



## Physical Anthropology Section – 2011

### H87 Identification vs. Cause of Death in Mass Graves Where Individuals are Commingled in Colombia

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The goal of this presentation is to demonstrate the importance of determining cause of death of commingled individuals from mass graves from the Colombian armed conflict.

This presentation will impact the forensic science community by discussing the approach used to individuate remains that will impact the forensic community in those countries with mass graves issues and low resources.

In Colombia, graves were commingled and/or incomplete individuals were buried to increase the complexity of forensic analyses. Of the reasons that can explain the existence of these type of graves is the practice used by paramilitary groups where victims are dismembered alive or as a method to dispose and hide the remains. Consequently, several individuals are sometimes buried in one or more graves in a disorganized and random manner. Other reasons are the cultural traditions of the community and circumstances of the victim's family, who bury their loved ones in one grave on their own property or in local cemeteries, even when they have died in different events or circumstances, including natural death. Sometimes the community is forced to carry out mass burials in a short period of time when threatened by armed groups that may strike again. On other occasions, forcibly displaced families exhume their dead relatives in order to rebury them in the area where they relocate. Lastly, particularly in rural cemeteries, bodies are often exhumed and disposed of with other remains, in order to

open space for the recently deceased. No record is kept on the conditions in which these individuals are buried or found.

These graves are characterized by the presence of commingled and incomplete bodies at different stages of preservation and with various types of injuries. Frequently, the climate of the tropical forest where the conflict takes place deteriorates the bony structures and hinders the determination of the biological profile and prevents articulation of body segments.

During lab analyses, remains are individualized based on the morphological and metric characteristics in order to determine the minimum number of individuals. The most likely number of individuals is not used because graves usually have three to five bodies. In cases where individualization/sorting is impossible, the remains of each individual are classified as *INDIVIDUAL X*; groups of anatomically associated structures where it is impossible to determine to which individual they belong are classified as *GROUP X*; and disarticulated structures that may correspond to any individual are classified as *MISCELLANEOUS*. Both *INDIVIDUAL* and *GROUP* skeletal samples are kept for purposes of genetic analysis. However, due to the high cost and volume of cases, DNA labs give higher priority to *INDIVIDUAL samples* than to *GROUP samples*. Consequently, *INDIVIDUALS* samples are identified, but in most cases the cause of death may not be established, particularly if the injuries that caused death remain unassociated.

The medical-anthropological teams are frequently faced with these two problems: sorting and determination of the individual's cause of death. Returning complete skeletons to family members is very often not possible and cannot rely on genetics because of sample processing limitations. Additionally, the cause of death of these individuals is frequently undetermined. The proposal is to take bone samples from the skull and injured structures for identification purposes. This would require the enhancement of DNA extraction techniques from small structures, and a coordinated effort with DNA experts. Processing samples in this way may contribute to victim identification and explain the circumstances of death. Additionally, it would meet the requirements of the administration of justice and each family's need to know the truth about what happened to their loved ones.

**Commingled, Cause of Death, Armed Conflict in Colombia**