E56 Results of the FBI Laboratory's Evaluation of Compositional Bullet Lead Analysis Testimonies

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After attending this presentation, attendees will understand the process undertaken by the Federal Bureau of Investigation Laboratory in evaluating examiner testimony when results from Compositional Bullet Lead Analyses (CBLA) were used in court. The results of the review will also be presented.

This presentation will impact the forensic community by presenting a model to consider when the testimony of expert witnesses in other fields may require evaluation.

CBLA was a forensic discipline used by the FBI Laboratory for over four decades when either a firearm was not recovered or a fired bullet was too mutilated for microscopic comparison of physical markings. If crime scene bullets were "analytically indistinguishable" to other bullets, research suggested that they likely originated from the same source of molten lead. Thousands to millions of bullets may be produced of the same composition and are usually packaged within the same box and in other boxes of the same caliber and type over a relatively short time period.

In 2002, the FBI commissioned the National Academy of Sciences (NAS) to evaluate the scientific basis of CBLA. Specifically, the NAS was asked to assess and provide recommendations for future improvements in three areas: (1) the analytical method in use at the time; (2) the way that the FBI was conducting statistical comparisons of the analytical results; and, (3) the appropriate statements that can be made in interpreting the results of a CBLA comparison.

The NAS released their report, *"Forensic Analysis: Weighing Bullet Lead Evidence,"* in February of 2004. The report contained 22 findings and recommendations. Upon issuance of the report, the FBI Laboratory temporarily suspended all CBLA examinations in order to review and evaluate the report's recommendations. Over the next 15 months, all recommendations were implemented and a revised analytical protocol was developed and revalidated. But in mid-2005, the FBI Laboratory decided to permanently discontinue the CBLA examination due to conflicts in the recommended statistical techniques suggested in the report, lack of knowledge of geographical distribution data, and the media labeling the examination as "junk science." The FBI Laboratory affirmed that previously issued reports were not in error and the foundation of CBLA was valid. Nonetheless, notification was made to the FBI's case contributors, the National District Attorney Association, the National Association of Criminal Defense Lawyers, and the Innocence Project of the decision to discontinue the CBLA examination.

In late 2007, the FBI agreed to undertake an extensive review of CBLA testimony offered by its examiners in all criminal cases that could be identified. Over the next four years, over 2,200 case files were reviewed to allow for requests to be made for testimony transcripts.

Each CBLA testimony was evaluated following a process developed by the FBI and the U.S. Department of Justice with input from the Innocence Project. Testimonies were deemed "inappropriate" if they fell into one of three categories: (1) if at any point during the testimony, the examiner suggested that a crime scene bullet could be linked to single "box" of bullets to the exclusion of all others; (2) if at any point during the testimony the examiner made some other statement that overstated the significance of bullets being "analytically indistinguishable"; or, (3) if the examiner failed to provide information that there would be a large number of other bullets, unrelated to the case, that would also be "analytically indistinguishable" due to the bullet manufacturing process. Testimonies that were not deemed "inappropriate" using these criteria were, by default, classified as "appropriate."

CBLA testimony from 232 transcripts were evaluated. Using the above criteria, 150 of the testimonies were deemed inappropriate, while just 82 were appropriate. While these results were surprising, the stringent review process ensured that the evidence was not misconstrued by the courts or juries. The ramifications and lessons learned from the CBLA testimony reviews will be discussed.

Bullet Lead, Testimony, Review