

A Book Review Essay on Recent Publications Concerning Human Skeletal Trauma Analysis, Violence and Conflict

Lindsey Jo Helms Thorson

University of Wisconsin—Milwaukee, WI, USA

Introduction

In an increasingly globalized and media-driven world where people are daily confronted with images and stories of social violence, conflict, and abuse of power, it comes as no surprise that we feel there has been an increase in hostility and violent interactions between and among people throughout the world today. In accordance with this global feeling of unease, bioarchaeologists and forensic anthropologists have recently turned their attentions to better understanding human violent interactions, the larger social consequences of violence and the circumstances that lead to violent outbreaks, through the direct analysis of human skeletal trauma patterns in their archaeological and forensic contexts. Recently, three edited volumes have been published concerning the topic of trauma analysis and its contribution to understanding violent conflict:

Skeletal Trauma Analysis: Case Studies in Context edited by Nicholas V. Passalacqua and Christopher W. Rainwater (2015) Wiley Blackwell. ISBN: 978-1-118-38422-0. \$139.95 (Ebook \$111.99).

Bioarchaeological and Forensic Perspectives on Violence: How Violent Death is Interpreted from Skeletal Remains edited by Debra L. Martin and Cheryl P. Anderson (2014). Cambridge University Press. ISBN: 978-1-107-04544-6. \$102.00 (Ebook \$79).

The Routledge Handbook of the Bioarchaeology of Human Conflict edited by Christopher Knüsel and Martin J. Smith (2014). Routledge Taylor and Francis Group. ISBN: 978-0-415-84219-8. \$240.00 (Ebook \$240).

The three edited volumes under consideration here each provide a different perspective and approach to the understanding and interpretation of violent trauma; and each volume provides a unique scope and material focus for their discussions of trauma. The functional aspects of each volume also widely differ: from length, writing style, the quality of images and captions, and their usefulness as introductory instructional material, intermediate level instruction or as more advanced comparative and theoretical materials. There are also many points of overlap between the volumes when it comes to their theoretical perspectives and approaches, and their scope and range. The many differences between the three volumes will be explored in this review, while also highlighting areas of overlap and similarities. Recommendations will be made concerning the application of each volume to different audiences, as instructional and educational materials and as comparative research materials.

Theoretical and Disciplinary Approaches

The three volumes all take different approaches to their discussions of human skeletal trauma analysis. They range in the amount of theory included in their interpretations, and in the disciplinary perspectives of the contributing materials to each volume. Finally, the organization of each volume reflects the theoretical and disciplinary aims of the editors for their volumes.

Reflecting a recent trend in bioarchaeological literature (Crandall and Martin 2014; Martin et al. 2010; Novak 2014b; Nystrom 2011; Sofaer 2006; etc.), the volume edited by Knüsel and Smith (2014) makes a concerted effort to introduce theory into the interpretations of skeletal trauma analysis and its social context. They present an overview of the nature and development of human conflict from prehistory to the present through the study of the remains of past people. In their introduction, Knüsel and Smith point out that the purpose for their volume is not to be a catalogue of injuries nor to serve as a proxy for weapon typologies (2014,6); but rather to address “the scale and frequency of violent encounters based on the physical traces left in the remains of human bodies and their depositional context” (2014,4). Knüsel and Smith gather and explore societal and cultural circumstances of violent injury, where violent trauma is part of a wider discourse, and argue that the body can be read as text and is best understood within a cultural and social context. Beyond interpreting the body as material culture (Sofaer 2006), the contributing authors of the Knüsel and Smith (2014) volume also address many different themes including: the interpretation of multiple types of violence, differences between personal and national scales of violence, the demographics of violent conflicts (i.e., perpetrators/participants and victims), violence as a gendered behavior, and social violence. The introductory and conclusory chapters arguably have the best discussion of how violent trauma interpretations can contribute to a greater theoretical and social understanding of social aspects of violent conflicts; because they use the wide variety of their contributing chapters as the physical evidence to support their overarching observations and interpretations. In this way, the big-picture of the volume was retained and the edited volume became more than just a random compilation of articles about human skeletal trauma analysis. Knüsel and Smith’s conclusion was successfully able to connect the many and varied contributing chapters into a solid and cohesive understanding of the nature of human violent conflicts.

