Working with the Remains in Cambodia: Skeletal Analysis and Human Rights after Atrocity

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Abstract.
This essay will discuss the research being conducted on Khmer Rouge-era human skeletal remains in Cambodia, and the implications of this work. First, the Cambodian project to conserve and analyze the remains at the Choeung Ek Genocidal Center (Choeung Ek) will be briefly discussed. This exceptional undertaking was the first complete scientific analysis of human remains from a Cambodian mass gravesite. Second, the author’s independent research at Choeung Ek and a collaborative project at another mass gravesite will be reviewed. The author’s research focuses on the traumatic injuries and demographics of the remains at Choeung Ek, while also incorporating cultural understandings of these memorials. Finally, the importance of this work within Cambodia and the international community will be examined; this essay will attempt to situate the research being undertaken in Cambodia within the broader framework of human rights after atrocity.

Keywords.
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Introduction

After a deadly civil war in the early 1970s, the Khmer Rouge\(^1\) Communist regime came to power in Phnom Penh, Cambodia in April 1975, subsequently establishing the government of Democratic Kampuchea (DK). The DK leadership, led by the infamous Pol Pot, abolished money, education, religion and private property, and almost all Cambodians were forcibly relocated from cities to collective farms in the countryside. The conditions were severe, and historical estimates state that between 1975 and 1979, approximately one quarter of the Cambodian population of nearly eight million died from mistreatment, overwork, malnutrition, and violence.\(^2\) On January 7, 1979 Vietnamese troops entered Phnom Penh ending the three years, eight months, and twenty days of Democratic Kampuchea.

In April 1994, the United States Congress passed the Cambodian Genocide Justice Act to investigate the Khmer Rouge era atrocities. The following year the Documentation Center of Cambodia (DC-Cam) was founded as a research and documentation institute to provide information about the Khmer Rouge period to scholars and the public.\(^3\) Beginning in 1994, DC-Cam launched a ten-year project to locate and map sites of Khmer Rouge atrocities including mass graves, former prisons and security centers, and memorials. At the completion of the project, DC-Cam had identified 19,733 mass graves, 196 former prisons, and eighty-one memorials.\(^4\)

One of the most well-known mass gravesites, and the one that is used for national commemorations, is Choeung Ek. Located approximately 15 km southwest of the center of Phnom Penh, today it is called The Choeung Ek Genocidal Center, although colloquially it is known as the “Killing Fields.” After 1977, the former Chinese cemetery at Choeung Ek was used by the Khmer Rouge as an execution and burial location for thousands of men, women, and children. The majority of the victims came from S-21 (Tuol Sleng), the highest level security and torture center in use during the Khmer Rouge period.\(^5\) When Choeung Ek was discovered shortly after the Khmer

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\(^1\) “Khmer Rouge” is the French derivative of “Khmer Kroham” or “Red Khmer.” This term was first used by Cambodia’s King Norodom Sihanouk in the 1960s to describe Cambodian members of the Communist party. Khmer Rouge can refer to the regime, as well as individuals who worked for the regime, also known as cadre. Meng-Try Ea, *The Chain of Terror: The Khmer Rouge Southwest Zone Security System* (Phnom Penh: Documentation Center of Cambodia, 2005), xii.


\(^3\) Documentation Center of Cambodia, “History and Description of Dc-Cam: Our History,” [http://d.dccam.org/Abouts/History/ Histories.htm](http://d.dccam.org/Abouts/History/Histories.htm).


Rouge were driven from Phnom Penh in January 1979, 129 mass graves were found. Eighty-six of these graves were subsequently exhumed, and the remains of nearly 9,000 individuals were disinterred. In 1988, the Cambodian government built a memorial stupa (shrine) to commemorate and protect the physical remains of the Khmer Rouge victims, and it is within this stupa that the human bones have stayed—virtually untouched—until recently.

Figure 1. The inside of the memorial stupa at Choeung Ek.

