

WARFARE IN BRONZE AGE SOCIETY

EDITED BY CHRISTIAN HORN
AND KRISTIAN KRISTIANSEN



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Warfare in Bronze Age Society takes a fresh look at warfare and its role in reshaping Bronze Age society. The Bronze Age represents the global emergence of a militarized society with a martial culture, materialized in a package of new, efficient weapons that remained in use for millennia to come. Warfare became institutionalized and professionalized during the Bronze Age, and a new class of warriors made their appearance. Evidence for this development is reflected in the ostentatious display of weapons in burials and hoards and in iconography from rock art to palace frescoes. These new manifestations of martial culture constructed the warrior as a 'Hero' and warfare as 'Heroic'. The case studies, written by an international team of scholars, discuss these and other new aspects of Bronze Age warfare. Moreover, the essays show that warriors also facilitated mobility and innovation as new weapons quickly spread from the Mediterranean to northern Europe.

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PREFACE

This volume is the result of a conference on Bronze Age warfare held in December 2012 at the University of Gothenburg. The aim was to situate warfare in its social, demographic, technological and ideological contexts. We wish to express our gratitude to all speakers and participants for their active engagement and for contributing to lively discussions during the conference. Since then, the editors and authors have worked together to transform the original contributions and debates into a coherent publication. We are grateful to the two anonymous reviewers for providing constructive comments, which benefitted the book, and we are also grateful to Helle Vandkilde for her willingness to provide a concluding chapter.

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CHAPTER ONE

INTRODUCING BRONZE AGE WARFARE

Christian Horn and Kristian Kristiansen

CONTEXTUALIZING BRONZE AGE WARFARE: THE EMERGENCE OF MARTIAL ARTS

In this book, it is argued that the Bronze Age represents the global emergence of a militarized society with a martial culture materialized in a package of new, efficient weapons that remained in use for millennia to come. It is evidenced in the ostentatious display of weapons in burials and hoards, as well as in iconography from rock art to palace frescoes (Osgood, Monks and Toms 2000). This development has been described in a variety of ways: as the emergence of warrior aristocracies (Kristiansen 1999; Treherne 1995, Chapter 15) linked to the emergence of the ‘Hero’ and his retinue (Hansen 2014; Vandkilde, Chapter 15), or simply through a study of weapons and their indications of use (Harding 2007; Horn 2013a; Kristiansen 1984, 2002; Molloy 2007; Quillec 2007; Randsborg 1995). It all comes down to the historical fact that warfare became institutionalized and professionalized during the Bronze Age, and a new class of warriors made its appearance, one displaying differences among Eurasian, Mediterranean, and European warrior classes that were rooted in their different social and political complexities. However, the differences were not as large between these different groups of warriors because they employed similar types of swords and warrior gear. The causes behind this development can be traced back to a combination of factors.

Demographic factors are crucial if we wish to understand the rapid development of a warrior-based society. The Bronze Age saw a remarkable rise in

population throughout Europe. According to calculations carried out by Johannes Müller, Europe's population doubled between 2000 and 1500 BC. In absolute figures, we are talking about 13–14 million people by around 1500 BC: Europe would now hold nearly as great a population as the Near East, despite lacking towns (Müller 2013: figures 8 and 10). This population increase went hand in hand with an increase in settled land. Most arable soils and grasslands, including heathlands, became permanently settled during the Bronze Age, and settlements were in many regions continuous: one could travel through 'civilized' and settled landscapes from Denmark to Italy, even if there were still some large tracts of forest that the prudent traveller would rather circumnavigate. Such large populations led to the gradual formation of more complex, ranked societies, and warriors were an essential ingredient in sustaining them, just as they were a potential destabilizing factor as well.

Economic factors played a key role in this demographic explosion (Bartelheim and Stäuble 2009). European communities adopted new, robust grains, such as millet, and vegetables, such as beans and peas, which helped to improve diets and feed more people (Stika and Heiss 2013). Farmhouses became larger and more diversified than during the preceding millennia, and, in northern Europe, some cattle were stalled, providing heating, manure, and milk. Single farmsteads with economy buildings crowded the landscape in temperate northern Europe, while well-organized village communities were dominant to the south. This more diversified economy, which also utilized mountainous areas for transhumance, expanded food output.

