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RECENT CASES

EVIDENCE—SCIENTIFIC TESTIMONY—VOICEPRINT EVIDENCE IS ADMISSIBLE IN CRIMINAL TRIALS—

The defendant was indicted by a grand jury in November of 1970 and charged with murder in the first degree. Two St. Paul policemen had responded to an emergency call requesting assistance for a pregnant woman. One of the officers was killed with a high caliber rifle after he knocked on the door of the apartment. The emergency call had been recorded. The police then made voiceprints¹ of this call and another call subsequently made to the defendant. By comparing the two voiceprints the police established probable cause for an arrest warrant of the defendant, contending she had made the call which lured the officer to his death. The defendant claimed the warrant was illegal, on the ground it failed to establish probable cause. The Minnesota Supreme Court upheld the use of voiceprints, or spectrograms, as evidence to show probable cause for arrest and search warrants.² The court further stated

1. "The voice spectrogram, which is produced by a spectrograph machine, is a visual record of human speech. In substance, the spectrograph machine consists of (1) a magnetic recording device, (2) a variable electronic filter, (3) a paper-carrying drum that is coupled to the magnetic recording device, and (4) an electronic stylus that marks the paper as the drum rotates. Spectrograms thus produced can be compared point for point to determine if any significant similarities exist." United States v. Raymond, 337 F. Supp. 641, 642 (D.D.C. 1972), citing VOICE IDENTIFICATION RESEARCH, A REPORT TO THE LAW ENFORCEMENT ASSISTANCE ADMINISTRATION, United States Department of Justice, Department of Michigan State Police, East Lansing, Michigan, Grant No. NI 70-004, at 9 (February, 1971).

Voiceprint identification uses the unique features in the spectrographic impressions of a person's utterances of ten commonly used English words, *the, to, and, me, on, is, you, I, it, and a*. Two major factors which determine the uniqueness of voice prints are the vocal cavities (throat, nasal, and two oral cavities formed by the position of the tongue), and the articulators (lips, teeth, tongue, soft palate, and jaw muscles). It is unlikely that two speakers would have vocal cavities dimensions and articulator use patterns identical enough to confound voiceprint identification methods. Kersta, *Speaker Recognition and Identification by Voiceprints*, 40 CONN. B.J. 586 (1966).

2. "[P]robable cause for arrest exists where there is a reasonable ground for suspicion supported by circumstances sufficiently strong in themselves to warrant a cautious man in believing the accused is guilty. Probable cause is concerned with probabilities and is something more than mere suspicion and something less than evidence which would sustain a conviction." State *ex rel.* Trimble v. Hedman, 192 N.W.2d 432, 434 (Minn. 1971), as quoted in State v. Fish 159 N.W.2d 786, 790 (Minn. 1968).

The defendant, Constance Trimble, was tried in Rochester, Minnesota in February and March of 1972. She admitted placing the call, claiming she was forced to do so by an unidentified person; thus the voiceprint evidence was not necessary to the prosecution's case. However, Miss Trimble was acquitted by a jury of all charges on March 16, 1972.

that spectrograms ought to be admissible for the purpose of corroborating voice comparisons made by ear alone and for the purpose of impeachment.

By doing so, the Minnesota Supreme Court has become the first civilian appellate court in the nation to declare that the voice-print process of identification has attained "general scientific acceptance"³ and qualifies as evidence in a criminal trial. *State ex rel. Trimble v. Hedman*, 192 N.W. 2d 432 (Minn. 1971).

Various other scientific tests have previously attained that acceptance, for example; blood tests,⁴ breath tests,⁵ fingerprints,⁶ footprints,⁷ x-rays,⁸ handwriting,⁹ and radar.¹⁰ Aural identification of a taped voice also has been admissible.¹¹ General scientific acceptance has not yet been accorded to the polygraph,¹² sodium pentathol,¹³ or evidence obtained by hypnotism.¹⁴

The Fifth Amendment to the Constitution of the United States provides that no man "shall be compelled in any criminal case to be a witness against himself." However, this has been held to be limited to testimonial disclosures¹⁵ only, and a defendant can be forced to stand up in court for identification,¹⁶ to walk before the jury,¹⁷ to give blood for blood tests,¹⁸ to submit to fingerprinting,¹⁹ and to put on a hat and coat²⁰ for the purpose of aiding in identification. He also can be compelled to speak to enable a witness to make a voice identification.²¹ However, the issue be-

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

4. *People v. Fidler*, 485 P.2d 725 (Colo. 1971) (to determine alcohol content in the blood).

