

Informal Fallacies in Examiner Testimony: The Search for Black Swans in Forensics

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FRE 702: Testimony by Experts

“If scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise if

- 1) the testimony is based upon sufficient facts or data,
- 2) the testimony is the product of reliable principles and methods, and
- 3) the witness has applied the principles and methods reliably to the facts of the case.”

Professional Standards

- IAI Resolution 2010-18
 - n “It is the responsibility of forensic experts to offer a clear and unambiguous presentation of their conclusions.” (#4)
- ASCLD/LAB-*International*, Supplemental requirements for the accreditation of forensic science testing laboratories (2006)
 - n “When associations are made, the significance of the association shall be communicated clearly and qualified properly in the report.” (5.10.3.5)

Three Conclusions in Evaluation

- Identification
 - n “The determination of an examiner that there is sufficient quality and quantity of detail in agreement to conclude that two friction ridge impressions originated from the same source.”
- Exclusion
 - n “The determination by an examiner that there is sufficient quality and quantity of detail in disagreement to conclude that two areas of friction ridge impressions did not originate from the same source.”
- Inconclusive
 - n “During Evaluation, the conclusion reached that neither sufficient agreement exists to individualize nor sufficient disagreement exists to exclude.”

Identification Conclusion

- While, at this time, there is no quantifiable threshold to define the point at which an examiner can reach a conclusion of identification, testing has shown that even without a numerical threshold for sufficiency, examiners can reliably identify latent prints.
- Accepting that friction ridge arrangements on the skin are unique, prints of those arrangements will also be unique, given that sufficient quantity and quality of information is available in the print.
- Examiners trained to competency, through training and experience, are able to discern if a latent print has sufficient information to individualize.

Transparency

- Documentation
- Conclusions
 - n Presence of a print indicates contact with an item but does not necessarily indicate the circumstances of the touch
 - n Cannot exclude an individual as having touched an item (can only exclude individual from being source of a particular print)
- Limitations
 - n Not all prints are identifiable
 - n Hypothetical chance that another area of friction ridge skin could have left a similar looking latent print.
 - n Human error

Absolute Certainty

- Q: Ms. Gische, what were the results of your comparisons?
- A: ~~I am absolutely 100% certain that~~ I identified the latent print detected on...
- The certainty often associated with an identification is a measure of the examiner's confidence in his or her opinion based on the data observed, and not a statement of absolute scientific truth.

The Path Forward

- Transparency
- Language
 - n “...will never be shown...”
 - n “...has never been shown...”
- Research
 - n Quality & Quantity metrics
 - n Mathematically based models