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Tales of Hoards and Swordfighters in Early Bronze Age Scandinavia: The Brand New and the Broken

LENE MELHEIM AND CHRISTIAN HORN

This article focuses on the complexity of Early Bronze Age weapon depositions. While some of the deposited weapons have been disabled by intentional breakage, others seem to be more or less unused. A plausible explanation for the variability is that the surrender of lethal weapons to land or water was a means of coping with their power or agency – their individuality. We suggest that weapons, in their capacity as extensions of warriors' bodies, may have substituted for humans in ritual depositions. The metalworkers also come into play, due to their capacities in the processes of making weapons and shaping weapon technologies. Although we consider the three depositions that we discuss to relate to rituals on the occasion of warfare, we are not aiming for a uniform explanation. In the same way as the patterned human behaviour of a ritual is a means of subsuming individual events into a greater order, so a focus on general patterns may subsume the complexity of the past by ignoring the many different events leading to, e.g., the deposition of metalwork. Far from seeing these perspectives as contradictory, we try to use three well-documented individual cases to shed light on the variability within the pattern.

Keywords: Early Bronze Age; ritual depositions; weapon agency; object biography; technology

INTRODUCTION

In the Nordic region as elsewhere, axes, swords and spears were increasingly buried with dead males in the first part of the second millennium BCE. A logical assumption is that these men were fighters or high-ranked men with roles associated with warfare. Axes,

swords and spears were also deposited both individually and in hoards. The presence of use-wear on deposited weapons demonstrates that at least some of them had been employed in combat prior to being deposited. It can therefore be assumed that weapon depositions relate to warfare, either, as has often been argued, indirectly as among the

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practices structuring warrior identity, or, as is argued here, more directly as an element in rituals performed shortly before or after combat or feuding. It is, however, clear from the high degree of variation that weapon depositions were differently executed and motivated and should, therefore, not be treated as one solid category. A ritual deposition may reflect not only a single aspect of the complex social networks objects are situated in, but an equally complex combination of factors drawing on the objects' production and uses; in short, their entire known or perceived social 'life', which culminated in them being sacrificed. This article represents an attempt to address this complexity.

The three particular cases were chosen because details of the artefacts' production and uses were immediately available to us through our current work on use-wear and provenance analysis (Fig. 1). Two of the hoards come from prominent Bronze Age landscapes in Central Jutland. One is a closed find of 40 spearheads and seven flanged axes, famously known as the Torsted hoard, from Ringkjøbing on the western side of the Jutland Peninsula. The other is the Dystrup hoard from Djursland on the east coast, with eight almost identical swords. Last is a wetland find from a more peripheral area of Bronze Age Scandinavia, a single sword from lake Randsfjorden in the landscape of Hadeland, eastern Norway.

Each of the three finds represents the main forms of depositional practice in the period in question (Fig. 2). Although single deposition is the by far dominant way of surrendering weapons, the hoards show the same selection of weapons, only in larger numbers. The multi-type hoard from Torsted and the one-type hoard from Dystrup are, if only because of the sheer numbers of weapons, valuable sources on war-related practices in Early Bronze Age Jutland. In their capacity as large assemblages of weapons with a common history of production, these two hoards enable us to discuss possible relations between processes of production and warfare. The sword from

Randsfjorden is typical of its time in being a wetland single deposition. In its local context, however, it is a one-off. The find shows how the scope of the Nordic networks that transmitted weapon technologies and rituals extended to parts of Scandinavia otherwise considered as peripheral. The seascape and the inland waterways connect the three sites. On this basis, it is argued here that the Randsfjorden sword may possibly relate to the high maritime mobility of Bronze Age warriors.

Although other finds would be equally valid objects of study, the combination of provenance and use-wear analysis allows us to unwrap details of the objects' biographies, details such as are not immediately available for most metalwork. This, with the three different and well-documented contexts of deposition, allows us to differentiate between three very different trajectories. On this basis, we will formulate a set of hypotheses which account for possible motives behind the depositions.

WARFARE, WEAPONS AND WATERWAYS

The ubiquitous nature of warfare in many pre-state societies implies that, although not necessarily constantly on-going, hostilities and war campaigns acted as a structuring principle for society (e.g. Otto 2006). Another point which we want to stress here is that war and raiding, however brutal, represent cultural interaction. Warfare is not just an occasion for the forced exchange of goods it is also an occasion for the transmission of technologies (Horn 2014). Sword and spearhead injuries identified on Early Bronze Age individuals suggest that, as in other parts of Europe, feuds, raiding and piracy were regular occurrences in the lives of the Nordic people (Holck 1987, Vandkilde 2000, 2006, p. 61, fig. 2, Thrane 2006, Fyllingen 2006).

