A124 Finding the Graves of the Missing: A Study of Geo-Anthropological Techniques in Bosnia-Herzegovina

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After attending this presentation, attendees will learn about new geo-anthropological techniques to define search parameters for persons missing and presumed dead from armed conflict. Attendees will learn why the search for the missing in Bosnia, which has relied on witness testimony, has become unproductive and how to use geographic methods to create refined search parameters and discover new sites.

This presentation will impact the forensic science community by showing how geographic techniques can be used by anthropologists to better plan searches as well as to complement or compensate for other, perhaps less reliable, methods. This presentation will demonstrate how geo-anthropological methods enable the more effective prioritization of search areas, perhaps most importantly, when there are no witnesses available to identify burial sites. Attendees will learn how a nearly exclusive reliance on oral testimony in Bosnia-Herzegovina has led to a recent dramatic decline of grave discoveries and missing person identifications despite the fact that there are over 7,000 people still missing from the war. New methods are needed to find the missing for both humanitarian and medicolegal reasons.

Previous research has shown that the movement of victims from the time and place of detention to their burial site is fairly limited. This study uses burial sites as the unit of analysis, using a sample of 274 confirmed burial sites with positively identified victims in Bosnia-Herzegovina. Although many more body disposal sites have been discovered in Bosnia, there are problems with the reliability of information about, among other things, circumstances of disappearance and death as well as victim and/or perpetrator identity. Location precision is another problem with many recovery sites known to date. This study collected and coded data such as victim and perpetrator ethnic affiliation, civil status (e.g., police, military, civilian), combat front lines, site visibility, and other socio-geographic factors. Geospatial and spatial statistical tests were run to examine changes across time and regions throughout the conflict. Tests conducted included spatially weighted regression and Ripley's k-function cluster analysis.

Results show that a 20km buffer around the place of death captures approximately 90% of the victim disposal sites included in this study. Cluster analysis of graves showed their location was not at all random, indicating that the placement of one burial site influences (attracts) subsequent burials. This was especially true for targeted mass killings of civilians where questions of logistics overwhelmed the ability of killers to dispose of all victims at one time and location. Different tests showed a degree of variability in site locations but also allowed the researchers to identify factors that appear to influence offenders in their selection of body disposal sites.

Using these methods to limit and prioritize search areas, investigators can focus their efforts to find new witnesses who are more likely to have direct knowledge of undiscovered sites. Using geo-anthropological methods to understand mortuary behavior in conflict contexts will also enable investigators to better plan for searches in countries where conflict is still ongoing and too dangerous in which to operate, such as Syria, Iraq, and the Ukraine.

Forensic Anthropology, Geospatial Techology, Missing Persons

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