



FORENSIC SCIENCE

Fingerprinting Doesn't Hold Up as a Science in Court

When the U.S. Supreme Court set new standards 9 years ago designed to keep “junk science” out of the courtroom, few would have guessed that evidence based on one of the oldest and most widely used forensic techniques in the world might be in jeopardy. But earlier this month, a federal judge ruled that old-fashioned fingerprinting doesn't meet the Supreme Court's standards. The ruling won't knock fingerprint examiners out of the courtroom, but it may limit the claims they can make. And it opens the way for challenges to the scientific credibility of ballistics and other forensic techniques.

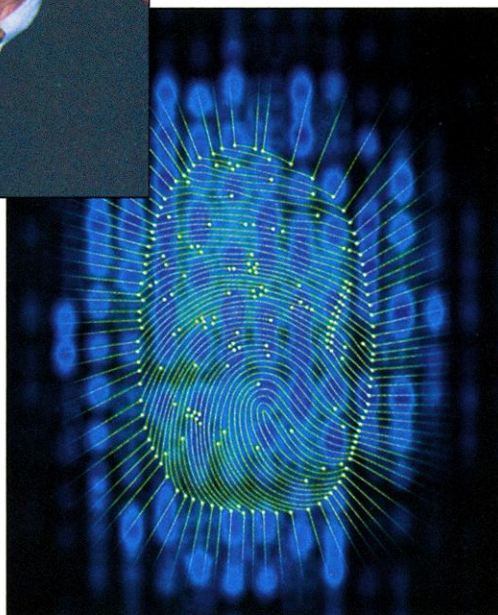
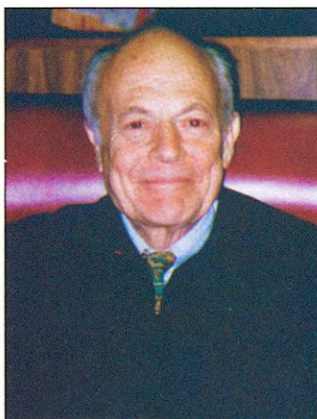
In 1993 the U.S. Supreme Court clarified the Federal Rules of Evidence specifying what counts in court as science. In *Daubert v. Merrell Dow Pharmaceuticals*, the court said that a technique or methodology qualifies as science only if it can be tested, is subject to peer review, possesses known rates of error, and is generally accepted as science. In the past 3 years, defense lawyers and skeptics have argued repeatedly that fingerprint identification—the practice of matching a “latent print” found at a crime scene to a copy taken by authorities—does not satisfy the court's standards. More than 20 state and federal judges had rejected such arguments, but on 7 January, Judge Louis H. Pollak of the U.S. District Court for the Eastern District of Pennsylvania found that fingerprinting fails three of the four *Daubert* standards.

Pollak, a former dean at the University of Pennsylvania and Yale law schools, ruled on whether fingerprint evidence could be introduced in a trial in his court. He rejected the argument that the technique had been tested both by nearly 100 years of courtroom experience and by examiners checking each other's findings. Fingerprint identification also has not been subject to peer review, he found, in part because fingerprint examiners

do not constitute a “scientific community.” The judge further found that the rate at which practitioners make errors has not been quantified.

Much of the controversy surrounding fingerprinting stems from the subjectivity involved in comparing prints. Examiners systematically note the overall pattern of the ridges; places where individual ridges stop or split, which are known as Galton points; and details on the individual ridges, such as the positions of pores. But ultimately the examiner relies on his or her ability to recognize patterns to decide whether two prints match, says Pat Wertheim, a forensic scientist with the Arizona Department of Public Safety in Tucson.

But although their judgments are subjective, fingerprint examiners claim their method allows them to make matches with absolute accuracy. They attribute any error to mis-



Science friction. U.S. District Judge Louis H. Pollak ruled that fingerprinting does not match the Supreme Court's definition of science.

takes made by the examiner and argue that such “practitioner error” does not fall under the scrutiny of *Daubert*. Pollak ruled, however, that practitioner error must also be quantified, which critics and supporters agree has never been done.

Even though he found that fingerprinting fails the *Daubert* test, Pollak didn't bar fingerprint evidence entirely from the trial. He ruled that fingerprint examiners for both sides could point to characteristics of the fingerprints presented as evidence, but he forbade them from declaring whether two prints match.

The ruling applies only to one case, but it will likely set a precedent by which other judges will find fingerprinting unscientific, says David Faigman, a law professor at Hastings College of the Law in San Francisco. He adds that Pollak's ruling should spur the necessary testing, which will likely prove fingerprinting reliable: “The FBI and others will begin to do the research that *Daubert* has called for all along.”

However, David Ashbaugh, a forensic scientist with Ridgeology Consulting Services in Hope, British Columbia, and a staff sergeant in the Royal Canadian Mounted Police, says that Pollak misunderstood the arguments made in support of fingerprinting. “This is just one judge,” Ashbaugh says. “There will be opportunities to present our case to other judges.”

In the meantime, James Starrs, a law professor and forensic scientist at George Washington University in Washington, D.C., says that fingerprint examiners have a better chance of satisfying the flexible *Daubert* standards by declaring fingerprint identification a form of technical expertise, similar to accident reconstruction, rather than science. But fingerprint examiners aren't willing to strike such a bargain, Wertheim says. “That's the chicken's way out,” he says. “We all feel that fingerprint identification is good science.”

Both critics and supporters of fingerprinting expect lawyers to use Pollak's decision to try to appeal convictions and to question the validity of other types of forensic science. Suspicion will likely fall first on ballistics: the process in which a bullet is matched to a smoking gun.

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