Analysis and Preservation of Human Remains in Cambodia

Conservation at the Choeung Ek Genocidal Center

In 2012, with the official consent of Cambodia’s Prime Minister, Hun Sen, a conservation project was launched. Under the direction of a Ministerial and Municipal committee, the project sought to preserve and curate the human bones, tools/weapons, and textiles at the Choeung Ek Genocidal Center. This was the start of the first comprehensive scientific analysis and preservation of human remains from mass gravesites throughout Cambodia, and the scientific team was exclusively Cambodian.

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6 Author’s discussion with Choeung Ek managerial staff, December 2015.
The human remains within the *stupa* comprise crania, mandibles, long bones, and other skeletal elements (i.e., sacra, os coxae, scapulae, etc.), which were systematically removed, cleaned, analyzed, and preserved. Analysis and inventory of the remains were also incorporated to properly record the available information for posterity. In particular, the team was interested in demographics (i.e., age-at-death and sex) and skeletal traumatic injuries.

The project was completed in December 2015. In less than three years the team analyzed and preserved tens of thousands of human bones. This is an extraordinary achievement that has yet to be replicated in Cambodia. To date, data derived from the human remains at Choeung Ek have not been analyzed and there are no forthcoming publications about this work in either Khmer or English. Perhaps this will occur in the future. The analytical/inventory forms for each individual have been published in Khmer in a 32-volume set that is retained by the Choeung Ek Genocidal Center, the Cambodian Ministry of Culture and Fine Arts, and other Cambodian organizations as scientific documentation of the work that was completed.

**Current Research and Projects**

The author was fortunate to be able to join this team at their laboratory for the first time in 2014. She returned in late 2015 to begin anthropological doctoral research employing a biocultural (biological and socio-cultural) approach to address questions concerning the individuals executed by the Khmer Rouge regime and the agency (the effect on living individuals) of the resulting skeletal remains. The author scientifically assessed the demographics (i.e., age-at-death, sex, ancestry) and evidence of traumatic injuries (e.g., blunt force, sharp force, and gunshot trauma) of more than 500 crania at Choeung Ek.

The author’s research is complimentary to the exclusively Cambodian research conducted at Choeung Ek and employs different methods and technology to answer additional questions. By systematically analyzing the human skeletal remains at Choeung Ek, which directly retain evidence of violent actions, the author will integrate previously undocumented data into a more holistic narrative of these Khmer Rouge atrocities. The author hopes that her research will greatly contribute to the literature on Khmer Rouge violence, as well as the current focus within forensic anthropology on crimes against humanity and genocide.

The socio-cultural component of the author’s research will evaluate the incorporation of skeletal remains into Cambodian memorials. While these memorials are well-documented, research has not specifically addressed the role of the physical skeletal remains within; since these structures were built to shelter the remains, studying their primary component (the bones) will be an important contribution to the memorial literature. The author directly observed more than a
dozen memorials and conducted interviews with the site’s caretaker(s) to address the role that the memorials and/or remains play in modern Cambodia.

A bio-cultural approach for the author’s research is an anthropological imperative. A biological analysis of the skeletal remains provides demographic data and permits quantification of the traumatic injuries; but without integrating the socio-cultural context, these remains persist as isolated specimens of scientific evidence on the periphery of modern Cambodian life. By evaluating the agency, or social impact of these remains—via their presence within memorial structures—the author will address the conceptions of bones as both active materials (objects) and as embodied memories (subjects). Rather than focusing exclusively on what has been done to/with the bones since they were exhumed in the 1980s, this research will also evaluate what effect the remains have on living people.

After the analysis and conservation of the remains at Choeung Ek finished, the author and the Choeung Ek laboratory director wanted to collaborate to continue this important work throughout the country. A project proposal was developed to analyze, document, and preserve human remains at another mass gravesite in Cambodia called Krang Ta Chan. Krang Ta Chan is a former Khmer Rouge prison and gravesite located in Takeo Province. At this site, it is estimated that more than 10,000 people were executed and at least 3,000 bodies were exhumed.

