

Scientific Evidence

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Developments: 1988-1993

- DNA Litigation
 - People v. Castro (1989)
- Daubert v. Merrell Dow Pharm. (1993)
 - Supreme Court's "junk science" decision
- Lab Abuse Cases
 - W. Virginia (Fred Zain) (1993)

DNA Admissibility “Wars”

- University science, not forensic science
- “Science culture”
 - written protocols
 - quality assurance/quality control
 - proficiency testing
- Open science vs. adversarial science

DNA Gold Standard

- What DNA “Fingerprinting” Can Teach the Law About the Rest of Forensic Science?
 - “forensic scientists, like scientists in all other fields, should subject their claims to methodologically rigorous empirical tests. The results of these tests should be published and debated.”
 - Saks & Koelher, 13 Cardozo L. Rev. 361 (1991)

Later Supreme Court Cases

- *Joiner* (1997):
 - *Daubert* “somewhat broader” than *Frye*
- *Kumho* (1999):
 - *Daubert* extends to nonscientific evidence
- *Wisegram v. Marley Co.*, 528 U.S. 440 (2000)
 - *Daubert* sets an “exacting standard”

U.S. v. Horn

- “Under *Daubert*, ... it was expected that it would be easier to admit evidence that was the product of new science or technology. In practice, however, it often seems as though the opposite has occurred – application of *Daubert/Kumho Tire* analysis results in the exclusion of evidence that might otherwise have been admitted under *Frye*.”
 - 185 F. Supp. 2d 530 (D. Md. 2002) (HGN)

Admissibility

- *Daubert* trilogy invites “reexamination even of ‘generally accepted’ venerable, technical fields.”
 - U.S. v. Hines, 55 F. Supp. 2d 62, 67 (D. Mass. 1999) (handwriting comparison).
- “Courts are now confronting challenges to testimony, as here, whose admissibility had long been settled.”
 - U.S. v. Hidalgo, 229 F. Supp. 2d 961, 966 (D. Ariz. 2002)

No “Grandfathering”

- “Nor did [*Daubert*] ‘grandfather’ or protect from *Daubert* scrutiny evidence that had previously been admitted under *Frye*.”
 - U.S. v. Williams, 506 F.3d 151, 162 (2d Cir. 2007).

Rand Institute: Civil Cases

- “[S]ince *Daubert*, judges have examined the reliability of expert evidence more closely and have found more evidence unreliable as a result.”
 - Dixon & Gill, 8 Psychol., Pub. Pol’y & L. 251 (2002)

Study of Criminal Cases

- “*Daubert* decision did not impact on the admission rates of expert testimony at either the trial or appellate court levels.”
- Groscup et al., 8 Psychol., Pub. Pol’y & L. 339, 364 (2002)

Forensic Sci. Community

- “The *Daubert* Standard goes a step further than *Frye* and requires the forensic scientists to prove that the evidence is fundamentally scientifically reliable, not just generally accepted by his/her peers in the discipline.”
 - Jones, President’s Editorial, 47 J. Forensic Sci. 437, 437 (2002)

Strict v. Lax Approaches

- “The choice is not between easy *Frye* and difficult *Daubert*; it is between strict and lax scrutiny.”
 - Redmayne, Expert Evidence and Criminal Justice 113 (2001)

Hair Comparisons

- “This court has been unsuccessful in its attempts to locate *any* indication that expert hair comparison testimony meets any of the requirements of *Daubert*.”
 - *Williamson v. Reynolds*, 904 F. Supp. 1529, 1558 (E.D. Okl. 1995) *rev'd on this issue*, 110 F.3d 1508, 1522-23 (10th Cir. 1997) (due process, not *Daubert*, standard applies in habeas proceedings)

Hair Comparison (cont.)

- Most courts still admit this evidence
- DNA evidence compared: Microscopic analysis wrong 12% of time
 - Houck & Budowle, *Correlation of Microscopic and Mitochondrial DNA Hair Comparisons*, 47 J. Forensic Sci. 964 (2002)

Bitemark Comparison

- “Despite the continued acceptance of bitemark evidence in European, Oceanic and North American Courts, the fundamental scientific basis for bitemark analysis has never been established.”
 - Pretty & Sweet, The Scientific Basis for Human Bitemark Analyses – A Critical Review, 41 Sci. & Just. 85, 86 (2001)

Bitemark (cont.)

