B98 Probabilistic Reporting in American Criminal Cases: A Baseline Study

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Learning Overview: After attending this presentation, attendees will gain an empirically grounded understanding of the current state of probabilistic reporting in six criminalistic disciplines in the United States.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by helping forensic scientists understand empirically how forensic results are reported in American trials today. The reporting of forensic results is a topic of crucial importance and increasing interest. Given that many forensic statisticians are advocating for the greater use of probabilistic reporting, this research may allow them to establish a baseline in order to measure progress toward that goal.

Over eight years ago the NRC Report, *Strengthening Forensic Science in the United States,* highlighted the lack of standards regarding reporting of evidence in forensic science. At the same time, forensic statisticians have been calling for the greater use of probabilistic reporting in forensic science. Yet, despite the intense interest surrounding forensic evidence reporting, there have been few efforts to empirically survey how forensic examiners are currently reporting evidence in ordinary, everyday criminal cases. Previous studies of forensic evidence reporting primarily have relied on either official reporting standards or anecdotal data from high-profile cases, neither of which are likely to yield a representative view of actual reporting. By contrast, the current study seeks to provide insight into how more typical forensic examiners are reporting results in average, run-of-the-mill criminal cases. This study addresses this question for six forensic pattern recognition disciplines: latent prints, firearms and tool marks, questioned documents, shoeprints, tire tracks and blood pattern analysis.

Collecting data on actual forensic evidence reporting is difficult. There is no comprehensive or representative repository of forensic expert reports and testimony. Accordingly, the current study relies an opportunistic sample of forensic expert reports and testimony culled from a variety of sources. Based on trial transcripts, affidavits, laboratory reports, and proficiency test submissions, the study measures the degree to which probabilistic reporting occurs. For probabilistic reports, the study describes the type of probability used. Broadly, the probabilistic reporting in these six disciplines is rare. The probabilistic reporting that does exist tends to refer to verbal characterizations rather than quantitative statements based on formal data. The current study will contribute to the ongoing normative discussion among academics and statisticians regarding how forensic results could and should be reported.

Reports, Statistics, Probability