

Beyond Mayfield: Wrongful Convictions Due to Fingerprint Errors and Lessons Learned



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United Flight 173



- December 8, 1978
- Denver – Portland
- Captain McBroom

United Flight 173



- Death toll¹
 - 8 passengers
 - Flight attendant
 - Flight engineer
- 24 individuals with serious injuries

United Flight 173



Anatomy of Error

- Captain Broom
 - Experienced



Anatomy of Error

- Captain Broom
 - Experienced
 - “Certified” in his field



Anatomy of Error

- Captain Broom
 - Experienced
 - “Certified” in his field
 - Followed all protocols and procedures



Anatomy of Error

- Captain Broom
 - Experienced
 - “Certified” in his field
 - Followed all protocols and procedures
 - Exercised great caution



Anatomy of Error

- Captain Broom
 - Experienced
 - “Certified” in his field
 - Followed all protocols and procedures
 - Exercised great caution
 - Crashed the plane



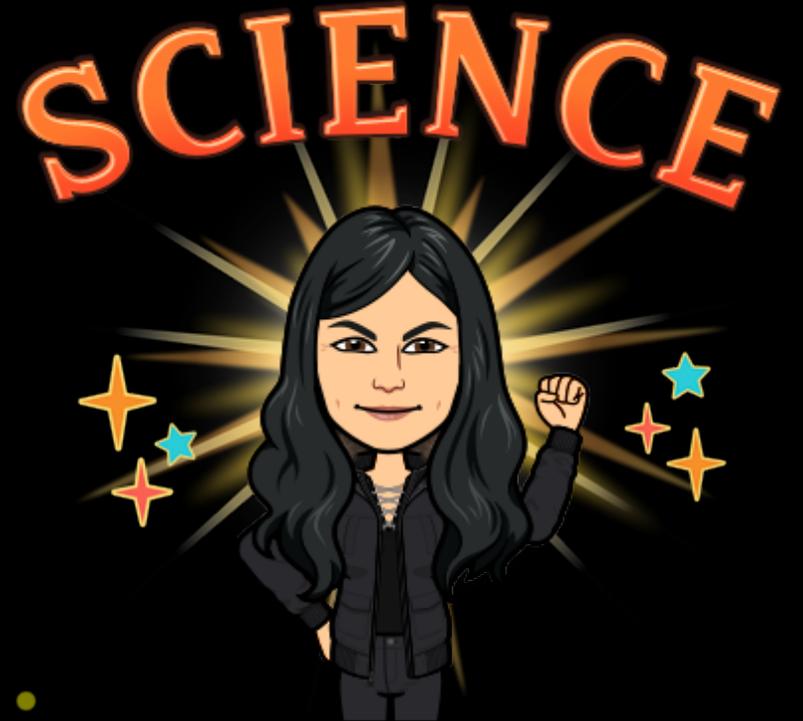
Anatomy of Error

- What happened next?
 - FAA changed regulations
 - Implemented innovative training
 - Published exhaustive assessments

