Advanced 2
Reading Unit 4
Presented by Mohammad Rajabpur

Fingerprints

A

For most of the century since it made its courtroom debut, fingerprinting has enjoyed an impeccable reputation for identifying criminals. What jury would acquit a suspect if his prints matched those found at the scene of a crime? It was thus understandable that when a speaker at a recent meeting on Science and the Law held in San Diego by America's Justice Department hinted that the technique might not deserve its aura of infallibility, a law enforcement agent in the audience was later overheard calling him an unprintable name.

debut = the first public appearance of a performer or sports player
He will make his debut for the first team this week.
the band's debut album
She's making her New York debut at Carnegie Hall.

impeccable = perfect; flawless; without any mistakes or faults

acquit = exonerate

hint = imply

aura (of something) = a feeling or particular quality that is very easy to notice and seems to surround a person or place
She always has an aura of confidence.
The mountains have a magical aura.

infallibility = the fact that somebody/something is never wrong or never fails

law enforcement agent = police officer or FBA agent

unprintable name = f word; swearing; curse; offensive word

B

Understandable, but not, says the speaker, Simon Cole, justified. For he is one of a small group of people that has started looking at the technique which, above all others, gave forensic science its scientific status. And, surprisingly, he has found it is scientifically and statistically wanting.

The Paraphrase of the Frist Sentence:
Simon Cole says, "It is understandable, but not justified."

justified = reasonable

forensic = connected with the scientific tests used by the police when trying to solve a crime

wanting = not good enough

C
This is not to say that the world's prisons are full of innocent victims of dodgy evidence. But the fact is, according to Dr. Cole, who researched the subject at Cornell University, that fingerprinting has never been subjected to the scientific scrutiny required in a modern courtroom. And he thinks it should be.

dodgy = suspicious

scrutiny = careful study

D
Modern fingerprinting goes back to Francis Galton, a 19th-century British scientist who, ironically, helped pioneer the use of statistics. In 1892, Galton looked at the pattern of whorls, arches, and loops that make up fingerprints, and estimated that the chance of two prints matching at random was about one in 64 billion.

pioneer = to be the first person who does something

whorl = a pattern made by a curved line that forms a rough circle, with smaller circles inside bigger ones

arch /ɑːrtʃ/= anything that forms a curved shape at the top

E
That estimate, however, has never been backed up by any data. Besides, Galton was not really comparing whole prints. Instead, he identified places where the ridges of which fingerprints are composed, either end or split. These are now known as "points of similarity," or "Galton details," and if two prints have enough points in common, they are deemed to be identical. Galton's estimate relied on using every available point (there are generally between 35 and 50). Current practice, which varies widely from one place to another, has been to declare a match if there are somewhere between 8 and 16 points of similarity linking a point found at a crime scene and one taken from a suspect. Unfortunately, the validity of this process, and the number of points of similarity needed to make it statistically secure, have not been scientifically investigated. Nor has the alternative technique, recently introduced in England of relying on an examiner's overall impression of a match, without any attempt at quantification. That puts fingerprinting on shaky theoretical ground.

estimate = a judgement that you make without having the exact details or figures about the size, amount, cost, etc. of something

ridge = a raised line on the surface of something; the point where two sloping surfaces join

deem = consider

validity = being acceptable; acceptability

quantification = the act of describing or expressing something as an amount or a number

F

And two other things make the situation worse in practice. The first is that fingerprints found at crime scenes tend to be incomplete. What are being compared are thus not whole prints, but mere fragments. Nothing, not even Galton's original analysis, has anything to say about the likelihood of fragments of prints coinciding in different individuals. The second difficulty is that most fingerprint evidence found at the scene of a crime is "latent." In other words, it requires treatment with chemicals, or illumination with ultraviolet light, in order to make it visible enough to work with—and, even then, it is often indistinct. How valid it is to compare such filtered evidence with the clean crisp prints obtained from suspects in controlled conditions is another unexplored question.

scene = location

fragment = a part of the whole

coincide = to be the same or very similar
The interests of employers and employees do not always coincide.

latent = hidden; not manifest

illumination = light or a place that light comes from
The only illumination in the room came from the fire.

indistinct = vague; hazy; unclear

valid = acceptable

crisp = fresh and clean

G
The upshot is that, at least by comparison with the techniques used to process DNA evidence (which are often, in tribute to the awe in which the older technique is held, referred to as "DNA fingerprinting"), fingerprints look technically flawed. And lawyers—backed in America by a judgment made in 1993 that set standards for the admission of scientific evidence in court—are starting to notice.

upshot = outcome; final result

tribute = respect

flawed = problematic; containing errors; defective

H
The turning point was the case of Byron Mitchell, who allegedly drove the getaway car in a robbery carried out in Pennsylvania in 1991. In 1998, Mr. Mitchell appealed against his conviction. The case turned on two latent prints—one found on the getaway car's steering wheel and the other on its gear lever–that were said to link him to the crime. The details of the case are tortuous: Mr. Mitchell's conviction was upheld this year, but his lawyer Robert Epstein, another doubter of the value of fingerprints, is still trying to have it overturned.

turning point = an important development or change

appeal = to make a formal request to a court or to somebody in authority for a judgment or a decision to be changed

tortuous = complicated; complex

uphold = (especially of a court of law) to agree that a previous decision was correct or that a request is reasonable; approve of

overturn = to officially decide that a legal decision, etc. is not correct, and to make it no longer legally recognized

I
During the course of the trial, however, the Department of Justice did something that had never been done before. It carried out a rough and ready experiment to test the reliability of fingerprints. It did this by sending the latent prints, plus inked prints of Mr. Mitchell's fingers, to the laboratories of 53 state law enforcement agencies. Eight of the 35 agencies that responded were unable to find a match for one of the latent prints, and six failed to match the other—an average failure rate of 20%.

J
That is a shocking result. And confidence in the department's objective attitude to scientific evidence is not enhanced by its response to the first round of results. It slipped enlarged photographs of the latent prints and the prints from Mr. Mitchell into transparent plastic sleeves, and marked red dots on the sleeves to suggest which of Mr. Mitchell's prints matched the latent ones and where. When this "modified" evidence was sent back to the errant laboratories, most of the examiners took the hint and agreed that the prints did actually match, after all.

objective = unbiased; impartial

errant (adj.) = doing something that is wrong; not behaving in an acceptable way

K
This case, in Dr. Cole's view, casts serious, and for the first time, quantitative doubt on the reliability of fingerprints. More research would thus be welcome, and America's National Institute of Justice (an arm of the Department of Justice) is proposing to study the matter, and has made $500,000 available to do so. This is, in effect, an admission that fingerprinting as now practiced may not actually be reliable. In the meantime, the use of a technique that may have an error rate as high as 20% raises a lot of legal questions. If these are not answered soon, many more cases that turned on a few smudges left behind by a careless criminal or an innocent bystander are going to be dragged before the appeals courts.

Full Text:

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Sample Summary
Fingerprinting, long considered an infallible method for identifying criminals, has come under scrutiny for its scientific and statistical reliability. Dr. Simon Cole and others argue that fingerprinting has never undergone rigorous scientific examination required for modern courtroom evidence. The technique, dating back to Francis Galton's 1892 analysis, relies on "points of similarity" rather than complete prints, with standards for matches varying widely. Fingerprints found at crime scenes are often incomplete and require chemical treatment or UV light to be visible, raising questions about the validity of comparing such evidence to clear prints obtained from suspects. Recent experiments and legal challenges, such as the Byron Mitchell case, have shown significant error rates in fingerprint identification, prompting calls for further research and raising concerns about the reliability of this forensic method in legal contexts.