More importantly, perhaps, were improvements in dress and food preservation. The early to mid-second millennium saw the universal adaptation of woollen dress and a wool economy with extensive trade in both raw wool and large pieces of cloth (Frei et al. in press). This healthier and warmer dress was undoubtedly important for improved health conditions. In terms of food preservation, smoked and salted meat was adopted, as evidenced from the Hallstatt mines (Kern et al. 2009), and trade in salt, along with wool and metal, created a new commercial economy that connected all regions (Earle et al. 2015; Harding 2013). These improvements in costume and food preservation made long-distance travel less hazardous because more varied food supplies could be carried along in case of unforeseen events or the need to travel through unsettled landscapes. For warriors and traders alike, these were a basic foundation for surviving under difficult conditions. DNA from the hair of the Egtved woman confirms that travels could occur over long distances (Frei et al. 2015).

Political factors were important in the development of this new social order. The new commodity trade demanded stable political alliances between distant regions above the community level (Kristiansen and Suchowska-Ducke 2015; Vandkilde et al. 2015). The gradual introduction of bronze and bronze-working

technologies into all spheres of life, from weapons and ornaments to working tools, such as axes, and agrarian tools, such as sickles, had social and political implications. As all communities became dependent on regular supplies of bronze, new social institutions were established that secured such regular supplies on a year-to-year or perhaps even on a month-to-month basis. New forms of organized transport had to be developed, both at sea and on land, as well as political alliances and confederations that guaranteed the safety of traders and their companies. This could also have led to tension and conflict between competing regions (see [Chapter 4](#)). A stop in supplies would mean severe long-term economic and political consequences, and these had to be avoided. Consequently, we see the emergence of new forms of stable, long-distance alliances and confederacies, such as those documented in the marriages of foreign women into neighbouring kingdoms/chiefdoms or even distant ones, such as those between south Germany and Jutland – two highly organized and rich regions (Müller 2015; Kristiansen and Larsson 2005: figure 107). The rather direct connections between these two regions is documented not only in the distribution of shared sword types, such as octagonal hilted swords, but also in recent evidence from the Egtved burial, an eighteen-year-old woman buried in an oak coffin in Jutland who originated in south Germany and had travelled between the two regions twice during the last two years of her life (Frei et al. 2015). It presupposes the operation of regular routes with known destinations, where rules of guest friendship guaranteed food and safety along the way. Social mechanisms, such as marriage – the Egtved example – and the returning of foster sons to the mother’s brother in south Germany would have forged these links into strong familial ties. It would also have had the power to potentially recast identities, as happened, for example, in the Mediterranean (see [Chapter 6](#)). These are traditional ways of securing alliances, well-known from Indo-European literature (Miller 2000: figure 4A).

The volume of weapons and number of warriors played a role. Recent calculations of the number of weapons deposited in warrior burials in Denmark during the period 1500–1100 BC reached a volume around 20,000 swords (see [Chapter 3](#); Bunnefeldt 2013; [Chapter 13](#) in this book). From Thy in Jutland, we have the densest distribution of swords, which suggests that nearly every major farm had a warrior. There existed around 20,000 farms in Denmark during this period (Holst et al. 2013), and, even if we assume that only one in ten (the largest farms) provided a sword-carrying warrior, it means that 2,000 sword-carrying warriors were available at any time. These were the war leaders. We must therefore assume that they were able to muster a retinue of lance-bearing warriors from all other farms of free men and women, thus making 20,000 lances in daily use during the Middle Bronze Age in Denmark. If we assume that an infantry warrior normally carried two lances, as demonstrated in both burials and on Mycenaean pictorial pottery, the figure becomes 40,000 lances.

