



Physical Anthropology Section - 2014

H88 Cognitive Bias in Forensic Anthropology: Visual Assessments of Skeletal Remains Are Susceptible to Confirmation Bias

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After attending this presentation, attendees will understand how contextual information can influence forensic anthropologists' judgments and decision making in non-metric assessments.

This presentation will impact the forensic science community by demonstrating that cognitive bias can alter and impact forensic anthropology and increase awareness of how contextual information can affect objective assessments, interpretations, and final conclusions of forensic anthropologists.

The issues of cognitive bias and its effects in forensic science and criminal investigations have been increasingly discussed and described. The National Academy of Sciences in the United States and the Forensic Regulator in the United Kingdom have highlighted the review of standards and processes within forensic science disciplines and underlined the potential for bias in forensic interpretations. Studies have demonstrated the effect of cognitive bias in decision making within a number of forensic fields. Research has shown that judgment and decision making can be influenced by extraneous information that can lead to a decrease of objectivity in the interpretation of forensic evidence. In many disciplines, such as forensic anthropology, the presence of cognitive interpretation issues and its impact is still not fully assessed with a lack of empirical studies that test the degree to which cognitive issues might arise and affect the judgment and final evaluation of the forensic anthropologist. The anthropological methods are acknowledged for being subjective (in a similar manner to many other forensic science disciplines), hence the need for research in this area. This study investigated if confirmation bias can arise in visual perceptual assessments within biological profiling on skeletal remains when subjected to different contextual information.

An experimental study was designed to examine cognitive biases within forensic anthropological non-metric methods in assessing sex, ancestry, and age-at-death. To examine viewer interpretation, 41 participants were asked to establish a full biological profile on skeletal remains of one complete individual. The skeletal remains had ambiguous features, with the morphological traits of the skull and pelvis showing no clear signs of female or male characteristics. This was particularly significant in this study as cognitive biases are more prevalent in ambiguous cases. Participants were semi-randomly divided into three groups. Two of the groups were given contextual information regarding the sex, ancestry and age-at-death of the individual before conducting the analysis. The third group acted as a control group with no contextual information provided prior to the assessment of the same skeletal remains. The experiment was designed to investigate if the interpretation and conclusions of the skeletal remains would differ among participants within the three groups when exposed to contextual information and to assess if the examiners would confirm or disagree with the given context when establishing a biological profile.

The results revealed a significant biasing effect within the three groups, demonstrating a strong confirmation bias within participants' assessments of sex, ancestry, and age-at-death. In assessment of sex, the control group was divided with 31% assessing the remains to be male and 69% female. However, in the group that received contextual information that the remains were male, 72% indicated the remains were male, 14% female, and 14% undetermined in their conclusion. Of the group that was given the context that the remains were of a female, 100% of the participants concluded the remains to be female. Similar results were obtained for ancestry and age-at-death assessments. The results demonstrated that participants given contextual information before conducting the analysis had a strong bias to conform with the given context when conducting the examination. This study demonstrates that cognitive bias exists in forensic anthropological non-metric methods on skeletal remains and affects the interpretation and conclusions of the forensic scientists. The presentation will present the findings and discuss the importance of recognizing biases that may impact interpretation during analysis as well as highlighting the need for further research addressing how to minimize and alleviate these effects to secure a more robust and credible discipline.

Forensic Anthropology, Cognitive Bias, Decision Making