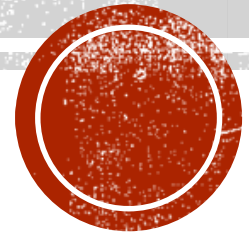


SKELETAL EVIDENCE OF TORTURE

Victoria Tasker



BIOLOGICAL ANTHROPOLOGY

- “Every change in the form and function of a bone or a function alone, results in definitive changes in the internal architecture of the bone and equally definitive changes in the external architecture in accordance to mathematical laws.”
– Wolff’s Law (1986)
- Cortical (outer) and trabecular (inner)
- Remodeling done by osteoclasts and osteoblasts
- Antemortem = before death
- Perimortem = at time of death
- Postmortem = post death



METHOD 1: AMPUTATION

- Why?
 - Painful but not fatal = common
- Skeletal indicators:
 - Cut marks
 - Nature of the bone remodeling/healing (complications, shortening, avascular necrosis)
 - Presence/absence of medical care
- Taphonomic/diagenic factors make this inference difficult



METHOD 2: HOBBLING

- What?
 - the trauma or binding of the feet to limit physical mobility and is often done to cause a specific social response
- Why?
 - often done as a display of violence in order to gain social control over the witnessing population
- Skeletal markings: Case study (Prehistoric Southwest of America)
 - 190 fragments of tarsals, phalanges and metatarsals = one foot
 - perimortem crushing, scrape marks, cut marks, chop marks and other crushing
 - Chop marks (as indicated by arrows in figure 2) indicate attempted disarticulation of the foot and eventual complete disarticulation of the foot



F. 00-002 – Black arrows show chop marks and white arrows show crushing injuries



METHOD 3: BEATING

- Fractures = trauma
- Nature of healing or location of fracture determines torture
- Case study: Early Neolithic in Central Europe (Germany)
 - perimortem injuries to the lower extremities were overwhelmingly dominant
 - focus on the location of the fractures that indicate a non-fatal intent
 - repeated blows to the lower legs, rendering the victims disabled and immobilized

