Evidence-Admissibility of Evidence-Frye Standard of General Acceptance for Admissibility of Scientific Evidence Rejected in Favor of Balancing Test

Philip Hiatt Dixon
RECENT DEVELOPMENTS

Evidence—Admissibility of Evidence—Frye Standard of “General Acceptance” for Admissibility of Scientific Evidence Rejected in Favor of Balancing Test

United States v. Williams,
583 F.2d 1194 (2d Cir. 1978),
cert. denied, 99 S. Ct. 1025 (1979)

The explosion of technology in this century has spawned a succession of new scientific techniques with increased capabilities for measurement, identification, and analysis.1 The new techniques often prove valuable in investigations of complex or subtle crimes. When the results of new scientific techniques are offered as evidence, however, difficult questions arise concerning their potential effect on the fairness of the judicial process. Traditionally, courts have resolved these questions by applying the general acceptance test of Frye v. United States.2 Under this standard, scientific evidence cannot be admitted unless it has “gained general acceptance in the particular field in which it belongs.”3 Although courts have widely followed Frye during the last fifty years,4 the Second Circuit Court of Appeals, in United States v. Williams,5 recently rejected the Frye standard. The court adopted a balancing test which weighs the probative value, materiality, and reliability of the scientific evidence against its tendency to mislead or prejudice the jury.6 This Note will examine the utility of the Frye standard in light of the Williams attack, and suggest that the

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2 293 F. 1013 (D.C. Cir. 1923).
3 Id. at 1014.
5 583 F.2d 1194 (2d Cir. 1978), cert. denied, 99 S. Ct. 1025 (1979).
6 Id. at 1198.
Frye standard is necessary to preserve the fairness of criminal trials.

I

Background

For a decision which has been widely applied, yet sparked sharp disagreement, Frye is unprepossessing. The nine-paragraph opinion offers little discussion of the policy motives that prompted the court to create a special screening standard for scientific evidence. The defendant in Frye sought unsuccessfully to introduce the results of a lie-detector test. On appeal, the defendant argued that the testimony of his expert was admissible because “the question involved does not lie within the range of common experience or common knowledge, but requires special experience or special knowledge.”

The District of Columbia Circuit did not reach this contention. The court held that the test results failed to meet a threshold requirement for the admission of evidence derived by new scientific techniques: “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.”

Although the Frye court offered little policy justification for imposing its additional test, later courts have filled in the gaps. These courts’ justifications of Frye fall into two categories. First, the Frye test helps to ensure that scientific evidence will be reli-

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7 293 F. at 1013-14. The test was described as a “systolic blood pressure deception test.” Id. at 1013.
8 Id. at 1014.
9 Id. Frye was not the first case to look at the views of scientific authorities when assessing the admissibility of scientific evidence. See, e.g., People v. Jennings, 252 Ill. 534, 546-47, 96 N.E. 1077, 1081 (1911) (court examined “standard authorities on scientific subjects” to find fingerprints admissible); State v. Knight, 43 Me. 11 (1857) (court admitted blood type evidence on basis of experimental evidence of reliability). But “the notion of a special rule of admissibility for scientific evidence seems to have arisen [with Frye] in 1923.” McCormick’s Handbook of the Law of Evidence § 203, at 489 (2d ed. E. Cleary 1972).

Later accounts indicate that the defendant in Frye was induced to confess to a murder by a “friend,” who promised the defendant a half share in the $1,000 reward money offered by the victim’s family. See R. Ferguson & A. Miller, Polygraph for the Defense 5-6 (1974). Lie-detector tests corroborated the defendant’s story. Id. at 6. Although his lawyers were unable to enter the favorable test results, they did get the fact that the defendant had passed the test before the jury, possibly persuading the jury to forego the death penalty. Id. at 6-7. The test results were later substantiated by the real murderer’s confession. See Fourteenth Annual Report of the Judicial Council of the State of New York 265 (1948).
able. Second, the higher standard protects the interests of defendants, who frequently are unable to effectively rebut such evidence.

