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Admissibility of DNA Evidence

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Although there is no specific federal rule addressing the admissibility of deoxyribonucleic acid[1] [hereinafter DNA] evidence, the federal courts have developed a policy regarding DNA admissibility.[2] In *United States v. Jakobetz*,[3] the Second Circuit addressed the issue of the admissibility of DNA testing in a criminal trial.[4] In *Jakobetz*, a young woman was kidnapped, repeatedly raped and sexually assaulted.[5] After her release, she was brought to a hospital where a semen sample was taken from her vagina for DNA profiling analysis.[6] The DNA analysis revealed "a 'match' and calculated that there was one chance in 300 million that the DNA . . . could have come from someone from the Caucasian population other than Jakobetz."[7]

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1. Deoxyribonucleic Acid is the "basic hereditary component of all living matter and contains all the information needed to make the organism and carry on its functions, including complete instructions on what proteins to produce." Thomas Traiam Moga, *Transgenic Animals as Intellectual Property (or the Patented Mouse that Roared)*, 76 J. PAT. & TRADEMARK OFFICE SOCIETY 511, 544 (1994). A North Carolina statute describes DNA as "located in the nucleus of cells and provides an individual's personal genetic blueprint." Manning A. Connors, III, *DNA Databases: The Case for the Combined DNA Index System*, 29 WAKE FOREST L. REV. 889, 914 (1994).

2. *See* United States v. Johnson, 56 F.3d 947 (8th Cir. 1995) (stating that contradicting expert testimony on the reliability of DNA evidence goes to its weight and not its admissibility); United States v. Davis, 40 F.3d 1069 (10th Cir. 1994) (holding that the district court properly admitted DNA evidence); United States v. Bonds, 12 F.3d 540 (6th Cir. 1993) (allowing evidence concerning DNA profiles to be submitted to the jury); Spencer v. Murray, 5 F.3d 758 (4th Cir. 1993) (holding that admission of DNA evidence did not violate defendant's due process rights); United States v. Martinez, 3 F.3d 1191 (8th Cir. 1992) (stating that general theory and techniques of DNA profiling are valid).

3. 955 F.2d 786 (2d Cir.), *cert. denied*, 506 U.S. 834 (1992).

4. *Id.* The court of appeals in *Jakobetz* affirmed the district court's finding that the DNA profiling evidence was admissible. *Id.* at 800.

5. *Id.* at 789. The young woman was assaulted while making a call at a rest area along a highway. *Id.* The defendant forced the woman into the back of his trailer before he left the scene. *Id.* Thirty minutes later, the defendant stopped the truck, entered the back and proceeded to rape and sexually assault the woman. *Id.*

6. *Id.* at 790.

7. *Id.* at 789.

The defendant made a motion in limine to preclude the admission of the DNA evidence.[8] In determining the admissibility of the DNA profiling evidence, the *Jakobetz* court abandoned the test that had been set forth in *Frye v. United States*[9] in favor of a more liberal standard enunciated in *United States v. Williams*.[10]

In *Frye*, the Court of Appeals for the District of Columbia held that the standard for the admissibility of novel scientific evidence is whether the scientific procedure or principle used to obtain the evidence has been "sufficiently established to have gained general acceptance in the particular field in which it belongs."[11] If the procedure has, in fact, "gained general acceptance" in the field in which it belongs, then such evidence obtained as a result of the procedure will be admissible.[12] The *Frye* test has been well established as the operating standard for the admissibility of novel scientific evidence.[13]

By comparison, the *Williams* test for admissibility asks whether "the probativeness, materiality, and reliability of the evidence" outweighs its "tendency to mislead, prejudice, and confuse the jury."[14] The court in *Jakobetz* recognized that, because probativeness and materiality are not normally at issue, the standard enunciated in *Williams* is a "balancing of the reliability of the evidence against its potential negative impact on the

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8. *Id.* at 790.

9. 293 F. 1013 (D.C. Cir. 1923). In *Frye*, the defendant appealed his conviction of murder in the second degree on the grounds that the court erred in excluding expert witness testimony pertaining to the results of a polygraph test taken by the defendant. *Id.* The court held that general acceptance indicated reliability and only reliable evidence should be admissible. *Id.* at 1014.

10. 583 F.2d 1194 (2d. Cir. 1978), *cert. denied*, 439 U.S. 1117 (1979).

11. *Frye*, 293 F. at 1014.

12. *Id.*

13. *See* Cassandra C. Colchagoff, *A New Era for Science and the Law: The Face of Scientific Evidence in the Federal Courts After* Daubert v. Merrell Dow Pharmaceuticals, Inc., 29 TULSA L. J. 735, 739 (1994) ("Since its formulation, the *Frye* test for admissibility of novel scientific evidence has been the dominant standard in courts which have considered the issue.").