5. The "Breathalyzer" is often used to determine alcohol content in the blood. *State v. Parrot*, 187 Neb. 213, 188 N.W.2d 694 (1971).

6. *State v. Reed*, 56 Wash. 2d 668, 354 P.2d 935 (1960), *cert. denied*, 368 U.S. 857 (1960).

7. *McClard v. United States*, 386 F.2d 495 (8th Cir. 1967).

8. *Call v. Burley*, 57 Idaho 58, 62 P.2d 101 (1936).

9. *Morrone v. Morrone*, 44 N.J. Super. 305, 130 A.2d 396 (1957).

10. To measure excessive speed of automobiles. *City of St. Louis v. Boecker*, 370 S.W.2d 731 (Mo. 1963).

11. That is, a witness has been allowed to listen to the taped voice of a defendant and compare the voice with the voice he allegedly heard. *Carbo v. United States*, 314 F.2d 718 (9th Cir. 1963).

12. *United States v. Salazar-Gaeta*, 447 F.2d 468 (9th Cir. 1971).

13. *People v. Jones*, 52 Cal. 2d 636, 343 P.2d 577 (1959). Courts have been reluctant to admit evidence obtained by the use of the polygraph, or lie detector, saying that it has not been proven to be scientifically reliable enough at this time. Evidence obtained by the use of sodium pentathol (truth serum) and by hypnotism also has been refused, since neither of these processes is considered to be an exact or objective process.

14. *People v. Busch*, 56 Cal. 2d 868, 366 P.2d 314, 16 Cal. Rptr. 898 (1961); *State v. Pusch*, 77 N.D. 860, 46 N.W.2d 508 (1950). But there is authority that a witness may testify to facts from her own recollection, although the witness' present knowledge was acquired as a result of being hypnotized. *Harding v. State*, 5 Md. App. 230, 246 A.2d 302 (1968), *cert. denied*, 395 U.S. 949 (1969).

15. 8 WIGMORE, EVIDENCE §2263 (McNaughten rev. 1961).

16. *Allen v. State*, 188 Md. 603, 39 A.2d 820 (1944).

17. *In re Moran*, 203 U.S. 96 (1906).

18. *Schmerber v. California*, 384 U.S. 757 (1966).

19. *United States v. Kelley*, 55 F.2d 67, 70 (2d Cir. 1932), *rev'g* 51 F.2d 263 (2d Cir. 1931).

20. *Richardson v. State*, 168 Miss. 788, 151 So. 910, 911 (1934).

21. *People v. Ellis*, 55 Cal. Rptr. 385, 421 P.2d 893, 395 (1966).

fore the Minnesota court was not whether the defendant's constitutional rights had been violated, but whether the voiceprint process had gained the required scientific acceptance to be admissible.

Only four civilian appellate courts and one military court had considered the voiceprint issue prior to the recent Minnesota decision.²² In 1967 the United States Court of Military Appeals upheld the conviction of an airman who had been convicted of making obscene and threatening telephone calls.²³ The court relied on the prosecution's expert witness, Lawrence G. Kersta,²⁴ (the principal developer of the voiceprint identification process), in determining that an identification made by this process is a reliable one. While recognizing that a disagreement concerning scientific acceptance did exist,²⁵ the court said that expert testimony is often admitted where the experts disagree.²⁶ The court then allowed tape recordings of the obscene calls and the test call to be played before the court, and the court members themselves could determine the margin of error, if any, in Mr. Kersta's expert opinion.²⁷

Courts in New Jersey and California have denied the admission of voiceprint evidence in criminal trials. In *State v. Cary*²⁸ the New Jersey court heard testimony from four expert witnesses;²⁹ the only one who would attest to the absolute reliability of the voiceprint process was, as in *Wright*, Dr. Lawrence G. Kersta. In denying the admissibility the court said it is hard to define just when a scientific principle or discovery passes from the experimental to the demonstrable stage; to do so it must at least have gained gen-

22. *People v. Straehle*, Crim. No. 9323/64 (Sup. Ct. Westchester City Ct. 1966). This New York case involved a perjury prosecution of a policeman. The trial court admitted voiceprint evidence, saying it was up to the jury to determine the weight to be given the evidence. The case, however, resulted in a hung jury. See Cederbaums, *Voiceprint Identification: A Scientific and Legal Dilemma*, 5 CRIM. L. BULL. 323, 326 (1969).

