



Anthropology Section - 2015

A126 Twenty-Eight Years of Forensic Anthropological Casework in the Northeastern United States: Trends, Patterns, and Lessons Learned

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After attending this presentation, attendees will be familiar with forensic casework encountered in the northeastern United States, as the current study is the first long-term analysis of cases in this region.

This presentation will impact the forensic science community by revealing and detailing trends, patterns, and factors that may be encountered in similar regional casework and by providing comparative data for other regionally focused case syntheses.

In the past 20 years, there has been a shift in the field of forensic anthropology from merely a laboratory-based discipline, concerned only with the establishment of a biological profile, to a broad spectrum discipline that also includes forensic archaeology, forensic taphonomy, and trauma analysis.¹ As a result of this expansion in the real and perceived roles of forensic anthropology, forensic anthropologists are being routinely called upon to assist in more cases. Unfortunately, analyses of the trends in casework conducted by forensic anthropologists are rare and are often specific to a particular region of the country; however, these analyses can provide important information about trends in the field that may be used by practitioners and also by educators to re-evaluate the focus and needs of their academic programs as the field shifts and changes. Comprehensive reviews of casework from specific regions can reveal patterns of: (1) taphonomic factors (e.g., types of animal scavenging) to create better Postmortem Interval (PMI) estimates; (2) decedent deposition, including locations and environments; (3) decedent demographics (e.g., sex/age/ancestry differences); and, (3) trauma, all of which can then be used as Komar notes, in the future “to generate research models, support court testimony, and provide comparative data...”²

This presentation focuses on forensic casework from 1986 to 2013, first at the University of Pittsburgh and later from the chair of Mercyhurst University’s Department of Applied Forensic Sciences (DAFS) in Erie, PA. A sample of 543 cases from the DAFS case database were evaluated and information on requesting agencies, specific case location, number/types of cases, depositional environment, recovery season, taphonomic influences, decedent demographics, and skeletal trauma were compiled and analyzed.

Over the period of observation, especially since 1991, caseload steadily increased, which can likely be attributed to: (1) employment of forensic archaeology; (2) education of law enforcement and coroner/medical examiners regarding roles and benefits of forensic anthropology/archaeology; (3) technological advances in timely and accurate evaluations of forensic significance; and, (4) producing high-quality recoveries, analyses, and reports. Cases conducted were documented from 15 states (mostly Pennsylvania, western New York, and eastern Ohio), four countries, and the territory of Guam. Most (79.9%) were modern forensic cases, while others were deemed non-forensically significant upon recovery (historic: 17.0%; prehistoric: 3.9%).

Human cases submitted for laboratory analyses alone were more prevalent (22.1%) than cases involving forensic archaeological recoveries (15.7%) despite the value of visiting the scene and conducting recoveries. Approximately half (42.2%) of the cases were evaluations of forensic significance (human vs. non-human), several of which were consultations for wildlife services and humane societies. Most modern cases involving forensic archaeological recoveries occurred during fall (34.1%) and summer (29.4%). The higher incidence during these months is likely explained by hunting in fall and camping/hiking during summer in remote areas, given that: (1) most of these recoveries occurred in wooded areas (43.7%) or open fields (12.6%); and, (2) surface scatters (50.6%) were more common than burials (32.9%), fatal fires (8.2%), or mass fatalities (8.2%). The remaining case types included searches (10.5%) and reviews of cases (6.8%). In cases with documented trauma, blunt force (28.4%) was most common, followed by ballistic (25.3%), multiple types (18.9%), fire (16.8%), and sharp (4.2%) trauma. In cases with both known and estimated age, adults in their prime (30-55years) were most prevalent. Males and individuals of Caucasian descent were encountered more frequently in both lab analyses and recovery cases. These results correspond with the known demographics of Pennsylvania, given that 83.5% of the population is “White” and that males (48.8%) and females (51.2%) are nearly evenly represented.³

The current research uses the aforementioned data and results as a basis for further interpretations of regional trends in the field, to evaluate how the discipline is progressing, and for future research (e.g., Dirkmaat et al.).⁴



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References:

1. Dirkmaat DC, Cabo-Perez LC, Ousley SD, Symes SA. 2008. New perspectives in forensic anthropology. *Yearbk Phys Anthropol* 51: 33-52.
 2. Komar DA. 2003. Twenty-seven years of forensic anthropology casework in New Mexico. *J Forensic Sci* 48(3):1.
 3. http://www.pasdc.hbg.psu.edu/sdc/pasdc_files/pastats/PA_Facts_2014.pdf
 4. Dirkmaat DC, Cabo LL, Fredette SM. 2014. Refining postmortem interval estimates in the Northeast. Proceedings of the American Academy of Forensic Sciences, 66th Annual Scientific Meeting, Seattle, WA. 2014. 478.
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Forensic Anthropology, Forensic Archaeology, Forensic Casework