14. *Williams*, 583 F.2d at 1198.

jury."[15] As such, the issue in *Williams* was whether the results of scientific analysis "reached a level of reliability to warrant its use in the courtroom."[16]

The court suggested specific factors to determine the reliability of scientific techniques used in the DNA analysis. These factors include: (1) the potential rate of error; (2) the existence and maintenance of standards; (3) the manner in which a scientific technique has been employed; (4) the existence of an analogous relationship with other kinds of scientific techniques; and (5) the presence of fail-safe characteristics.[17] Although *Williams* did not involve DNA analysis,[18] the *Jakobetz* court held that "the approach for admitting novel scientific evidence . . . adopted in *Williams* applies even to something as complicated as DNA profiling."[19] As a result, the *Jakobetz* court held that the factors enunciated in *Williams* should be applied to a balancing test similar to that of Federal Rule of Evidence 403 to determine

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15. United States v. Jakobetz, 955 F.2d 786, 796 (2d Cir.), *cert. denied*, 506 U.S. 834 (1992).

16. *Williams*, 583 F.2d at 1198. The scientific analysis involved in *Williams* was a procedure to identify voices, called spectrographic voice analysis. *Id.* at 1197. A spectrograph "is an electromagnetic instrument which analyzes sound and disperses it into an array of its time, frequency and intensity components." *Id.*

17. *Id. See* Janet C. Hoeffel, *The Dark Side of DNA Profiling: Unreliable Scientific Evidence Meets The Criminal Defendant*, 42 STAN. L. REV. 465 (1990) (discussing the *Williams* factors as they pertain to DNA profiling).

18. *See supra* note 16.

19. *Jakobetz*, 955 F.2d at 796. The *Jakobetz* court noted that although the *Frye* standard was adopted by a majority of jurisdictions, the standard was overly conservative and prone to manipulation in order to exclude novel scientific evidence. *Id.* at 794. The more permissive approach in *Williams* for determining admissibility likened the standard for admissibility of scientific evidence to that for other evidence. *Id. See* FED R. EVID. 403. Rule 403 provides: "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." *Id.*

"whether the probative value of the proffered evidence outweighs its danger of unfair prejudice."[20]

Thus, *Jakobetz* established that the standard for admitting DNA evidence in federal courts is governed by the *Williams'* reliability factors applied in conjunction with a balancing test.[21] The court in *Jakobetz* felt that this standard "embodies the standards implicit in the Federal Rules of Evidence, especially Rule 702 . . . ."[22] In short, this test asks "whether the testimony will assist the trier of fact to understand the evidence or to determine a fact in issue."[23]

New York courts have also addressed the issue of DNA evidence admissibility. In *People v. Castro*,[24] Judge Sheindlin, New York State Supreme Court Judge, set forth a three prong analysis to determine the admissibility of DNA evidence.[25] The defendant was accused of murdering a twenty year old pregnant woman and her two year old daughter.[26] The People sought to introduce into evidence a wristwatch which allegedly had a bloodstain from the adult victim.[27]

The first two prongs of the *Castro* test relate to the test set forth in *Frye*.[28] More specifically, the first prong considers whether there is a generally accepted theory in the scientific community which supports the conclusion that DNA forensic

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20. *Jakobetz*, 955 F.2d. at 794.

21. *Id.*

22. *Id.* at 796. *See* FED. R. EVID. 702. Federal Rule of Evidence 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." *Id.*

23. *Id. See* MCCORMICK ON EVIDENCE § 203, at 607 (John William Strong ed., 4th ed. 1992).

24. 144 Misc. 2d 956, 545 N.Y.S.2d 985 (Sup. Ct. Bronx County 1989).

25. *Id.* at 959, 545 N.Y.S.2d at 987.

26. *Id.* at 957, 545 N.Y.S.2d at 985.

27. *Id.*

28. *Id.* at 959-60, 545 N.Y.S.2d at 987. The *Frye* test examines whether the procedure is generally acceptable as reliable, and not whether such procedure is "unanimously indorsed" [sic] by the scientific community. *Id.* at 958, 545 N.Y.S.2d at 987 (quoting People v. Middleton, 54 N.Y.2d 42, 49, 429 N.E.2d 100, 103, 444 N.Y.S.2d 581, 584 (1981)).

testing can produce reliable results.[29] The second prong inquires whether there are existing techniques generally accepted in the scientific community that are capable of producing reliable results in DNA identification.[30] The third prong considers whether the accepted scientific techniques were performed by the testing laboratory in analyzing the evidence.[31] The *Castro* court held that in order for the test results to be admissible, it must be shown at a pretrial hearing that laboratory technicians did in fact perform the accepted scientific techniques in the particular case.[32] Without proving this proposition, the evidence will not be admitted at trial.[33]

The New York Court of Appeals addressed the issue of DNA admissibility and established the standard for New York in *People v. Wesley*.[34] In *Wesley*, the court adopted a two-pronged inquiry similar to the test set forth in *Castro*.[35] Under *Wesley*, the first inquiry[36] asks whether the accepted techniques, when properly performed, generate results generally accepted as

29. *Id.* at 959, 545 N.Y.S.2d at 987.

