1938).

88. 151 Misc. 899, 271 N.Y.S. 277 (Sup. Ct. Kings County), *rev'd*, 241 A.D. 888, 272 N.Y.S. 165 (1934).

89. *Id.* at 899, 271 N.Y.S. at 278.

90. *Id.* at 899, 900, 271 N.Y.S. at 278.

to submit to the blood test.⁹¹ Referring to *Frye*, the court explained: "Naturally, the courts will not permit the application of scientific tests which have not attained definite and dependable results accepted generally by those qualified to judge."⁹² Reviewing the "pamphlets" submitted to the court, the court concluded that such evidence was generally accepted so as to be admissible.⁹³ After analyzing several cases which have turned on the admissibility of scientific evidence, the court stated its openness to new techniques and willingness to look forward regarding the use of such evidence.⁹⁴ Other early cases demonstrate this same trend.⁹⁵

91. *Id.* at 903, 271 N.Y.S. at 281.

92. *Id.* at 901, 271 N.Y.S. at 280. The court accurately articulated the line drawn between science and law, and the relationship between them:

Law and jurisprudence, which are something more than the dry tomes of the past, can be understood by considering fundamental principles not only of government and economics but also at times by giving consideration in particular cases to sociology, medicine, or other sciences, philosophy and history. New concepts must beat down the crystallized resistance of the legally trained mind that always seeks precedent before the new is accepted into law. Frequently we must look ahead and not backwards.

Id. at 900, 271 N.Y.S. at 278.

93. *Id.* at 902, 271 N.Y.S. at 281. "The same arguments which might be advanced against the test here sought have, from time immemorial, been urged whenever a step has been taken which marked progress; but the law is not static." *Id.* at 901-02, 271 N.Y.S. at 280.

94. *Id.* at 901, 271 N.Y.S. at 279-80.

95. *See, e.g.,* *People v. Forte*, 167 Misc. 868, 4 N.Y.S.2d 913 (Kings County Ct. 1938); *People v. Kenny*, 167 Misc. 51, 3 N.Y.S.2d 348 (Queens County Ct. 1938). However, these two cases demonstrate how adoption of the *Frye* test by trial courts has sometimes led to inconsistent applications. For example, in *Kenny* the results of a lie detector test of defendant were deemed admissible by the court. The test was applied by one Father Summers, who had tested the device on over 6000 individuals, with results approaching 100% accuracy. *Kenny*, 167 Misc. at 51-52, 3 N.Y.S.2d at 349-50. *Frye* was cited as precedent against admitting such evidence. *Id.* at 53, 3 N.Y.S.2d at 350. The court held that, since other forms of scientific evidence, such as handwriting experts and psychiatrists, gave rise to differing conclusions but were still usually admitted, the lie detector results should be admitted for consideration by the jury. *Id.* at 54, 3 N.Y.S.2d at 351. Thus, the basis of the decision relied less on the device's general acceptance by the scientific community, and focused on its relevance to the issue of defendant's guilt. In *Forte*, the court, again in determining the admissibility of the results of a lie detector test, ignored *Kenny* as persuasive authority and instead conducted a survey of publications of the field. *Forte*, 167 Misc. at 869, 4 N.Y.S.2d at 916. The court concluded that, even if the test were administered by Father Summers, the test would still not have attained the general acceptance needed for admissibility. *Id.* at 874, 4 N.Y.S.2d at 919.

The *Frye* standard was formally adopted by the New York Court of Appeals in 1938, but also without illustrative discussion. In *People v. Forte*,⁹⁶ defendant Vincent Forte was convicted of first-degree murder of a store owner.⁹⁷ The conviction was based primarily on eyewitness testimony of the events leading up to the crime and a ballistics analysis of the defendant's gun.⁹⁸ The defense moved to reopen the case and submit the defendant to a lie detector test.⁹⁹ The motion was denied.¹⁰⁰ The defendant was convicted, and he subsequently appealed.¹⁰¹

Upon review, the Court of Appeals affirmed the decision.¹⁰² After noting that the defendant raised an issue of law "which require[d] serious consideration,"¹⁰³ the court devoted only one paragraph to discussing the standard.¹⁰⁴ It concluded: "[t]he record [was] devoid of evidence tending to show a general scientific recognition that the pathometer possesses efficacy."¹⁰⁵ Further, absent reasonable certainty "demonstrated by qualified experts in respect to the lie 'detector,'" the court would not "hold as [a] matter of law that error was committed in refusing to allow defendant to experiment with it."¹⁰⁶ Thus, the court formally adopted the *Frye* standard as the standard to apply in New York, albeit without extensive discussion. The decision may also have shaped how the test was to be applied.¹⁰⁷

The inconsistency of application may be explained in several ways. One argument may be the inherently ambiguous terms of the test, which allowed for differing interpretations. See *infra* text accompanying notes 221-27. Another related argument is that the test was vague enough to fulfill the wishes of the judge. The tenor of the opinions in *Beuschel* and *Kenny* suggests that they were pro-admissibility; the tenor of the opinion in *Forte*, in contrast, suggests a more cautious approach.

96. 279 N.Y. 204, 18 N.E.2d 31 (1938), *reh'g denied*, 279 N.Y. 788, 18 N.E.2d 870 (1939).

97. *Id.* at 205, 18 N.E.2d at 32.

98. *Id.* at 205-06, 18 N.E.2d at 32.

99. *Id.* at 206, 18 N.E.2d at 32.

100. *Id.*

101. *Id.* at 205-06, 18 N.E.2d at 32.

102. *Id.* at 207, 18 N.E.2d at 33.

103. *Id.* at 206, 18 N.E.2d at 32.

104. *Id.*

105. *Id.*

106. *Id.*

107. A reference in the decision may have been aimed to prevent the kind of analysis found in *Kenny* in admitting scientific evidence. See *supra* note 95. In a retort to the court's claim in *Kenny* that handwriting analysis and psychiatric tes-

2. *Discussion and Modification of Frye*

It has only been in the last twenty-five years that New York courts have engaged in a thorough discussion of the *Frye* standard. The sudden outburst of discussion has arguably been sparked by new scientific techniques which have tested the viability of the standard.¹⁰⁸ These applications have also revealed weaknesses or ambiguities in the original standard, which have prompted some modifications.

One of the first *Frye* modifications by the Court of Appeals was an attempt to explain what constitutes general acceptance under the *Frye* test. In *People v. Leone*,¹⁰⁹ the Court of Appeals defined the general acceptance standard as whether the technique "has been sufficiently established to have gained general acceptance" in the applicable scientific community.¹¹⁰

In *Leone*, three persons were murdered at a rest area.¹¹¹ The defendant was questioned several times in connection with the murders, and was then asked to take a polygraph test,¹¹² to which he consented.¹¹³ He was ultimately charged with the murders two years later.¹¹⁴ Before trial, the prosecution ad-

timony which can give rise to differing conclusions are admitted, the Court of Appeals wrote that "[e]vidence relating to handwriting . . . is recognized by experts as possessing such value that reasonable certainty can follow from tests." *Forte*, 279 N.Y. at 206, 18 N.E.2d at 32.

108. The vast majority of *Frye* applications in its early history revolved around the lie detector test. See, e.g., *People v. Leone*, 25 N.Y.2d 511, 255 N.E.2d 696, 307 N.Y.S.2d 430 (1969); *People v. Forte*, 167 Misc. 868, 4 N.Y.S.2d 913 (Kings County Ct. 1938); *People v. Kenny*, 167 Misc. 51, 3 N.Y.S.2d 348 (Queens County Ct. 1938). With an increase in the use of novel and groundbreaking scientific techniques, the standard is now applied to techniques impossible to predict during the time of the *Frye* holding. See generally *supra* notes 6-15 and accompanying text. For example, DNA fingerprinting as evidence at trials has not only prompted a modification of the standard, but at least one trial court modified the standard to make it more conservative than the *Frye* test. See, e.g., *People v. Castro*, 144 Misc. 2d 956; 545 N.Y.S.2d 985 (Sup. Ct. Crim. T. Bronx County 1989).