With funding granted by the American Academy of Forensic Sciences and additional international donations, the Krang Ta Chan project became the fourth effort to systematically analyze human remains from the Khmer Rouge era. This new project had three primary goals: 1) to scientifically analyze the previously exhumed human skeletal remains located at Krang Ta Chan, 2) to renovate the memorial *stupa* currently at the site, and 3) to provide documentation about the human remains for historical and future research. It is hoped that this project and the associated research will contribute evidence of Khmer Rouge violence that has hitherto been undocumented in the historical literature.

Employing the same techniques used for the remains at Choeung Ek, this project began in April 2016. All of the remains were removed from the *stupa* and transported to the laboratory at Choeung Ek where they were assigned identification numbers, cleaned, analyzed, photographed, and preserved. The team documented more than 1,900 crania and thousands of other bones belonging to both adults and children. The remains were returned to the renovated (i.e., cleaned, painted, and with new glass) *stupa* in Krang Ta Chan and a solemn Khmer Buddhist ceremony was held for the local community to call the spirits back to the mortal remains and wish them well in their next lives.

It is the author’s hope that this type of analysis and preservation of human remains from the Khmer Rouge era will continue in Cambodia, as much information can be gleaned from studying human remains. However, as discussed below, perspectives on this work vary.

**Implications for Analyzing and Preserving Human Remains from Human Rights Atrocities and Genocides**

While it is informative to describe the aforementioned analytical research, more pertinent is the significance of these analyses and research in Cambodia—as well as how this research contributes to the international study of human rights and genocide. The following discussion will attempt to situate the skeletal research being undertaken in Cambodia within the broader framework of human rights after atrocity.

The analysis of modern human remains from violent conflicts is primarily conducted by forensic anthropologists. Forensic anthropologists and archaeologists have been involved in

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11 The team at Choeung Ek conducted two smaller analytical and preservation projects while completing the Choeung Ek work.

12 A simplified distinction between forensic anthropologists and archaeologists is as follows: archaeologists are primarily trained to locate graves and buried bodies and remove them from the ground, while anthropologists are skeletal
the investigation of political violence and human rights violations for many decades. The first inclusion of forensic experts—particularly anthropologists—in a human rights investigation was in 1984 when professionals were asked to investigate the “disappeared” from Argentina’s military dictatorship (Dirty War) in the late 1970s and early 1980s.\(^\text{13}\)

As the discipline of forensic anthropology becomes more widely recognized internationally, it is now common for these professionals to be involved in the identification of disaster victims and victims of human rights violence.\(^\text{14}\) Presumably this trend will continue in the near future as anthropologists and archaeologists are able to provide information that is otherwise inaccessible.

The responsibilities of forensic anthropologists and archaeologists often include (mass) grave exhumation, skeletal and material culture analysis (primarily analyses and documentation of biological characteristics and traumatic injuries), assisting with identification of the decedents, providing legal testimony, and collecting ante-mortem (before death) data on decedents.\(^\text{15}\) Therefore, in the context of human rights violence or genocide, the work of forensic anthropologists can demonstrate that multiple individuals residing within a common grave was purposeful rather than coincidental; it can provide evidence suggesting the cause of death; and the work can offer

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\(^\text{15}\) Ibid., 133-36; Steadman and Haglund, “The Scope of Anthropological Contributions to Human Rights Investigations,” 3.
biological information which has the potential to lead to personal identifications. Additionally, forensic anthropological contributions to the analysis of traumatic injuries and violence at the population-level (i.e., taking the injuries of entire groups of victims into account rather than simply analyzing one victim individually) allows for geographic and temporal comparisons of such atrocities,\(^\text{16}\) which directly contributes to the global nature of genocide and human rights studies.

