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## Forensic Anthropology as a Tool of International Humanitarian Law: Azerbaijan's Post-Conflict Experience

### Abstract

This article explores how forensic anthropology can operationalise international humanitarian law (IHL) in the aftermath of armed conflict, using Azerbaijan's recent experience as a case study. International humanitarian law establishes binding obligations for both states and non-state armed actors to undertake all feasible measures aimed at locating, recovering, and identifying persons who have died in connection with armed conflict, as well as to ensure that relevant information concerning their fate is communicated to their families. The interdisciplinary field of forensic anthropology—drawing on osteology, archaeology, medicine, and law—has become essential for fulfilling these obligations, especially in contexts of mass violence and mass graves. Through a qualitative analysis of legal instruments, academic literature, and selected Azerbaijani research, the article examines how forensic methods support the identification of human remains, document war crimes, and protect victims' rights. It draws attention to the progressive development of humanitarian forensic action, addresses the ethical and methodological complexities inherent in mass grave investigations, and underscores the importance of sustained international cooperation. The findings suggest that by investing in training, adopting international standards, and building forensic databases, Azerbaijan can strengthen both domestic justice and regional humanitarian mechanisms.

**Keywords:** forensic anthropology, international humanitarian law, mass graves, missing persons, identification of remains, humanitarian cooperation

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## Məhkəmə antropologiyası beynəlxalq humanitar hüququn bir vasitəsi kimi: Azərbaycanın münaqışdən sonrakı təcrübəsi

### Xülasə

Bu məqalə məhkəmə antropologiyasının silahlı münaqışdən sonra beynəlxalq humanitar hüququ (BHH) necə həyata keçirə biləcəyini, Azərbaycanın son təcrübəsini nümunə kimi göstərməklə araşdırır. BHH dövlətlərə və silahlı qruplara ölənlərin axtarışı, çıxarılması və identifikasiyası, eləcə də ailələrə məlumat verilməsi üzrə öhdəliklər qoyur. Osteologiya, arxeologiya, tibb və hüquq sahələrindən faydalanan məhkəmə antropologiyası kütləvi zorakılıq və kütləvi məzarlıqlar kontekstində bu öhdəliklərin yerinə yetirilməsində əvəzsizdir. Hüquqi sənədlərin, elmi ədəbiyyatın və seçilmiş Azərbaycan tədqiqatlarının keyfiyyət analizi əsasında məqalə məhkəmə metodlarının insan qalıqlarının identifikasiyasına, müharibə cinayətlərinin sənədləşdirilməsinə və qurbanların hüquqlarının qorunmasına necə dəstək verdiyini araşdırır.

Humanitar məhkəmə fəaliyyətinin inkişafı, kütləvi məzarlıq araşdırmlarının etik və metodoloji çətinlikləri və beynəlxalq əməkdaşlığın zəruriliyi vurgulanır. Nəticələr göstərir ki, təlimə investisiya qoymaqla, beynəlxalq standartları qəbul etməklə və məhkəmə məlumat bazaları yaratmaqla Azərbaycan həm milli ədaləti, həm də regional humanitar mexanizmləri gücləndirə bilər.

**Açar sözlər:** *məhkəmə antropologiyası, beynəlxalq humanitar hüquq, kütləvi məzarlıqlar, itkin şəxslər, qalıqların identifikasiyası, humanitar əməkdaşlıq*

## Introduction

Armed conflicts leave behind more than destroyed infrastructure and devastated communities; they produce a legacy of unresolved disappearances and unburied dead. Families live with uncertainty, seeking to know what happened to missing relatives, while societies must decide how to honour the dead with dignity. International humanitarian law (IHL) responds to these humanitarian concerns by formulating legal standards governing the dignified treatment of those who have died during armed conflict and by imposing obligations on conflict parties to locate, recover, and establish the identity of the deceased. These responsibilities do not lapse with the end of active hostilities; rather, they continue as part of a sustained legal and moral commitment to safeguard the right of families to obtain information about the fate of their relatives and to ensure that missing persons are not rendered invisible by the aftermath of war. However, the effective realisation of these legal requirements depends on the availability of specialised scientific knowledge and on engagement with affected communities conducted in a culturally and ethically sensitive manner. In this context, forensic anthropology—an applied branch of biological anthropology integrating osteological, archaeological, and forensic methods into legal inquiry—has assumed a central role in translating IHL obligations into practical action.