Even if we assume that some farms only provided archers, the figures are massive. If we transfer these figures to the rest of Europe, we can multiply them correspondingly with the settled areas of that region, which were at least ten to twenty times larger than those in Denmark, a small but rich country, providing a minimum figure of 200,000 lance-carrying warriors (of the proposed 13–14 million Europeans living around 1500 BC, Denmark contributed about 300,000, which means that the calculation from the Danish case is conservative). Even if we assume that many regions were less well organized and less densely populated than Denmark (Müller 2013: figures 3–4), and even if we assume that not all farms provided warriors with lances, the numbers are telling: Bronze Age warfare had the capacity to scale up real armies when needed, as demonstrated in the Tollense valley (see [Chapter 10](#)). Moreover, it makes the claim stated at the beginning of this chapter less provocative, that the Bronze Age saw the emergence of a militarized society with a culture of martial arts. It immediately raises some new questions: what were warriors used for? Furthermore, what were the attractions of becoming a warrior?

The ideas of ‘Hero’ versus warrior and parading versus combat were additional factors in the rise of a warrior society. The Bronze Age sees the formation of two institutions that complemented each other: the ideological construction of the heroic warrior (the Hero, as known from sagas and ancient texts; e.g., Miller 2000) and the social construction of semi-professional warriors organized in military retinues when needed. Burial rituals as well as hoard depositions formalized the high, ideological standing of the warrior throughout Europe, especially after 1600 BC (Hansen 2014). Together with heroic literature, an oral tradition that came down to us only in later written form, it provided a blueprint for the life and deeds of warriors. We also encounter this version of the heroic warrior in the ritualized parading and sporting events seen on rock art panels in Scandinavia or on pottery and palace frescoes in the Aegean (see [Chapter 5](#)). Sports originate in the training of young warriors, and cattle raiding of competing non-allied communities was the accepted way of keeping local warriors busy. Taking service at more distant chiefdoms, if successful, might provide another way of returning home with fame and wealth to establish oneself as a local chief/farmer (Kristiansen and Larsson 2005: figure 95). However, warriors were also essential in providing protection for trading expeditions, whether on land or at sea. In addition, they could be mobilized as retinues along the lines of chiefly kinships/confederations to form larger armies when needed. The realities of a warrior life were often grim, as the evidence of trauma on skeletons from Middle Bronze Age burials and the Tollense site demonstrate (see [Chapter 10](#)). Helle Vandkilde provides an in-depth view on these dualities of warrior retinues in her postscript and their probable origin in third-millennium social changes throughout western Eurasia (see also [Chapters 7 and 8](#)).

BRONZE AGE WARFARE PAST AND PRESENT

The study of warfare in prehistoric and early historic societies has gained new momentum in the past ten years. It now spans use wear studies (*swords*: Bridgford 1997, 2000; Bunnefeld and Schwenzer 2011; Colquhoun 2011; Horn 2013a, 2013b, 2014a; Kristiansen 1978, 1984, 2002; Matthews 2011; Molloy 2011; Quilliec 2008; York 2002; *spears*: Anderson 2011; Horn 2013a, 2013b, 2014a; Schauer 1979; *daggers*: Dolfini 2011, York 2002; *halberds*: Brandherm 2011; Dolfini 2011; Horn 2013b, 2014b; O’Flaherty 2002; for more, see the edited volume by Uckelmann and Mödlinger 2011), experimental studies (Anderson 2011; Gutiérrez Sáez and Lerma 2015; Molloy 2007, 2008, 2009; O’Flaherty 2007; O’Flaherty et al. 2008; O’Flaherty et al. 2011) and analyses of combat-inflicted trauma and injuries on skeletons (Aranda-Jinénez et al. 2009; Cansi et al. 2009; Fyllingen 2003, 2006; Harding et al. 2007; Jantzen et al. 2011; Peter-Röcher 2007; Walker 2001). Nevertheless, such research has also been informed by interdisciplinary comparative studies of the role of warfare in pre-modern societies (Arkush and Allen 2006; Ralph 2013; Ton, Thrane and Vandkilde 2006). It therefore seemed natural to convene a conference on Bronze Age warfare in Gothenburg, in 2012, to take stock of the various expressions of warfare during this formative historical period when new specialized weaponry was introduced, such as swords, lances and chariots (Kristiansen 2013). Our aim was to demonstrate the diversity of expressions and effects of warfare in Bronze Age Europe by stressing social and historical contexts. The need to understand these contexts has recently been emphasized: Vandkilde pointed out that in most human societies warfare was neither absent nor endemic. Thus, war and peace are not natural but cultural phenomena (Vandkilde forthcoming; see also Chapter 2).