Returning to Cambodia, after the Khmer Rouge regime officially ended in January 1979, citizens and local governmental authorities throughout the country proceeded to collect human remains and artifacts from mass graves and place them in memorials for preservation. In the subsequent decades, however, the memorials and the remains began to deteriorate. After noting this degradation, the Cambodian government issued directives in 2001 to preserve the remains of the victims of the Khmer Rouge. “In order to preserve the remains as evidence of these historic crimes and as the basis for remembrance and education by the Cambodian people as a whole, especially future generations,” as the government circular states, “all local authorities at province and municipal level shall cooperate with relevant expert institutions in their areas to examine, restore and maintain existing memorials, and to examine and research other remaining grave sites, so that all such places may be transformed into memorials...for both citizens and tourists.”\(^\text{17}\) The preservation of remains and memorials in Cambodia, was therefore, officially sanctioned and encouraged.

The projects at Choeung Ek and Krang Ta Chan are fulfilling the aforementioned goals established in 2001 for the preservation and examination of both the human remains and the memorials. Despite a fifteen-year delay, the work is now being conducted in order to document the violence inflicted by the Khmer Rouge, preserve the human remains for future generations of Cambodians and international visitors, and maintain the memorials to protect the remains and provide a location for visitors to pay their respects to the deceased. However, it must be noted that the work with the human remains in Cambodia is not currently forensic as these data and results are not directly contributing to legal cases. This status may change in the future, but currently the term for the work is more correctly classified as applied skeletal biology or osteology (the study of human bones) rather than forensic anthropology.

Additionally, both projects as well as the author’s research are providing information that has not been available until now. While there are historical and eyewitness accounts of the violence that transpired during the Khmer Rouge era, the physical remains were not analyzed until three years ago. Human remains, in contrast to historical records, provide direct evidence of traumatic events—in the form of distinct skeletal injury patterns—that can be assessed to discern one of the key tenets of anthropology: human behavior.\(^\text{18}\) Thus, this research is vital for a comprehensive understanding of this time period and for international awareness.

Controversies

However, in Cambodia as well as other countries, the exhumation of mass graves, the analysis of the human remains within, and the subsequent disposition of these disinterred remains are not without controversy. It must be noted that human remains resulting from genocide or crimes against humanity are rarely accessible for research primarily because they are politically, culturally, ethically, and religiously sensitive. If the unidentified remains are not buried or cremated, and therefore potentially available for study, it is generally not possible to ask for family permission to work with the remains, which is problematic. As mentioned above, only recently has the Cambodian government granted permission for large-scale analysis of skeletal remains from the Khmer Rouge era; however, as all of the remains are unidentified, families cannot be consulted to provide permission. Given the varying socio-cultural and religious contexts of post-atrocity


regions, the ramifications of working with human remains must be addressed on a case-by-case basis and should include governmental, cultural, and familial/community parties.

Prior to the graves being exhumed and the remains disinterred, many scholars have recently begun to discuss the conflicting ideologies and desires of forensic science/anthropology and other groups. As Rosenblatt\textsuperscript{19} and Crossland\textsuperscript{20} note, for example, justice, evidence, and truth mean different things to different political, social, and religious stakeholders. In many post-atrocity nations, religious leaders citing various beliefs and doctrines, have objected “to exhumation, autopsy, and other forensic practices, even when the mass graves in question contained crucial evidence of atrocities committed against their own members.”\textsuperscript{21} Rosenblatt continues by stating that the division between religious groups and forensic investigators is not that the forensic teams are disrespectful of the dead or are mistreating them; rather, it is about disturbing the bodies and the graves (or sacred spaces) that they occupy. Religious or cultural groups may believe that forensic teams profane the spaces and the individuals within if the grave is disturbed.\textsuperscript{22}

Crossland\textsuperscript{23} provides another example of contested forensic work: although the exhumations of the mass graves in Argentina in the 1980s and 1990s were politically sanctioned, mothers and other surviving relatives of the victims were opposed to the exhumations stating that rather than resulting in a reappearance of their family members, the forensic disinterment was a definitive indication that their children and relatives were deceased. Until those who committed the crimes were held accountable, the mothers wanted to remember their children as alive rather than dead; as long as their children were “disappeared,” the mothers could protest for accountability. These are two examples of contested spaces and ideologies in which forensic anthropologists and archaeologists find themselves and which must be considered before any forensic investigations or analysis of human remains are begun.

