



A85 Evaluation and Minimization of Contextual Bias in Forensic Anthropological Casework in the Context of a Medical Examiner's Office

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Learning Overview: After attending this presentation, attendees will better understand the sources of bias that affect forensic anthropological casework in the context of a medical examiner's office and how to reduce the introduction of biasing data.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing recommendations for mitigating potential issues of bias in forensic anthropology. This research illustrates the significance of evaluating sources of contextual bias and acknowledging the changes that can be implemented to promote less biased analyses.

In recent years, forensic scientists have given more attention to the presence of bias during scientific examination. Cognitive bias refers to modifications of judgment resulting from the presence of internal expectations and external information. Because it influences decision-making and interpretations, cognitive bias—particularly confirmation bias—must be critically evaluated and minimized, when feasible. Several studies have been published demonstrating the evaluated effects of contextual information on forensic anthropological interpretations of the skeletal biological profile and have found that extraneous information can result in biased conclusions. However, none of the available studies originated from a medical examiner's context. Although these studies identified sources of cognitive bias, they may not capture the nuances of anthropological activities in the medical examiner setting. This research fills this knowledge gap.

The purpose of this project was to identify where and how cognitive bias impacts forensic anthropological analyses conducted at the Harris County Institute of Forensic Sciences (HCIFS). To achieve this goal, the flow of information from the death scene to the laboratory, and within the laboratory, was examined over the course of one year. Subsequent to extended observations and shadowing of HCIFS forensic anthropologists, pathologists, and investigators, the following sources of bias were identified: (1) attending death scenes to locate or recover human remains—law enforcement and investigators often propose theories about the decedent, and contextual information and items, such as clothing and ligatures, are clearly visible; (2) attending case presentation meetings—scene and presumptive identification information are presented at the morning meeting in which daily cases are discussed prior to autopsy; (3) discussions during anthropological consults—discussion with the pathologist during autopsy often reveals contextual information about the case. Sharp force trauma cases, in particular, are of interest because the pathologist frequently notes the precise type of blade that was presumed to have been used (i.e., serrated or non-serrated); (4) radiographic comparisons—anthropologists typically view antemortem and postmortem images simultaneously for the purpose of radiographic identification; (5) language used while discussing unidentified decedents—general use of personal pronouns for an unknown decedent, prior to the anthropologist assessing the remains to estimate sex, has been observed; (6) peer review—the peer review process, particularly for radiographic identifications, does not include blind verification; and (7) information management systems—knowledge of a decedent's tentative identification and case information is accessible by staff via the agency's electronic information management system.

Cognitive bias and the presence of extraneous contextual information cannot be eliminated in a medical examiner's office, particularly one in which various forensic scientists work side-by-side. However, one goal of this project was to provide recommendations for mitigating the introduction of bias into anthropological casework. The following recommendations draw on various suggestions and methods provided by prior researchers, but with an emphasis on medical examiner-specific context: (1) the anthropologist who attended the scene does not conduct the skeletal analysis; (2) the anthropologist responsible for the day's cases does not attend the morning meeting; (3) evaluate antemortem and postmortem radiographs for identification independently, prior to comparison; (4) avoid using personal pronouns for unidentified decedents; (5) the peer reviewer should independently assess specimens and data and form general conclusions prior to reading the analyst's report; (6) anthropologists should avoid accessing contextual case information prior to the examination of the remains; and (7) record in bench notes what contextual information was relayed prior to beginning examination.

Although cognitive bias is inherent in human decision-making, evaluating and mitigating it in forensic anthropological casework is necessary to provide objective scientific conclusions. This research assessed sources of cognitive bias in the context of a medical examiner's office and provides recommendations for forensic anthropologists to reduce bias. While not all forensic anthropologists work in a medical examiner setting, these recommendations are useful tools for all practitioners.

Bias, Medical Examiner's Office, Contextual Information