109. 25 N.Y.2d 511, 255 N.E.2d 696, 307 N.Y.S.2d 430 (1969).

110. *Id.* at 517, 255 N.E.2d at 700, 307 N.Y.S.2d at 434.

111. *Id.* at 512, 255 N.E.2d at 696, 307 N.Y.S.2d at 430.

112. *Id.* at 512, 255 N.E.2d at 697, 307 N.Y.S.2d at 430. The lie detector in *Leone* was significantly more advanced than the one in *Frye* and other early cases. The test here not only measured blood pressure like the early detectors, but also a subject's respiration, heart rate, and the skin's resistance to electric current. *Id.* at 513, 255 N.E.2d at 697, 307 N.Y.S.2d at 431.

113. *Id.* at 512, 255 N.E.2d at 697, 307 N.Y.S.2d at 430.

114. *Id.* at 513, 255 N.E.2d at 697, 307 N.Y.S.2d at 431.

vised the defendant that it planned to introduce the results of the test as evidence.¹¹⁵ Defendant moved to suppress the evidence, and the motion was granted.¹¹⁶ The Appellate Division, Fourth Department, affirmed without opinion.¹¹⁷ The prosecution then appealed to the Court of Appeals.¹¹⁸

The Court of Appeals affirmed the order of the Appellate Division.¹¹⁹ The court surveyed the scientific literature on the test, and found enough disagreement as to its general acceptance to affirm the order.¹²⁰ In its attempt to formulate what constitutes "general acceptance," the court explained:

Although perfection in test results is not a prerequisite to the admissibility of evidence obtainable by the use of scientific instruments, the rule has been to grant judicial recognition only after the instrument has been sufficiently established to have gained general acceptance in the particular field to which it belongs.¹²¹

The court also considered "scientific community" to include those experts in fields related to the technique under consideration.¹²²

At least one subsequent decision has interpreted *Leone* as establishing that a percentage of experts of less than one hundred percent would satisfy the general acceptance standard.¹²³ The court's holding has also been interpreted to suggest that

115. *Id.*

116. *Id.*

117. *People v. Leone*, 31 A.D.2d 1009, 300 N.Y.S.2d 308 (4th Dep't 1969).

118. *Leone*, 25 N.Y.2d at 512, 255 N.E.2d at 696, 307 N.Y.S.2d at 430.

119. *Id.* at 518, 255 N.E.2d at 700, 307 N.Y.S.2d at 435.

120. *Id.* at 514-16, 255 N.E.2d at 698-99, 307 N.Y.S.2d at 432-34. The decision can be interpreted as establishing a conservative approach to the admissibility of novel scientific evidence. The *Leone* court voiced concern over the effect such evidence may have in the minds of a jury. *Id.* at 518, 255 N.E.2d at 700, 307 N.Y.S.2d at 435. "We are all aware of the tremendous weight which such tests would necessarily have in the minds of a jury. Thus, we should be most careful in admitting into evidence the results of such tests unless their reasonable accuracy and general scientific acceptance are clearly recognized." *Id.*

121. *Id.* at 517, 255 N.E.2d at 700, 307 N.Y.S.2d at 434 (citing 3 JOHN H. WIGMORE, WIGMORE ON EVIDENCE § 990 (3d ed. 1940)).

122. *Id.* at 516, 255 N.E.2d at 699, 307 N.Y.S.2d at 433.

123. *See People v. Collins*, 94 Misc. 2d 704, 708, 405 N.Y.S.2d 365, 368 (Sup. Ct. Crim. T. Kings County 1978).

another separate test for the theory or technique's reliability must be satisfied before the evidence may be admitted.¹²⁴

The interpretation of *Leone* requiring satisfaction of both general acceptance and reliability was corrected in *People v. Middleton*.¹²⁵ In *Middleton*, the defendant, a hospital maintenance employee, was arraigned on charges related to the death of his supervisor, who was found in his office with five distinct bite marks on his back.¹²⁶ Before presentation to the grand jury, the prosecution filed a motion requiring the defendant to submit to an oral examination and the making of a cast of his mouth by an expert.¹²⁷ Over defense's objections,¹²⁸ the court

124. *Id.* at 706, 405 N.Y.S.2d at 367. The court in *Collins* interpreted *Leone* as mandating two separate tests which must be satisfied before novel scientific evidence is to be admitted: its general acceptance in the scientific community, and a separate judicial evaluation of the technique or theory's reliability. *Id.* at 706-07, 405 N.Y.S.2d at 367. Specifically, the court stated that "the standard which must be applied to the admissibility of . . . any scientific test, is the twofold test of reliability and general scientific acceptance." *Id.* at 706, 405 N.Y.S.2d at 367. The court in *Collins* relied primarily on the last passage of the *Leone* opinion: "We are all aware of the tremendous weight which such tests would necessarily have in the minds of a jury. Thus, we should be most careful in admitting into evidence the results of such tests unless their reasonable accuracy and general scientific acceptance are clearly recognized." *Id.* (citing *Leone*, 25 N.Y.2d at 518, 255 N.E.2d at 700, 307 N.Y.S.2d at 435 (emphasis added)). But other opinions have rejected the twofold test on the grounds that the general acceptance standard was designed primarily to ensure the technique's reliability by those most able to judge. See, e.g., *People v. Burton*, 153 Misc. 2d 681, 590 N.Y.S.2d 972 (Sup. Ct. Bronx County 1992). In *Burton*, the court concluded that the *Frye* standard "predicates the admissibility of scientific evidence on the assumption that 'general acceptance' in the scientific community is indicative of reliability to allow an opinion of evidential force to be asserted in the courtroom." 153 Misc. 2d at 684, 590 N.Y.S.2d at 974. A close reading of the *Leone* decision suggests that the court wanted both scientific and judicial assurances of reliability, which raises an important question as to whether a court's determination of reliability of a scientific technique or theory defeats the purpose of the *Frye* standard. See *Collins*, 94 Misc. 2d at 706-07, 405 N.Y.S.2d at 367.

The interpretation that determining general acceptance also presumes a technique's reliability is established in *People v. Middleton*. See *infra* notes 125-39 and accompanying text.

125. 54 N.Y.2d 42, 429 N.E.2d 100, 444 N.Y.S.2d 581 (1981).

126. *Id.* at 45, 429 N.E.2d at 101, 444 N.Y.S.2d at 582.

127. *Id.*

128. "Defendant's attorney opposed [the] motion on the grounds that the Supreme Court was without jurisdiction, that the People had failed to establish probable cause to believe defendant had committed the crime, and that such examination and casting would violate defendant's Fifth Amendment rights." *Id.*

granted the prosecution's motion.¹²⁹ Based on the bite mark evidence and other evidence, defendant was indicted by the grand jury¹³⁰ and subsequently convicted of first degree manslaughter.¹³¹ The Appellate Division, First Department, affirmed the trial court's ruling on the admissibility of the evidence.¹³² The defendant then appealed to the Court of Appeals.¹³³

The Court of Appeals held that "[t]he reliability of bite mark evidence as a means of identification is sufficiently established in the scientific community to make such evidence admissible in a criminal case, without separately establishing scientific reliability in each case . . ." ¹³⁴ Rather than develop a separate test for reliability, the Court of Appeals reasoned that such reliability could be demonstrated by the "authenticity of the materials used and propriety of the procedure followed"¹³⁵ at trial, which would then be subject to cross-examination.¹³⁶ The court, following its prior holding in *Leone*, stated that general acceptance of a procedure does not require unanimous endorsement, but rather that it be "generally acceptable as reliable."¹³⁷

The holding in *Middleton* established that only the *Frye* test would be used in determining the admissibility of novel scientific evidence, without a separate determination by the court of its reliability, so long as the proper foundation of evidence was established.¹³⁸ The court also suggested that the jury is the proper body to determine the weight of such evidence.¹³⁹

129. *Id.*

130. *Id.* at 45-46, 429 N.E.2d at 101, 444 N.Y.S.2d at 582.