However, we should not overlook the context of our own time. Why is warfare more prominent as a research theme today than twenty-five years ago? This was a time when peaceful trade and interaction studies were preferred over migrations, and the role of warfare was deemed to be of little significance. Bronze Age weapons were mostly thought of as symbolic, with few exceptions (Kristiansen 1984), and even studies, such as Keeley (1996) who confronted this peaceful myth of prehistoric societies, had little impact to begin with. According to Keeley, people in general became war-weary after World War II and the Vietnam War. Because the world they lived in could not deliver what they sought, then surely the past must have been a less horrible place. Thus, they started creating a world they ultimately wanted to live in. It could also be argued, however, that the ideology of a modern welfare society had no place for warfare, which was increasingly considered as something that belonged to the past (the two world wars). More importantly, Keeley’s book started a debate from which an increasing research focus on the possible

evidence for warfare followed, from skeletal traumas to actual traces of combat. An edited book by Carman and Harding (1999) propelled such a development, and, in recent years, we have seen mounting published evidence in this field of research. This, however, was also a period when warfare suddenly resurfaced in Europe – from the Balkan civil wars in former Yugoslavia to wars following the collapse of the former Soviet Union. It thus seems inescapable to conclude that experiences from our own time influence how we prioritize research on the past, from migrations to warfare.

Since then, we have seen debates over the scale and implications of warfare in prehistoric Europe, where new empirical evidence has demonstrated a prevalence of violence in both societies with low hierarchies and even in organized egalitarian societies (Schulting 2013). The violent nature of Neolithic and Copper-Age societies has been demonstrated by a number of spectacular finds and findings, from the family massacre in a Corded Ware society in Eulau in Central Germany (Muhl et al. 2010) to similar massacres in Globular Amphora (Przybyla et al. 2013) and Linear Band ceramic communities (Christensen 2004; Petrasch 1999; Teschler-Nicola et al. 1997; Wahl and König 1987; c.f. Schulting and Fibiger 2012). One of the most famous prehistoric people, Ötzi, was apparently killed during an ambush in which he received an arrow in the back of his shoulder (Gleirscher 2014; Gostner and Egarter Vigl 2003). The early importance of archery and bladed weapons for the conduct of war or warlike violence is well documented in graves of the Italian Copper Age (Horn 2014b) but also elsewhere; for example, in the Danish Bell Beaker burials (Sarauw 2007). Thus, Morris in his latest book takes this evidence as a starting point for suggesting that warfare was far deadlier at the community level among pre-state societies and only became ‘civilized’ and with less casualties for the general population with the rise of states and organized armies/warfare starting during the Bronze Age (Morris 2014).

Our book demonstrates how warfare became increasingly professionalized during the Bronze Age and more or less a full-time occupation for warriors at a certain period of their lives (see, e.g., Salzani 2005). This moves the role of organized warfare known to us from the Iron Age and early historical period back another thousand years in time, and this will have a profound effect on our perception of European Bronze Age societies. This new understanding has been amply demonstrated by evidence for large-scale warfare and killing in the Tollense Valley in Mecklenburg, northern Germany (Jantzen et al. 2011; Jantzen et al. 2014; Terberger et al. 2014; see Chapter 10).

Even though specialized weapons are seen as an indicator of a more systematic and professional approach to combat (see Chapter 9), its implications in the creation of social institutions, identities and personal agency are rarely discussed (see Chapter 6). In short, warfare needs to be

contextualized. Prehistoric halberds have, for example, long been interpreted as ritual objects for people with high status. The fact that they appear in ritual depositions and rich burials has been used to preclude an interpretation as functional weapons. An a priori bias therefore inhibited the full understanding of what turns out to be one of the first specialized weapons in prehistoric Europe. Even though halberds were entangled in complex networks and social institutions, it was possible – using use wear analysis – to demonstrate that they were also deadly, efficient and widely used weapons (Horn 2011, 2014b).

