



Physical Anthropology Section – 2011

H18 Forensic Anthropology and Virtual Human Remains: Ethics in Uncharted Territory

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After attending this presentation, attendees will have an understanding of some of the ethical considerations that forensic anthropology as a discipline may be facing as it begins to increase the use of virtual human remains and imaging technologies.

This presentation will impact the forensic science community by opening a dialogue in the anthropological community regarding the use of virtual human remains so as to establish ethical guidelines for the future.

The use of virtual human remains in forensic anthropology has been steadily increasing as the technology to capture and view them becomes more affordable and accessible. Within the next decade, it is anticipated that medical imaging tools such as multislice computed tomography (MSCT) and magnetic resonance imaging (MRI) scanners and software, along with other data capture capabilities such as laser scanning will become a routine component of the anthropologist's toolkit in much the same way as radiographs and photographs. Recent work (Decker et al, in press; Decker et al, 2008)^{1,2} and others (Thali et al, 2003)³ demonstrate the potential for virtual remains for the non-invasive examination of remains, as well as the ability to use imaging as a permanent record of an individual. It is now possible to scan an entire human body, whether living or dead, and create a 3D virtual model of it in minutes. This digital human can be explored in a multitude of unprecedented and heretofore unimagined ways, both for crime-solving and research purposes. It has not yet been decided whether these new types of medical images will be considered a simple increase in sophistication from existing tools, or if the differences are so marked that they will be subject to a new set of rules that has yet to be defined.

The discipline must consider the potential contentiousness surrounding the retention and future use of virtual skeletal remains. The big question that has yet to be asked – or answered – is “Are virtual remains governed by same ethics as actual remains?” There are three main areas in which these issues likely will be encountered: forensic cases (involving identified and unidentified individuals), use in education, and use in research. There is potential for a vast amount of knowledge to emerge from such specimens, but issues must be considered that may arise surrounding cultural and religious values of the deceased and the survivors – this is a daunting task in uncharted territory.

Recent reports and investigations by the National Academy of Sciences and the United States Congress have made this an even more pressing issue that must be addressed as the discipline pushes towards standardization of the forensic sciences.

As a field, there must be transparency in our practices and consider the values and viewpoints of the public as part of the discipline's responsibility. In the modern climate, public dissemination is necessary. It may be assumed that the treatment of virtual human remains will be similar to other types of digital evidence in a forensic case. However, real human remains are often handled differently than other types of evidence. Also, due to the nature of the work, human remains handled by a forensic anthropologist are not always part of an investigation so the circumstances of such remains are different. In this presentation, these issues are discussed as well as the different issues surrounding the use of remains in teaching and research.

This presentation will examine current attitudes toward the treatment and use of virtual human remains and explore the pathways that the profession can take to ensure that ethical practices continue to evolve along with laboratory practices.

References:

1. Decker SJ, Davy-Jow SL, Ford JM, Hilbelink DR (In Press) Virtual Sex Determination: Metric and non-metric traits of the adult pelvis from 3D computed tomography (CT) models. *Journal of Forensic Sciences*.
2. Decker SJ, Hilbelink DR, Hoegstrom E, Ford J (2008) Virtual Skull Anatomy: 3 Dimensional Computer Modeling and Measurement of Human Cranial Anatomy. *Proceedings of the American Academy of Forensic Sciences 2008*, Washington DC.
3. Thali, MJ, Yen K, Schweitzer W, Vock P, Boesch C, Ozdoba C, Schroth G, Ith M, Sonnenschein M, Doernhoefer T, Scheurer E, Plattner T, Dirnhofer R (2003). Virtopsy, a new imaging horizon in forensic pathology: virtual autopsy by postmortem multislice computed tomography (MSCT) and magnetic resonance imaging (MRI)—a feasibility study. *Journal of Forensic Sciences* 48: 386–403.



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