- State v. Krone, 897 P.2d 621 (Ariz. 1995)
 (“The bite marks were crucial to the State’s case because there was very little other evidence to suggest Krone’s guilt.”)
- Krone exonerated through DNA profiling
 - Hansen, The Uncertain Science of Evidence, ABA J. 49 (July 2005)

Bitemark (cont.)

- Expert concluded “that Burke's teeth matched the bite mark on the victim's left breast to a ‘reasonable degree of scientific certainty.’ ... DNA analysis showed that Burke was excluded as the source of male DNA found in the bite mark on the victim's left breast.”
- *Burke v. Town Of Walpole*, 405 F.3d 66, 73 (1st Cir. 2005)

Handwriting Comparisons

- “Because the principle of uniqueness is without empirical support, we conclude that a document examiner will not be permitted to testify that the maker of a known document is the maker of the questioned document. Nor will a document examiner be able to testify as to identity in terms of probabilities.”
 - U.S. v. Hidalgo, 229 F. Supp. 2d 961, 967 (D. Ariz. 2002)

Fingerprints

- U.S. v. Llera Plaza, 188 F. Supp. 2d 549, 558 (E.D. Pa. 2002) (excluding and then admitting)
- State v. Rose, KO6-545 Cir. Ct. Baltimore, Md. 2007) (excluded fingerprint evidence under *Frye* standard).

Firearms Identifications

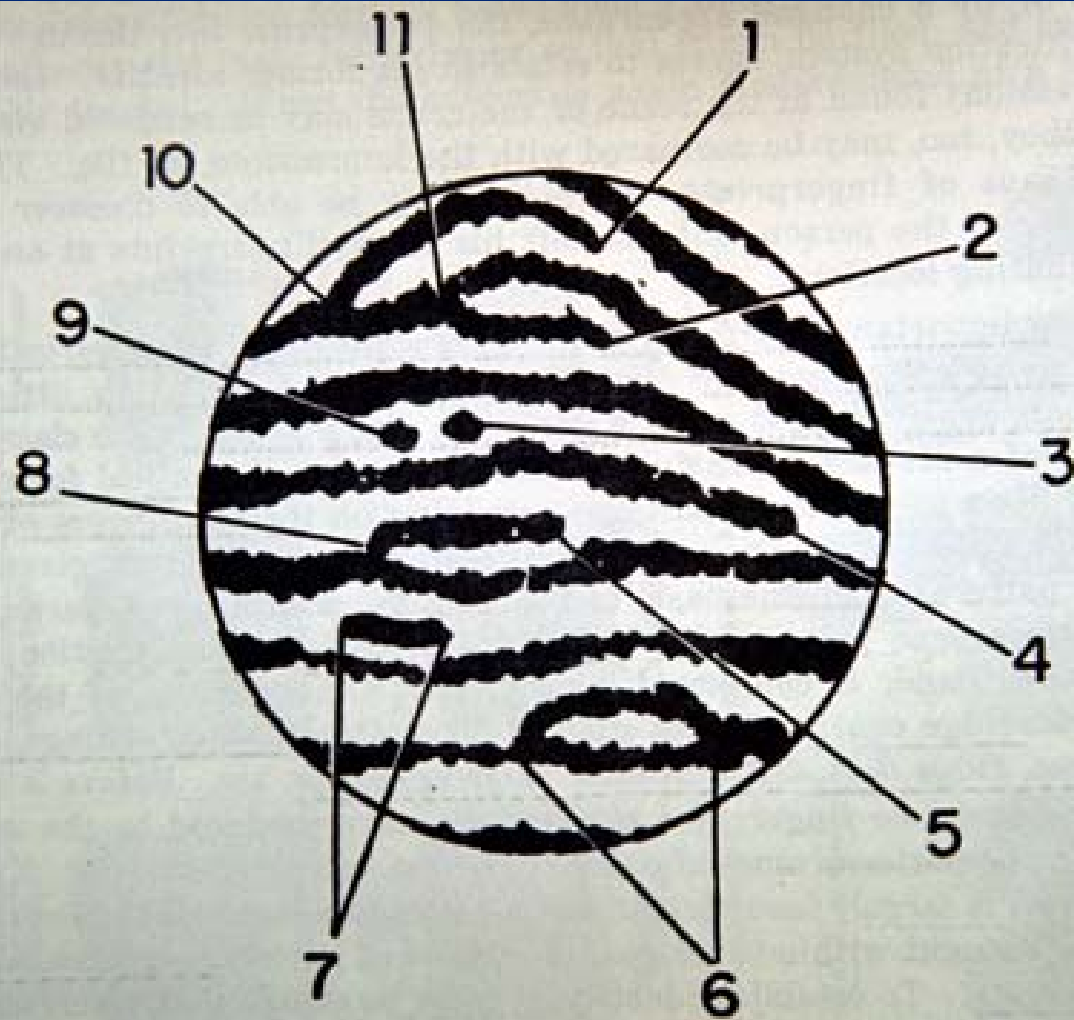
- U.S. v. Monteiro, 407 F. Supp. 2d 351 (D. Mass. 2006)
- U.S. v. Glynn, 578 F. Supp. 2d 567 (S.D. N.Y. 2008)

