H60 Spatial Analysis and Modeling of Missing Persons Burial Locations in Multiple Armed Conflict Contexts

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After attending this presentation attendees will be familiar with a new application of geographic analysis to search for missing persons who have been killed during armed conflict and are presumed to be buried in unmarked graves. Attendees will gain an understanding of the geographic trends of burial locations—despite varying contextual circumstances—that can assist the search for missing persons, which is often directed by forensic anthropologists. Attendees will also gain an appreciation for geographic information science tools, which have seldom been exploited by forensic anthropologists. Such techniques are of increasing importance as the field of forensic anthropology becomes more standardized, particularly with respect to the use of archaeological methods.

This presentation will impact the forensic community by introducing innovative techniques available to those who are tasked with locating missing persons in armed conflict contexts. A thorough understanding of how to use geographic information science approaches and software packages for forensic research can provide interesting insights into the spatial behavior of killers, reduce field costs for contemporary operations, and help locate older burial sites in locations where witnesses are not forthcoming or several years have passed since burial. The location of remains is the first critical step in identifying remains for the purposes of death investigation and repatriation.

Only in recent years have forensic anthropologists adopted geographic methods to address problems often confronted in forensic anthropological research and casework, such as burial prospection or spatial distribution of surface remains.[1-3] This study builds upon and expands previous research on clandestine burial location analysis from the Spanish Civil War.[4] The study's hypothesis posits that limited resources in times of armed conflict and rational human behavior result in cross-context patterns of victim burial location. The material being presented is a subsample of a study of burials in seven countries/conflicts. This presentation includes analysis of burial site characteristics of three conflicts (Spanish Civil War 1936 – 1939; Bosnia-Herzegovina 1992 – 1995; and Korean War 1950 – 1953) and examines burial locations of both combatants and non-combatants. The study sample includes 155 burial site locations and uses geographic information software and methods including kriging, viewshed analysis, and Ripley's k-function cluster analysis. These methods are used to ascertain the geographic characteristics of burial locations (e.g., land use, distances from roads and populated areas, visibility of burial location, distances traveled between site of disappearance/death/burial), demonstrating the types of locations chosen for burial. In this study, preliminary results show strong inter- and intra-context consistency given certain contextual variables. This study also indicates that there is a general evolution of burial site selection from less clandestine (e.g., cemetery burials) to more clandestine (e.g., very rural or mountainous terrain) locations that is dependent upon prevailing socio-political factors, and the course of a particular armed conflict. Changing burial activities include the postmortem movement of bodies from primary to secondary locations. Secondary burial locations, however, are highly dependent upon motives for body relocation. Being able to ascertain such motives informs greatly upon geographic location characteristics that should be sought when searching for missing persons' remains.

References:

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Burial Prospection, Missing Persons, Spatial Analysis

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