It is the aim of this book to contextualize warfare in order to facilitate a holistic understanding of past societies, processes and agents. The presence of organized warfare, especially from the later Bronze Age onwards, is a less contentious subject. Therefore, our aim is not to ‘prove’ that warfare existed in particular societies, but to understand how warfare was interwoven with other processes and aspects and how it was tied into the social fabric, as through rituals (see Chapter 11) and identities (see Chapters 12 and 13). How did war affect the identity, status and ideas of self of individual agents?

THE CHAPTERS

Here follows a brief presentation of the following chapters. In archaeology, many questions are phrased in an either-or way that can easily lead to oversimplified models of interpretation. Harding (Chapter 2) tackles such oversimplification with a survey of the evidence for violent and peaceful encounters during the Bronze Age. He argues against any simplistic view of mobility and contact. Instead, he puts forward a model of interactions following complex patterns that allowed for a much more varied response from individual agents than any reductionist approach could cope with. The integration of violent and peaceful interactions and encounters provides a more vivid picture of life and mobility in Bronze Age societies. A significant number of papers address the relationships among mobility, trade and warfare. Starting with an ‘edge-wise’ look on weapons, in this case flange-hilted swords, Kristansen (Chapter 3) suggests that they were highly efficient weapons. Taking into account other weapons, such as the full-hilted sword and spears, he goes on to suggest a separation of warriors into fighters and leaders and, with that, a professionalization of fighting in war bands. In combining evidence for mobility and trade with the evidence for fighting, the chapter elegantly shows the interwoven nature of warfare and trade across Europe. With a wide array of ethnographic and historical analogies and demographic considerations, Kristiansen demonstrates the social impact of warfare: the strain of providing men and suffering victims for local populations, the organization of hierarchies and the exchange of goods and ideas.

In pointing to the relation of exchange goods such as amber and metals with specialized weaponry from the Scandinavian Late Neolithic/Early Bronze Age onwards, Horn ([Chapter 4](#)) argues that warfare and trade are not only related, but depend on each other. Warriors both protected and benefitted from trade, which therefore increased the demand for warriors. Ultimately, it developed new incentives for warfare to control trade routes. However, the microregional chances to participate in exchange are not equally distributed. Considering the early evidence of intensive and frequent use of specialized weaponry in combat, Horn suggests that deprived groups may have levelled unequal opportunities by waterborne raiding. This kind of competitive combat over exchange may have been responsible for some of the distribution patterns we observe in the archaeological record.

Ling and Toreld ([Chapter 5](#)) also highlight the connection between maritime mobility and warriors. In their contribution, they investigate Scandinavian Bronze Age rock art with the premise that warriors are enmeshed in complex networks of practice and therefore highlight the maritime connection of warriors. Newly discovered rock art panels from the Early Bronze Age provide evidence that warriors engaged in deadly combat, and the association of carvings of warriors and canoes in maritime positions demonstrates that crewing, seafaring and fighting were part of their practice. Following the approach of Alfred Gell, Toreld and Ling suggest that rock art has an agentive power that helped to sustain political power in maritime chiefdoms.

Molloy, too, keeps with the topic of warriors and mobility ([Chapter 6](#)), but focuses on technological solutions. He conducts a microanalysis of subtle differences within the group of the Naue-II swords, where he compares chemical composition, rivet holes, blade design and use. By adding observations on spears/lances and the cross-section of swords, he goes on to show that warfare kept people on the move, thus facilitating an overall pattern of similarity. Within these patterns of overall similarity, subtle differences, however, may point to diverse origins as well as local cultural and ethnic differences.

Also focusing on the technological aspects of war, Klimscha ([Chapter 7](#)) argues that innovations in metal casting and transportation during the early Bronze Age in the Levant provide evidence for an increase in the reach of exchange. With that follows a need to control this new space. He, too, is able to demonstrate the highly interwoven nature of trade and warfare in which one drives the other and vice versa. This development started before the advent of early states in the Southern Levant despite the absence of specialized weapons. He therefore concludes that the absence of specialized weapons does not mean the absence of specialized warfare.

In their contribution, Pitman and Doonan ([Chapter 8](#)) are concerned with how different aspects of technology are interlinked with warfare. They review

evidence for metal casting and warfare in the burial record of the Middle Bronze Age of the Southern Urals, including the famous Sintashta complex, and trace the relationship of agents of war and agents of metal casting (i.e., the metallurgist and the warrior). The *chaîne opératoire* of weapon production and use demonstrates how many daily activities are affected to at least some degree by warfare.

