

Injury and Trauma in Bioarchaeology: Interpreting Violence in Past Lives

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Injury and Trauma in Bioarchaeology: Interpreting Violence in Past Lives, written by Rebecca Redfern, serves as a volume dedicated to describing not only how violence is interpreted in the archaeological record, but also how those interpretations are influenced by modern methodology, research, and worldviews. Each chapter provides a description of a different type of violence or factor contributing to violent behavior, how they can be interpreted in a culturally relative manner, and how they are often represented in the archaeological record. In the introduction, Redfern begins with describing how violence pervades throughout aspects of modern life, and can influence the ways in which we interpret the past.

In Chapter 2, "Approaches to Understanding and Interpreting Violence in the Past," Redfern discusses two different models for understanding violent behavior. The first is the 'Web of Violence,' in which it is understood that violence is dependent on the interconnectedness of culture and includes structural violence, and the second is the 'Ecological Model of Violence,' which is more societal in nature and includes violent events such as warfare. After introducing these models, Redfern then addresses specific forms of violence and their cultural correlates.

In "Violent Behavior in Humans and Human Societies," (Chapter 3) Redfern discusses the ways in which cultural norms surrounding violent acts can be interpreted in both modern-day samples and in the archaeological record. Essentially, the skeletal trauma that can be observed by means of punitive violence, mass violence, genocide, and ritual violence is highly dependent on what each specific culture considers to be normal. In some cultures, for example, certain types of corporal punishment are to be expected in response to specific crimes. She uses a modern Aboriginal Australian group as an example of this, in which the guilty person's thigh is speared in particular places based on the crime committed. The use of punitive violence within a society can lead to executions, which can be identified in the archaeological record—with specific traits suggesting hanging and crucifixion. Ritual violence also provides telling signs on the skeleton, including rites of passage, torture, and sacrifices.

In addition to providing examples of trauma on skeletal elements, Redfern discusses how mortuary context, or burial practices, can be used to identify violent trends. Specifically, mass graves (suggesting mass violence and genocide), body position in singular graves, and other contexts which are generally atypical of a particular soci-

ety can lead to the assumption that a violent act has taken place, and, in some cases, can suggest the particular action which took place. In these cases, burial contexts are often referred to as 'deviant burials,' and typically are used to describe instances in which a member, or members, of society is interred in an abnormal fashion compared to other individuals in the community. Combining the examination of human remains and their mortuary contexts can shed light on cultural factors influencing violence. In addition, demographic differences in sex, age, and ability may suggest early forms of structural violence, as specific groups are targeted over others.

In Chapter 4, "Environmental Factors and Violence," Redfern discusses the environment's role in perpetuating and facilitating violent behavior through dietary stress, exposure to pollution, climate, and subsistence strategy. The section on diet and behavior focuses mostly on modern populations and discusses the correlation between both the availability of foods with adequate nutritional value and sufficient amounts of food, with violent behavior. Exposure to pollutants also is mentioned, and for the most part focuses on how pollutants such as lead can result in developmental and intellectual delays. The suggestion also is made that this type of adverse environment affects specific groups more than others—mainly low-income groups—which contributes to the evidence for structural violence in urban populations. In the 'climate and violence' section, Redfern provides an overview of some of the literature pertaining to the relationship between violent behavior and temperature, as well as anomalies such as natural disasters. Clearly, the relationship between climate and violence is very complex, but certain natural disasters, such as earthquakes, floods, and landslides exhibit trauma that can be categorized and systematically interpreted. Finally, at the end of Chapter 4, Redfern discusses the literature pertaining to the relationship between violence and subsistence, including levels of violence as associated with hunter-gatherer subsistence and the use of agriculture.

Redfern, in Chapter 5, "Injury in Life Course Perspective," provides an outline that consists of clinical information from modern populations and bioarchaeological examples of violence as it relates to age and sex. The likelihood of injury and the manifestations of injury are dependent on an individual's age at the time of injury. According to Redfern, they also are dependent on sex and gender, and furthermore, they rely on any specific society's accepted gender roles. Relationships can be established between the

risk of injury and maturation of a skeleton, which can be seen in the archaeological record, and are supported by studies in biomechanics. Essentially, the body's response to stress is completely dependent on how plastic the individual's bones are at that point in time, but the causative agents of injury are dependent on the types of activities acted upon by the individual. Individuals who are very young and very old, for example, are at the most risk for injury as they have the least bone mass, however, the types of common injuries between the two groups are very different. Younger people respond much faster to injury, but are very susceptible to fracture due to lower bone mass during growth. Older people are much more likely to experience fracture, also due to lower bone mass and density, but are much less likely to make a full recovery from injuries and regain full bone mass. In addition to age differences, implementation of gender roles in society can have a profound effect on injury risk between genders. Different activities are ascribed to each gender in some cultures, and activity-related risk can lead to differences in injury patterns. Some societies, for example, assign much more manual labor to males than females, leading to a higher risk of work-related injury. These types of injuries are easily observed in contemporary society and in the archaeological record.

Chapter 6, "Violent Happenings: Intentional Injury Patterns," includes child abuse, domestic violence, elder abuse, abuse of vulnerable people, and assaults. Varying types of abusive behavior exhibit similar trauma in the archaeological record as in modern populations. They are usually presented by patterns of multiple injuries including head and ribs, with some long bone patterns revealed. Domestic violence victims usually exhibit injuries to the head and limbs. Elder abuse is typically seen on the head and upper limbs, and common trends include malnutrition and other signs of neglect. Redfern's section on abuse of vulnerable people focuses mostly on modern populations and the conditions in treatment facilities. Alternatively, manifestations of physical assault can vary widely, and differences

can be observed between sexes. The most common injuries, for example, are to the face and head, with most injuries on males around the nose and mouth and most injuries on females around the neck and occipital bone. Redfern ends this chapter by discussing trends regarding multiple injuries, including injury-proneness and injury recidivism.

The last chapter before the conclusion is titled "Living with the Consequences of Injury" (Chapter 7). In this chapter, Redfern dedicates sections to the importance of understanding how injury and trauma can affect the lives of people experiencing them as well as the ways that this can be interpreted in the archaeological record. She suggests that a cultural perspective should always be included in interpretations, because although the examination of skeletal injuries can identify types of trauma and impairments, the impact of those injuries and health problems are culturally specific. The chapter concludes with a section devoted to bioarchaeological perspectives on the consequences of injury. Redfern posits that it can be identified in the archaeological record when an individual's life was altered due to injury in the manner of multiple injury risk and implementation of the bioarchaeology of care model. The conclusion of the book (Chapter 8) is focused on reiterating how bioarchaeology can be valuable for assessing violent behavior in the past, but that bioarchaeologists must continue to ensure that they are both aware of their biases, and researching with respect for individuals of the past.

Redfern's text *Injury and Trauma in Bioarchaeology: Interpreting Violence in Past Lives* successfully presents an overview of the most common types of violent behavior and the trauma that occurs as the result of it. She is able to incorporate multiple lines of evidence from modern, historic, and prehistoric populations to establish patterns of diagnosing injuries in the past and describing what the likely consequences of violent behaviors were in the past. She shows a commitment to integrating a cultural perspective to the study of violence in bioarchaeology and maintaining a focus on the individual's lived experiences.