Henneberg, 1999 and Meyer at al., 2015

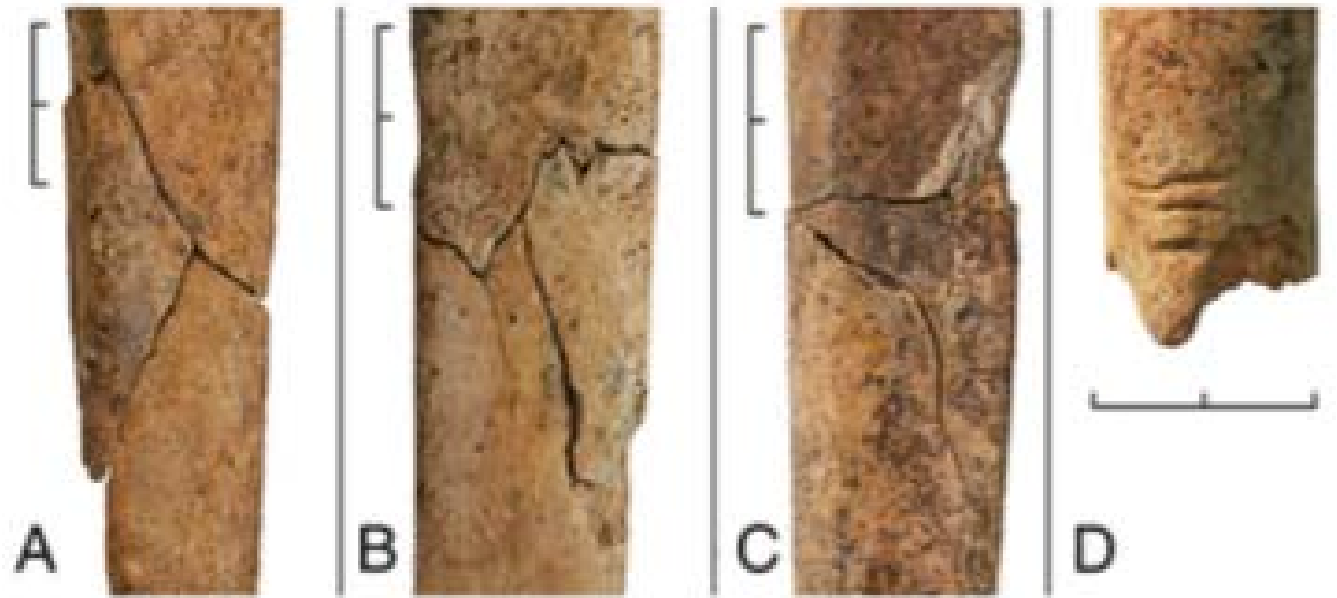


Figure 3: “Examples of perimortem long-bone fractures identified in the mass grave, often showing the classic butterfly pattern (A-C). (A) right tibia no. 289. (B) Left tibia no. 20-21. (C) Right tibia no. 374. (D) Right humerus no. 328 with parallel chop marks. (Scale bars, 2 cm each.)” (Meyer at al., 2015 p. 4)



HOW CAN THE PAST HELP THE FUTURE?

BIOLOGICAL ANTHROPOLOGY TO FORENSIC ANTHROPOLOGY

- Forensic anthropology draws from skeletal patterning
- Perspective shift into the modern world



METHODOLOGY FOR IDENTIFICATION OF TORTURE

- What is the reality of an identification of torture?
 - Political ramifications
 - Different procedures and protocols
 - Universality of conduct?
- Methodology?
 - The Istanbul Protocol: *The Manual on the Effective Investigation and Documentation of Torture and Other Cruel, Inhuman or Degrading treatment or Punishment*
 - But for skeletal or other remains? No
 - Extrapolation of recommendations encompassed in a universal, sound and unambiguous (as far as possible) methodology but must be flexible to adapt to relevant technologies e.g. pharmaceutical abuse



LIMITATIONS

- Small representation of reality
- Postmortem damage
- Overlapping skeletal markers for different diagnoses



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SYNOPSIS: SKELETAL EVIDENCE OF TORTURE: HOW CAN THE PAST HELP THE PRESENT?

VICTORIA TASKER

Torture occurs in many countries, by many people, for many reasons and has done so for an extremely long time. For as long as torture has existed into the depths of human existence, it has grown equally in sophistication and at times, intensity. However, as the quality and quantity of methods of torture have expanded, the methods of detecting torture have also developed. This presentation discusses three methods of torture that can be found on the skeleton: amputation, hobbling and beating. Preceding this is a brief summary on how a forensic anthropologist uses to bones to understand both our biological and social past and present.

The fundamental principle of physical and forensic anthropology lies in the irrefutably sensitive nature of the human skeleton to its external environment. The human body is subject but not limited to stress, violence, the environment, non-violent trauma and many other external forces.

Outer (cortical) bone and inner (trabecular) bone interact such a way that a force on the cortical bone will impact the trabecular bone (Weiss, 2009). Bones break to compensate for their inability to accommodate the force applied (see Newton's Second Law of Motion in Hoffer, 1983). With this knowledge, fractures are meaningful when analysing context and cause. Bone remodeling works as an additional source of information in understanding the cause of a fracture. Remodeling occurs by osteoblasts and osteoclasts, creating new bone and removing unnecessary or damaged bone, respectively (White & Folken, 2000). The level of bone remodeling can determine the approximate age of the fracture i.e. the more bone remodeling is present the older the fracture is. This in combination with a level of bone healing, reveals the antemortem, perimortem and postmortem nature of injuries and hence, a reflection of the violent and physical nature of the human race. The nature of cut marks, number of lesions and level of bone remodeling, are examined in an attempt to differentiate between different types of violence. The skeleton, despite its protective layer of skin and organs, is impressionable and vulnerable to the nature of the human race. As we will see in the methods presented, social and political contexts also contribute to the ultimate skeletal diagnosis.