All courts require that a new scientific technique be reliable enough to have some probative value—that it operate on more than principles of sheer chance. But courts that apply the Frye standard demand that the new technique have an even higher level of reliability because they are concerned that the “mystic infallibility” of scientific devices will unduly sway lay jurors. Courts that have adopted the Frye standard believe that general scientific acceptance is the best assurance that the new technique's results are reliable. These courts often portray the Frye standard in terms of a dual trial for the new technique, in which scientists “form a kind of technical jury, which must first pass on the scientific status of a procedure before the lay jury utilizes it in making its findings of fact.” In addition, some of the courts applying the Frye standard maintain that the standard guarantees the availability of a pool of experts to help a defendant challenge the new technique's admissibility.

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12 See, e.g., United States v. Addison, 498 F.2d 741, 744 (D.C. Cir. 1974); People v. Kelly, 17 Cal. 3d 24, 31, 130 Cal. Rptr. 144, 149, 549 F.2d 1240, 1245 (1976). One court suggested that recent dramatic scientific successes in space exploration, contrasted with human failures such as Watergate, have increased the danger of juror belief in “the infallibility of science.” See D’Arc v. D’Arc, 157 N.J. Super. 553, 565, 385 A.2d 278, 284 (1978). Courts voice this concern regardless of which side in a criminal trial seeks to use scientific evidence. Frye, after all, sought to use the test results in his own defense.


14 See United States v. Addison, 498 F.2d 741, 744 (D.C. Cir. 1974). This protective function of the Frye standard has frequently been vitiated by some courts’ failure to apply Frye’s language rigorously. Courts have construed the appropriate “community” of scientists too narrowly, sometimes accepting a mere handful of experts as a “community.” One court defined “community” as those scientists who would be expected to be familiar with
Although *United States v. Williams* was not the first case to adopt some form of balancing test for the admissibility of new scientific evidence, it was among the first to explicitly discard *Frye* in favor of a test modeled after Federal Rule of Evidence 403. Federal courts have generally found that the Federal Rules of Evidence were not intended to supersede the *Frye* standard. Since the rules took effect, four circuit courts have reaf-

the voiceprint technique under consideration. It thus limited its survey to a small group of scientists, primarily pioneers in voiceprint research and development. *Commonwealth v. Lykus*, 367 Mass. 191, 327 N.E.2d 671, 677-78 (1975). Another court admitted the results of a chemical test for narcotics use even though the general medical profession was unfamiliar with the test and its “general acceptance” was “limited to those few in a specialized field who deal with the narcotics problem.” *People v. Williams*, 164 Cal. App. 2d 858, 862, 331 P.2d 251, 253-54 (1958). Delineating such a small group of experts as a “community” limits the defendant’s access to experts who will challenge the technique.

Other courts, anxious to utilize the newest scientific techniques and impatient with the deliberations of the scientific community, stretch the concept of “general” acceptance to embrace techniques that are embroiled in raging controversy. One court argued that “[e]very useful new development must have its first day in court,” despite the “conflicting opinions of . . . legions of expert witnesses.” *United States v. Stifel*, 433 F.2d 431, 438 (6th Cir. 1970), cert. denied, 401 U.S. 994 (1971).

Most serious of all, many courts permit general acceptance to be assessed by proponents of the new technique. For a critical discussion of the role of one of the voiceprint’s early experts as a developer and promoter of the technique and as a witness for its admissibility in court, see *People v. King*, 266 Cal. App. 2d 437, 450-59, 72 Cal. Rptr. 144, 153, 549 P.2d 1240, 1249 (1976). All three problems can be eased if courts insist that an independent expert, not one whose career is inextricably intertwined with the success of the new technique, assess its acceptance. *See text accompanying notes 49-51 infra.* Some courts have been adamant in insisting upon such independent testimony. *See, e.g.*, *People v. Kelly*, 17 Cal. 3d 24, 38, 130 Cal. Rptr. 144, 153, 549 P.2d 1240, 1249 (1976) (rejecting assessment by voiceprint expert who helped develop and promote process); *People v. Tobey*, 401 Mich. 141, 146, 257 N.W.2d 537, 539 (1977) (rejecting similar assessment by experts “whose reputations and careers have been built on their voiceprint work”).