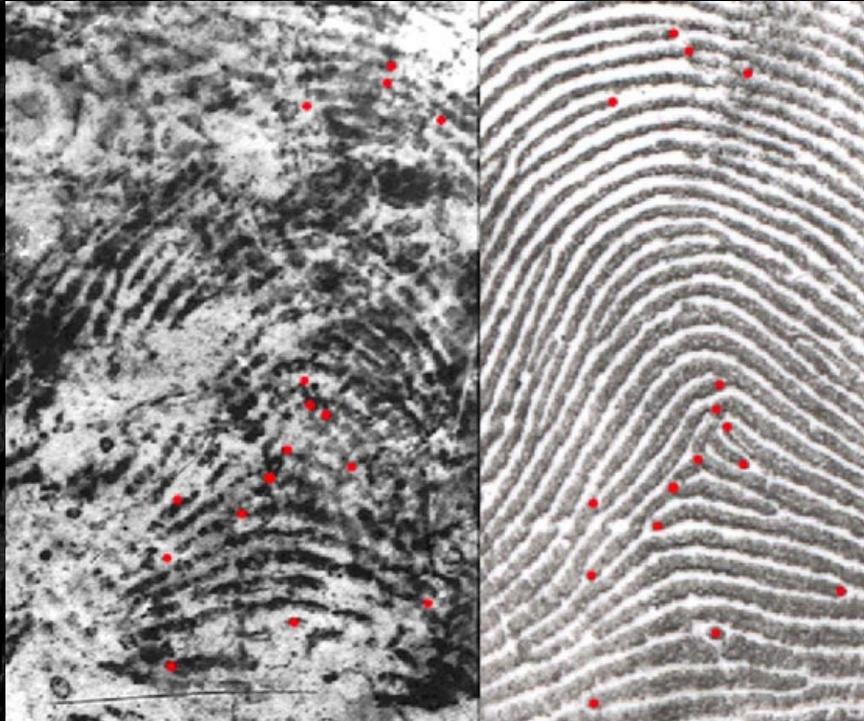


Studying cases of error allows us to...

- Understand how errors occur
- Take steps to limit the possibility of similar errors in the future



Mayfield & McKie



- Errors are not limited to
 - Western adversarial system
 - Countries with holistic systems of fingerprint analysis
 - Uncertified examiners or unaccredited laboratories
 - Unverified same source attributions
 - Cases without defense experts

Wrongful Convictions

- **Faulty** or **misleading** forensics has been shown to be the second leading cause of wrongful convictions across the United States.²
 - Evidence is **faulty** when the science does not support the conclusions testified to under oath.
 - Evidence is **misleading** when the conclusions are expressed with an inappropriate degree of confidence or when limitations are not sufficiently communicated to the fact finder.



Stephan Cowans

- 1997 (Massachusetts): Police officer shot twice while in a physical altercation with an unknown subject
- Also shot at a window where a witness was watching
- Subject fled the scene, dropping a baseball cap
- Subject forcibly entered a home where a woman and her daughter resided
- Over the next ten minutes, he hid in the home and drank some water from a glass mug
- He wiped down the gun, leaving it, the mug and a white sweatshirt at the home

STORY TIME



Stephan Cowans

- A few weeks later, both the injured officer and the witness from the second-floor window identified Stephan Cowans from a photo array lineup
- The woman and daughter, who had spent considerably more time with the suspect, did not identify Cowans from the lineup.