Azerbaijan's history of armed confrontation over the Nagorno Karabakh region has resulted in large numbers of missing persons and unmarked burial sites. Years of unresolved disappearances have placed an emotional burden on families and created legal and humanitarian challenges. Exhumations conducted in liberated territories after recent hostilities have revealed evidence of mass graves and human rights abuses, underscoring the need for scientific methods to recover and identify remains. The application of forensic anthropology in Azerbaijan therefore provides a compelling lens through which to examine the practical implementation of IHL.

## Research

The capacity of forensic anthropology to operate effectively derives from its fundamentally interdisciplinary character, as evidenced by the pioneering work of the Argentine Forensic Anthropology Team in the 1980s, which showed that the integration of archaeological, osteological, medical, statistical, and legal expertise can both clarify the fate of forcibly disappeared individuals and contribute to the prosecution of serious human rights violations (Cordner & Tidball-Binz, 2017).

The International Committee of the Red Cross articulated the concept of humanitarian forensic action as the systematic use of forensic scientific methods in the service of humanitarian objectives (Cordner & Tidball-Binz, 2017).

Forensic anthropology plays a critical role in the investigation of war crimes, genocide, and crimes against humanity. In contexts marked by large-scale violence, investigators are required to establish not only the identity of those who died but also the circumstances and causes of their deaths. Within this framework, humanitarian forensic action encompasses the dignified management of human remains, the systematic documentation of injuries and torture, the assessment of deaths occurring in detention, the examination of mass graves, and the identification of combatants reported missing in action (Cordner & Tidball-Binz, 2017).

Humanitarian investigations differ from criminal prosecutions: the focus is on identification and returning remains to families, not on assigning guilt. Nonetheless, the documentation produced through forensic anthropology can inform courts and truth commissions and support legal accountability.

International humanitarian law codifies duties to protect the dead and ensure that families can learn the fate of missing relatives. Under Article 16 of the First Geneva Convention and Article 17 of the Second Geneva Convention, parties to an armed conflict are obliged to safeguard the bodies of the deceased against desecration, to ensure that they are buried in a dignified manner, and to take appropriate measures aimed at establishing their identity. Similar provisions appear in the Third and Fourth Conventions and in the Additional Protocols of 1977. The 2025 *International Review of the Red Cross* analysis entitled *Dignity in Death* underscores that the rules of international humanitarian law are designed to guarantee the dignified treatment and retrieval of those who have died in armed conflict. Central to these legal provisions is the protection of the families' entitlement to obtain information concerning the fate and circumstances of their relatives (Obregón Gieseke & Londoño, 2025).

The duty to account for the deceased is given practical effect through a set of closely connected responsibilities, namely: undertaking active searches for persons who have lost their lives, systematically collecting and recording all relevant information concerning the deceased and the sites of their burial while ensuring that graves are properly marked, and communicating available information regarding their fate to family members (Obregón Gieseke & Londoño, 2025).

The Geneva Conventions of 1949 are central to IHL and have been ratified by nearly all states. According to Azerbaijani legal scholarship, the Conventions extended protection to victims of both international and internal conflicts and introduced comprehensive rules for the humane treatment of wounded soldiers, prisoners of war, and civilians. Additional Protocol I and Additional Protocol II, both adopted in 1977, significantly reinforced safeguards for civilian populations while introducing legal constraints on the methods and means employed in armed conflict. As highlighted in instructional materials of the Azerbaijani Police Academy on international humanitarian law, these norms pursue a dual objective: affording protection to individuals who are not, or are no longer, participating in hostilities and limiting the discretion of belligerents in their choice of weapons and tactics (Mazanlı, 2019).