With the exception of a few chapters pertaining to genocide mass burials from Rwanda and Spain, the remaining chapters of the Knüsel and Smith (2014) volume are bioarchaeological in disciplinary perspective. The chapters take a population-level approach rather than a case-study approach, and use larger samples representative of larger populations. The bioarchaeological perspective is also clearly represented in the questions addressed by the volume, such as: What are the demographics of violent conflicts? In violent conflicts, how are bodies used/manipulated to convey socio-political messages? What is the experience of women and children in conflict? How well does the skeletal evidence support archaeological and contextual evidence? What are the ritual/performative roles of violence? Has the scale of conflict changed over time?

What circumstances are more likely to lead to violent conflicts?

Due to the large size of the volume (34 chapters, 704 pages), Knüsel and Smith (2014) organized the volume chronologically. Of the three volumes under consideration, the Knüsel and Smith (2014) volume has the greatest emphasis on temporal changes concerning violent conflict. This chronological view allows for clear observation of shifts in violent behavior and conflict from the Upper Paleolithic neandertal intrapersonal violent conflict (Estabrook and Frayer 2014) to modern genocidal war crimes (Ferllini 2014). The wide temporal span allows Knüsel and Smith, to identify and discuss the antiquity of violent conflict, to identify significant periods of change in the behavior of violent conflict and to explore explanations for violent conflict's antiquity and its changing patterns. They identify two periods of high conflicts throughout human history in both hemispheres: the first is around the year AD 1 and the second is between AD 1000 and 1500 (Knüsel and Smith 2014,657). Knüsel and Smith also recognize thresholds in the development of violent conflicts. The Neolithic period marks the threshold for the earliest evidence of organized conflict, as is reflected in the evidence for monument building larger social organization, and the earliest mass graves (Knüsel and Smith 2014, 685). Knüsel and Smith (2014,687) identify historical conflicts have at their core issues of governance, pitting powerful monarchs against aristocratic barons of peasants. Modern conflicts have become increasingly impersonal and mass killings have become "a hallmark of twentieth-century warfare, where 'efficiency' in killing becomes a theme" (Knüsel and Smith 2014,687). They argue that the most significant change to occur in warfare in centuries "is the arrival on the battlefield of drones or unmanned systems" and that the "development and use of such machines appears set to continue accelerating, even in the face of questions with regard to their ability to discriminate among targets" (Knüsel and Smith 2014,688). Beyond basic changes to the pattern or nature of warfare, Knüsel and Smith were also able to identify temporal differences in the type of trauma patterns. Some trauma types (e.g., gunshot wounds) are time dependent and can signal the adoption of firearms and gunpowder; while other forms of skeletal trauma "are not time dependent" (Knüsel and Smith 2014,661), such as blunt-force trauma. Finally, by comparing skeletal data to historical documentation, Knüsel and Smith are able to recognize that the skeletal record often underestimates the extent of violence and therefore is a conservative estimate of the prevalence of violence in the past (Knüsel and Smith 2014,665).

The Martin and Anderson (2014) volume also identifies a gap in both bioarchaeological and forensic anthropological literature with respect to the incorporation of theory into interpretations of skeletal trauma analysis. However the contributing chapter authors of Martin and Anderson (2014) are more successful than the introduction and conclusion at clearly discussing the theoretical contributions to their discussions of human violent interactions. The chapters contain a mixture of forensic and bioarchaeological perspectives, case-studies and population-level analyses, methodological considerations, discussions of semantics, and especially the greater significance of our work

as bioarchaeologists and forensic anthropologists: but the links between individual chapters are not well discussed nor clearly identified by the editors in their introduction.

Martin and Anderson (2014) recognized that both bioarchaeological and forensic anthropological techniques are fundamentally inseparable, and in order to broaden our theoretical and practical understanding of violence and to broaden our approaches to the study of violence in everyday life bioarchaeologists and forensic anthropologists need to work together. To accomplish their aim, Martin and Anderson (2014) make a concerted effort to include chapters that are from both bioarchaeological and forensic perspectives, and therefore the volume has a broader disciplinary interest base than the Knüsel and Smith (2014) and Passalacqua and Rainwater (2015) volumes. The forensic chapters include historic case studies, historic and modern genocide samples, and two modern criminal case studies, and help to improve our understandings of the direct links between skeletal trauma and their causes and implications for the socio-cultural context; while the bioarchaeological chapters focus more on population-level analyses that aid in our understanding of the nature of intergroup conflicts and some intragroup conflicts.