Metal spearheads were newcomers in Scandinavia around 1700 BCE. Swords were another new arrival about a century later and the Dystrup swords were arguably among the

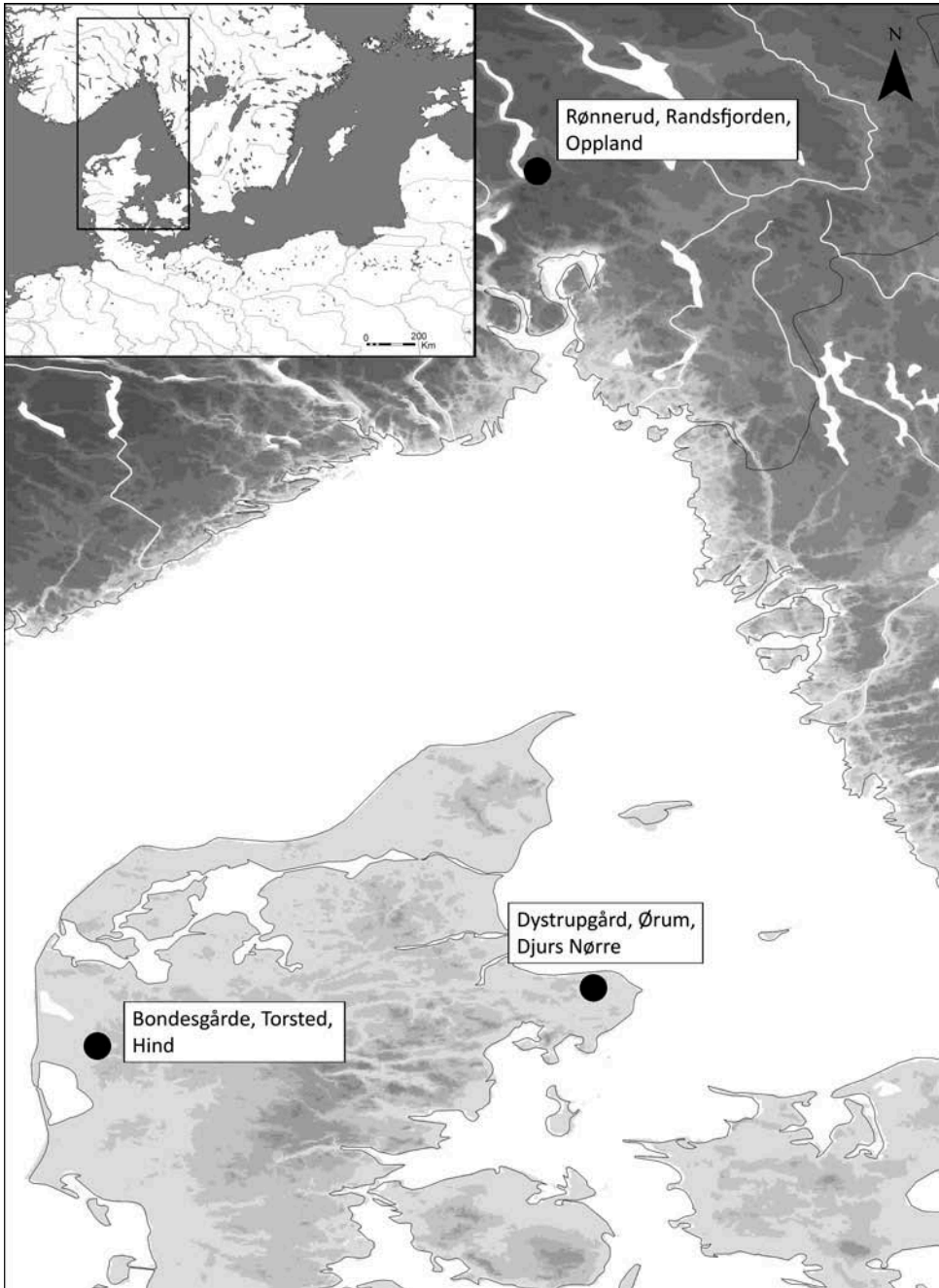


Fig. 1. The Skagerrak/Kattegat seascape with Denmark and southeastern Norway and the three sites discussed in the text. Not to scale. Map: Derek Pitman & Christian Horn.