131. *Id.* at 46, 429 N.E.2d at 102, 444 N.Y.S.2d at 583.

132. *People v. Middleton*, 76 A.D.2d 762, 763, 428 N.Y.S.2d 688, 689 (1st Dep't 1980).

133. *Middleton*, 54 N.Y.2d at 46-47, 429 N.E.2d at 102, 444 N.Y.S.2d at 583.

134. *Id.* at 45, 429 N.E.2d at 101, 444 N.Y.S.2d at 582.

135. *Id.*

136. *Id.*

137. *Id.* at 49, 429 N.E.2d at 103, 444 N.Y.S.2d at 584.

138. *Id.* at 49-51, 429 N.E.2d at 103-04, 444 N.Y.S.2d at 584-85.

139. *Id.* at 51, 429 N.E.2d at 104, 444 N.Y.S.2d at 585. In *Leone*, the Court of Appeals seemed mindful of the "tremendous weight" scientific evidence would have in the minds of a jury. *See supra* note 120. But in *Middleton*, the second test of reliability was dismissed due to the court's belief that the adversarial process would aid the jury in determining the weight of the evidence. *Middleton*, 54 N.Y.2d at 51, 429 N.E.2d at 104, 444 N.Y.S.2d at 585.

3. *Current Crises*

In the past twelve years, the Court of Appeals has heard many cases regarding the *Frye* standard, including four cases since 1990.¹⁴⁰ One central concern of the court has been the admissibility of hypnotically produced recall at trial.

In *People v. Hughes*,¹⁴¹ a victim was raped outside of her home.¹⁴² Unable to remember who raped her, she consented to a number of hypnotic sessions to help her recall the event.¹⁴³ Before her first session, she learned that the police suspected the defendant.¹⁴⁴ In the first session, she identified the defendant as her attacker.¹⁴⁵ Prior to trial, defendant moved to suppress victim's testimony on grounds that she was unable to identify the attacker at the hospital immediately after the rape, and that hypnosis was unduly suggestive.¹⁴⁶ The trial court admitted the hypnotic testimony as evidence,¹⁴⁷ and defendant was found guilty at trial of rape, assault, and burglary.¹⁴⁸ On appeal, the Appellate Division reversed.¹⁴⁹

Upon review, the Court of Appeals affirmed the Appellate Division, holding that hypnotically produced recall was inadmissible as verification of the witness's testimony because it had not been generally accepted as reliable in the scientific community.¹⁵⁰ Deciding that the *Frye* standard was applicable to hypnosis, it held:

[W]hen presented with scientific evidence purporting to gauge the credibility of participants or witnesses to a criminal incident, we

140. *People v. Schreiner*, 77 N.Y.2d 733, 573 N.E.2d 552, 570 N.Y.S.2d 464 (1991) (hypnotically induced recall); *People v. Mooney*, 76 N.Y.2d 827, 559 N.E.2d 1274, 560 N.Y.S.2d 115 (1990) (psychological factors affecting an eyewitness's testimony); *People v. Hulst*, 76 N.Y.2d 190, 556 N.E.2d 1077, 557 N.Y.S.2d 270 (1990) (hypnotically produced recall); *People v. Taylor*, 75 N.Y.2d 277, 552 N.E.2d 131, 552 N.Y.S.2d 883 (1990) (rape trauma syndrome).

141. 59 N.Y.2d 523, 453 N.E.2d 484, 466 N.Y.S.2d 255 (1983).

142. *Id.* at 526-27, 453 N.E.2d at 485, 466 N.Y.S.2d at 256.

143. *Id.* at 529, 453 N.E.2d at 486, 466 N.Y.S.2d at 257.

144. *Id.* at 529-30, 453 N.E.2d at 486, 466 N.Y.S.2d at 257.

145. *Id.* at 530, 453 N.E.2d at 486, 466 N.Y.S.2d at 257.

146. *Id.* at 527, 453 N.E.2d at 485, 466 N.Y.S.2d at 256.

147. *Id.* at 531-32, 453 N.E.2d at 487, 466 N.Y.S.2d at 258.

148. *Id.* at 532, 453 N.E.2d at 488, 466 N.Y.S.2d at 259.

149. *People v. Hughes*, 88 A.D.2d 17, 452 N.Y.S.2d 929 (4th Dep't 1982). The appellate division reversed on the grounds that hypnosis as evidence did not satisfy the *Frye* standard. *Id.* at 20, 21, 452 N.Y.S.2d at 931, 932.

150. *Hughes*, 59 N.Y.2d at 543, 453 N.E.2d at 494, 466 N.Y.S.2d at 265.

have established a very high level of reliability, tantamount to certainty, as a predicate for its admissibility. Although ordinary scientific proof need not meet such a demanding standard, the increased certitude has been found appropriate when the fallibility of the scientific procedure might directly affect the fact finder's assessment of eyewitness credibility.¹⁵¹

Hughes is significant because the court concluded that the *Frye* standard applied to cases of hypnosis, and thus such evidence was inadmissible.¹⁵² This presumption has been questioned,¹⁵³ and foreshadowed future concerns with what kinds of techniques require application of the *Frye* test,¹⁵⁴ including other forms of testimony enhanced through hypnosis.¹⁵⁵ The court also concluded that the *Frye* test applied, even though its application in other jurisdictions led to inconsistent results.¹⁵⁶

151. *Id.* at 542, 453 N.E.2d at 493, 466 N.Y.S.2d at 264 (citations omitted).

152. The court based its conclusion on a general survey of case law. *Id.* at 537, 453 N.E.2d at 490-91, 466 N.Y.S.2d at 261.

153. At the Appellate Division, a concern was raised as to whether the *Frye* standard applied. In a dissenting opinion, Justice Doerr stated: "I have some doubts as to whether [the *Frye*] rule should apply, since the evidence being presented is not an expert testifying as to the results of a scientific test but rather the witness testifying as to her own recollection . . ." 88 A.D.2d at 23, 452 N.Y.S.2d at 933 (Doerr, J., dissenting).

154. See *infra* notes 157-66 and accompanying text. See generally *People v. Mooney*, 76 N.Y.2d 827, 559 N.E.2d 1274, 560 N.Y.S.2d 115 (1990).

155. In *People v. Schreiner*, 77 N.Y.2d 733, 573 N.E.2d 552, 570 N.Y.S.2d 464 (1991), the Court of Appeals held that hypnotically produced recall by the defendant of his murder of the victim was inadmissible, since it had the same problems of suggestibility as in *Hughes*. *Id.* at 738-39, 573 N.E.2d at 555, 570 N.Y.S.2d at 467. Also, in *People v. Hults*, 76 N.Y.2d 190, 556 N.E.2d 1077, 557 N.Y.S.2d 270 (1990), the court held that hypnotically produced recall cannot be used for reasons of impeachment, and is not barred by constitutional considerations of the right to confrontation. *Id.* at 197-99, 556 N.E.2d at 1081-82, 557 N.Y.S.2d at 275-76. The continuing attention by the court to these issues demonstrates the pervasive concerns of applying the *Frye* standard to evidence produced through hypnosis. See *supra* notes 141-52 and accompanying text.