17 The Supreme Judicial Court of Maine, in *State v. Williams*, 388 A.2d 500 (Me. 1978), held that the *Frye* standard should give way to Maine Rule of Evidence 403, which is based on Federal Rule of Evidence 403. The court allowed “the presiding Justice ... a latitude, which the *Frye* rule denies, to hold admissible in a particular case proffered evidence involving newly ascertained, or applied, scientific principles which have not yet achieved general acceptance in whatever might be thought to be the applicable scientific community, if a showing has been made which satisfies the Justice that the proffered evidence is sufficiently reliable to be held relevant.” *Id.* at 504.

18 The Federal Rules of Evidence do not deal explicitly with evidence derived from new scientific techniques. Rule 702, dealing with expert witnesses, 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
firmed the *Frye* standard. Of these four courts, only one referred explicitly to any clash between the rules and the general acceptance standard. The Sixth Circuit found that the liberal policies of the rules needed the restraint of the *Frye* standard to ensure fair trials for criminal defendants.

The Second Circuit, in *United States v. Williams*, upheld the use of "voiceprint" evidence in a narcotics trial and flatly rejected the notion that courts should require general acceptance by the scientific community. The court bristled at the concept of a

testify thereto in the form of an opinion or otherwise.

*FED. R. EVID. 702*. The Federal Rules do, however, provide for the exclusion of some otherwise relevant evidence:

> 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 the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence.

*FED. R. EVID. 403*. *See* note 20 and accompanying text *infra* for further discussion of the rules.

19 *See* United States v. Kilgus, 571 F.2d 508, 510 (9th Cir. 1978) ("forward looking infrared system" to identify airplane fails *Frye* test); United States v. Brown, 557 F.2d 541, 554-59 (6th Cir. 1977) (microprobic hair analysis not admissible under *Frye*); United States v. McDaniel, 538 F.2d 408, 412-13 (D.C. Cir. 1976) (voiceprint evidence fails *Frye* test); United States v. Alexander, 526 F.2d 161 (8th Cir. 1975) (results of polygraph tests not admissible under *Frye*).

20 United States v. Brown, 557 F.2d 541, 556 (6th Cir. 1977). The Sixth Circuit Court of Appeals noted that the "clear trend in federal court is toward the admission of expert testimony whenever it will aid the trier of fact. . . . However, a strong countervailing restraint on the admission of expert testimony is the defendant's right to a fair trial." *Id.* The Federal Rules themselves are inconclusive on the subject and the Advisory Committee Notes make no mention of *Frye*. Congress enacted Article VII, dealing with expert testimony, without significantly altering the proposed article forwarded by the Supreme Court. *See* RULES OF EVIDENCE FOR UNITED STATES COURTS AND MAGISTRATES, 56 F.R.D. 183, 281-92 (1972) (Text of Article VII as forwarded by Supreme Court). Congressional attention focused on provisions such as rule 706, dealing with the appointment of experts by the court, and did not consider the article's effect on the treatment of new scientific techniques. The House, Senate, and House Conference reports did not even mention Article VII. H.R. REP. No. 650, 93d Cong., 1st Sess., reprinted in [1974] U.S. CODE CONG. & AD. NEWS 7075; S. REP. No. 1277, 93d Cong., 2d Sess., reprinted in [1974] U.S. CODE CONG. & AD. NEWS 7051; H.R. REP. No. 1597, 93d Cong., 2d Sess., reprinted in [1974] U.S. CODE CONG. & AD. NEWS 7098.

21 The voice spectrogram, or voiceprint, depicts the duration, frequency, and amplitude of a voice's sound waves as a series of lines of varying shades of darkness on a graph. The operator compares certain key passages from a sample and an unknown tape. The developers of the technique maintain that because no two persons possess exactly the same vocal cavities or speech patterns, no two spectrograms will be the same. For a thorough discussion of the development of the technique, see A. MOENSSENS & F. INBAU, *supra* note 1, at 564-84.