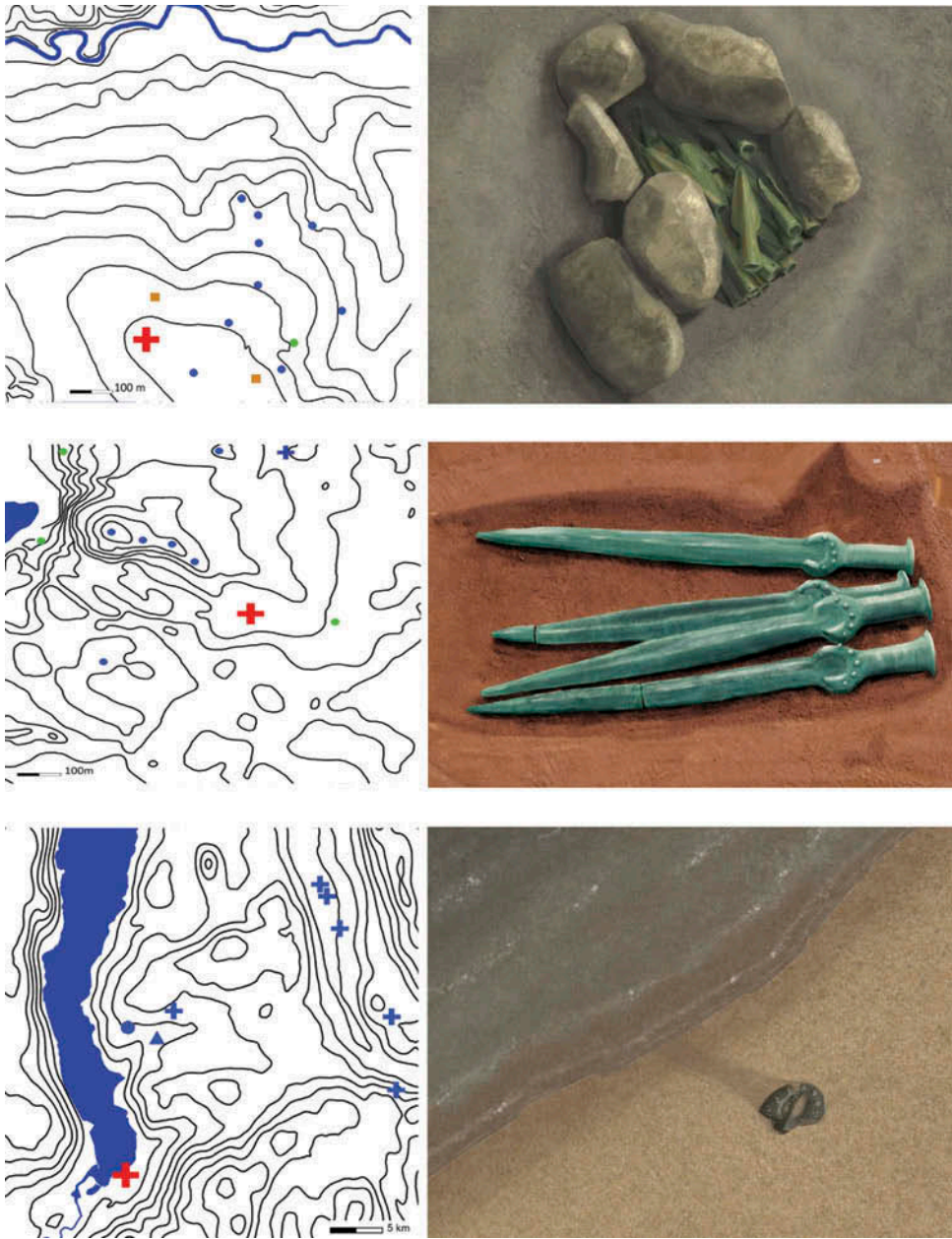


Fig. 2. The three depositions and their find contexts. Large crosses: find spots. Small crosses, triangle: Bronze Age metal finds. Dots: burial monuments. Squares: stone settings. Maps: Derek Pitman & Christian Horn. Top: Multi-type hoard at Torsted of 40 spearheads and seven axes, showing the spearheads deposited without hafts. Map intervals 10 m. Source: Becker (1964). Middle: Single-type hoard of eight swords at Dystrup, after the removal of four swords during excavation. Map intervals 10 m. Source: Wincentz Rasmussen & Boas (2006). Bottom: Sword at the shore of lake Randsfjorden, in all likelihood a wetland deposition. Map intervals 50 m. All drawings: Rich Potter/Archaeodesign. © Rich Potter. Printed with permission.

very first swords ever made in Scandinavia (Jensen 2002, p. 72). The adoption of the sword involved both the adoption of the techniques required to make a functional sword and the incorporation of the body techniques required to control and use a sword successfully in combat. Fighting with a sword is different from fighting with a dagger as it involves not only stabbing but also slashing (Molloy 2008). Sword and fighter form a unity, the sword becomes an extension of the body (Malafouris 2008, Kristiansen 2008, p. 42) and the fighter's movements adjust to the shape and the momentum of the sword. At the other end of the man-object continuum, and equally central, is the process of production. A case in point is the occurrence in the Bronze Age of swords made for left-handed fighters (Kristiansen 2002). On this basis it may perhaps be assumed that the fighter did not just adjust to the sword, but that swords were in fact made or adjusted to fit particular fighters. This point raises the question of the role of the metalworker. How was the production of weaponry organized and would it relate directly to raiding or feuding campaigns?

A link between metalworkers and warfare is indirectly present in the many legends and myths about weaponry from antiquity. In the *Iliad* it was Hephaistos who led Achilles to victory over Hector by crafting his armour. From Norse and other medieval sources, we learn that swords were sometimes named and imbued with agency, and that swords could be forged for a particular person on the occasion of a challenging mission (Davidson 1994, pp. 162–163, Gansum 2004, Lund 2009, p. 104, Hedeager 2011, pp. 38, 140, cf. Kristiansen 2002). In the medieval period a sword's name would typically refer to its ownership or certain qualities or it would establish the sword's previous biography (Pearce 2013, pp. 56–57). To the latter category belong swords named after their maker. In a broader European context it seems that the personification of weapons has roots much farther back in time. For instance, Pearce (2013, p. 65) argued that the face-like ornaments on

the flange-hilted Sauerbrunn/Boiu swords of the Bronze Age foretell the inscription of names on weapons which is documented from the pre-Roman Iron Age onwards. The fact that most Nordic Early Bronze Age swords were manufactured individually and thus given individual traits (Ottenjann 1969, 10–11) may have initiated this process and contributed to them being animated or imbued with spirit and agency.