156. *Hughes*, 59 N.Y.2d at 537, 453 N.E.2d at 490, 466 N.Y.S.2d at 261. Upon noting that "[a]t the center of the controversy is the question as to whether the general rule governing the admissibility of scientific evidence applies to hypnotic recall," the court examined how other jurisdictions treated this issue. *Id.* It commented that "[i]n the last few years . . . most courts considering the problem for the first time have applied the *Frye* test, but differ as to its consequences." *Id.* at 538-39, 453 N.E.2d at 491-92, 466 N.Y.S.2d at 262. The court eventually concluded that "[i]n short the law is in a state of flux and there is no rule which will entirely satisfy all the demands of logic, policy and practicality." *Id.* at 540, 453 N.E.2d at 493, 466 N.Y.S.2d at 264.

Another issue recently before the Court of Appeals is whether the *Frye* test applies only to "hard" scientific evidence, or whether it also applies to "soft" scientific evidence.¹⁵⁷ In *People v. Taylor*,¹⁵⁸ a consolidation of two actions,¹⁵⁹ the Court of Appeals addressed the admissibility of rape trauma syndrome. In the first action, expert testimony regarding rape trauma syndrome was admitted to explain the victim's unwillingness to name the defendant as her attacker, and to explain the apparent calmness of the victim immediately after the rape.¹⁶⁰ Upon conviction, the Appellate Division affirmed.¹⁶¹ In the second action, testimony regarding rape trauma syndrome was admitted, apparently with the purpose of showing that since the victim demonstrated symptoms consistent with rape trauma syndrome, it was more likely that she was raped.¹⁶² Upon a partial conviction of the acts charged, the Appellate Division affirmed the trial court's decision.¹⁶³

Upon review, the Court of Appeals held that testimony regarding rape trauma syndrome was admissible in the first action under the *Frye* standard, but only to offer explanation to the jury as to a possible justification for the victim's behavior.¹⁶⁴ In the second action, however, the court held that it should not be admitted merely to suggest that a rape actually occurred since the victim demonstrated certain, identifiable symptoms.¹⁶⁵ Although the court recognized that symptoms of rape trauma

157. This matter of application was foreshadowed in *Hughes* regarding hypnosis, but also applies to other forms of evidence as well. See *supra* notes 141-56 and accompanying text. See also *supra* notes 56-58 and accompanying text for a discussion of "hard" and "soft" scientific evidence.

158. 75 N.Y.2d 277, 552 N.E.2d 131, 552 N.Y.S.2d 883 (1990).

159. The two cases are *People v. Banks*, 145 A.D.2d 944, 536 N.Y.S.2d 316 (4th Dep't 1988) and *People v. Taylor*, 142 A.D.2d 410, 536 N.Y.S.2d 825 (2d Dep't 1988). In *Taylor*, an expert testified on the specifics of rape trauma syndrome. *Taylor*, 75 N.Y.2d at 283, 552 N.E.2d at 132, 552 N.Y.S.2d at 884.

160. *Taylor*, 75 N.Y.2d at 283, 552 N.E.2d at 132, 552 N.Y.S.2d at 884.

161. *People v. Taylor*, 142 A.D.2d 410, 530 N.Y.S.2d 825 (2d Dep't 1988).

162. *Taylor*, 75 N.Y.2d at 284-85, 552 N.E.2d at 133, 552 N.Y.S.2d at 885.

163. *People v. Banks*, 145 A.D.2d 944, 536 N.Y.S.2d 316 (4th Dep't 1988). The defendant was convicted on four statutory counts but was acquitted on all forcible counts. *Taylor*, 75 N.Y.2d at 284-85, 552 N.E.2d at 133, 552 N.Y.S.2d at 885.

164. *Id.* at 293, 552 N.E.2d at 138, 552 N.Y.S.2d at 890.

165. *Id.* at 293, 552 N.E.2d at 138-39, 552 N.Y.S.2d at 890-91.

syndrome do not prove that a rape occurred, the syndrome may help elucidate other material issues.¹⁶⁶

Thus, New York has stumbled across recurrent problems in its use of the *Frye* test. First, courts have had a difficult time determining what constitutes general acceptance in the scientific community.¹⁶⁷ Second, although the Court of Appeals has applied the *Frye* standard to soft scientific evidence, its approach in doing so suggests that the *Frye* standard cannot be easily applied to methods of soft scientific evidence.¹⁶⁸ And third, trial courts have felt compelled to tinker with the standard to ensure that the admitted evidence is reliable, suggesting that some have doubts that the standard by itself accurately measures reliability.¹⁶⁹ The federal courts have wrestled with similar problems.¹⁷⁰ The Supreme Court recently resolved some of these problems with its holding in *Daubert v. Merrell Dow Pharmaceuticals*.¹⁷¹

166. Although the court recognized that "rape trauma syndrome encompasses a broad range of symptoms and varied patterns of recovery," it then pointed out that its recognition by the American Psychiatric Association, as well as the diagnostic criteria for posttraumatic stress syndrome, illustrate that the scientific community has generally accepted the fact that "rape as a stressor can have marked, identifiable effects on a victim's behavior. . . ." *Id.* at 286-87, 552 N.E.2d at 134-35, 552 N.Y.S.2d at 886-87. On this issue, the court concluded:

We are aware that rape trauma syndrome is a therapeutic and not a legal concept. Physicians and rape counselors who treat victims of sexual assault are not charged with the responsibility of ascertaining whether the victim is telling the truth when she says that a rape occurred. That is part of the truth-finding process implicated in a criminal trial. We do not believe, however, that the therapeutic origin of the syndrome renders it unreliable for trial purposes. Thus, although we acknowledge that evidence of rape trauma syndrome does not by itself prove that the complainant was raped, we believe that this should not preclude its admissibility into evidence at trial when relevance to a particular disputed issue has been demonstrated.

Id. at 287, 552 N.E.2d at 135, 552 N.Y.S.2d at 887.

167. *See infra* notes 221-27 and accompanying text.

168. *See infra* notes 234-36 and accompanying text.

169. *See infra* notes 228-33 and accompanying text.

170. *See generally supra* part II.D.2.

171. 113 S. Ct. 2786 (1993).

III. *Daubert v. Merrell Dow Pharmaceuticals*A. *Facts*

The Supreme Court ended the uncertainty among federal courts by holding in *Daubert v. Merrell Dow Pharmaceuticals*¹⁷² that the Federal Rules of Evidence superseded the *Frye* standard.¹⁷³ In *Daubert*, the petitioners were minor children with severe birth defects.¹⁷⁴ An action on their behalf was brought against respondent, alleging that the defects had been caused by their mothers' ingestion of Bendectin, a prescription anti-nausea drug.¹⁷⁵

B. *Procedural History*

After discovery, the respondents moved for summary judgment, and offered the testimony of an expert¹⁷⁶ who concluded that, based on published studies, no link had been established between Bendectin and birth defects.¹⁷⁷ The petitioners responded by offering experts of their own¹⁷⁸ who concluded that a "reanalysis" of previously published studies and "in vitro"¹⁷⁹ and "in vivo"¹⁸⁰ animal studies established a link between birth defects and the use of Bendectin.¹⁸¹

The district court granted the motion for summary judgment,¹⁸² concluding that petitioners' evidence did not meet the standard of general acceptance.¹⁸³ The Court of Appeals for the

172. *Id.*

173. *Id.* at 2793.

174. *Id.* at 2791.

175. *Id.*

176. The expert was Dr. Steven Lamm, a physician and epidemiologist, who had had extensive education and experience regarding the effects of exposure to chemicals. *Id.*

177. *Id.*

178. The Court noted that the experts of petitioners were similarly well-credentialed in determining the risks of chemical exposure. *Id.*

179. "In vitro" tests are those which are conducted in an artificial environment such as test tubes. *STEDMAN'S MEDICAL DICTIONARY* 723 (5th Unabr. Lawyers' ed. 1982).

180. "In vivo" studies are those which are conducted in the living body. *Id.*

181. *Daubert*, 113 S. Ct. at 2791.

