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**UNLOCKING THE IDENTITY OF SKELETAL REMAINS**- Maitri Sutariya<sup>1</sup>***Abstract***

The examination of human remains according to forensic standards is a complex process that requires the participation of several different forensic medical specialties. In this article, we present a complex forensic investigation that involved a double homicide. The bodies were found in a state of near-complete skeletonization indicating that they had been skeletonized. Through the use of forensic DNA analysis, we were able to determine the identification of the two bodies, as well as identify injuries that were caused by firearms and stabbing weapons that occurred around the time of death. The post-mortem examinations allowed us to establish the two bodies' biological characteristics, including ancestry, gender, age, and height. Two of the persons who were found to be responsible for the criminal conduct were sentenced to life in prison for the crime of homicide. The other two individuals were identified as being involved in the criminal act. The justices gave their approval to the reconstruction of the crime that was carried out by the prosecutor, which involved a double murder with gunshots.

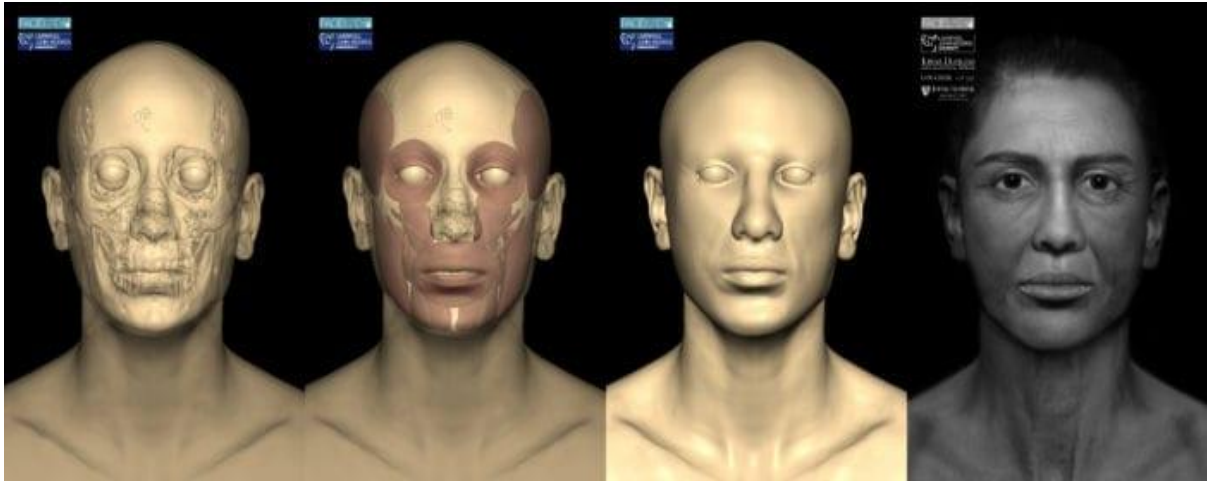
**KEYWORDS: Anthropology, Forensic, and Skeletal**

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## INTRODUCTION

Forensic anthropologists analyze human skeletal remains to ascertain their potential relevance in criminal investigations and legal proceedings, focusing on characteristics related to bone structure. The legal system incorporates the field of biological anthropology. The primary responsibility of forensic anthropologists is to identify individuals based on their skeletal remains.

"Forensic anthropology involves the application of specialized knowledge in physical anthropology, which includes the study of human sexual, racial, age, and individual characteristics, to address issues related to" medico-legal jury prudence," *according to Charles Snow's 1973 definition.*

Furthermore, it is crucial to acknowledge that, in addition to their commonalities, the pursuit of individuals who have been forcibly disappeared in the three nations has developed through distinct trajectories. Occasionally, it has been distinguished by the prominent existence of the In certain countries, such as Colombia and, to a lesser extent, Peru, the state plays a significant role. However, the state needs to be present in other countries like Guatemala. Simultaneously, it is essential to emphasize that the search procedures in the three nations have never followed a straight and predictable path. <sup>2</sup>In Colombia, the search was conducted during internal turmoil, whereas in Guatemala and Peru, this endeavor commenced after the cessation of hostilities (in 1992 and 2002, respectively).