Another interesting aspect of relevance for the Early Bronze Age is the strong association in Norse texts and language between weaponry and waterways, which ties in with the many archaeological finds of sword and spearhead in rivers and lakes (Lund 2009, pp. 123–127, 2010). There is also a clear connection between the metalworker and waterways, most notably the banks of lakes or other water bodies (Lund 2009, pp. 92–94). A preference in the Late Neolithic and Bronze Age for wetlands as places to deposit metal weapons may indicate that a connection between weapons, metalworking and water bodies was already established then. The selective deposition of swords in rivers and lakes in the Early Bronze Age seems, on the other hand, to suggest a very particular affinity between weapons and running water bodies. This connection is explicit in Norse and Medieval written sources, where rivers are described as 'running' with swords and spears (Lund 2009, pp. 125–126).

A THEORY OF WEAPON HOARDING

In Scandinavia, the first half of the second millennium BCE was a period of transition, when the old hoarding paradigm for weapons and tools was gradually replaced by a burial paradigm (Kristiansen 1998, p. 73–76, fig. 32a). Despite this, single depositions seem to be by far the dominant way of dealing with weapons throughout period I (Vandkilde 1996, pp. 243–248, fig. 263). Sword depositions are often considered to be personal rather than communal and thus strongly associated with the lifecycle of the warrior (Kristiansen 2008). Wetland depositions of weaponry may be seen

as society's way of commemorating a dead warrior or as the warrior's way of leaving his fighting persona behind at the transition from active warrior to old man (Fontijn 2002, p. 230, 2008). Another possibility, which we want to explore here, is that depositions may be more directly related to warfare and performed by one of the warring parties, as argued by Kristiansen (2008, p. 42).

Despite much effort, Bronze Age hoarding practices remain a mystery to the archaeological community as they seem to escape any catch-all interpretation. Bronze Age depositions simply cannot be pinned down to ritual or economic, symbolic or functional (Needham 2001, Hansen 2002, Brück 2007, Hansen *et al.* 2012) and very probably this is partly because several layers of meaning were often mobilized at the same time. A minimal definition is that a deposition is a way of handling objects with a value or history, which in the Bronze Age may have had various more or less explicit motivations. In the three cases discussed here, for reasons we shall return to, we consider a ritual understanding to be the more probable. Essential to most understandings of Bronze Age ritual depositions is the idea that it is a form of exchange (with supra-human powers or features of the landscape) interconnected with the overall importance of gift-giving. This connection is based on the anthropological discourse on gift economies, with which most archaeologists will be familiar. We need to dwell a little, however, on a particular aspect of this discussion that we find very useful for understanding how weapon depositions may tie in with warfare.

In Godelier's (1999) reinterpretation of Mauss (1925, cf. 1990 [1950]), he did not contend that the power of a gift, the *hau*, is a mysterious aspect, as was argued by Mauss. What binds the parties of an exchange situation together is, in fact, the giver's continued presence in what has been given (Godelier 1999, pp. 44–48). This provides the giver with rights over the receiver. Godelier thus suggests, in line with Weiner (1992), that it is

the reciprocal nature of all human relationships which lies at the core of a gift's power and which is ultimately nurtured by the fact that what is given away is always at the same time kept. The competitive nature of a North American potlatch ceremony, for instance, is structured by the principle that the most generous giver is also the most prosperous and powerful since this person retains their wealth while giving it away. Different societies organize this differently, yet in all societies some things are kept out of circulation and these things are, Godelier (1999, pp. 166–167) maintains, the very guarantee of the value of what is circulating. When it comes to the relationship with the gods, men are already indebted by having been given life, and gift-giving is therefore an unquestionable obligation. Thus, at the core of a ritual deposition lies the idea of an obligatory exchange: a sacrifice or gift you are indebted to perform.

Following Weiner and Godelier, the gift will not stop working after having been given away, but the power of the giver – or another person who is the object's original owner – will remain active even after the deposition. This phenomenon may partly explain why and how weapon depositions have so strongly structured people's perception of the landscape in the past (Kristiansen 2008, 42–43). Weapons take on the histories of real persons, their lives and deaths. Sometimes such stories may have motivated the deposition in the first place and even prevented the weapons from re-entering society. On this basis it seems fair to suppose that gifts given to the gods in the context of war would at one level relate to the vitality of the giver.

Warfare or raiding may be seen as continuously liminal states which can be divided into different stages coherent with those of a passage ritual and consisting of segregation, liminality and aggregation. Combatants are constantly in limbo between life and death – not necessarily because death in fighting was seen as something bad, but because death is a direct contradiction to a functional human society. Warriors move quite literally into a

dangerous border zone between life and death. This state can be paralleled with the liminal phase/state defined by van Gennep (1960) in his rites of passage. It also fits in with Turner's (1967, 1969) notion that the liminal phase is the phase most often connected with death. To cope with the pressure such a state is putting on the fighter's psyche, rituals are performed. These rituals are likely to employ symbols and symbolic action understood by all participants. Although symbols are potentially multi-vocal, they are usually anchored in everyday life and material culture. It seems fair to assume that weapons, although being capable of acquiring also other connotations, would be at the natural centre of war-related rituals.

