

Dusting for fingerprints -- It ain't CSI

May 11 2011

dozens of crime dramas revolve around them. The investigators find the victim, dust for fingerprints, run them through a computer program and - voilà- the guilty party is quickly identified and sent to prison.

If only it were that easy. The reality is that often this common but crucial portion of an investigation is often done by humans, not by computers. An upcoming study in *Psychological Science*, a journal of the Association for Psychological Science, reveals that the human factor in the process could lead to errors and incorrect conclusions.

"We knew from other psychological research that the all-too-human foibles of distraction, rushes to judgment, biases and expectations can't be avoided even by the most diligent professionals, so we were understandably concerned about the potential for error," said lead study author Jason Tangen of the University of Queensland. Tangen, along with the other authors, set out to find determine the likelihood of human error when dealing with [fingerprints](#). "There was a fair bit of commentary on the absence of evidence on fingerprint expertise, but nobody seemed to be successful in conducting the critical experiments," Tangen added.

To conduct the study, the researchers drafted 37 qualified fingerprint experts and 37 novices and gave them pairs of fingerprints to examine side by side. Examiners had to decide whether a simulated crime scene matched a potential suspect or not. Some of the print pairs belonged to the "suspect" while others were highly similar but actually belonged to an "innocent" person. Participants were asked to judge whether the prints

matched or not using a "confidence" rating scale from one to 12, one indicating that they were positively sure they were different and 12 denoting that they were certain the fingerprints were a match.

The novices mistakenly identified 55.18 percent of the similar, non-matching pairs as matches. The experts did exceedingly well overall correctly identifying just over 92 percent of the matching pairs. However, they also misidentified almost 8 per cent of the non-matches. It is these kinds of errors that can often lead to failing to identify a criminal.

"Qualified court-practicing fingerprint experts are exceedingly accurate compared to novices," said Tangen. "But, they are not infallible," he added. Tangen said that many experts tend to err on the side of caution by making errors that would free the guilty rather than convict the innocent. It is important to remember, however, that these errors could still have the opposite outcome and lead to false convictions.

According to Tangen, part of the issue is the lack of research on the how successfully humans can identify fingerprints. "Even though fingerprint evidence has been used in criminal courts for more than 100 years, there have been no properly controlled experiments on the identification accuracy of fingerprint examiners," said Tangen. "We have taken a step in addressing this issue."

Provided by Association for Psychological Science

Citation: Dusting for fingerprints -- It ain't CSI (2011, May 11) retrieved 28 April 2024 from <https://medicalxpress.com/news/2011-05-fingerprints-aint-csi.html>

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