182. *Daubert v. Merrell Dow Pharmaceuticals*, 727 F. Supp. 570, 571 (S.D. Cal. 1989).

183. *Id.* at 575. Specifically, since the expert testimony was not based on epidemiological data, such testimony would not be admissible to prove causation. Current literature on Bendectin is based on such epidemiological data. *Id.*

Ninth Circuit affirmed,¹⁸⁴ concluding that petitioners' evidence did not satisfy the *Frye* standard and was thus inadmissible.¹⁸⁵ The Supreme Court then granted certiorari¹⁸⁶ to resolve the conflict among the circuits on the application of the standard.¹⁸⁷

C. *Majority Holding*

In a seven member majority opinion, the Court held that the *Frye* standard was superseded by the Federal Rules of Evidence, but the Court avoided the conclusion that the *Frye* standard was inherently flawed.¹⁸⁸ It further established an analytical approach in determining the admissibility of novel scientific evidence.¹⁸⁹ In the majority opinion, Justice Blackmun reasoned that Federal Rule of Evidence 702 specifically governs expert testimony, and makes no mention of the general acceptance standard.¹⁹⁰ Further, the "liberal thrust" of the Rules would not be served by the conservative *Frye* standard.¹⁹¹ The Court concluded: "Frye made 'general acceptance' the exclusive test for admitting expert scientific testimony. That austere standard, absent from and incompatible with the Federal Rules of Evidence, should not be applied in federal trials."¹⁹²

D. *Reasoning*

The Court thus posits a mode of analysis in determining the admissibility of novel scientific evidence. The first step is to determine, pursuant to Rule 104(a),¹⁹³ whether the expert is to

184. *Daubert v. Merrell Dow Pharmaceuticals*, 951 F.2d 1128 (9th Cir. 1991).

185. *Daubert*, 113 S. Ct. at 2792 (citing *Daubert*, 951 F.2d at 1131).

186. *Daubert v. Merrell Dow Pharmaceuticals*, 113 S. Ct. 320 (1992).

187. *Daubert*, 113 S. Ct. at 2792.

188. *Id.* at 2793. As Justice Blackmun wrote:

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.

Id. (citations omitted).

189. 113 S. Ct. at 2796.

190. *Id.* at 2794.

191. *Id.*

192. *Id.*

193. Rule 104(a) states that "[p]reliminary questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court" FED. R. EVID. 104(a).

testify to scientific knowledge;¹⁹⁴ the second step is to determine whether such testimony “will assist the trier of fact to understand or determine a fact in issue.”¹⁹⁵ This analysis requires “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.”¹⁹⁶

In its analysis, the Court reasoned that Rule 702 of the Federal Rules of Evidence¹⁹⁷ embodied requirements that novel scientific evidence be relevant and reliable before it can be admitted.¹⁹⁸ It interpreted Rule 702’s reference to “scientific knowledge” as establishing a standard of evidentiary reliability.¹⁹⁹ The majority reasoned, “[t]he adjective ‘scientific’ implies a grounding in the methods and procedures of science. Similarly, the word ‘knowledge’ connotes more than subjective belief or unsupported speculation. . . . [I]n order to qualify as ‘scientific knowledge,’ an inference or assertion must be derived by the scientific method.”²⁰⁰

The Court also interpreted the passage in Rule 702 to require that such evidence must “assist the trier of fact to understand the evidence or to determine a fact in issue”²⁰¹ as establishing a standard of relevance.²⁰² “Rule 702’s ‘helpfulness’ standard requires a valid scientific connection to the pertinent inquiry as a precondition to admissibility.”²⁰³

The Court went on to suggest several factors for the trial court to consider in making these determinations:²⁰⁴ whether the theory or technique can be or has been tested;²⁰⁵ whether the theory or technique has been subjected to peer review and publication;²⁰⁶ the technique’s known or potential rate of er-

194. 113 S. Ct. at 2796.

195. *Id.*

196. *Id.*

197. *See supra* note 72.

198. *Daubert*, 113 S. Ct. at 2795.

199. *Id.*

200. *Id.*

201. *Id.* at 2795 (quoting FED. R. EVID. 702).

202. *Id.* at 2796-97.

203. *Id.* at 2796.

204. *Id.* at 2796-97.

205. *Id.* at 2796.

206. *Id.* at 2797.

ror;²⁰⁷ and whether the technique has been generally accepted in the relevant scientific community.²⁰⁸

In response to the concern that abandoning the *Frye* test will cause a “free-for-all” of unproven scientific theories, the Court stressed that the adversary system and currently existing procedural devices can adequately safeguard against this danger.²⁰⁹ Also, addressing the fear that the trial judge’s gatekeeping role in determining the admissibility of such evidence would frustrate the search for truth, the Court emphasized the differing constraints on law and science.²¹⁰

E. Chief Justice Rehnquist—Concurring in Part and Dissenting in Part

In his concurrence, Chief Justice Rehnquist²¹¹ agreed that the *Frye* test was superseded by the Federal Rules of Evidence,²¹² but stressed that the Court needed only to respond to the issue of whether the standard was superseded, and should have avoided discussion as to other issues.²¹³ One of Chief Justice Rehnquist’s concerns was that the application of Rule 702 suggested by the majority places the federal trial court judge in a difficult position.²¹⁴ Criticizing the criteria offered by the ma-

207. *Id.*

208. *Id.*

209. *Id.* at 2798.

210. *Id.* at 2798-99. Justice Blackmun offered an eloquent articulation of the differing demands of science and law:

It is true that open debate is an essential part of both legal and scientific analyses. Yet there are important differences between the quest for truth in the courtroom and the quest for truth in the laboratory. Scientific conclusions are subject to perpetual revision. Law, on the other hand, must resolve disputes finally and quickly. The scientific project is advanced by broad and wide-ranging consideration of a multitude of hypotheses, for those that are incorrect will eventually be shown to be so, and that in itself is an advance. Conjectures that are probably wrong are of little use, however, in the project of reaching a quick, final, and binding legal judgment—often of great consequence—about a particular set of events in the past.

Id. at 2798.

211. Chief Justice Rehnquist was joined in his concurrence by Justice Stevens. *Id.* at 2799.

212. *Id.*

213. *Id.* Chief Justice Rehnquist proffered that another issue before the Court was that “if *Frye* remains valid, whether it requires expert scientific testimony to have been subjected to a peer-review process in order to be admissible.” *Id.*

214. *Id.* at 2800.

jority in assessing the reliability and relevance of scientific evidence, Rehnquist expressed this concern: "I do not doubt that Rule 702 confides to the judge some gatekeeping responsibility in deciding questions of the admissibility of proffered expert testimony. But I do not think it imposes on them either the obligation or the authority to become amateur scientists in order to perform that role."²¹⁵ Thus, Chief Justice Rehnquist concluded that the Court's reasoning on how to use Rule 702 raises more questions than it answers.²¹⁶

IV. Analysis

New York State decisions demonstrate that the *Frye* standard has proven untenable in determining the admissibility of novel scientific evidence.²¹⁷ The inflexible requirement in *Frye* that a technique be generally accepted in the scientific community can result in the exclusion of relevant evidence.²¹⁸ The ambiguity of "general acceptance" and "scientific community" results in the inconsistent and possibly selective application of the standard.²¹⁹ The holding in *Daubert*, which furthers the judicial trend away from the *Frye* standard,²²⁰ frees trial courts from these flaws, and allows judges more freedom in determining whether such evidence is reliable and relevant to a material issue.