30. *Id.*

31. *Id.* The *Castro* court noted that the greatest defect of the *Frye* test is that the test's focus on general acceptance, which dims critical problems in the application of a particular technique. *Id.* at 960, 545 N.Y.S.2d at 987.

32. *Id.* at 959, 545 N.Y.S.2d at 988. At the conclusion of the decision, the court suggested a three-step pretrial hearing procedure in determining the admissibility of DNA evidence. *Id.* at 978-79, 545 N.Y.S.2d at 998-99.

33. *Id.*

34. 83 N.Y.2d 417, 633 N.E.2d 451, 611 N.Y.S.2d 97 (1994). In *Wesley*, DNA comparisons were made of blood taken from the defendant's T-shirt, from the defendant, and the deceased's hair follicles. *Id.* at 421, 633 N.E.2d at 453, 611 N.Y.S.2d at 99. The tests by the scientists concluded that the DNA print pattern from the defendant's T-shirt matched the DNA print pattern of the deceased and that the DNA print pattern from the defendant's blood differed from the DNA print pattern of the deceased. *Id.*

35. *Id.* at 422, 633 N.E.2d at 453-54, 611 N.Y.S.2d at 99-100

36. The first prong of *Wesley* incorporates the first and second prongs of *Castro* and addresses the *Frye* issue. *Id.* at 422, 633 N.E.2d at 454, 611 N.Y.S.2d at 100.

reliable within the scientific community.[37] The second prong[38] inquires whether a proper foundation has been established for admissibility of the DNA evidence.[39] The word "foundation," as used in the second prong, considers whether the accepted techniques were employed by the experts.[40] As stated by the court in *Wesley*, "foundation concerns itself with the adequacy of the specific procedures used to generate the particular evidence to be admitted."[41] Once the *Frye* test has been satisfied and an adequate foundation has been established, the evidence is admitted.[42] The jury then considers the testimony regarding any infirmities in the collection of evidence and analysis when determining the weight of the evidence.[43]

By comparison, the Second Circuit employs a less restrictive standard than the New York rule. In *Jakobetz*, the Second Circuit rejected the *Frye* standard for a more liberal approach based upon a balancing test. This test is similar to Federal Rule of Evidence 403, which implements the factors set forth in *United States v.*

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37. *Id.* The court noted that there was sufficient evidence in the record to support the hearing court's determination on general reliability as a matter of law and that the determination comported with generally accepted scientific authority at the time of the *Frye* hearing in 1988. *Id.* at 424, 633 N.E.2d at 455, 611 N.Y.S.2d at 101.

38. The second prong of the *Wesley* test is similar to the third prong of *Castro*. *See supra* note 31 and accompanying text.

39. *Wesley*, 83 N.Y.2d at 428-29, 633 N.E.2d at 457-58, 611 N.Y.S.2d at 103-04. The second prong includes questions such as how the sample was acquired, whether the chain of custody was preserved, and how the tests were conducted. *Id.*

40. *Id.* at 429, 633 N.E.2d at 457-58, 611 N.Y.S.2d at 103-04. The foundation included testimony that the proper steps were performed in the DNA analysis and explained the assumptions underlying the probability calculations. *Id.* at 425, 633 N.E.2d at 455, 611 N.Y.S.2d at 101. In *Wesley*, the foundation was presented at trial. *Id.* at 428-29, 633 N.E.2d at 457, 611 N.Y.S.2d at 103. This differs from *Castro*, where the court required a pre-trial hearing to determine the adequacy of the procedures used. People v. Castro, 144 Misc. 2d 956, 959, 545 N.Y.S.2d 985, 987 (Sup. Ct. Bronx County 1989).

41. *Wesley*, 83 N.Y.2d at 432, 633 N.E.2d at 454, 611 N.Y.S.2d at 100.

42. *Id.* at 429, 633 N.E.2d at 458, 611 N.Y.S.2d at 104.

43. *Id.* The *Castro* court considered this the third stage of the inquiry. *Id.*

Williams.[44] This liberal approach asksinto whether the evidence that is sought to be admitted is reliable. New York, however, not only employs the *Frye* test in determining the admissibility of DNA evidence, but recognizes that "DNA evidence presents special problems of reliability."[45] As a result, New York requires an additional inquiry into the adequacy of the procedures used to further ensure that the evidence is reliable. Although *Williams* inquires into the "care and concern with which a scientific technique has been employed,"[46] this is only one factor to be considered in determining whether the evidence is admissible.

44. United States v. Jakobetz, 955 F.2d 786, 794 (2d Cir.), *cert. denied*, 506 U.S. 834 (1992).

45. *Id.*

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