22 583 F.2d at 1198. The prosecution introduced voiceprints to establish defendant Isiah Williams as the telephone caller who arranged a drug transaction. The trial court found that voiceprint evidence was admissible under the *Frye* standard. United States v. Williams, 443 F. Supp. 269, 270-71 (S.D.N.Y. 1977).
“technical jury,” declaring that trial courts should not “surrender to scientists the responsibility for determining the reliability” of evidence.\(^{23}\) Although the court did not mention Federal Rule of Evidence 403,\(^{24}\) it paraphrased the rule, stating that the trial court should weigh against the evidence’s probative value and reliability “any tendency to mislead, prejudice, or confuse the jury.”\(^ {25}\) In addition, the court noted that rule 702 permitted qualified expert witnesses to testify if the judge finds it “will assist the trier of fact to understand the evidence or to determine a fact in issue.”\(^ {26}\)

Within this scheme, the court declared, the \textit{Frye} standard has no place.

The Second Circuit outlined several factors for trial courts to consider in assessing the reliability of a new scientific technique: the technique’s potential rate of error,\(^ {27}\) the existence and maintenance of testing standards,\(^ {28}\) the care with which the technique has been employed,\(^ {29}\) the technique’s similarity to other scientific procedures,\(^ {30}\) and the existence of “fail-safe” characteristics.\(^ {31}\)

\section*{II

Analysis}

The Second Circuit’s criticism of the \textit{Frye} standard could be more fairly addressed to the often mechanical application of the standard by \textit{Frye’s} progeny. These courts have shown excessive deference to a far smaller “community” of experts—a technical jury drawn from a limited pool—than that contemplated by the standard.\(^ {32}\) The technical jury description of the general acceptance requirement, attacked in \textit{United States v. Williams},\(^ {33}\) is color-
ful and catchy, but it is nonsense. It is dangerous nonsense because it creates a spurious reason for rejecting Frye. Under a proper application of the Frye standard, the trial judge retains complete control over the admission of evidence. The judge decides whether the new scientific technique has achieved general acceptance in the appropriate scientific field, and the breadth of such terms as "general" give him considerable leeway.

The technical jury issue obscures the real difference between the Frye and United States v. Williams approaches. The Second Circuit's position requires the trial judge to balance the probative value and reliability of the proposed evidence against its potential for misleading or prejudicing the jury. Frye sets up an independent standard for guaranteeing the reliability of the new scientific technique; it does not explicitly deal with the impact of the new evidence on the jury. This apparent omission upset the Second Circuit. By its silence, Frye appears to assign to scientists the task of assessing the technique's potential for misleading the jury—a task for which the scientists are wholly unequipped.

Contrary to appearances, however, courts applying the Frye standard have not neglected the impact of proposed scientific evidence on the jury. These courts assume that unfamiliar scientific techniques and devices will strongly impress jurors. If the evidence is not as accurate as the jury assumes it to be, the jury is misled. Frye's threshold requirement of general scientific acceptance is an attempt to guarantee that any scientific evidence reaching a jury will be as reliable as the jury believes it to be. Any evidence derived from a technique which has not achieved general acceptance from the appropriate scientific community is per se misleading, and therefore inadmissible.

This per se rule seems unappealingly inflexible next to the balancing test espoused by United States v. Williams. Nonethe-

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34 See, e.g., State v. Williams, 388 A.2d 500, 504 (Me. 1978) (under Frye rule, "the presiding Justice is bound by an additional, independently controlling standard") (emphasis in original).
35 Some courts have abused this judicial latitude. See note 14 supra.
36 583 F.2d at 1198.
37 See, e.g., United States v. Addison, 498 F.2d 741, 744 (D.C. Cir. 1974) ("scientific proof may in some instances assume a posture of mystic infallibility in the eyes of a jury of laymen"); People v. Kelly, 17 Cal. 3d 24, 31, 130 Cal. Rptr. 144, 149, 549 P.2d 1240, 1245 (1976) ("[l]ay jurors tend to give considerable weight to 'scientific' evidence when presented by 'experts' with impressive credentials").
38 One leading commentator on the law of evidence maintains that: "General scientific acceptance" is a proper condition for taking judicial notice of
less, on a practical level Frye is correct. Judges assess the potentially misleading impact of evidence derived from new scientific techniques with great difficulty. The impact of scientific test results on a jury is a matter of fine degree and is less susceptible to measurement than the prejudicial impact of most proffered evidence. The judge is not deciding whether a color photograph of an accident victim’s mangled body or a murder victim’s bloody clothing would unduly prejudice or mislead a jury. In those cases, a judge can call upon his past experiences with the passions and foibles of juries, as well as his own feelings, to assess the probable impact of the evidence. But if the evidence is derived from new scientific techniques, the judge must predict what level of accuracy the jury will ascribe to the technique, and then decide whether the technique will meet the jury’s probable expectations.

