H21 The Power of Contextual Effects: A Study of Biasability in Visual Interpretations of Trauma Analysis on Skeletal Remains

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After attending this presentation, attendees will understand how contextual information can bias assessment of trauma images.

This presentation will impact the forensic science community by demonstrating how bias can impact forensic anthropology and how contextual information can affect objective assessments by scientists with a range of experience and ability.

The potential for contextual information to bias assessments in the forensic sciences has been demonstrated, focusing on the DNA, ballistics, and friction ridge analysis disciplines. This has been discussed in the National Academy of Sciences Report, *Strengthening Forensic Science in the United States: A Path Forward.* However, in many forensic disciplines, such as anthropology, the presence of bias, its impact on objectivity, and how to mitigate its effects is still not fully assessed or appreciated. Effects that may impact the judgment and decision-making of forensic anthropologists need to be measured. No studies have been performed within the discipline assessing possible biasing effects within visual analysis.

Biasability potential within forensic anthropology was examined by constructing an experiment that analyzed the effects of external manipulations on judgment and decision-making in visual trauma assessment. Three separate websites were created containing 14 identical images of skeletal remains presenting a range of trauma. Each website presented participants with different contextual information. The three separate contexts described human rights mass grave excavations, a 19th-century archaeological excavation setting, and a control scenario with no specific contextual information provided. Ninety-nine participants were equally distributed and randomly assigned to one of the three scenarios. Participants completed a survey noting qualifications and experience, and were asked to assess the presence of trauma in the images and to describe their confidence in their interpretation by scoring for level of certainty. The interpretation of presence of trauma was assessed to determine if it would differ for the same images across the different scenarios.

The results indicated a bias correlation between the three scenarios, indicating a higher likelihood of identifying trauma within the mass grave excavation context. A significant biasing effect was associated with four of the images, notable for their ambiguous and distinct nature. Participants with less experience were more likely to interpret the presence of trauma. This research demonstrates that bias can be detected in the field of forensic anthropology, highlighting the importance of recognizing issues that may influence interpretation during investigation and analysis, as well as the need for further research on how to mitigate these effects.

Anthropology, Bias, Trauma Assessment

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