Gener (Chapter 9) also considers the technologies connected to war but addresses them closer to individual weapons and fighters. He points to how complex technology and the sheer amount of technological know-how are at the core of ancient sword use. Gener shows us how much time people spend with weapons outside fighting and how much human creativity is dedicated to the task of creating weapons that are more efficient.

That efficient weapons could have been made from perishable materials can be gleaned from the Tollense valley site. Here, Lidke and her colleagues (Chapter 10) join in the source critical warning to take the archaeological evidence of warfare, or rather its absence, at face value. The presence of personal objects such as ornaments has given rise to an interpretation of the Tollense valley as a sacrificial site. Drawing all the evidence together, the authors argue that, for the time being, there is no better explanation than to interpret the site as the remains of a Bronze Age battlefield dating to Period III. However, this does not preclude that some ritual activity may have taken place at the site, highlighting that there is not necessarily a separation between places of violent interaction and ritual.

This is a theme explored by Mörtz (Chapter 11). By calculating the minimal number of artefacts in what Mörtz defines as weapon hoards, he is able to show that they constitute meaningful combinations from the perspective of combat requirements. Use wear and theoretical elaboration on the practical use of barbed spearheads leads him to conclude that the British weapon hoards are intimately linked to warfare and combat. Discussing analogies from the Iron Age and the Classical period, Mörtz opposes the classical scheme of ‘founder hoards’ and ‘merchant hoards’. Instead, he proposes an interpretation as sacrifices of war booties. Thus, he is able to interlink war intimately with ritual activities rather than seeing them as opposites.

By taking a fresh look at Mycenaean graves and their connection to weapons and skeletal injuries, Georganas (Chapter 12) touches on a point also addressed by Kristiansen. He points to a divide between the warrior persona and those who actually fought. Assuming a warrior persona seems to be part of the identity of elite individuals who possibly were never really involved in actual combat. Conversely, injured individuals were not buried with weapons. In the light of this evidence, we may wonder how many individuals dying in fights were buried at all.

According to Bunnefeld (Chapter 13), we can observe a similar disparity between those showing off a warrior ideal and those who also fought in south Scandinavia and northern Germany. He contends that the sword should rather

be seen as the emblem of the identity of free farmers because they are numerous. Whether one agrees or not with his numbers, a substantial part of the population was under arms even when only accounting for swords. If we add contemporary spears, we could probably argue for a ‘militarized’ society in the Nordic Bronze Age, much in the way of Engel’s Germanic mode of production (Gilman 1995), although this is not Bunnefeld’s conclusion.

Most pointedly, Anderson (Chapter 14) argues for a theoretical deconstruction of ‘the warrior’. Thus, she forces us to rethink what we mean when we write about ‘the warrior’. Anderson unfolds a full theoretical discussion of the possible distinction between the warrior image and the fighter. In this model, *fighters* were engaged in real combat, whereas the *warrior* may be a mythical identification figure. It may mainly be a male identity, but that does not exclude females from taking part in actual combat. She also points to a bias in evidence for those who fought because fighters may not have received the same honours – for example, a burial – as those who managed to claim ‘warrior status’. Therefore, a much larger portion of society may have been involved in fighting, a sentiment that finds support for the Nordic Bronze Age in the calculations made by Bunnefeld.

CONCLUSION

With this volume, we demonstrate that properly contextualized warfare was highly influential in the wider social arena. During the Bronze Age, warfare became embedded in social institutions and in the creation of a Heroic mythology that may have had little to do with day-to-day realities but nonetheless supported an institution of warriors and made risks worthwhile (Hansen 2014; see Chapter 15).

The international metal trade provided an additional arena for warriors, whether protecting or challenging such trade. Therefore, warfare had a deep transforming influence on Bronze Age societies, as reflected in the ritual veneration of warriors in both burials and hoarding practices. Once established as an institution, the Heroic warrior would gradually become a mundane soldier serving ruling chiefs to sustain power, trade and the protection of property. The consequences of this development in late prehistory might well be a theme for another conference.

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