STORY TIME



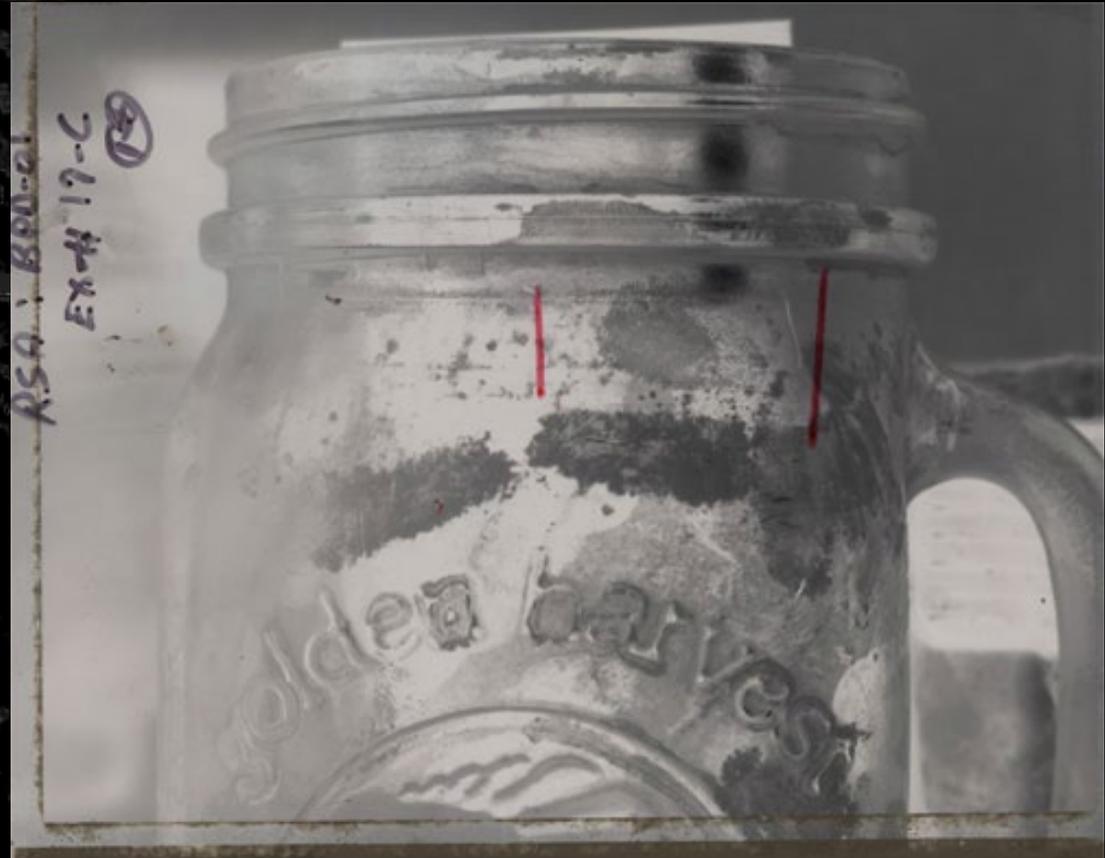
Stephan Cowans

- Cowans was arrested, and a subsequent fingerprint examination of a **latent print found on the mug** resulted in a **source identification to Cowans**
- The source attribution noted **16 corresponding minutiae** between the questioned print and Cowans' left thumb print.
 - Verified by a 2nd examiner
 - Verified by two defense experts
- Convicted in 1998

STORY TIME



Stephan Cowans



Stephan Cowans



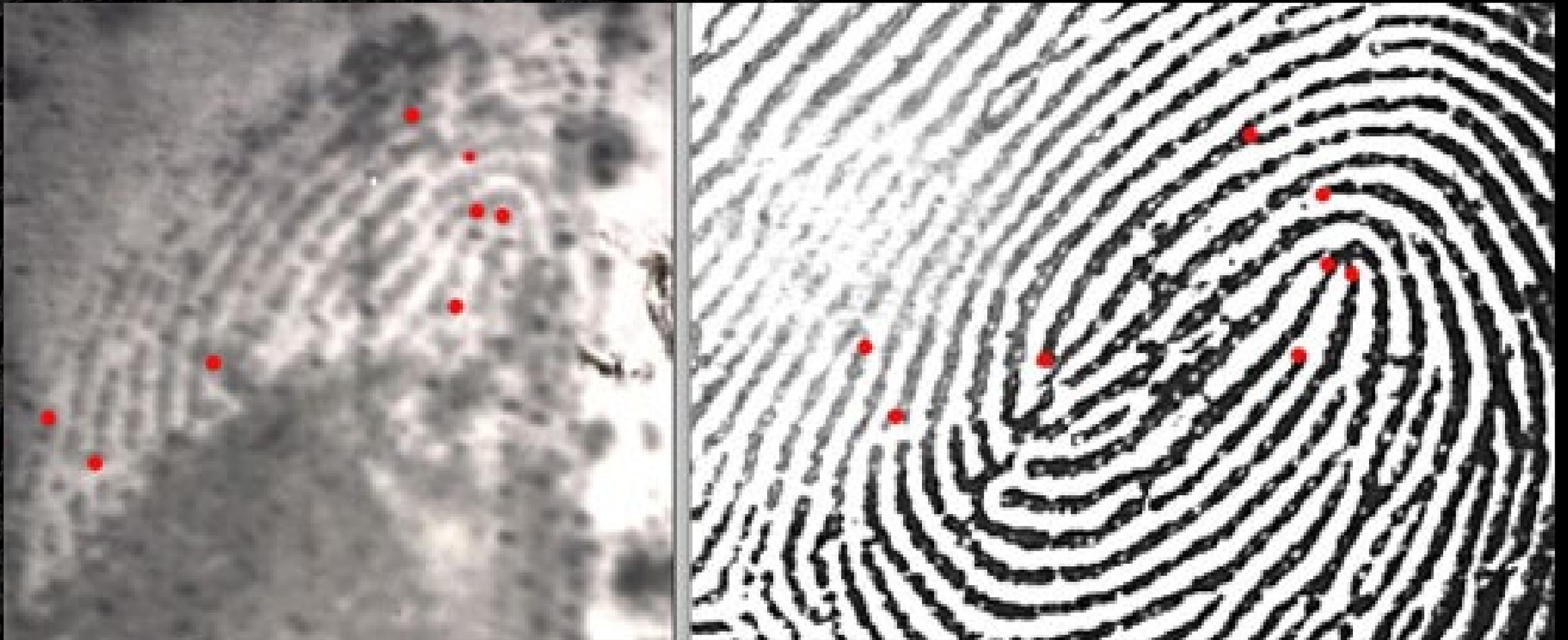
Erroneous ID: latent print from mug to Cowans