Martin and Anderson (2014) is organized by theme 1) overview and innovative methodologies; 2) ritual and performative violence; and 3) violence and identity. However, there is little discussion of the thematic connections between the chapters, which is a weakness of this volume. While each chapter is useful and thought provoking, they could just as easily be stand-alone articles. The concluding chapter by Galloway (2014) only offers a reflective narrative on the challenges anthropologists' face while working with the dead and with violence. This is not to say, that Galloway's chapter is not a worth while contribution as it recognizes the need for an appropriate discussion and release of the stresses associated with working with the dead, through the use of macabre humor. Galloway's chapter was wonderfully refreshing and humorous in such a way as those working with the dead will appreciate. But Galloway's contribution would be better as a contributed chapter rather than the concluding chapter. The volume could be strengthened if the editors had provided a conclusion (or section summaries) that discussed the theoretical and thematic connections between the included chapters, the larger take-aways and insights illuminated by the volume as a whole. As it stands, the volume has no overarching conclusion and the reader is left wondering how each chapter fits in its assigned section of the book.

The Passalacqua and Rainwater (2015) volume does not focus on the interpretation of trauma but rather on its identification, arguing that only through increased exposure can analysts acquire the necessary experience to properly interpret skeletal trauma (Passalacqua and Rainwater 2015,6). Passalacqua and Rainwater's impetuous for the volume was that "many forensic anthropology programs do not receive enough case work to sufficiently train students in skeletal trauma interpretation" (Passalacqua and Rainwater 2015,2). Their goal was to help develop trauma analysis skills beyond the introductory level (Passalacqua and Rainwater 2015,2). The interpretations presented in

their volume are causal rather than of larger social significance, therefore the theoretical approach presented in this volume is more a ‘middle-range’ processual approach and reflective of the book’s disciplinary setting of forensic anthropology. One interesting hidden theme that did arise within the volume is the use of traumata to reflect behaviors of both victims and perpetrators in forensic contexts, but this theme was not made explicit and not explored by the editors.

The Passalacqua and Rainwater (2015) volume is forensic in nature, and is geared more toward forensic anthropologists and crime-scene investigators. The volume expands upon basic trauma types and the often limited exposure to trauma cases by including chapters on unusual and atypical trauma such as: blast trauma, dismemberment, plane crashes, falls from heights, violent sexual assault, and taphonomic effects to trauma. In addition, this volume also expands upon disciplinary discussions concerning the ‘CSI effect’, child-abuse, and over-interpretation of bone trauma. Forensic and bioarchaeological specialists alike will find instructional utility in these discussions.

Since the Passalacqua and Rainwater (2015) volume lacks in-depth discussions contributing to the theoretical applications of skeletal trauma research, and all the contributing chapters are from a forensic anthropological nature, it comes as no surprise that the volume has no clear organizational structure. At best it is loosely organized by trauma type. Beginning with a cluster of chapters concerning blunt-force trauma, followed by a few chapters concerning low-velocity impacts and blast traumas, and ending with two in-depth discussions of two forensic cases. There are also a handful of other chapters thrown in that pertain to dismemberment, burning, scavenging, child abuse and the Spanish Civil War. In addition to lacking a clear organizational structure, the volume also lacks a concluding chapter, and therefore no links are drawn between the case studies presented in the volume.

Range of Scope: Time, Geography, Scale and Discipline

Beyond disciplinary approach and theoretical perspective differences, the aims of the editors very clearly shaped the materials chosen for inclusion. The contributing chapters of each volume range in their temporal scope, geographic scope and the scale of conflict investigated.

For a thematic bioarchaeological volume on violent conflict, it is refreshing to see a large temporal range presented in the contributing chapters of the Knüsel and Smith (2014) volume; with contributions dating to the Upper Paleolithic, prehistoric Europe, medieval Europe, prehistoric Americas, the early modern period, and the modern era.