Method 1: Amputation

Amputation is a common method, particularly that of the phalanges of the hands and feet as it will be disabling and painful but not fatal (Knusel and Smith, 2014). Amputations can be revealed skeletally not only by lack of a phalange but mainly by the cut marks on the remaining bone and by healing on such bone. These skeletal markings are more reliable than just the absence of a phalange (a small finger bone) as these bones are subject to taphonomic processes such as scavenging by animals, weathering of surrounding earth and deterioration of the bone.

Method 2: Hobbling

Hobbling is the trauma or binding of the feet to limit physical mobility and is often done to cause a specific social response (Osterholtz, 2012). Through the crushing and beating of the feet (most commonly the soles) the torturer can render their victim disabled and can only be mobile by hobbling. This type of torture is often done as a display of violence in order to gain social control over the witnessing population. Osterholtz (2012) examines the social use of hobbling as well as its skeletal manifestations (crushing, scrape marks, cut marks and cop marks) in human skeletal remains recovered from the prehistoric Southwest of America.



Method 3: Beating

Beatings are often a cause of fractures in the context of torture. Fractures on the bone indicate some level of trauma, however, it is the nature of healing on the bone or the location of the fractures that can suggest torture. This is shown in human remains of a mass grave from the Early Neolithic in Central Europe (Germany) (Meyer *et al.*, 2015). Perimortem injuries to the cranial and upper extremities were prevalent but the perimortem injuries to the lower extremities were overwhelmingly dominant (Meyer *et al.*, 2015). The repeated blows to the lower legs, rendering the victims disabled and immobilized, reveals the intent behind such violence (Meyer *et al.*, 2015).

How can the past help the future?

From the view of a forensic anthropologist the insights gained from ancient civilisations shift slightly; the perspective changes to incorporate a forensic context and modern day implications. Ancient cases can reveal skeletal evidence of torture and with the large variability in what the modern human mind can conceive, there is no way of ruling out the use of similar methods of torture in today's society.

Methodology for the identification of torture:

The identification of torture found on skeletal remains can have different political ramifications for different political climates, within which are different procedures and protocols for the forensic anthropologist to follow. Due to this, there is potential that torture may not be always be identified and documented accurately or uniformly. There has been suggestion for the development of a code of conduct for forensic anthropologists as well as a methodology for the identification of torture. This methodology could be extrapolated from The Istanbul Protocol: *The Manual on the Effective Investigation and Documentation of Torture and Other Cruel, Inhuman or Degrading treatment or Punishment* (Schmitt, Cunha and Pinheiro, 2006). This development is vital due to the advancement of technology which has given rise to the use of anaesthetics, hallucinogens, tranquillizers and addictive drugs as pharmacological abuse (Henneberg, 1999).

Limitations of the skeleton:

Torture that manifests on the skeleton is only a very small representation of all torture cases. Furthermore, the torturer is more likely to choose torture methods and techniques that do not leave a mark on the victim, either on the skeleton or soft tissue.

Postmortem damage from burials in a clandestine grave may cause depositional loss or damage of bone, faunal scavenging or postmortem mutilation which will limit the accuracy of an interpretation (Powell, 2010).

Skeletal diagnoses often have overlapping skeletal markers and as such the investigation must be thorough and acknowledging of this limitation.

The act of torturing another human being has been embedded in the physical core of the human race for many centuries. The skeletal markings of torture in ancient cases give forensic anthropologists the tools to understand the roots of torture and the societal role it fills. The forensic anthropologist plays a fundamental role in identifying torture in skeletal remains and hence is influential in its subsequent documentation and place in judicial and legal systems. Future advances in pharmacology will assist in detecting pharmaceuticals used as torture and contribute to the necessary development of a universal methodology in identifying torture on skeletal remains. Methods of torture that are able to mark the bone signify severe and terrible suffering to the victim. The role of the forensic anthropologist, whilst a positive reflection on the ability to understand the human body, it is also a reflection on the cruelest and awful acts that have occurred by humans in our existence.