Within the framework of international humanitarian law, states and conflict parties are required to conduct non-discriminatory searches for the deceased and to systematically collect, preserve, and communicate information that may facilitate their identification (Obregón Gieseke & Londoño, 2025).

They are required to guarantee that burial sites are treated with respect, clearly identified, and that human remains are managed in a dignified manner. These responsibilities are further reinforced by rules of customary international law, which compel states to take all practicable steps to account for individuals reported as missing and to safeguard the corresponding rights and interests of their families.

Azerbaijan's post-conflict landscape is shaped by decades of confrontation over the Nagorno Karabakh region. Following the dissolution of the Soviet Union, hostilities between Armenia and Azerbaijan resulted in significant loss of life, displacement, and unresolved disappearances. Despite ceasefire agreements, tensions persisted and escalated again in 2020. The protracted nature of the conflict meant that thousands of soldiers and civilians were reported missing. Many graves remained unmarked, and families lacked information about the fate of their relatives. Although precise numbers vary among sources, the continued existence of missing persons underscores the long-term humanitarian impact of the conflict.

The discovery of mass graves in liberated territories after recent hostilities has highlighted the scale of the missing persons problem. Unmarked burials and commingled remains reflect not only the chaos of battle but also deliberate efforts to conceal deaths. Forensic anthropologists are essential for excavating these sites, disentangling commingled remains, and constructing biological profiles. They work with archaeologists to document stratigraphy, taphonomy, and artefacts, which can help reconstruct the circumstances of death (Schmitt, 2020).

Because the graves often contain victims from different periods and localities, careful documentation prevents misinterpretation. Although academic literature does not yet provide

comprehensive data on Azerbaijan's mass graves, local research emphasises the importance of anthropometric studies for identification. For example, a 2023 study by Ibragimov and Kerimov developed regression equations to estimate body length from skull measurements using a collection of 120 Azerbaijani skulls (Ibragimov & Kerimov, 2023). The researchers highlighted that such methods could assist expert examinations in identifying individuals when skeletal remains are incomplete or when DNA is unavailable (Ibragimov & Kerimov, 2023). Another study by Ibragimov analysed the state of personal identification methods and argued that forensic anthropology remains central to establishing identity despite advances in DNA analysis (Ibragimov, 2023).

In Azerbaijan, forensic anthropology is still developing as an academic and professional field. Nonetheless, local researchers and institutions have contributed to its growth. The *Məhkəmə Ekspertizası, Kriminalistika və Kriminologyanın Aktual Məsələləri* collection reports that Azerbaijan's Forensic Expertise Centre prioritises legal, organisational, and methodological issues in forensic research and has established scientific journals and training programmes (Məmmədoğlu, 2025).

These initiatives aim to build capacity, develop methodological standards, and provide continuous education for forensic experts. The collection also notes that collaboration between forensic specialists, law enforcement, and academic institutions is essential for effective practice (Məmmədoğlu, 2025).

Anthropometric research by Ibragimov and colleagues demonstrates how local scholars adapt global methods to the Azerbaijani context. By examining craniological series from Azerbaijani populations, they developed statistical models to estimate body length from skull dimensions (Ibragimov & Kerimov, 2023).

Such models are particularly useful in situations where only incomplete skeletal material is available for analysis. In a separate study, Ibragimov conceptualises forensic anthropology as a structured body of knowledge aimed at establishing personal identity through the systematic examination of traces, and outlines a traditional three-stage methodology consisting of: (1) the independent assessment of information relating to the missing individual and the unidentified remains; (2) the comparative evaluation of the collected data; and (3) the analytical interpretation of the results in order to reach conclusions regarding identity (Ibragimov, 2023). He argues that identification relies on both medical-biological characteristics (such as sex, age, height, and congenital anomalies) and biological-forensic characteristics (fingerprints, handwriting, gait, voice, etc.) (Ibragimov, 2023).