Knüsel and Smith (2014) also has the widest geographic span of the volume considered here, with contributions from Europe (18 of 34 chapters), the Americas (8 of 34), Africa (1 of 34 chapters), the Middle East (2 of 34 chapters) and the SE Pacific (1 of 34 chapters). There is a rather obvious bias toward contributions from Europe. However, the editors recognize this geographic bias toward European samples, stating that this distribution reflects two things: first, the illustration of “the distribution of locations where evi-

dence for a particular phenomenon [violent conflict] has been noted” and second, “the distribution of archaeologists (or in this case mainly bioarchaeologists) involved in such research” (Knüsel and Smith 2014, 17). Upon closer inspection, the European bias in this volume is more a result of the many modern-period contributions (11 of 34 chapters), which is a rarity in bioarchaeological literature and is comparatively under-investigated period in bioarchaeology and archaeology. Beyond the geographic tilt toward the use of European samples, the volume really only gives Europe a strong temporal scope. The second largest geographic representation comes from the eight New World chapters. The majority of which come from Peruvian samples (4 of 8 New World chapters), and the remainder come from Western US samples (CA, CO, UT, and the Pacific NW coast); all but two are prehistoric samples. There are many examples of violent conflict work by bioarchaeologists working throughout North, Central and South America, rather than just Peru and the western U.S and whom work with historic and pre-historic samples (Chacon and Dye 2007; Chacon and Mendoza 2007; Stojanowski and Duncan 2015; Martin et al. 2012; Steadman 2008), so Knüsel and Smith’s conclusions concerning New World changes over time could be somewhat skewed and this is not acknowledged by the editors of the volume.

Of the three volumes, the Knüsel and Smith (2014) volume focuses entirely on intergroup conflict. Knüsel and Smith (2014) pays particular attention to the changes and developments associated with warfare, and the socio-political implications. Thus, the scale of conflict examined in the Knüsel and Smith volume is primarily that of intergroup conflicts rather than interpersonal conflict.

The temporal span of the Martin and Anderson (2014) volume is less clearly identified by the editors as it is in the Knüsel and Smith (2014) volume. The contributing chapters however do span a considerable period, with contributions from the European bronze age (one chapter), early-modern Europe (one chapter), prehistoric Americas (six chapters), historic Americas (four chapters); and modern forensic case-work (four chapters).

The geographic scale of the Martin and Anderson (2014) volume is rather restricted: being primarily limited to the Americas, with only two chapters using samples from Germany and Sweden. Even within the Americas most samples included in the volume are either from Central America (three chapters), South America (four chapters) or the American Southwest (three chapters). The remaining chapters are the two chapters on modern forensic methods and Duncan and Stojanowski’s (2014) chapter on colonial Spanish Florida. There are no contributions from samples located in the Eastern US, Canada, the central US, nor from eastern or southern South America.

In Martin and Anderson (2014) some of the contributing chapters focus on case-studies to reconstruct violence from skeletal and contextual information (six chapters), while other chapters take a more population-based approach (eight chapters). Eight of the contributing chapters focus on intergroup conflicts, and seven chapters focus more on small-scale interpersonal conflicts. Therefore the scale of conflict examined by the contributing authors

of Martin and Anderson (2014) volume is more diverse than that of the Knüsel and Smith (2014) volume.

Reflecting the forensic perspective of the volume, the temporal scope is rather limited for the Passalacqua and Rainwater (2015) volume. All the contributions come from modern forensic contexts. The lack of a temporal perspective on forensic trauma analysis makes it difficult to understand changing patterns in victim/perpetrator relationships and behaviors, or to identify changes to trauma patterns over time.

Unlike that of the Martin and Anderson (2014) and Knüsel and Smith (2014) volumes, a wide geographic scope was not of importance to the overall goal of the Passalacqua and Rainwater (2015) volume (to expand trauma analysis skills), and was therefore not of significance to the volume's editors or contributors. Most contributions and samples come from United States or European contexts, and therefore this volume is of little use for those interested in a more global perspective on forensic trauma analysis.

All the chapters presented in the Passalacqua and Rainwater (2015) volume are small sample-size case-studies. Most are from interpersonal conflicts, but some of the chapter materials are the result of larger-scale intergroup conflicts. The focus on case-studies was intentional, as they claim that "it is often first-hand experience that is the most instructive" and the basis for larger-scale projects (Passalacqua and Rainwater 2015,2). The scale of the volume therefore fits with its primary goal to further the development of trauma analysis skills.

Recommendations and Future Directions

Each of the edited volumes considered in this review essay provide different and unique perspectives on the analysis of trauma in the human skeleton. All three volumes range in level of difficulty of how information is presented and therefore when applied to research and educational uses, each book will be more successful in certain circumstances than in others.