A. Problems with *Frye*

The first problem of the *Frye* standard in New York courts is that the requirement of general acceptance has led to confu-

215. *Id.*

216. *Id.* Both Chief Justice Rehnquist and Justice Blackmun alluded to the unique characteristics of the amicus curiae briefs submitted to the Court in aid of its decision. *Id.* at 2798, 2799. Chief Justice Rehnquist described it best:

Twenty-two *amicus* briefs have been filed in the case, and indeed the Court's opinion contains no less than 37 citations to *amicus* briefs and other secondary sources. The various briefs filed in this case are markedly different from typical briefs, . . . they deal with definitions of scientific knowledge, scientific method, scientific validity, and peer review—in short, matters far afield from the expertise of judges.

Id. at 2799.

217. See generally *supra* part II.D.

218. See *supra* notes 45-47 and accompanying text.

219. See *supra* notes 49-55 and accompanying text.

220. See generally *supra* notes 23-24 and accompanying text.

sion and inconsistent application. The holdings in *People v. Leone* and *People v. Middleton* clarified this requirement by holding that a party does not need to establish universal support for a technique in order to satisfy the general acceptance requirement.²²¹ But the New York Court of Appeals has avoided placing a specific percentage of experts as a threshold requirement.²²² The problem is further amplified by the ambiguity in the term "scientific community." The flaw can lead to inconsistent application, and more focus is placed on what percentage constitutes general acceptance, and less focus is placed on what should be the primary issue: is the evidence relevant to a material issue?²²³

Second, the ambiguity surrounding "scientific community" has led to inconsistent application of the standard.²²⁴ New York courts have struggled with how inclusive the community should be.²²⁵ The ambiguity also allows judges to be selective in apply-

221. See discussion *supra* part II.D.2.

222. In *Leone* and *Middleton*, the Court of Appeals did not specify whether the *Frye* test is satisfied with a showing of 90%, 75%, or even 51% support of the new scientific technique. See *supra* notes 121-24, 135-38 and accompanying text. But inconsistencies still abound. In *People v. Bethune*, 105 A.D.2d 262, 484 N.Y.S.2d 577 (2d Dep't 1984), the court concluded that bite mark evidence was admissible because the techniques used by the expert in reaching his opinion "are viewed by a majority of experts in the field as accurate and reliable." *Id.* at 268, 484 N.Y.S.2d at 582. It further noted that "defendant's own expert made no claim . . . that a majority of forensic odontologists view identification of aged bite mark scars as inaccurate or unreliable." *Id.* at 268-69, 484 N.Y.S.2d at 582. The reasoning of the court suggests that a simple majority rules. But at least one court has suggested that it may reject novel scientific evidence, even if it is generally accepted by a majority of experts. In *People v. Mohit*, 153 Misc. 2d 22, 579 N.Y.S.2d 990 (Westchester County Ct. 1992), the court concluded that "if a well-respected minority within a given scientific community rejects as unreliable a particular procedure, technique, or theory, the court possesses the authority to agree with that minority view and exclude the evidence offered." *Id.* at 24, 579 N.Y.S.2d at 992.

223. See Giannelli, *supra* note 2, at 1226, for a discussion of how the "general acceptance" standard may obscure the crucial issue of whether such a technique is relevant to a material issue at trial.

224. See *supra* notes 49-53 and accompanying text.

225. Several cases have wrestled with this issue, knowing that the size of the field will affect whether evidence is admissible. In *People v. Seda*, 139 Misc. 2d 834, 529 N.Y.S.2d 931 (Sup. Ct. N.Y. County 1988), the court articulated the rationale for broadening the scope of the scientific community:

Problems with the *Frye* standard also arise when the specialized community which may appropriately be called upon to judge whether a procedure has gained general acceptance is too narrow. . . .

....

ing the standard. The trial judge may admit or exclude evidence based on how the scientific community is constituted. If the judge includes only those who administer the test or technique, the evidence is usually admitted. If the judge includes experts in related or tangential fields, the general acceptance standard is less likely to be satisfied.²²⁶ The flaw in this approach is that the continuing ambiguity of the term leads to inconsistent application and inconsistent results, not that one way of constituting the scientific community is more advantageous than the other.²²⁷

Third, New York trial courts have demonstrated a lack of confidence with the *Frye* standard in determining whether novel scientific evidence should be admitted.²²⁸ For example, some courts require that there be a judicial determination of a test's reliability, as well as a determination by the scientific community.²²⁹ Although this more stringent test has been over-

The scientific tradition expects independent verification of new procedures. When other scientists analyze and repeat the tests, they counteract the dangers of biased reporting. It is scientists not responsible for the original research that confirm its validity.

Id. at 837, 846, 529 N.Y.S.2d at 933, 939 (quoting *People v. Young*, 391 N.W.2d 270, 283 (Mich. 1986)). An argument for shrinking the scope of the scientific community was made by the court in *People v. Quinn*, 153 Misc. 2d 139, 580 N.Y.S.2d 818 (Dist. Ct. Suffolk County 1991). The court dismissed a concern that those testifying as to the reliability of a drug test have a personal stake. "But in considering defendant's argument, the court is left to ponder just who . . . might be capable of giving relevant testimony . . ." *Id.* at 154, 580 N.Y.S.2d at 828. *But see People v. Wesley*, 83 N.Y.2d 417, 440-41, 633 N.E.2d 451, 464-65, 611 N.Y.S.2d 97, 110-11 (1994) (Kaye, C.J., concurring) (refusing to accept testimony of scientific experts with "commercial interests" in the technique).

226. This constitution of the "scientific community" may sometimes result in the opposite effect. An example of this can be found in *Wesley*. In determining under the *Frye* test whether DNA fingerprinting evidence is admissible, the majority placed great weight in the testimony of experts in molecular biology, population genetics, and restriction enzymes, all of whom testified as to the test's acceptance. *Wesley*, 83 N.Y.2d at 424 n.4, 633 N.E.2d at 455 n.4, 611 N.Y.S.2d at 101 n.4. But as the concurring opinion notes, "[n]one of these witnesses . . . was expert in forensic DNA analysis." *Id.* at 438, 633 N.E.2d at 463, 611 N.Y.S.2d at 109.

227. *See supra* notes 49-53 and accompanying text.

228. *See supra* parts II.D.2-3.

229. *See, e.g., People v. Collins*, 94 Misc. 2d 704, 706, 405 N.Y.S.2d 365, 367 (Sup. Ct. Crim. T. Kings County 1978) ("This court therefore concludes that the standard which must be applied to the admissibility . . . of any scientific test, is the twofold test of reliability and general scientific acceptance."). *See supra* note 124 and accompanying text.

ruled by the Court of Appeals,²³⁰ it has emerged in other forms.²³¹ In addition, some courts have devised more stringent tests than the *Frye* test itself to be used when dealing with the admissibility of new and complex forms of scientific evidence.²³² These attempts to modify the *Frye* standard to "fit" modern scientific techniques may lead to inconsistent application and results.²³³ At the least, these attempts suggest a lack of confidence by courts in the *Frye* standard to accurately determine the reliability of complex tests or theories. At most, they illustrate the recognition by trial courts that the *Frye* standard has outlived its purpose for determining the admissibility of novel scientific evidence.

Fourth, the inability of the *Frye* standard to determine the reliability of "soft" evidence has arguably led to a softening of the standard²³⁴ and an inefficient manner of indicating judicial acceptance of a psychological or psychiatric technique.²³⁵ Relying on the Court of Appeals to take judicial notice of a psychological syndrome under limited circumstances at trial would be inefficient; a great deal of litigation would necessarily occur

230. See *supra* text accompanying notes 125-39.

231. In the most recently proposed Code of Evidence, for example, the test articulated for admissibility was twofold: a technique must satisfy a judicial determination of reliability, as well as general acceptance in the scientific community. N.Y.S. LAW REVISION COMMISSION, A PROPOSED CODE OF EVIDENCE FOR THE STATE OF NEW YORK § 702(b), at 166 (1991).

