



A53 A Comparison of the Accuracy of Identification Between Non-Human and Human Skeletal Elements

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Learning Overview: After attending this presentation, attendees will understand the significance of zooarchaeology training in the identification of non-human versus human skeletal elements in potential forensic cases.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by illustrating the importance of having a readily available forensic anthropologist with a proper background in zooarchaeology for all active crime scene units and law enforcement agencies.

Human versus non-human assessments are a common component of the caseload of forensic anthropologists, as forensic significance is often primarily based on that distinction. Without zooarchaeological training, animal remains are often initially misidentified at the scene, by law enforcement or the general public, as potentially human, frequently leading to unnecessary wastes in investigative time and resources. On the other hand, proper identification and description of reported animal remains beyond the basic human-vs.-non-human assessment serve as positive reinforcement for the reporting of suspected skeletal element findings by the public, by demonstrating to the discoverers that their reports were meaningful and received comprehensive examination and consideration. Due to these considerations, there is a consistent need of properly trained forensic anthropologists to assist in establishing the forensic significance of skeletal elements in potential cases.

Ten human skeletal elements and ten non-human skeletal elements were photographed with and without scales from six views and randomized into a singular document. The participants were asked to record their conclusions. The use of photographs in this study instead of in-person analysis is both due to the current coronavirus pandemic and because photographic identification is indeed very commonly utilized by forensic anthropologists in the initial stages of this type of consultation. The survey document was sent through email to each of the 50 participants. Seventeen of the participants were law enforcement officers with no formal human osteological or zooarchaeological training. Seventeen of the participants were Department of Applied Forensic Sciences (DAFS) first year graduate students and undergraduate students, as well as various individuals with formal training in human osteology only. Sixteen of the participants were Mercyhurst University DAFS second-year graduate students, staff, and outside practicing forensic anthropologists with both human osteological and zooarchaeological training. Each member of the study was prohibited from using outside reference materials in the identification process. After opening the document, participants were asked to view each photograph and determine if it was a non-human or human skeletal element. If able to do so, they were further asked to identify the specific bone as well as the species and side. The document was then returned, and the results were compiled for preliminary statistical analysis.

Participants without osteological training demonstrated lower accuracy rates in the identification of human versus non-human skeletal remains. Those who had formal human osteological training but no zooarchaeological had a higher accuracy in determining non-human skeletal remains from human remains. The participants who had received formal training in both human osteology and zooarchaeology had high accuracy in identifying human skeletal remains from non-human in a very timely manner. The ability of those trained in both human osteology and zooarchaeology to identify bones in more specific detail offers valuable skill and is key for crime scene analysis and reconstruction.

Zooarchaeology, Human Remains, Identification