ADAPTING TO INNOVATION: METALWORKERS AND WARRIORS

In the traditional view, swords were introduced to Scandinavia from the Carpathian Basin around 1700 BCE through direct exchange of prestigious objects between the two areas (Lomborg 1969, David 2002, map 18, Engedal 2002, figs. 8, 27, Kristiansen and Larsson 2005, figs 91, 96). Also, a more general technological and stylistic influence from the Carpathian Basin towards the north is assumed. The metal-hilted swords from Dystrup are like some other Scandinavian swords associated with the Hajdúsámson-Apa (H-A) swords of this area to the degree that they are said to be copies (Lomborg 1960, p. 70, Engedal 2002, p. 50). Their rounded shoulders, a combination of false and real rivets, a circular indentation of the grip plate and ornamental features indicate a strong affinity to the H-A horizon (Sicherl 2004). A gradual evolution is seen from some of the so-called local copies to the later Nordic metal-hilted swords, with which the Randsfjorden sword belongs.

This one-dimensional notion of innovation in one place and tacit copying in another must be critically re-evaluated. Vandkilde (2000) argued that there are several stages

in a process of style formation, including an experimentation phase and a phase of consolidation, which may be recognized in early Nordic metalwork. Flohr Sørensen (2012) pointed out that prototypes are meant to lead to the production of difference. Through resemblance to a model, the object attains its own independence. On this basis, the H-A-associated swords may be seen not as imitations, but as parts of a Nordic technological discourse. Similarly, this may be said about the spearheads and axes of the Torsted hoard, which are considered to be local products heavily influenced by Central European prototypes (Vandkilde 1996, p. 213).

Apparently, both metalworkers and warriors may have played a part in appropriating and shaping new weapon technologies – the metalworkers most clearly by adapting innovations to a local technological discourse, but also possibly by ‘tailoring’ weapons for individual fighters or for particularly challenging missions. Although it is certainly possible that the first swords were brought to the north by already skilled fighters who had been trained abroad, a process of local adaptation seems to have started quickly. Non-local weapons from Central Europe may have inspired the production of Scandinavian swords and spears, but local metalworkers produced differences in the morphology and decoration and in so doing created a canvas that tied these objects to local identities. In this regard, it is interesting to observe the difference in depositional practices between the two areas. In the Nordic region, burials or wetlands seem to have been the preferred contexts for sword depositions by around 1600 BCE, while most H-A swords in the Carpathian Basin at this point in time occur in dryland multi-type hoards. Only later, from after 1500 BCE, were swords in this area deposited in rivers as elsewhere in Europe (Torbrügge 1996, Falkenstein 2005, cf. Bradley 1990). Multi-type hoards are much rarer in Scandinavia, and, when they do occur, they usually contain spearheads and axes and less often swords (Vandkilde 1996,

pp. 243–250, fig. 267, Thrane 2005, p. 621, Bergerbrant 2013, p. 151). This demonstrates that the notion of mere copying is not only wrong for technological innovation but also for sacrificial customs.

Warriors invest individual weapons with meaning through practice in warfare and raids. In the continuous relational process of training and engaging with weapons in combat, the body is shaped by the weapon and vice versa, allowing the fighter and the weapon to embody each other's qualities (Malafouris 2008, Warnier 2011, cf. Mauss 2006 [1935]). The weapon becomes integrated into the body map of the warrior (Malafouris 2008). However, weapons are detachable and it is this quality that may have allowed them to replace the warriors as liminal agents in sacrifices. Deeds and histories carried out and lived by warriors are projected into the weapons (Horn 2011). Thus, the fighter's life is embedded in the weapon and surrendering the weapon may be seen as, at one level, as a substitute for surrendering his or her life. By giving up the weapon, the threat of the liminality of fighter and weapon is counteracted (Fontijn 2002, Kristiansen 2008, pp. 42–43).

That histories are accumulated during the social life of a weapon is an uncontroversial statement in today's archaeology. The biographical approach has proven valuable for understanding the processes that make objects meaningful and generate significance (Kopytoff 1986, Gosden and Marshall 1999, York 2002, Molloy 2011). However, object biographies have typically focused on processes of commodification and singularization in acts of exchange. Against this, Gosden and Marshall (1999, pp. 174–176) stressed that the constitution of meaning requires performance. In the same way as a weapon may gain meaning and be imbued with agency through the process of production, events related to the use of the weapon in combat may certainly have contributed to making it significant. The ritual act of deposition would probably be a kind of transformative performance that further invested Early

Bronze Age weapons with meaning. It is usually assumed that this is the last performative act before recovery, but, as we have hinted at and will argue further below, objects are likely also to exert post-depositional agency in structuring the ritual landscape. Additionally, since the significance of an object rests in the social memory, the transformation of an individual object may potentially affect the whole category that it belongs to.

Archaeology offers a number of different angles on the biography of objects and various analytical methods that can reveal events that may have generated significance for an object. With the help of provenance analysis and use-wear analysis, we will in the following set out to disentangle some of these meanings, being painfully aware that our interpretation will represent only a very simplified account of the past.