Cartridge Case Ident. (cont.)

- “O’Shea declared that this match could be made ‘to the exclusion of every other firearm in the world.’ . . . That conclusion, needless to say, is extraordinary, particularly given O’Shea’s data and methods.”
- Admitting similarities, but not conclusion
 - U.S. v. Green, 405 F. Supp. 2d 104 (D. Mass. 2005)

NRC Ballistic Imaging (2008)

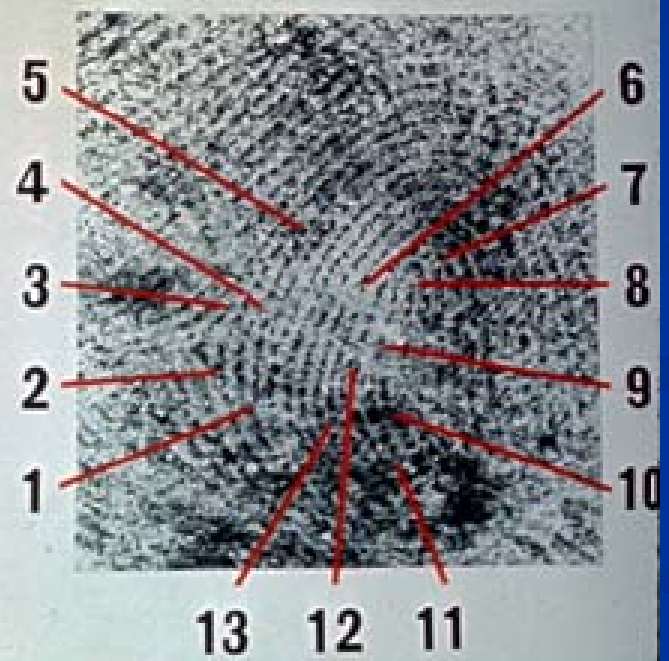
- Report was concerned about testimony cast “in bold absolutes” such as that a match can be made to the exclusion of all other firearms in the world: “Such comments cloak an inherently subjective assessment of a match with an extreme probability statement that has no firm grounding and unrealistically implies an error rate of zero.” *Id.* at 82.