In *State v. McKenna*, 94 N.J. Super. 71, 226 A.2d 757, 759 (1967) the appellate court ruled only on whether the defendant could be compelled to submit to tape recording of his voice for the purpose of comparison with a spectrogram already in the prosecutor's possession. The court made it clear that it was not passing on the admissibility of spectrograms as evidence. No attempt was made to use voiceprint evidence in the trial. See also *People v. King*, 266 Cal. App. 2d 437, 72 Cal. Rptr. 478 (1968); *State v. Cary*, 99 N.J. Super. 323, 239 A.2d 680 (1968), discussed in text accompanying notes 28, 32 *infra*.

23. *United States v. Wright*, 17 U.S.C.M.A. 183, 37 C.M.R. 447 (1967).

24. Kersta is an electrical engineer and physicist who worked 39 years for Bell Telephone Laboratories, retiring in 1966. He established Voiceprint Laboratories in Somerville, New Jersey, which manufactures and sells the spectrograph. Thus it was in his interest to see that the spectrograph was declared reliable.

25. Dr. Frank Clark, a senior research psychologist at Stanford Research Institute in the area of speech transmission and voice recording, and Dr. Cletus J. Burke testified against the validity of the spectrograph.

26. *United States v. Wright*, 17 U.S.C.M.A. 183, 188, 37 C.M.R. 447, 453 (1967).

27. *Id.*

28. *State v. Cary*, 99 N.J. Super. 323, 239 A.2d 680 (1968).

29. Dr. Lawrence G. Kersta, *supra* note 24. Dr. Louis J. Gerstman, an associate professor of psychology and speech at Queen's College, City University of New York; Dr. Peter N. Ladefoged, a professor of phonetics at the University of California, Los Angeles; and Dr. Oscar I. Tosi, a professor teaching experimental phonetics, analysis of sound, mathematics for speech science and related subjects at Michigan State University. *State v. Cary*, 99 N.J. Super. 323, 239 A.2d 680, 682-83 (1968).

eral acceptance in the field in which it belongs.³⁰ There just was not enough evidence presented for the New Jersey court to tell if the voiceprint process had been generally accepted.³¹

*People v. King*³² was decided on similar reasoning. There the court also was not satisfied that the voiceprint process had attained general scientific acceptance. The prosecution had Dr. Kersta testify, but three other experts testified against the validity of voiceprint evidence.³³ As a result the court turned down the evidence and quoted *State v. Cary*,³⁴ saying that "something more than the bare opinion of one man, however qualified, is required" to convince the court of the validity of the voiceprint.³⁵

The Minnesota Supreme Court has decided that the spectrograph method of voice identification has gained general scientific acceptance. The court heard testimony from three experts, (Dr. Kersta did not testify). Two of these, Dr. Tosi and Dr. Ladefoged, had testified against the absolute reliability of the voiceprint in *Cary*.³⁶ Dr. Tosi has subsequently conducted further voiceprint tests³⁷ and

30. The court paraphrased Frye v. United States, 293 F. 1013 (D.C. Cir. 1923), saying, "There is a twilight zone beyond which the principle involved in the discovery must reach before it can be acceptable to the courts, but it can be said that it must be sufficiently established to have gained general acceptance in the particular field in which it belongs." *State v. Cary*, 99 N.J. Super. 323, 239 A.2d 680, 685 (1968).

31. *State v. Cary*, 99 N.J. Super. 323, 239 A.2d 680, 685 (1968).

32. 266 Cal. App. 2d 437, 72 Cal. Rptr. 478 (1968). This was an arson case stemming from the Watts riots of 1965. A CBS news program contained an interview with an unidentifiable Negro male who confessed to several Molotov cocktail bombings. By using the spectrograph to compare the voice in the newscast with the defendant's voice, the trial court convicted the defendant. The California Supreme Court reversed the conviction.

33. Testifying against the validity of the voiceprint process were Dr. Frank Clark, *supra* note 25; Dr. Louis J. Gerstman, and Dr. Peter N. Ladefoged, *supra* note 29.

34. *State v. Cary*, 49 N.J. 343, 230 A.2d 384, 389 (1967). The defendant was indicted for murder in 1966. The trial court, on motion of the state, ordered the defendant to submit to a recording of his voice, so that a voiceprint could be made and compared with a voiceprint made from the tape recording of a call to the police station concerning a homicide. The defendant appealed this interlocutory order. The Supreme Court of New Jersey remanded the case to the Superior Court of New Jersey (*State v. Cary*, 99 N.J. Super. 323, 239 A.2d 680 (1968)), to determine if the spectrograph had achieved general scientific acceptance to be admissible as evidence.