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<sup>2</sup>Ament, C. M., & Graham, T. J. (2017). Secrets of a Mass Grave: Using forensic anthropology techniques to gather and analyze evidence. *The Science Teacher*, 84(8), 26–29. <http://www.jstor.org/stable/26387243>

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The accuracy of procedures is always contingent upon validation studies, regardless of the strategy used. The validation of results is contingent upon applying a method established from a particular sample to a different sample. When selecting procedures, it is crucial to carefully verify whether the chosen method is suitable for the specific sample. Most importantly, it is essential to have an appropriate method for identifying one's lineage that incorporates references from the group from which the individual originates. The picture mentioned above has had forensic implications, evident in the subtle variations in technical terminology and some areas of the scientific procedure about investigating, retrieving, and examining the remains<sup>3</sup>. Colombia has demonstrated this phenomenon since government agencies employ forensic specialists from the Argentine Forensic Anthropology Team, but they are affiliated with non-governmental organizations in Guatemala. In Peru, there are professionals in both categories. The guide's structure has been arranged logically, following the different steps in searching for, recovering, analyzing, and identifying remains. Additionally, it includes guidelines for communicating the results to the victim's relatives.



Estimating ancestry is crucial not just for direct identification purposes but also as a necessary preliminary step in calculating age, sex, size, and other characteristics. Having prior information on ancestral lineage can enhance the precision of sex estimation. In addition, the absence of lists does indeed refer to lineage. Since identification is inherently a

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<sup>3</sup>[Discovering a double murder through skeletal remains: A case report - Samuele Manzoni, Andrea Ossoli, VenusiaCortellini, Andrea Verzeletti, 2019 \(sagepub.com\)](#)

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comparing process, all four characteristics, including ancestry, have the potential to result in exclusion.

The assessment of ancestry is influenced by the methodologies employed in research and casework, which vary depending on the continent of their origin. This paper examines the techniques that can determine the geographic origin, primarily through anthropological assessment using metric and non-metric methods. It also acknowledges the existence of genetic and chemical methodologies, emphasizing that these approaches are also viable and should be considered.

The extensive and intricate body of published literature on lineage matters in forensic anthropology often needs to be clarified within the subject over its aim and interpretation.<sup>4</sup>There is a prevailing misconception that research on the human skeleton focuses on the skull, neglecting the rest of the skeletal system. However, this idea needs to be corrected. This succinct study offers a necessary literature summary to enhance comprehension of the various strategies and their practical implementation.

Regarding the remaining characters, no information is accessible. It is imperative to ensure that individuals who have recently expired, living humans, decomposing bodies, burned or disfigured remains, and skeletons are correctly identified. In criminal proceedings about individuals accused of assault, murder, rape, and analogous offenses, as well as scenarios involving the exchange of neonates within medical facilities, impersonation, and other such activities, it is imperative to have this information. It is mandatory for the physician to include a minimum of two identification identifiers in every medical record, encompassing matters such as marriage, inheritance, passports, insurance claims, challenged sexual orientation, missing persons, and similar concerns. In the context of the deceased, identification pertains to "assigning a suitable appellation, such as the individual's birth name, to the human remains."

The act of identifying an individual is referred to as identification. The persistent challenge faced by law enforcement is the identification of unidentified bodies, which requires the

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<sup>4</sup>.Snow, C. C. (1982). Forensic Anthropology. *Annual Review of Anthropology*, 11, 97–131. <http://www.jstor.org/stable/2155777>

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assistance of the most proficient forensic specialists. Victim identification remains critical in catastrophic incidents, irrespective of the cause of the catastrophe or the quantity of casualties. In both a legal and compassionate sense, background investigators must identify every individual, if possible, to facilitate their restoration to justice.