Because forensic anthropology is resource-intensive and requires specialised expertise, cooperation with international organisations is essential. As articulated by the International Committee of the Red Cross, humanitarian forensic action is grounded in the provision of assistance that is neutral, impartial, and independent, with the aim of enabling parties to armed conflict to comply with their respective obligations. In practice, this includes providing technical guidance, training local practitioners, assisting with the establishment of forensic laboratories, and facilitating the exchange of information between families and authorities. The ICRC's involvement in humanitarian forensic programmes worldwide has helped standardise procedures and promote best practices (Cordner & Tidball-Binz, 2017). For states like Azerbaijan, collaboration with the ICRC and the International Commission on Missing Persons can accelerate capacity building and ensure that investigations meet international standards.

Although its forensic anthropology infrastructure is still nascent, Azerbaijan has the potential to contribute to regional and international practices. Local research on cranial metrics and body length estimation (Ibragimov & Kerimov, 2023) as well as methodological reflections on identification processes enrich the global body of knowledge. Azerbaijan's experience in integrating state institutions, academic centres, and international organisations can serve as a model for other post-conflict societies. By participating in international networks and hosting regional workshops, Azerbaijani institutions can both benefit from and contribute to collective expertise (Ibragimov, 2023).

One of the primary challenges facing forensic anthropology in Azerbaijan is the shortage of trained specialists. Forensic anthropology requires expertise in osteology, archaeological excavation, pathology, genetics, and legal processes. The *Məhkəmə Ekspertizası, Kriminalistika və Kriminologiyanın Aktual Məsələləri* collection notes that developing forensic science is a national priority and that efforts are underway to train experts and establish academic programmes (Məmmədoğlu, 2025).

However, the number of qualified anthropologists remains small. Building a sustainable cadre of professionals will require establishing university curricula, providing scholarships for advanced study, and creating career incentives. Collaborative training with international organisations can accelerate capacity building, but long-term institutional investment is indispensable.

Mass grave investigations pose unique methodological challenges. Commingled, fragmented, and degraded remains complicate the reconstruction of individuals' biological profiles, and environmental conditions—such as soil composition, moisture, temperature, and time—affect decomposition and the preservation of DNA. In Azerbaijan, unexploded ordnance and lingering security risks further hinder fieldwork (Ibragimov & Kerimov, 2023).

Technical constraints extend to laboratory capacities. Genetic analysis requires equipment and reagents that may be scarce or expensive. Degraded DNA from old remains yields lower success rates, and the absence of ante-mortem records complicates matching. Anthropometric approaches, such as those developed by Ibragimov and Kerimov, offer alternative methods but still depend on statistical models that must be validated against larger datasets (Ibragimov & Kerimov, 2023). Without adequate funding and infrastructure, these constraints slow identification and increase the risk of misidentification.

Reliability and credibility depend on harmonising domestic procedures with international standards. States must align their practices with IHL obligations and accepted forensic guidelines. The Guiding Principles for the Dignified Management of the Dead place particular emphasis on safeguarding the dignity and interests of families while underscoring the importance of accurate and dependable identification procedures (Obregón Giesecken & Londoño, 2025).

In practice, this means establishing standard operating procedures (SOPs) for excavation, documentation, chain of custody, laboratory analysis, and data management. Multiple agencies—including prosecutorial offices, forensic institutes, security services, and humanitarian organisations—must coordinate effectively. Differences in institutional culture, capacity, and mandate can lead to inconsistent practices and hinder collaboration.

Anthropologists must balance scientific requirements with cultural sensitivity, avoiding unnecessary intrusions and ensuring that rituals and customs are honoured. In the Azerbaijani context, diverse religious and cultural practices demand flexibility and dialogue with community leaders.

## Conclusion

Forensic anthropology has evolved from an academic specialisation into an indispensable tool for implementing IHL and supporting humanitarian objectives. By combining osteological analysis, archaeological excavation, trauma interpretation, and ethical engagement with communities, forensic anthropologists provide the expertise needed to search for, recover, and identify the dead.

Azerbaijan's post-conflict experience illustrates both the potential and the challenges of using forensic anthropology to address missing persons and mass graves. While local research and institutional initiatives demonstrate commitment, the country faces shortages of specialists, technical constraints, and the need to harmonise practices with international standards.

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