TORSTED

At Bondesgårde near Torsted a total of 40 spearheads of the Bagterp type, variant Torsted had been enclosed in a small stone setting together with seven axes of the low-flanged, waisted type. The weaponry indicates a Montelius period Ia date for the deposition (Becker 1964, Jacob-Friesen 1967, p. 107, Aner and Kersten 1995, pp. 66–67, plates 36–40, Vandkilde 1996, pp. 97–103, 212–214, figs 82, 429, Jensen 2002, pp. 70–71, Fig. 3). The hoard has been interpreted as reflecting the organization of a Bronze Age war band with 40 fighters, seven of them equipped with both spear and axe and assumed to have played a more prominent role (Randsborg 1995). The spatial restrictions of the small stone setting imply that the weapons must have been deposited without hafts. One axe belongs to the Torsted-Tinsdal type and the remaining six to the related Verring type. Both are quite common in Denmark and considered, like the spearheads, to be local products inspired by Central European axe types (Vandkilde 1996, pp. 100–101). The 40 spearheads make up a significant part of the total population of



Fig. 3. Use-wear on objects in the Torsted hoard (National Museum, Copenhagen, inv. no. B15109, B15130, B15104). Close-ups (left to right): Incised lines (B15143); possible blowmark and fracture (B15103); blowmark and slight curvature (B15119); notch (B15102); dent (B15126); blowmark and fracture (B15106); multiple overlaying grind patterns (B15103); blowmark (B15111). Photos: Christian Horn.

Bagterp-Torsted specimens in Scandinavia. The spearheads show slight differences in size, which may be due to post-casting treatment (Bingli 2011). However, three of them (B15115, B15131, B15134) have decoration which seems to have been incised after casting. A fourth spear (B15143) has clusters of incised lines.

METAL ANALYSIS

Chemical signatures are unfortunately not available for the spearheads, but they are for five of the axes from the Torsted hoard (Vandkilde 1996, pp. 101–103, 429, Northover 1996, pp. 334–335, Liversage 2000, p. 17, Table 1) and for three of these unpublished lead isotope data have also been available. Looking at the trace elements, four of the five flanged axes belong to a metal type which is referred to as modified Singen-metal. Singen is a fahlore metal (with As-Sb-Ag-Ni as main impurities) very probably of Alpine origin and the modified variant, which has slightly lower impurities, but with the same main elements, is also considered to come from the Alpine area although not necessarily the same sources (Liversage 2000, p. 81). The lead isotope profiles, which will be published elsewhere shortly, are not inconsistent with an origin from Alpine fahlores. One axe is of a composition dominated by arsenic and nickel, which had become predominant in Scandinavia by 1600 BCE and which is considered to match a metal type widely used in the Carpathian Basin and elsewhere in Central Europe (Liversage 2000, p. 74). In this case the fairly consistent information gained from metal composition and typology suggests a common origin for axe prototypes and metal, both pointing strongly towards the Únětice culture.

USE-WEAR

Slight evidence for a use in combat was discovered on some of the spears from Torsted (Horn 2013). The 40 spears could, judging from the find context, have been intentionally

destroyed by the removal of the spearheads from their hafts. The potential deliberate destruction of spears through such a process has been theoretically deduced by Nebelsick (2000). Fourteen of the spears from Torsted are fractured in the upper third below the tip. While this alone might be attributed to corrosion and the brittle nature of the material, all of these fractures are positioned at approximately the same height. Additionally, two are curved and six showed a fracture on the cutting edge. Eighteen had a blow mark at the same position. Eleven spears possess evidence of the above-described indentation, some to a considerable degree. Sixteen have notches, v-shaped damage on the cutting edges possibly caused by other bladed implements. In several cases this impact damage goes along with displaced material.

HYPOTHESIS

Because the Torsted spearheads were subject to some force in order to fracture the tips, their subsequent deposition can be said to have been structured by violence. The missing hafts, however, seem to represent a form of ‘reverse engineering’ and may refer symbolically to the process of production. Perhaps, the ‘death’ of these weapons was perceived as an unmaking, the stepwise reversal of their making (Horn 2011, p. 59). Dating to the very beginning of the Nordic Early Bronze Age, the Torsted weaponry in many respects continues Late Neolithic fighting and hoarding traditions, although spearheads of metal were definitely newcomers. In light of the continued use of stone cists for burials, which is another Late Neolithic trait, it is noteworthy that the 40 spearheads and the seven axe heads of the Bondesgårde hoard were ‘buried’ in a structure reminiscent of a grave, after having been symbolically ‘killed’. One could also say that the three decorated spears at least were born as individuals. If the interpretation of the weaponry as representing a band of warriors is correct,

Table 1. Metal analysis (bulk) of artefacts from the three depositions.