232. See, e.g., *People v. Wesley*, 183 A.D.2d 75, 589 N.Y.S.2d 197 (3d Dep't 1992) (holding that in DNA fingerprinting cases, evidence of such must satisfy both *Frye* and the court's own determination of reliability), *aff'd*, 83 N.Y.2d 417, 633 N.E.2d 451, 611 N.Y.S.2d 451 (1994); *People v. Mohit*, 153 Misc. 2d 22, 26, 579 N.Y.S.2d 990, 993 (Westchester County Ct. 1992) (setting forth a three-prong analysis to determine whether DNA fingerprinting may be admitted in court under the *Frye* standard); *People v. Seda*, 139 Misc. 2d 834, 529 N.Y.S.2d 931 (Sup. Ct. N.Y. County 1988) (holding that the unique conditions of electrophoresis analysis are not measurable by the *Frye* standard and that a two prong analysis is required).

233. See *supra* part II.D.2.

234. The court's decision in *People v. Taylor*, 75 N.Y.2d 277, 552 N.E.2d 131, 552 N.Y.S.2d 883 (1990), is arguably a softening of the usually conservative stance toward the admissibility of evidence. Under certain circumstances, some forms of scientific evidence, although arguably not generally accepted enough to decide ultimate issues, may be admitted for other issues related to the trial. More significantly, the court's conclusion in *Taylor* that the *Frye* standard applied to rape trauma syndrome, despite some recognized problems, suggests that the court is prepared to expand *Frye*'s reach to techniques other than the "hard" sciences. See *supra* notes 157-66 and accompanying text.

235. See *supra* part II.D.3.

before such judicial notice would take place, and then only for the particular method or technique at issue. This inefficiency is heightened when trial court judges have the discretionary power to admit the same evidence under the same or similar limited circumstances.²³⁶

One possible reason for these problems with the *Frye* test may be the assumptions by the court in *Frye* regarding science. In devising the test, the *Frye* court did not cite case law or other outside sources to support the standard.²³⁷ This lack of specific references may suggest that the test was developed based on commonly accepted views of science at the time, views which might have changed since the time of *Frye*.²³⁸

B. *Applying Daubert*

Since New York, unlike a majority of other states,²³⁹ has not codified its rules of evidence to reflect the Federal Rules of

236. Under the Federal Rules of Evidence, for example, trial judges can limit the admissibility of evidence under Rule 104(a), so long as it is admissible under Rule 402, and is not substantially outweighed by unfair prejudice under Rule 403. Also, under New York case law, trial court judges have been given a great deal of discretion in allowing expert testimony. See *Selkowitz v. County of Nassau*, 45 N.Y.2d 97, 101-02, 379 N.E.2d 1140, 1142-43, 408 N.Y.S.2d 10-12 (1978).

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

238. During the late nineteenth century, the public saw science as attaining "an aura of special reliability and trustworthiness" and that any evidence deemed "scientific" might be viewed by the jury as having a "mystic infallibility." Wayne D. Greenstone, *Junk Science, Junk Justice*, 36 A.T.L.A. L. RPTR. 263 (Sept. 1993). See also *United States v. Addison*, 498 F.2d 741, 744 (D.C. Cir. 1974). This attitude may explain some of the current flaws with the test. The Court in *Frye* did not define what constitutes the "scientific community," nor did it illustrate what percentage is sufficient to constitute "general acceptance." With the view that science is a mysterious entity with "mystic infallibility," there would be no need for defining what the "scientific community" includes, or what numbers in support of a technique constitute general acceptance, because at the time both were seen as clearly defined entities. The test was devised in a time where science assumed a different role in society than it does today, which may be contributing to the growing dissatisfaction with the standard.

239. Thirty-four states have codified their rules of evidence much like the Federal Rules of Evidence, including Alaska, Arizona, Arkansas, Colorado, Delaware, Florida, Hawaii, Idaho, Iowa, Louisiana, Maine, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Rhode Island, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, and Wyoming. See Barbara Salken, *To Codify or Not to Codify—That is the Question: A Study of New York's Efforts to Enact an Evidence Code*, 58 BROOK. L. REV. 641, 658-59 n.124 (1992).

Evidence,²⁴⁰ the Supreme Court's holding in *Daubert* does not hold any immediate persuasive authority for New York to overturn the *Frye* standard. But the holding in *Daubert* illustrates the increasing trend of jurisdictions to replace the *Frye* standard with an approach based on relevancy and reliability.²⁴¹ The Court's reasoning is made more appealing because its mode of analysis would effectively correct many problems with the *Frye* standard now evident in New York.

First, the Court's emphasis on whether novel scientific evidence is reliable and relevant is preferable to whether such a technique is generally accepted in the scientific community. *Daubert's* emphasis avoids the problems one has in determining how many experts satisfy the general acceptance standard.²⁴² The Supreme Court's analysis in *Daubert* focuses on evidentiary reliability and relevance.²⁴³ In contrast, the general acceptance standard shifts attention away from relevance and reliability, since one of the assumptions of the test is that a majority of experts would indicate reliability. Of course, the party seeking admissibility under the *Daubert* analysis must demonstrate that such evidence is reliable and relevant. But the party is no longer limited by the strict confines of general acceptance to prove reliability and relevance.²⁴⁴ The *Daubert* analysis thus

240. New York has attempted to codify its rules of evidence several times. The first major attempt, in 1982, fashioned the rules of evidence very similar to the Federal Rules of Evidence. See N.Y.S. LAW REVISION COMMISSION, A CODE OF EVIDENCE FOR THE STATE OF NEW YORK (West 1982). The last major attempt, in 1991, codified a standard even tougher than *Frye* itself: it required not only general acceptance, but also a separate judicial determination of the technique's reliability. See N.Y.S. LAW REVISION COMMISSION, *supra* note 231, § 702(b), at 166. See generally Salken, *supra* note 239, at 659-62.

241. See *supra* notes 71-78 and accompanying text.

242. See *supra* note 222 and accompanying text.

243. See *supra* notes 198-208 and accompanying text. The Court's analysis of Federal Rule of Evidence 702 suggests that the term "scientific knowledge" contains within it a requirement of evidentiary reliability, while the "helpfulness" standard establishes relevance of the technique to a material issue at trial. *Id.* Although New York does not have a common law rule comparable to Rule 702, it is, in one sense, half-way there: any "expert opinion is proper when it would help to clarify an issue calling for professional or technical knowledge, possessed by the expert and beyond the ken of the typical juror." DeLong v. County of Erie, 60 N.Y.2d 296, 307, 457 N.E.2d 717, 722, 469 N.Y.S.2d 611, 617 (1983).

244. The *Daubert* Court avoided overturning the content of the *Frye* test and maintained its viability, at least in part, by keeping it as a factor in determining the admissibility of such evidence. See generally *Daubert v. Merrell Dow*

allows relevant evidence to be admitted, even though it would not satisfy the *Frye* test.²⁴⁵

Second, the flexibility of the analysis suggested by the Supreme Court avoids the problems concerning whether the *Frye* standard applies to hard and soft evidence,²⁴⁶ and how the standard should be modified to better measure the reliability of new or complicated techniques.²⁴⁷ The *Frye* standard, originally applied to a hard scientific technique,²⁴⁸ was never devised to apply to expert testimony such as psychological profiles or psychiatric classifications or syndromes.²⁴⁹ Reliability of a psychological profile is harder to substantiate than techniques based on physics or mathematics; the emphasis is on qualitative, or "subjective," rather than quantitative, or "objective" criteria.²⁵⁰ The Supreme Court's analysis in *Daubert* would allow psychological evidence to come in, with the judge's discretion, either

Pharmaceuticals, 113 S. Ct. 2786, 2796-97 (1993). See also *supra* notes 204-08 and accompanying text. An argument could be made that the Court's holding does little to weaken *Frye*'s hold on the federal circuits; instead, the Court's reasoning seems designed to technically overrule *Frye*, but still allow lower courts to use the standard in allowing scientific evidence. One consequence of the Court's holding is that previously conflicting circuit court decisions under *Frye* will now be seen as harmonious within the scope of Rule 702's inquiry. In the Court's own words: "The inquiry envisioned by Rule 702 is, we emphasize, a flexible one." *Daubert*, 113 S. Ct. at 2797.