United States v. Williams provides the judge with no means to measure the difference between the device’s reliability and the degree of credence the jury will give it. Rather, the Second Circuit assumed that cross-examination and opposing experts will lower the jury’s expectations to reflect the device’s true reliability. The court’s reliance on the jury’s power to find new scientific techniques unreliable or misleading illustrates its confusion. It makes no sense to say that a jury has the power to decide whether it is being misled: if the jury is being misled, it will not know it.

Even if it is not misled, a jury is likely to give undue weight, in some cases, to the results of an “objective” scientific test. When the prosecution uses evidence such as voiceprints, the technical data is often only part of the prosecution’s presentation. A jury

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scientific facts, but not a criterion for the admissibility of scientific evidence. Any relevant conclusions which are supported by a qualified expert witness should be received unless there are other reasons for exclusion. Particularly, probative value may be overborne by the familiar dangers of prejudicing or misleading the jury, and undue consumption of time.

McCormick, supra note 9, § 203, at 491 (footnotes omitted).

39 The judge’s task is further complicated by the fact that he must make his decision before the evidence is presented at trial; he has no way of knowing how effectively the opponent will counter the evidence.

40 583 F.2d at 1200.

41 See, e.g., United States v. McDaniel, 538 F.2d 408, 411-12 (D.C. Cir. 1976) (prosecution presented testimony of co-conspirators in gambling operation and policemen whom defendant bribed, as well as voiceprint evidence); United States v. Baller, 519 F.2d 463, 464 (4th Cir.), cert. denied, 423 U.S. 1019 (1975) (telephone company trace of threatening call to defendant’s home presented in addition to voiceprint evidence); United States v. Stifel, 433 F.2d 431, 432-35 (6th Cir. 1970), cert. denied, 401 U.S. 994 (1971) (in addition to neutron activation analysis test of bomb fragments, prosecution introduced threatening letters writ-
that has heard other evidence against the defendant, but is reluctant to convict because of doubts about his guilt, may transfer its feelings of responsibility for a conviction to the purportedly objective test results.

_United States v. Williams_ also ignores the other major concern of courts that apply the _Frye_ standard—the defendant’s access to experts. The Second Circuit would apparently be satisfied if the developer and sole expert in the use of a new technique could convince a trial judge that the technique was reliable.42 The _Frye_ standard, by requiring general scientific acceptance, guarantees that a new technique will be familiar to a significant segment of the appropriate scientific community.43 This, in turn, guarantees that a defendant will have a pool of experts from which to seek rebuttal witnesses. Even when a technique is so widely accepted by scientists that no reputable expert would challenge its basic principles, the defendant will still be likely to find experts willing to challenge its application. A number of “voiceprint” experts, for instance, accept the basic principles on which the technique operates, but question its application in untested areas.44

Even if a pool of experts exists, a criminal defendant may have trouble utilizing these witnesses. Courts applying _Frye_ have frequently noted that most criminal defendants are in a poor posi-

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42 In assessing the reliability of voiceprints, the Second Circuit did not focus on other scientists’ views of spectrographic experiments, but instead looked directly at the results achieved by one voiceprint expert. 583 F.2d at 1198. The court noted that a new technique may be admissible even if it does not meet all of the criteria for reliability. _Id._ at 1200 n.12. None of the criteria deal with the availability of other experts for rebuttal purposes.

43 By requiring general acceptance by the appropriate scientific community, as opposed to mere acquiescence or indifference, the _Frye_ test implicitly requires that there have been a debate over the new technique, or at least wide dissemination of information about it within that community.