ID	Place	Type	S	Fe	Co	Ni	Cu	Zn	As	Ag	Sn	Sb	Au	Pb	Bi
B15147/NMK 356	Bondesgårde, Torsted	Flanged axe	0.23	0.02	0.00	0.39	92.54	0.00	0.26	0.07	6.31	0.13	0.02	0.02	0.00
B15139/NMK 357	Bondesgårde, Torsted	Flanged axe	0.11	0.02	0.01	0.38	91.19	0.00	0.24	0.14	7.66	0.21	0.01	0.03	0.01
B15148/NMK 358	Bondesgårde, Torsted	Flanged axe	0.04	0.01	0.00	0.26	91.18	0.00	0.39	0.16	7.61	0.24	0.02	0.05	0.02
B15148/NMK 359	Bondesgårde, Torsted	Flanged axe	0.11	0.00	0.01	0.25	91.02	0.01	0.38	0.16	7.80	0.24	0.00	0.03	0.00
B15140/NMK 360	Bondesgårde, Torsted	Flanged axe	0.17	0.01	0.01	0.22	92.45	0.00	0.77	0.43	4.90	0.78	0.03	0.06	0.05
B17618/X2	Dystrupgård, Dystrup	Metal-hilted sword	0.40	0.01	0.02	0.51	89.68	0.00	0.38	0.03	7.28	0.00	0.02	0.14	0.03
B17622/X6	Dystrupgård, Dystrup	Metal-hilted sword	0.50	0.01	0.02	0.54	90.09	0.00	0.58	0.03	7.67	0.02	0.02	0.29	0.04
B17623/X7	Dystrupgård, Dystrup	Metal-hilted sword, plain	0.12	0.66	0.93	0.03	95.71	0.00	0.00	0.02	3.18	0.01	0.02	0.05	0.03
C54227/ALM 25	Rønnerud, Randsfjorden	Metal-hilted sword, blade	0.07	0.07	0.04	0.07	88.62	0.00	0.13	0.01	10.88	0.02	0.04	0.02	0.00
C54227/ALM 26	Rønnerud, Randsfjorden	Metal-hilted sword, hilt	0.08	0.07	0.00	0.13	88.10	0.03	0.30	0.02	10.74	0.45	0.02	0.00	0.01

Sources: data from Liversage (2000), Grandin (2013), Melheim (2000).

it may be hypothesized that the sacrifice was meant as a substitute for their lives.

DYSTRUP

In Denmark only six swords and one dagger of the H-A look-a-like type had been identified when, in 1993–1994, a hoard of eight short-swords dating to Montelius period Ib was discovered in a tilled field at Dystrupgård (Vandkilde 1996, pp. 224–227, Jensen 2002, pp. 72–74, Wincentz Rasmussen and Boas 2006, Fig. 4). Subsequent investigations revealed that the swords, which were all positioned in the same direction, had been bundled together. The hoarding of the swords is coherent with Carpathian practices of dry-land hoarding, apart from the fact that Dystrup is quite unique in being a single-type sword hoard. In close proximity to the swords was a large block of stone which had been removed quite recently by the farmer. The swords are bronze-hilted and, unlike most other H-A swords, cast in one piece. They have four to five imitation rivets and are unusually small, lengths varying between 43 and 46 cm. The overall decoration matrix is similar on seven of the swords, with the typical ogival v-figure centrally placed on the blade. Individual variation is however clearly present as regards both ornaments and size. One sword is undecorated and leaves an impression of being unfinished. However, both this sword and several other swords have traces of hammering on the edge facets.

METAL ANALYSIS

Three sword blades from the Dystrup hoard have been analysed (Table 1, B17618, B17622-3). Lead isotope analyses soon to be published indicate that the three swords were made of copper very probably deriving from the same source. However, when looking at the element composition patterns, an interesting division occurs between the three swords. The two decorated swords have tin contents of *c.* 7.3 and 7.7% respectively and

nickel, arsenic and lead as dominant impurities. The undecorated sword (B17623) has raised levels of iron and cobalt and much lower levels of arsenic, nickel and lead than the others. Most importantly, a bulk content of tin at only *c.* 3% separates this sword from the other two and from other swords from this period, and would probably make the undecorated sword less well suited for fighting (Molloy 2010, p. 414). A metallographic analysis gave no clear indications of post-casting treatment of the sword's edges by hammering or annealing (Grandin 2013). The metal analyses seem thus to confirm the visual impression that this sword is not a finished product and apparently this suspicion is strengthened by the use-wear analysis.

USE-WEAR

Three of the eight swords in the hoard from Dystrup are broken in the upper third below the tip (B17617-8, B17622). Corrosion could be responsible for this damage, but there is supporting evidence that the breaks are of anthropogenic origin. Two other swords (B17619, B17624) possess suspicious fractures on their cutting edge in a parallel position. None of the fractures appears to be modern, because they are all patinated. Even the sword (B17617) thought to be curved by agricultural implements (Wincentz Rasmussen and Boas 2006, p. 89) has a patinated fracture edge. This could suggest a pattern of intentional destruction with a blow aimed at the upper third of the blade with the goal of damaging the tip. In some cases this led to complete material failure, a fact which is further supported by indications of the same in the Torsted hoard.

The same sword shows damage that could be a blow mark, which may have been caused by impact as it is on the side of the blade rather than the cutting edge. This damage is somehow problematic, because it is slightly differently coloured than the overall patina of the sword. Due to its recovery from the belt of a potato harvester and the washing by the amateur finders (Wincentz Rasmussen and



Fig. 4. Use-wear on swords in Dystrup hoard (Museum Østjylland/National Museum, Copenhagen, inv. nos. B17617-18, B17622-3). Close-ups (left to right): Multiple dents (B17619); grind pattern (B17624); patinated fracture and sinkhole (B17617); patinated fractured tip (B17617). Photos: Soren Harbo Andersen and Christian Horn. Printed with permission.

