A87 Reconstructing Personhood: A Historical Perspective on Fragmentary Remains, DNA Technology, and Family Acceptance of Positive Identifications of United States War Dead

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After attending this presentation, attendees will better understand the historical evolution of identifications based on fragmentary remains as reconstituting the personhood of the decedent from the perspective of forensic practitioners and next of kin.

This presentation will impact the forensic science community by expanding the discussion regarding the identification of increasingly fragmentary remains consequent to improvements in scientific methodologies, including how those identifications may or may not reconstitute the "person" to the next of kin. A renewed awareness of the different meanings of "identification," "remains," and "person" to scientists and family members will positively impact attendees' abilities to practice a contextualized and empathetic form of forensic science.

The identification of remains from past United States conflicts is meant to provide answers for family members and contribute to a semblance of closure, despite the significant time depth often associated with these losses. The dead themselves — their bodies, their memories, their deaths — have agency. In some cases, a minute quantity of physical remains, accompanied by a report consisting of sequences of nucleotide bases and statistical probabilities, is willingly recognized as proof that a loved one was located, recovered, and identified. At first glance, this acceptance of very fragmentary remains appears to be a modern artifact of the genomic era; however, this presentation argues that the trend of accepting smaller and smaller portions of the body as representative of the whole "person" has deeper historical roots. Specifically, public acceptance for the identification of less-than-whole bodies appears to have begun during the Civil War, the first United States conflict in which families faced the realities of decomposition and fragmentation on a massive scale. Over time, the developing rhetoric around the recovery and repatriation of service members has increasingly made the possibility of receiving partial remains, or none at all, acceptable to the public.

Trends were analyzed among identification year, duration of identification process, completeness of remains, and use of mitochondrial DNA (mtDNA) analysis in a sample of remains identified at the Defense POW/MIA Accounting Agency-Central Identification Laboratory (DPAA-CIL).

Data were collected from the DPAA-CIL on a subset of identifications made from 1996-2015 and accessioned as early as 1982 (n=888). A subset of the cases accessioned after 1995 (n=621) was also analyzed (1995, the year in which the Defense Science Board Task Force released their *Report on The Use of DNA Technology for Identification of Ancient Remains*, represented a benchmark for DNA-led identifications of United States war losses). Positive identifications from cemetery disinterments were not considered, as these disproportionately targeted more complete cases for exhumation. Similarly, to counteract possible biasing effects, group identifications and additional portions from previously identified individuals were not considered.

The majority of cases in the sample were less than 50% complete. Results indicated that the completeness of remains had a significant relationship to the amount of time taken between initial accession and identification in

both datasets (p<0.001 for both). The use of mtDNA as an identification method also had a significant relationship with completeness of remains (p<0.001) and the year the identification was made (p<0.001). The overall trend in the data is that more fragmentary remains take longer to identify, and those identifications tend to use mtDNA methodology.

As methods for sequencing degraded DNA improve (e.g., next generation sequencing), fragmentary remains, once unidentifiable, may become the basis for positive identifications and repatriations. The last entire year considered here (2014) includes the highest numbers of identified cases consisting of remains <50% complete. Yet, anecdotal evidence suggests that it is an existing historical foundation that facilitates the acceptance of incomplete remains identified through modern DNA-based methodologies. In 2015, for example, family members of a service member implied hesitance in accepting a recent positive identification, instead finding closure in witness testimony: as *The Charlotte Observer* reported, "(They) still weren't convinced (of the DNA-based identification) until finally they heard what happened that day from the helicopter's co-pilot …."[1]

Loss, acceptance, and closure are part of a process that is individual; however, previous research across disciplines reveals some commonalities in this process with regard to war losses. As advocates for the dead, forensic anthropologists would do well to acknowledge the perspectives of the next of kin when making and presenting positive identifications.

Reference(s):

1. Perlmutt D. Home again: After 45 years, family greets return of fallen soldier. *The Charlotte Observer*. 2015 April 8 (http://www.charlotteobserver.com/news/local/article17918333.html).

Fragmentary Remains, Positive Identification, Mitochondrial DNA