44 See _United States v. Addison_, 498 F.2d 741, 744-45 (D.C. Cir. 1974) (court notes experts’ misgivings about reliability of voiceprints outside of controlled laboratory conditions; finds voiceprints inadmissible); _People v. Law_, 40 Cal. App. 3d 69, 84, 114 Cal. Rptr. 708, 718 (1974) (court notes experts’ reservations about use of spectrographic analysis to identify disguised voices, on which there was no experimental data; finds voiceprints inadmissible).
tion to wage a "battle of the experts." Even if a court is authorized to appoint expert witnesses for the defendant, the expense may make courts reluctant to provide such aid unless the crime charged is extremely serious. If the defendant presents no rebuttal testimony, the technical evidence will probably enter with no more than an uninformed challenge from the defendant's attorney. Under the Frye standard, however, the prosecution must first make a showing of general acceptance, and the defense attorney then faces the less arduous task of challenging the acceptance of the technique, rather than the reliability of the new technique itself.

Faulty application of the Frye standard by some courts does not argue for its rejection. Rather, courts should adjust their procedures to preserve the fairness of criminal trials when scientific evidence is proffered. Under the Federal Rules of Evidence and many parallel state rules, courts have the authority to summon their own experts. This expert need not have a developer's knowledge of the technique's inner workings, for he is assessing the technique's reception among scientists, not its reliability. The

45 See United States v. Stifel, 433 F.2d 431, 441 (6th Cir. 1970), cert. denied, 401 U.S. 994 (1971) (use of scientific evidence by prosecution "can be subjected to abuse" and courts should make sure defendant is given adequate time and resources to respond); State v. Williams, 388 A.2d 500, 506 (Me. 1978) (Nichols, J., concurring in the result) (the "burden of rebuttal is generally borne in these criminal cases by defendants without the economic means to marshal scientific witnesses for a battle of the experts").

A 1966 study noted the "imbalance between prosecution and defense" in the use of experts. In 22% of the cases surveyed the prosecution presented expert testimony and the defense presented none. In 3% of the cases both sides put experts on the stand, and in only 3% of the cases did the defense alone present expert testimony. In the remaining 72% of the trials neither side presented expert testimony. H. Kalven & H. Zeisel, The American Jury 139 (1971).

46 This concern prompted one court to caution that "if the government sees fit to use this time consuming, expensive means of fact-finding, it must both allow time for a defendant to make similar tests, and in the instance of an indigent defendant, a means to provide for payment for same." United States v. Stifel, 433 F.2d 431, 441 (6th Cir. 1970), cert. denied, 401 U.S. 994 (1971).

47 Under the Federal Rules of Evidence, courts are authorized to appoint their own independent experts, as well as experts suggested by the parties. Fed. R. Evid. 706.

48 At the preliminary hearing, the proponent of the technical evidence must demonstrate general acceptance by the appropriate scientific community. This is necessary to gain the admission of the evidence, regardless of what the opposing party does. If the court insists upon obtaining an objective assessment of the relevant scientific opinion on its own, the defendant's rights will frequently be protected even though he calls no expert witnesses. See note 14 supra.

49 See note 14 supra.

50 See note 47 supra.
expert need only understand the principles upon which the technique is based and have expertise in the fields utilizing those principles. In addition, courts may refer to statements of administrative commissions or other scientific bodies which take positions on the use of scientific techniques. By insisting on such assessments, courts will obtain an objective interpretation of the term “general acceptance” to supplement the parties’ interested evaluations. Independent experts also increase the likelihood that the relevant scientific community will include experts other than those intimately connected with the development and promotion of the new technique.

CONCLUSION

Criminal courts should retain the Frye standard for the admission of evidence derived by new scientific techniques. Frye’s assumption that such evidence will always have a strong impact on the jury is less elegant theoretically than the balancing test used in United States v. Williams. The balancing act required by the Second Circuit, however, is impractical for the judge to perform and the chances for error are great. The Frye standard, by requiring a higher level of acceptance than the balancing test, is a better guarantee that any scientific evidence reaching a jury will be as reliable as the jury believes it to be. The Frye test, if applied conscientiously, also assures the defendant greater access to rebuttal experts and makes the “battle of the experts” less uneven. Until other methods are developed to redress the imbalance in resources between prosecution and defense, courts should continue to apply the Frye standard.

Philip Hiatt Dixon

51 For example, the National Academy of Sciences recently warned that the use of voiceprint evidence in court proceedings should be approached with great caution. The Academy undertook a study of the technique at the request of the Federal Bureau of Investigation. N.Y. Times, Feb. 19, 1979, § A, at 13, col. 3.