### **RESEARCH OBJECTIVE**

1. To accelerate the process of inspecting, extracting, and analysing human bones about violations of international humanitarian law and violations of human rights, it is important to provide a system that is both thorough and coordinated.
2. Identify and correct significant errors and hazards that are typically encountered during examinations of state organizations, particularly in situations involving state officials, parastatal organizations, or rebel groups.
3. Create a complete guidebook that is designed to meet the needs of a broad variety of users, such as law enforcement agencies, forensic specialists, legal professionals (such as judges, attorneys, and prosecutors), families of victims, and the organisations and support systems that are affiliated with them. By giving language that is clear and brief as well as ideas that are necessary, the inclusion provides accessibility.
4. At each stage of the investigation, you should establish limits and explanations that are both clear and succinct for the main components of the investigation process. Because of this, there will be a greater likelihood of reaching an agreement on operating processes, consistency in documentation, and adaptation to individual challenges and circumstances.

### **CRITICAL ANALYSIS**

They handle such as severely decomposed or skeletonized bodies or situations involving missing body parts; forensic anthropologists typically serve as the final opportunity for identifying the victim and ensuring justice is served. The statement emphasizes the need to establish a standard approach to ensure that forensic investigations are accurate, reliable, and effective. To do this, a detailed examination of the benefits, drawbacks, and potential areas

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for improvement in present techniques and approaches is required. Forensic anthropologists examine human bones to find objective scientific evidence to help the justice system understand the specifics and context of criminal crimes. Forensic anthropologists who have undergone training in anthropology, archaeology, human osteology, and chain-of-evidence protocols are critical players in forensic science, both in the field and the laboratory. The methodical retrieval and acquisition of physical evidence in the field, rigorous scientific investigation in the laboratory, and ensuring the evidence's legitimacy can all impact the result of civil or criminal cases. Typically, evidence response teams at the federal, state, and county levels collect and assess physical evidence, such as human skeletal remains. Nonetheless, law enforcement agencies routinely seek the expertise of forensic anthropologists for this task. Forensic anthropologists have used their knowledge to investigate people who have been victims of crimes, accidents, natural disasters, and mass mortality. The forensic anthropologist will most likely be able to answer the following questions based on skeletal remains. These questions explain unique biological aspects of the dead's skeletal remains that eventually lead to the identification of the deceased. We use our archaeological skills to find and safely collect human remains and other physical evidence from crime scenes. This is especially crucial because the rehabilitation process is inherently harmful. First responders have a single opportunity to recover all tangible evidence without contamination. They must photograph the human remains, gunshot casings, and cigarette butts in their original locations, construct a map depicting the relative placements of these artifacts and other scene features and collect the necessary information. Forensic anthropologists use their knowledge of human osteology and anatomy in the laboratory to help medical examiners or coroners identify the victim, reconstruct the circumstances surrounding the death (such as determining if foul play was involved), and assess post-mortem events. The victim's bones are visually, stereoscopically, and radiographically examined to determine their age, gender, height, and ancestry. However, forensic anthropologists understand that analyzing skeletal remains can reveal vital clues about the victim's past. For example, the presence of fine horizontal indentations on the victim's front teeth (incisors) indicates that the victim suffered from severe disease or starvation during the teeth's developing period in infancy. Facial, rib, and hand bone fractures at various stages of healing may suggest a history of domestic abuse, whereas knee orthopedic implants may be the result of sports-related injuries. As a result, developing the

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victim's biological profile frequently provides evidence regarding the victim's life history, which might potentially assist in positively identifying the victim.