35. *People v. King*, 266 Cal. App. 2d 437, 72 Cal. Rptr. 478, 488 (1968).

36. Experts testifying were Dr. Tosi and Dr. Ladefoged, who had testified against the spectrograph in *Cary*; and Sergeant Ernest Nash of the Michigan State Police Department, who prepared the spectrograms in the instant case. Dr. Tosi and Sergeant Nash testified for the prosecution. *State ex rel. Trimble v. Hedman*, 192 N.W.2d 432, 434-35 (1971).

37. Dr. Tosi has since conducted extensive experiments for the purpose of studying speech spectrograms for voice identification, comparing over 34,000 samples of voiceprints over a four-year period.

Dr. Tosi's tests used a homogeneous sampling of individuals. Dr. Lawrence Kersta's prior study did not: it used a heterogeneous group, who had different accents, ages, and backgrounds, and this fact made it easier to differentiate between speakers. Dr. Tosi's group, on the other hand, were male students ranging in age from 19 to 34. There were no distinctive accents, and none of the students had noticeable speech defects.

Dr. Kersta's experiment also used closed testing groups, i.e., the spectrogram of the unknown voice was always included in the group of known voices being used. All the examiner had to do was find the spectrogram in the known group of spectrograms that most closely matched the spectrogram of the unknown voice. Dr. Tosi, however, used open tests, where the examiners were told that the spectrogram of the unknown voice may or may not be among the spectrograms of the known speakers. This "open" situation more closely parallels the actual situation confronted by law enforcement

both men have apparently changed their minds.³⁸ Dr. Tossi now thinks the spectrograph is "extremely reliable."³⁹

The court had before it only the issue of whether or not the voiceprint could be used to show probable cause for an arrest warrant. However, it went further and declared in dictum that

spectrograms ought to be admissible at least for the purpose of corroborating opinions as to identification by means of ear alone. They ought also to be admissible for the purpose of impeachment.⁴⁰

Thus the Minnesota court has opened the door for the use of voiceprint evidence in criminal trials. New Jersey and California were cautious and did not admit voiceprint evidence. But apparently the trend will be to allow voiceprint evidence. Two more courts have, since *Trimble*, allowed voiceprints to be admitted.⁴¹ Tests conducted since *Cary* and *King* indicate the process is very reliable — the evidence obtained this way should therefore be admissible, and the fact-finder should be allowed to accept or reject that evidence.

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CRIMINAL LAW—CONSTITUTIONAL LAW—THOSE PERSONS ARRESTED BUT NOT CONVICTED OF A CRIME HAVE A CONSTITUTIONAL RIGHT TO THE RETURN OF THEIR FINGERPRINTS AND PHOTOGRAPHS—
 Petitioner was arrested on a charge of assault and was subsequently fingerprinted and photographed by the Seattle Police Department. After charges were dismissed, petitioner requested

officials when making voice identifications. *United States v. Raymond*, 337 F. Supp. 641 (1972).

38. Dr. Ladefoged was not convinced of the reliability of the voiceprint process in *Trimble*. However, after reading Dr. Tossi's study, *supra* note 37, Dr. Ladefoged now believes that spectrograms have been established as a reliable method of voice identification, and he testified in favor of spectrograms in *United States v. Raymond*, 337 F. Supp. 641 (D.D.C. 1972).

39. *State ex rel. Trimble v. Hedman*, 192 N.W.2d 432, 439 (Minn. 1971).

40. *Id.* at 441.

41. *United States v. Raymond*, 337 F.Supp. 641 (D.D.C. 1972); *Worley v. State*, 263 So. 2d 613 (Fla. 1972). The circumstances in this case were nearly identical to *Trimble*. Here also a police officer was shot as he responded to an emergency telephone call—this one indicating a policeman in trouble. This call had been recorded, and the defendant was forced to read the statements made by the caller into a tape recorder. Sergeant Ernest Nash of the Michigan State Police Department made spectrograms from these tapes and compared them, identifying the defendant as the person who made the emergency call. Sergeant Nash also made the spectrogram identification in *Trimble*. The court allowed the Government's motion to introduce spectrograms as evidence. In *Worley* voiceprint evidence was allowed to corroborate a policeman's identification of the defendant's voice. The defendant was convicted of telephoning false bomb threats. The court affirmed the conviction.