Stephan Cowans

- 2003: Innocence project took on Cowans' case
- DNA profile obtained from the baseball cap, sweatshirt and mug eliminated Cowans as a contributor⁴
- Fingerprint source identification was re-examined by an independent expert and found to be erroneous.⁴



Stephan Cowans



ID: Latent from mug to (v) exclusionary prints [independent expert, 2004]

Stephan Cowans

- Result of inquiry into error
 - Inadequate practices and culture
 - Lack of training
 - Unit was a “dumping ground” for officers who were unfit for other duties
 - Punishment detail



Stephan Cowans



- Cowans stated to the press that “the evidence against him was so overwhelming that if he had been on the jury, he would have voted to convict himself.”⁵

Lana Canen

- 2002 (Indiana): An elderly woman was found deceased in her apartment, which had also been ransacked. ⁶
- Canen and her friend Andrew Royer were identified as potential persons of interest in the case, which was the first homicide investigation of the Elkhart Police Department's nascent cold case unit.

STORY TIME



Lana Canen

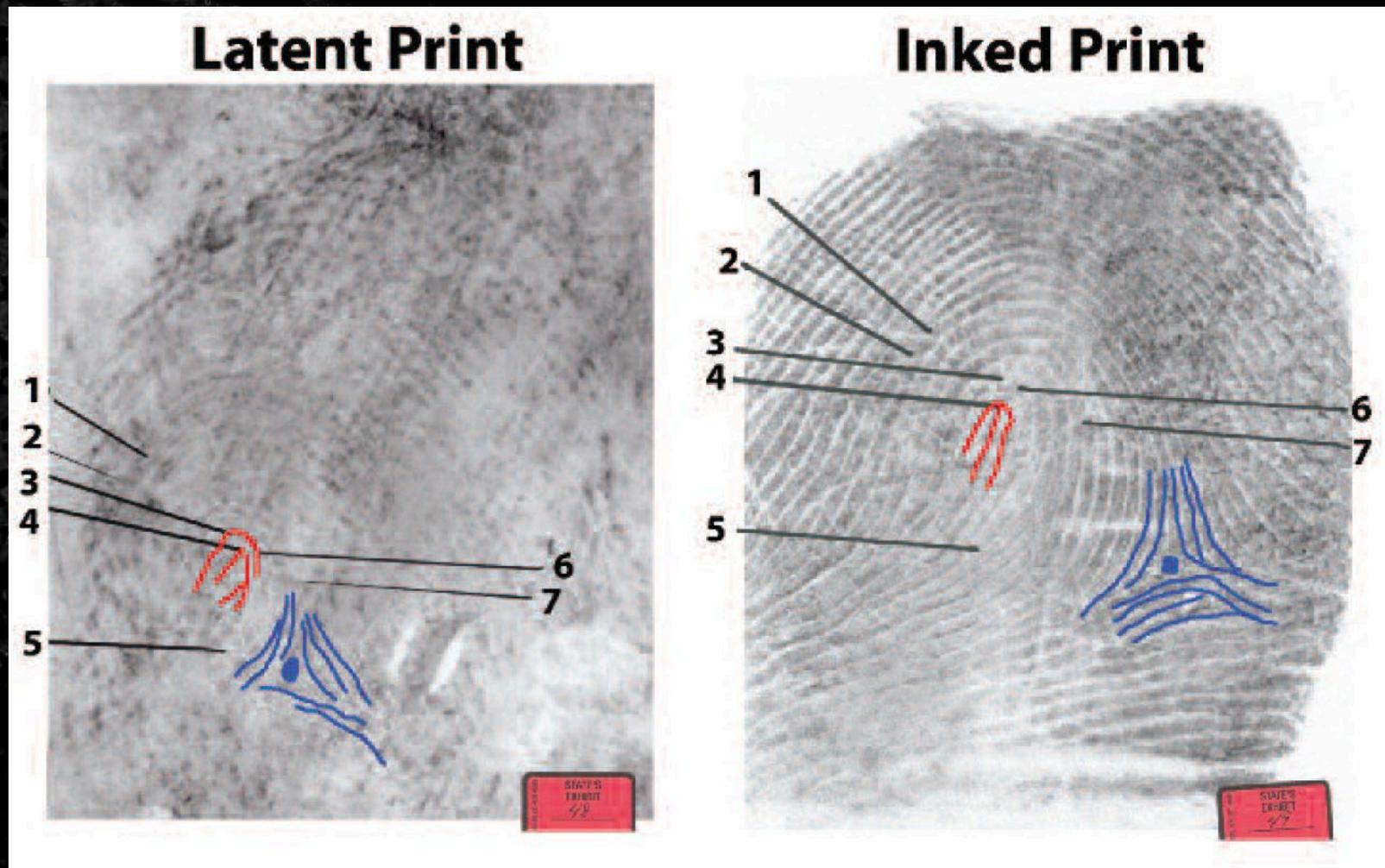
- One latent fingerprint developed on a plastic tub (containing prescription pill bottles) was identified to Lana Canen with 7 corresponding minutiae
- Canen was convicted of homicide in 2005 and sentenced to 55 years.

