

Preface

Twenty Years Since Knecht: New Answers, New Questions and New Approaches to the Study of Stone Age Armatures

Although it goes beyond a simple “proceedings volume”, this book is in part the result of a workshop with the same name organized by us in September 2011, at the University of Mainz, Germany. Both of us had previously dealt with the question of identifying weapons in the archaeological record using different methodologies (Sano 2009; Iovita 2011), yet we had both also begun new experimental projects aimed at solving some of what we had felt were methodological insufficiencies in existing protocols (Iovita et al. 2013, 2016; Sano and Oba 2015; Sano et al. 2016). It was in the context of the work for these projects that we began to realize how many researchers around the world were simultaneously working on weapon technologies and trying to find what role these might have played in shaping the course of human evolution. More importantly, we quickly found that many of these researchers were working independently, starting from different premises, but also having different background questions in mind, and representing different scientific traditions and schools. In short, weapons were all of a sudden globally fashionable, and that was and remains a good thing. Yet not everything about a new scientific trend is positive. We immediately realized that the sharp increase in interest carried with it the potential for duplication on the one hand, and for competition on the other. While competition and debate are healthy elements of any scientific enterprise, history has shown that too much competition at the beginning of a scientific “trend” can lead to a stifling of creativity and an acrimonious atmosphere, a combination that could ultimately hinder real progress. It was precisely with the goal of avoiding these problems that Multidisciplinary Approaches to the Study of Stone Age Weapons—the workshop (Fig. 1), and, later, the book, were conceived.

The decision to elect Heidi Knecht’s (1997) seminal work, *Projectile Technology*, as a model for our book was a conscious one. As we outline below, Knecht’s volume represented the culmination of a decade and a half of intensive research (the 1980s and early 1990s) when several theoretical, methodological and, not least of all, empirical-archaeological lines of work came together to form a synthesis of the meaning of [projectile] weapons in human evolution. More than fifteen years later, we believe we are now moving towards another synthesis, albeit with very different drivers and actors, and it is this *Zeitgeist* that we hope to have captured.

In contrast to Knecht’s volume, the research presented in this book is all archaeological, or at least archaeologically oriented. However, its multidisciplinary stems from the multidisciplinary of archaeology itself, which, as a historical science, draws from knowledge accumulated in other disciplines, including physics and materials science, cognitive and behavioural science, biology, and cultural anthropology. Much like Knecht’s book, this volume unites archaeological perspectives from a variety of time periods and from all five continents with a large assortment of new analytical and experimental studies.



Fig. 1 Participants at the 2011 conference on Multidisciplinary Approaches to the Study of Stone Age Weapons. The names of speakers are indicated by the numbers in the silhouettes below

Because of the aforementioned explosion in research that has taken place in the last ten years and the diversity of the approaches, we have decided to structure this volume in five parts, whose unequal sizes we believe accurately reflect the current distribution of work in the field: *recognizing ancient Stone Age weapons* (with new experimental approaches and the application of their results to archaeological material in two separate parts), the *evaluation of the performance and efficacy of different weapon systems*, the *maintenance and curation of Stone Age armatures*, and, finally, some of the *behavioural and cognitive implications of producing and utilizing different types of weapons*.

In conclusion, we still believe that discussion and exchange at regular intervals is the key towards a healthy and productive debate which ultimately pushes breakthroughs, and therefore, we wanted to gather many different points of view in Mainz, and, now, in this volume. We are also hoping that, rather than being an authoritative work on the study of weapons in the Stone Age, our book will instead be the starting point for a longer conversation about the role of this unique human technology in the evolutionary history of our species.

We thank the participants in the Stone Age weaponry workshop for their fruitful discussion. Special thanks are due to all the contributors to this volume for their informative papers and patience. We are grateful to all the reviewers for their time and effort. Finally, we thank Eric Delson and Eric Sargis, the Editors of the Vertebrate Paleobiology and Paleoanthropology Series, for their support throughout the publication process.

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Contents

Part I Recognizing Weapons: Experimental Approaches

- 1 **When Is a Point a Projectile? Morphology, Impact Fractures, Scientific Rigor, and the Limits of Inference** 3
Wallace Karl Hutchings
- 2 **Identifying Weapon Delivery Systems Using Macrofracture Analysis and Fracture Propagation Velocity: A Controlled Experiment** 13
Radu Iovita, Holger Schönekeß, Sabine Gaudzinski-Windheuser and Frank Jäger
- 3 **Experiments in Fracture Patterns and Impact Velocity with Replica Hunting Weapons from Japan** 29
Katsuhiro Sano, Yoshitaka Denda and Masayoshi Oba
- 4 **Thirty Years of Experimental Research on the Breakage Patterns of Stone Age Osseous Points. Overview, Methodological Problems and Current Perspectives** 47
Jean-Marc Pétillon, Hugues Plisson and Pierre Cattelain
- 5 **Levers, Not Springs: How a Spearthrower Works and Why It Matters. . . .** 65
John C. Whittaker

Part II Recognizing Weapons: Archaeological Applications

- 6 **Hunting Lesions in Pleistocene and Early Holocene European Bone Assemblages and Their Implications for Our Knowledge on the Use and Timing of Lithic Projectile Technology.** 77
Sabine Gaudzinski-Windheuser
- 7 **Edge Damage on 500-Thousand-Year-Old Spear Tips from Kathu Pan 1, South Africa: The Combined Effects of Spear Use and Taphonomic Processes** 101
Jayne Wilkins and Benjamin J. Schoville
- 8 **Projectile Damage and Point Morphometry at the Early Middle Paleolithic Misllya Cave, Mount Carmel (Israel): Preliminary Results and Interpretations** 119
Alla Yaroshevich, Yossi Zaidner and Mina Weinstein-Evron
- 9 **Morpho-Metric Variability of Early Gravettian Tanged “Font-Robert” Points, and Functional Implications** 135
Annemieke Milks, Rob Dinnis and Matthew Pope

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