Finally, the disposition of disinterred remains can be fraught with controversy. In post-atrocity nations such as Guatemala,\textsuperscript{24} Bosnia-Herzegovina, and many others, the disinterred remains have been buried, often as a means to counter the disorder of the mass violence and mass graves.\textsuperscript{25} In Rwanda and Cambodia, however, human remains are publicly displayed.\textsuperscript{26} In Cambodia, the display of the human remains at the Tuol Sleng Genocide Museum (the former Tuol Sleng/S-21 detention center in Phnom Penh mentioned above) came under scrutiny by the late Cambodian King Norodom Sihanouk in the 1990s and early 2000s.

When Tuol Sleng was converted into a museum in 1980, a map of Cambodia was created from 300 disinterred human crania and other bones and hung on the wall within the museum.\textsuperscript{27} In opposition to the governmental rhetoric of “human remains as ‘evidence,’” the late King Sihanouk employed religious discourse in 2001 requesting that the remains of the Khmer Rouge victims be

\textsuperscript{22} Ibid., 132-33.
\textsuperscript{25} Sarah E. Wagner, To Know Where He Lies: DNA Technology and the Search for Srebrenica’s Missing (Berkeley: University of California Pro, 2008), 204.
cremated in Khmer Buddhist tradition to honor the spirits and allow them to be re-incarnated. However, Sihanouk later retracted his request for cremation possibly because of political and public opposition to his proposal. The map of skulls was later dismantled in 2002 citing the deteriorating condition of the bones.

In response to the late King’s request, Prime Minister Hun Sen did offer to hold a referendum on the issue of cremating the human remains throughout the country, but not until after the trials of the Khmer Rouge leaders at the Extraordinary Chambers in the Courts of Cambodia (ECCC, also commonly known as the Khmer Rouge Tribunal) conclude, “in case remains were needed as evidence before the court.” As the ECCC cases are still ongoing, it is likely that the discussion regarding disposition of the human remains from the Khmer Rouge era will be renewed in the future.

Although forensic anthropologists and archaeologists have long been involved in the assessments of genocide and crimes against humanity, the amalgamation of forensic science and human rights is still in its infancy. Discrepancies between various stakeholders, political narratives, religious ideologies, and local and international communities will continue to pose challenges to the exhumation of mass graves, the analysis of the human remains, and the disposition of these remains. The questions and issues arising from working with atrocity-derived human remains are valuable and must continue to be discussed within the forensic science and human rights communities. Cambodia is merely one example of the work being done with human remains from an era of mass violence; while certainly not representative of past or future endeavors, perhaps this research and preservation serves as an illustration of what is possible.

Conclusion
While forensic anthropologists and archaeologists are not generally positioned to prevent mass atrocities such as genocide, they can contribute pertinent information about atrocities after they occur so that the victims are not forgotten. Although more than thirty years passed between the end of the Khmer Rouge regime and the beginning of skeletal analysis in Cambodia, the information derived from the human remains— as well as the preservation of the remains— is important for current and future generations of Cambodians and foreigners. While the display of human remains in Cambodia may be religiously and culturally contentious, for the time being, the display of remains throughout the country serves as a reminder of the past, and a lesson for the future.

30 Ibid., 188.
31 Ibid.
The analytical and preservation project at Choeung Ek was the first systematic assessment of the human remains from the Khmer Rouge period, and as the author’s research and the project at Krang Ta Chan demonstrate, there is much more work to be done. The Choeung Ek team and the author sincerely hope that the information gathered from the remains will contribute to a more accurate and holistic understanding of the violence that transpired under the Khmer Rouge regime. There is also the potential that the Cambodian skeletal and cultural data will be useful for international comparisons of such atrocities thereby furthering the global comprehension of mass violence. While much research still needs to be completed in Cambodia, the author hopes that this brief introduction has shed some light on the work being done and how this research may contribute to the larger fields of forensic anthropology and genocide studies.

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