STORY TIME



Lana Canen

- Erroneous ID chart/photo



Lana Canen

- After 8 years in prison, Canen was exonerated when a private defense expert exposed the erroneous identification.⁶
- Result of inquiry into error
 - Bias due to pressure from investigators
 - A lack of training



Mitigating Errors

- Implementation of scientifically sound procedures and written protocols (SOPs and Standards)
- Thorough vetting of candidates during recruitment and proper training
- Continuous training for current fingerprint examiners
- A rigorous quality control program
- A culture that focuses on scientific rigor and embraces positive change in the discipline



Conclusions

- Many errors are found due to fortuitous circumstances
- Even those with the resources to hire defense experts are not immune to wrongful incarceration
- Fingerprint examiners should be able to address the procedures and policies their agencies have in place to mitigate errors
- Fingerprints represent people
- Focus on PURPOSE rather than PROCEDURE



Questions?

References

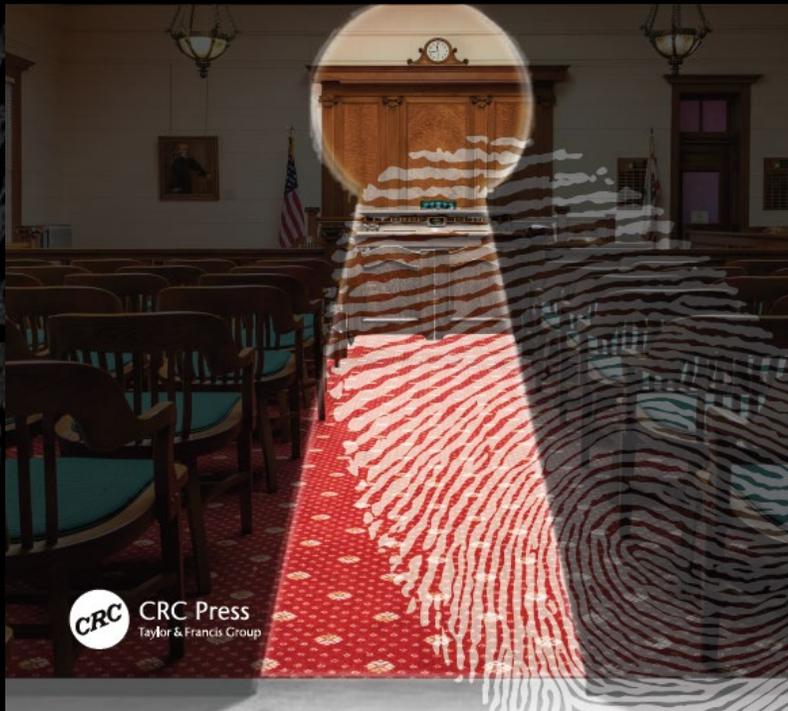
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COURTROOM TESTIMONY FOR FINGERPRINT EXAMINERS

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