Of the three volumes under consideration here, *Skeletal Trauma Analysis: Case Studies in Context*, by Passalacqua and Rainwater (2015), is by far the most introductory in nature. It uses simple language, clear and concise photographs and figures, and brief chapters that hold the reader's interest. However, this volume is not an introductory volume, because it still assumes some prior knowledge of basic human skeletal anatomy and trauma methods, it does not cover the basics of identification of skeletal trauma, and the chosen case studies included in the volume are intended to expand basic knowledge; highlighting uncommon or difficult to identify trauma patterns, such as blast trauma, child abuse, sexual assault or taphonomic effects that can mimic trauma. I would therefore recommend this text as a secondary course resource or for researchers and forensic anthropologists faced with a unique or uncommon trauma context.

The Routledge Handbook of the Bioarchaeology of Human Conflict, edited by Knüsel and Smith (2014), is by far the most advanced of the three volumes under consideration here. The advanced academic language, the as-

sumption of prior knowledge (especially methodological knowledge), and the use of the contributing chapters as support for larger societal and cultural conclusions regarding the nature of violent conflict all contribute to making this volume most appropriate for advanced readers. The volume is therefore best suited for courses of either upper level undergraduates or graduate students or for researchers looking for theoretical inspiration or comparative samples.

Bioarchaeological and Forensic Perspectives on Violence: How Violent Death is Interpreted from Skeletal Remains, by Martin and Anderson (2014), like the Knüsel and Smith (2014) volume is more theoretical in nature with focus paid to the interpretation of skeletal trauma rather than on its identification. However, this volume is less dense in its writing style, and more approachable for students. Many of the contributing chapters will be familiar to researchers as several of the chapter authors have recently published on the same material in other journals and volumes (Brinker et al. 2014; Crandall and Harrod 2014; Crandall et al. 2014; Flohr et al. 2014; Novak 2014a, 2014b). There is less focus on the presentation of the data in this volume, with mostly secondary data presented and more focus on its interpretation. The strongest aspects of this volume is that it has combined forensic and bioarchaeological perspectives to bring forth an integrated model of the two subdisciplines as well as to highlight the larger significance and applicability of the work of biological anthropologists outside of the classroom or courtroom. However, these two aspects were not fully developed by the volume's editors. The volume is an intermediate to advanced course text, because it takes what one would learn from more introductory volumes and applies interpretation in an effort to gain a greater understanding of the material. It does a good job at introducing students to the importance of interpretation and theory; for it is in the interpretations and presentations of our work that descendant communities, the public and other academics find the most impact.

After reading the three volumes considered here, it became clear that the field of biological anthropology is missing an introductory textbook focused entirely upon a complete introduction of human skeletal trauma analysis. Of the 70 chapters included in the three volumes, there is no primary text used for reference of methods or the identification of trauma types that is akin to Ortner (2003), Waldron (2009) or Roberts and Manchester (2007) for paleopathology. The volume by Wedel and Galloway (2014), *Broken Bones: Anthropological Analysis of Blunt Force Trauma. 2nd Edition*, does cover much concerning the biomechanics of bone and the forces necessary to fracture bone as well as how to identify blunt force trauma (BFT) patterns, but the book is specific to blunt force trauma and does not incorporate in-depth discussions of sharp force trauma (SFT), gunshot wounds (GSW), blast trauma, or medical trauma. Broader volumes such as, Digangi and Moore (2013), White, Black, and Folkens (2012), and Larsen (2015), have only a single summary chapter devoted to trauma analysis. For an analytical technique that is relatively rare in most skeletal samples, we need a more in-depth introduction than just a summary 'trauma-chapter' in a bioarchaeology or forensics coursebook.

When choosing the three volumes considered here, it was hoped that

one of them may address this gap in our course-instructional literature. However after review, none would be sufficient to use as the primary textbook for an introductory course devoted to skeletal trauma analysis, because none of these volumes provide the introductory instructional information combined with effective images necessary for students to learn how to identify the major trauma types. All three volumes considered here assume the reader has already received this introductory knowledge in an osteology, bioarchaeology or forensic anthropology course. Therefore, I feel that there is a continued need for an introductory instructional textbook that incorporates the major forms of skeletal trauma analysis (BFT, SFT, GSW, blast, and medical trauma).

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