245. See *supra* notes 45-48 and accompanying text.

246. See *supra* notes 158-66 and accompanying text.

247. See *supra* notes 228-33 and accompanying text.

248. The technique in *Frye* was a deception test. Although the Court admitted that the test was not generally accepted among "physiological and psychological authorities," the results of the test were objectively measurable. *Frye*, 293 F. at 1014.

249. However, it is true that the *Frye* Court acknowledged that "psychological authorities" were a relevant group in determining whether the deception test was generally accepted. See *id.* at 1014. But see *supra* notes 157-66 and accompanying text.

250. See *People v. Collins*, 94 Misc. 2d 704, 405 N.Y.S.2d 365 (Sup. Ct. Crim. T. Kings County 1978). In *Collins*, the court, in assessing whether voice spectrographic analysis should be admitted, put forth the requirement that "the standards for interpretation . . . must be objective rather than subjective; they must be definite rather than vague; they must be capable of being articulated; and the conclusions of any examiner must be capable of being scrutinized to determine whether they comport with a definite set of standards." *Id.* at 718, 405 N.Y.S.2d at 374. In examining a study advocating the reliability of spectrographic evidence, the court concluded that "subjective factors mentioned [in the study] would seem to cast a good deal of doubt on the reliability of this technique which, we must remember, is being put forth as a *scientific test*." *Id.* at 719, 405 N.Y.S.2d at 374.

with limited or unlimited admissibility, based on the degree of reliability demonstrated.

Third, the flexible approach makes admissibility dependent on criteria which measure the reliability and relevance of a particular technique. The factors suggested by the Supreme Court to determine reliability would free New York trial judges from having to adapt the *Frye* standard to more complicated scientific techniques.²⁵¹ By looking at relevant factors, such as peer review and the rate of error, along with general acceptance, a judge may more easily determine whether simple or complex scientific techniques are reliable and thus admissible in evidence. The pivotal contribution of the *Daubert* approach is that it focuses judicial inquiry onto a scientific technique's reliability, rather than whether the technique has simply garnered a majority of support in a community of experts.

Chief Justice Rehnquist's concern that the relevancy approach would place judges in the role of amateur scientists²⁵² ignores a more important concern. Judges must ensure that evidence sought to be admitted satisfies standards of reliability and relevance. This gatekeeping responsibility pertains both to those judges applying the *Frye* standard as well as those applying the *Daubert* standard. But the general acceptance standard shifts attention away from this inquiry, and instead focuses on counting heads. The *Daubert* standard shifts the judge's attention back to concerns of relevance and reliability. Also, Chief Justice Rehnquist's criticism ignores the reality that much modern-day evidence consists of scientific techniques and tests. The trial judge, rather than simply noting the majority in a community of scientists, should ensure through his own examination that techniques admitted as evidence be sufficiently relevant and reliable. Chief Justice Rehnquist is correct that the majority's approach in *Daubert* places more responsibility on trial court judges; judges must assume these responsibilities to

251. The Supreme Court also made clear that the suggested list of factors is not exhaustive; it acknowledged other factors suggested by commentators which focus on the reliability of the evidence, although it avoided any decision as to the worth of these other factors. *Daubert*, 113 S. Ct. at 2797 n.12. "To the extent that they focus on the reliability of evidence as ensured by the scientific validity of its underlying principles, all these versions may well have merit, although we express no opinion regarding any of their particular details." *Id.*

252. See discussion *supra* part III.E.

make certain that any admissible evidence satisfy judicial standards of relevance and reliability.

The argument has been made that the conservative nature of the *Frye* standard is advantageous because of an assumption that a conservative approach would ensure greater reliability.²⁵³ But the issue of whether or not the test is conservative is not relevant. The appropriate inquiry is whether the test allows relevant and reliable evidence to be admitted, while excluding unreliable or irrelevant evidence. Some courts have noted that the *Frye* test fails in this regard.²⁵⁴ Reliability can be demonstrated in other ways, such as those factors suggested by the Supreme Court and others.²⁵⁵

One may argue that disillusionment of the *Frye* standard will lead to an avalanche of unreliable scientific testimony allowed into courtrooms to justify liability on strange theories. But this concern ignores the Court's analysis: the *Frye* standard can still be used to determine a technique's reliability, but it no longer remains the sole standard by which to judge the admissibility of such evidence.²⁵⁶

Further, evidence which is not reliable or relevant to a material issue will be excluded under the *Daubert* approach. This more flexible approach may have the surprising impact of excluding unreliable evidence which may be admissible under the *Frye* test. Admissibility under *Frye* is highly dependent on what constitutes the scientific community.²⁵⁷ The *Daubert* approach, in contrast, focuses its concerns on whether the scientific technique is reliable and relevant. This approach makes it less likely that a small group of people will constitute a "community" and thus justify admissibility of an untested procedure.

Even though New York has not codified its rules of evidence to reflect the Federal Rules of Evidence, New York's principles of relevance as articulated in its common law allow for the pos-

253. See *supra* note 47.

254. See *supra* note 45 and accompanying text.

255. See WEINSTEIN & BERGER, *supra* note 18, ¶ 702[03], at 702-41 to 702-42 (1988). Other factors include: "the expert's qualifications and stature, the use which has been made of the new technique, the potential rate of error, the existence of specialized literature, and the novelty of the invention." *Id.*

256. *Daubert*, 113 S. Ct. at 2796.

257. See *supra* notes 224-27 and accompanying text.

sibility of a more flexible standard.²⁵⁸ By focusing on matters of relevance and reliability rather than on debating ambiguities of an outdated standard, New York courts would be more productive in determining if such evidence is relevant to a material issue.

V. Conclusion

The *Frye* standard in New York has proven untenable. Its ambiguous terms have led to inconsistent application, and the rigid requirements have excluded relevant evidence from being considered by a jury. The Supreme Court's analysis in *Daubert* offers a more flexible alternative to the *Frye* test which assures that more relevant and reliable scientific evidence will be considered by the fact finder in determining the resolution of legal disputes. The highlight of the *Daubert* standard is that admissibility of novel scientific evidence hinges on its relevance and reliability, not on its acceptance by a community of experts.

The Court of Appeals has refused to embrace the *Daubert* standard in *Wesley*, and has upheld the use of the *Frye* test in determining the admissibility of novel scientific evidence. Until a more flexible standard like that in *Daubert* is incorporated, the *Frye* test—with all its inherent ambiguities and difficulties in application—remains the law in New York.

Brian W. Burke*

258. Relevant evidence in New York has been defined as "evidence having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence." *People v. Davis*, 43 N.Y.2d 17, 27, 371 N.E.2d 456, 460, 400 N.Y.S.2d 735, 740 (1977) (quoting UNIF. R. EVID. 401 (1974)), cert. denied; 438 U.S. 914 (1978) and 435 U.S. 998 (1978). New York trial judges also have the discretion to exclude evidence if its admissibility may result in undue prejudice:

But even if the evidence is proximately relevant, it may be rejected if its probative value is outweighed by the danger that its admission would prolong the trial to an unreasonable extent without any corresponding advantage; or would confuse the main issue and mislead the jury; or unfairly surprise a party; or create substantial danger of undue prejudice to one of the parties.

JEROME PRINCE, *RICHARDSON ON EVIDENCE* § 147, at 117 (10th ed. 1973).

* To my wife Ann Marie.