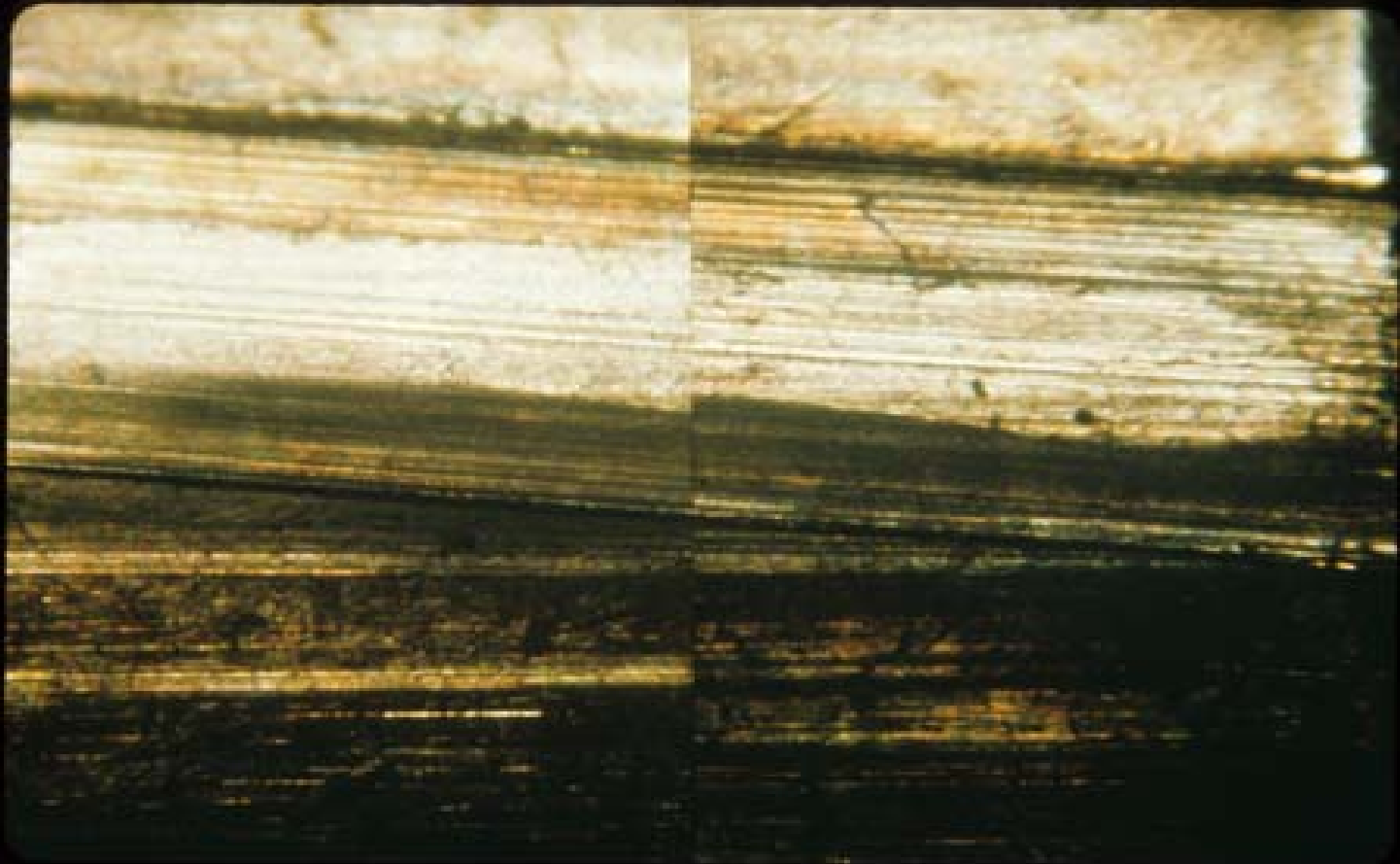


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Defense Experts

- *Ake v. Oklahoma*, 470 U.S. 68 (1985)
(recognizing a due process right to a defense expert under certain circumstances).
- Giannelli, *Ake v. Oklahoma: The Right to Expert Assistance in a Post-Daubert, Post-DNA World*, 89 *Cornell L. Rev.* 1305 (2004).

Pretrial Discovery

- Giannelli & Imwinkelried, *Scientific Evidence* ch. 3 (4th ed. 2007).
- Giannelli, *Criminal Discovery, Scientific Evidence, and DNA*, 44 *Vand. L. Rev.* 791 (1991).