F16 Wrongful Convictions and DNA Exonerations: Understanding the Role of Forensic Science as a Contributing Factor

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The goals of this presentation are to: (1) examine more closely wrongful conviction cases that include forensic science as a contributing factor; and, (2) identify what can be learned and how to ameliorate erroneous convictions when forensic scientists perform testing, interpret results, and render conclusions.

This presentation will impact the forensic science community by providing a greater understanding of the extent to which forensic science can be strengthened based on an evaluation of wrongful convictions.

There is no greater travesty in the criminal justice system than the conviction and punishment of a person for a crime he or she did not commit. According to the Innocence Project (IP), a national litigation and public policy organization dedicated to exonerating wrongfully convicted individuals, 342 individuals have been exonerated as a result of DNA analysis. Erroneous convictions, like most catastrophic mistakes in the criminal justice system, are rarely caused by a single identifiable act or weakness; instead, multiple failures in the process can lead to a negative outcome. The IP lists six "contributing causes" for wrongful convictions: (1) eyewitness misidentification; (2) false confessions or admissions; (3) government misconduct; (4) inadequate defense; (5) informants; and, (6) unvalidated or improper forensic science; however, Gould et al cautions that "without a comparison or control group of cases, researchers risk labeling these factors as 'causes' of erroneous convictions when they may be merely correlates."[1] Gould et al designed a unique experimental strategy to study factors leading to rightful acquittals or dismissal of charges against an innocent defendant (near misses) that were not present in cases that led to the conviction of an innocent person. After identifying a set of erroneous conviction and near miss cases, then analyzing the cases using bivariate and logistic regression techniques, the researchers identified ten factors that led to a wrongful conviction of an innocent defendant instead of a dismissal or acquittal. The ten factors are: (1) younger defendant; (2) criminal history; (3) weak prosecution case; (4) prosecution withheld evidence; (5) lying by a non-eyewitness; (6) unintentional witness misidentification; (7) misinterpreting forensic evidence at trial; (8) weak defense; (9) defendant offered a family witness; and, (10) "punitive" state culture.

In reviewing the 342 cases cited on the IP website, 157 cases (46%) included a reference to "Unvalidated or Improper Forensic Science." While cross-referencing the same cases listed on The National Registry of Exonerations (NRE) website, some inconsistencies were identified, making it challenging to reconcile the data. The NRE does use six categories of "contributing factors" (not referenced as causes), which are similar to those listed on the IP website, and are as follows: (1) mistaken witness identification; (2) perjury or false accusation, (3) false confession, (4) official misconduct; (5) inadequate legal defense; and, (6) false or misleading forensic evidence. Although neither the IP nor the NRE websites use the ten factors identified by Gould et al, the categorical descriptions used by the NRE website are more aligned with the academic literature and were therefore used for this study.

Advances in DNA technology and forensic DNA analysis have improved how cases are investigated, how forensic evidence is interpreted, and our understanding of erroneous convictions in the criminal justice system like no other single investigative or scientific discovery. With this invaluable resource, the criminal justice system has come to learn more from past mistakes, and forensic science is commonly linked with wrongful convictions in the

media, legal reviews, and academic research. Forensic science, when incorrectly perceived as a single discipline, causes observers to conflate matters and acquire their own misperceptions about all forensic science disciplines. Even more pervasive, many references to wrongful convictions in the popular media do not cite scholarly articles and often rely on other media articles and unverified sources.

The forensic disciplines most frequently cited in wrongful conviction cases are serology (ABO blood typing), microscopic hair analysis, and bitemarks; however, the last case involving any of these three disciplines was in the mid-1990s. Very few (less than 1%) of the 157 exonerations involved latent fingerprints, firearms, bloodstain pattern analysis, footwear and tire tread analysis, and handwriting. Finally, 98% of the DNA exonerations that are associated with "false or misleading forensic evidence" also involved two to five additional contributing factors. The focus of this study is to examine more closely wrongful conviction cases that include forensic science as a contributing factor to identify what can be learned and how to ameliorate erroneous convictions when forensic scientists perform testing, interpret results, and render conclusions. In many cases, interpretation of results from scientifically sound disciplines (e.g., forensic biology) and potentially ambiguous testimony could likely be the focus for improvement.

Reference(s):

1. Gould J.B., Carrano J., Leo R., Young J. *Predicting Erroneous Convictions: A Social Science Approach to Miscarriages of Justice*. National Institute of Justice Final Technical Report, National Criminal Justice Reference Service Document No. 241839, Washington, DC, 2013. Available at: https://www.ncjrs.gov/pdffiles1/nij/grants/241389.pdf.

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