After completing the victim's biological profile, the forensic anthropologist will examine the trauma that occurred at the time of death. Skeletal trauma analysis is a complex and time-consuming operation. When done correctly, this research can reveal concealed facts about the circumstances of death. However, differentiating between a knife mark created during the victim's death and a mark left by lawn mower blades hitting the bones long after death requires substantial expertise gathered from examining multiple bones over many years, whether in a mortuary, laboratory, or museum. Coroners, medical examiners, and other forensic specialists rely on the expertise and abilities of forensic anthropologists.

Forensic anthropologists are trained to examine and determine how environmental influences affect the appearance and structure of bones over time after death. For example, an unskilled observer may misinterpret the abrasion or wear away of the protective coating of the brain produced by water or wind as a trauma that occurred at the time of death. Similarly, conical depressions and minute parallel grooves may appear to be knife incisions, but they might instead be impressions left by carnivores or rodent teeth. As a result, the analysis of skeletal trauma distinguishes between patterns of severe damage inflicted by a weapon at the time of death and fracture or shattering caused by animals or weathering afterward. Forensic anthropologists are experts in locating and mapping human skeletal remains while excluding stones, sticks, and animal bones from the evidence collection. Consequently, our work allows investigating authorities to refocus their efforts on other parts of the inquiry. As an example, numerous forensic anthropologists, including myself, were asked to help with the recovery of victims from the 11 September World Trade Centre attack. Our primary task was to separate the human remains from the vast amount of nonhuman elements such as rocks, twigs, and other trash. While we did not use our talents to identify the victims in this case, our efforts significantly accelerated the identification process, which DNA and dental specialists mostly carried out. Forensic anthropologists play an important part in forensic investigations because they help identify and examine victims of mass fatalities. They also use tool markings on bones to connect offenders, victims, and weapons. Early engagement of forensic anthropologists in an investigation ensures optimal collection and preservation of human skeletal remains, allowing evidence response team members to

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focus on other types of evidence, such as fingerprints, fibers, and DNA. Furthermore, a forensic anthropologist's skeleton examination helps identify the victim and determine the potential cause of death. Due to the features of the cases

## **CONCLUSION**

When it comes to situations of human rights abuses, the purpose of this text is not to offer a full explanation of the process of investigating, retrieving, and analysing bone remains. Guatemala, Colombia, and Peru are three nations that have been at the forefront of this sector, and this paper serves as an introductory document that brings together the most successful forensic procedures that have been utilised in these countries. In addition to providing an overview of the scientific and technological procedures, this article also combines the practical expertise and insights that have been acquired by seasoned forensic specialists who have been working on the topic for a considerable amount of time.

This document stands out for its focus on including the victims in the families in all stages of the search process. It recognizes their entitlement to timely and appropriate information about the findings, the need to keep them adequately informed, and the opportunity to ask the scientists and authorities additional questions regarding the results.

Overall, significant advancements have been achieved throughout Latin America regarding conducting thorough investigations into occurrences that resemble those mentioned in this text. The "Minnesota Protocol" is often utilized by investigators at various levels. Regrettably, we are aware of the fact that extrajudicial killings and enforced disappearances persist in several countries within the region. These occurrences are motivated by political factors, as they were in the past, and other factors, such as organized crime. Consequently, we anticipate that all governmental and non-governmental organizations from any nation participating in the search, retrieval, and examination of remains will refer to and implement this advice in their endeavors.

To establish identification through forensic examinations of skeletons, one must have a complete grasp of bone morphology, osteology, and anatomy. This information can result in the production of important scientific evidence. Identifying the individual or the person legally entitled to own the remains can be accomplished by examining the skeletal remains. The individual's age, gender, ethnicity, and height are all taken into consideration to reach

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this goal. The structure of the skeleton can also provide helpful indicators for recognising and identifying particular bones. Because to the advancement of DNA profiling, it is now possible to confirm identity with complete and utter confidence. On the other hand, there are circumstances in which removing tissue for DNA analysis is not feasible. This may be the case when the tissue has been completely burned or decomposed or when the DNA taken has been substantially damaged, which may prevent identities from being confirmed.



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