Boas 2006, p. 87) the damage could be modern. Nevertheless, it is patinated and so an ancient origin of the damage is equally possible. Better evidence for fighting damage comes from another sword (B17619). Along the cutting edge two or perhaps more indentations, rounded impact damage on the cutting edge, are seen. Some of them exhibit material that was pushed away by the impact, but did not fracture and detach, thus making an anthropogenic origin of the damage more likely. The allegedly unfinished sword (B17623) is the only one without any signs of anthropogenic damage.

HYPOTHESIS

From the dryland context, one could infer that the Dystrup swords represent valuables that had been deposited during a raid in order to prevent looting and to be retrieved later. But, considering the wider context of the find and the fact that dryland sacrifice was the typical way of surrendering H-A swords in Central Europe, this is hardly the case. A more feasible explanation is that the swords had been made for a group of similarly equipped warriors and sacrificed after limited usage. While seven of the swords are very similar in terms of both decoration and use-wear, the undecorated sword stands out from the others by lacking the surface finish. It is not like some of the other swords deliberately broken and may very well be a kind of template. The fact that the Dystrup swords seem to be produced from one lot of metal may suggest that knowledge of their common origin was present at the time of deposition. Here, we clearly see the metalworker coming into play. The deposition seems, as argued to be the case for other Bronze Age hoards (Lund and Melheim 2011), to refer back to the process of production. Slight wear-marks on at least three of the swords may stem from limited use in combat, or perhaps the training of skilled swordfighters. On this basis we find it likely that the Dystrup swords represent a sacrificial offering of recently made weapons

by, or on behalf of, a group of fighters, and that the deposition relates to the process of production and to the handling of objects with power.

RANDSFJORDEN

In the 1980s a couple walking along the eastern shore of Randsfjorden in Oppland came across the heavily fragmented hilt of a sword. The sword came to light when the sea level was unusually low, as the lake is a water basin and had been drained (Melheim 2012, pp. 140–142, Fig. 5). The find spot is 200 m from the shore at normal water level and would usually have been flooded. The context is therefore most likely that of a wetland find, a supposition which is further supported by the dark patina. The sword is on typological grounds best dated to period Ib or perhaps the beginning of period II or around 1500 BCE.

The sword has much in common with a H-A-associated sword from Stølstrupgård in Denmark (Vandkilde 1996, p. 225, fig. 238, cf. Engedal 2005, p. 50) but the best parallel comes from a multi-type hoard from Valby, Sweden (Montelius 1917, fig. 905, Oldeberg 1974, p. 229). This hoard contained two swords, one of which, like the Randsfjorden sword, has eight concentric circles on the upper part of the blade, the same pattern around the rivets and line decoration on the lower and upper parts of the hilt plate. The Valby swords were heavily fragmented and had been hoarded with scrap metal in a bog, typical of metalworkers' hoards.

METAL ANALYSIS

Two samples were taken, one from the upper part of the blade, which is cut off beneath the hilt plate, the other from the upper part of the hilt plate (Table 1). Judging from the element composition data, the Randsfjorden sword may theoretically represent an original blade from Central Europe, with a locally produced hilt added later. The sample from the blade was interpreted as a low-impurity



Fig. 5. Use-wear on sword fragment from Randsfjorden (Museum of Cultural History, Oslo, inv. no. C54227). Close-ups (left to right): Blow mark; blow mark; modern grinding pattern; blow mark and possible ancient grinding pattern. Photos: Lene Melheim and Christian Horn.

copper of Central European origin, while the sample from the hilt itself has a composition consistent with metal types widely used in the Carpathian Basin (Melheim 2012, p. 141, cf. Liversage 1994, pp. 73–74, 2000, pp. 62, 82). The heightened level of antimony corresponds with a fahlore source.

The identification of different metals in blade and hilt occurs also in the published analyses of Danish swords (Liversage 2000, p. 103). Although a Central European ore source seems plausible for the two different metal types used to produce the blade and the hilt, the high tin levels at more than 10% are not compatible with alloying patterns in the Carpathian Basin, albeit it is consistent with comparable metal types in Denmark (Liversage 1994, tables xv–xvi, 2000, tables ii, iv). Not yet published lead isotope analyses support the idea of metal import, and the profiles from grip and blade seem to be consistent with two different ore regions. The coherent tin values of the two pieces, blade and hilt, indicate a common workshop origin. On the basis of this, the typical Nordic style and the Swedish parallel, it seems likely that the Randsfjorden sword was alloyed and manufactured on the Scandinavian peninsula from imported metal.

USE-WEAR

Despite the lake patina, the piece is heavily corroded. It was in private custody for almost 20 years and the corrosion may therefore be a late product. The presence of blisters, some of them pretty large, may have contributed to the fatal two-fold breakage of the hilt. Although the fracture below the hilt plate lacks patina, the breakage seems to be old. The lack of patina must be caused by somebody testing the metal after the object was retrieved.

On the best preserved side two blow marks are present, possibly caused by a sword on one or two occasions. On the other side of the hilt is possibly another, wider blow mark

potentially caused by the wooden haft of another weapon or a grazing blow. It is difficult to assess what caused the fracture of the blade, but an intentional destruction of the sword cannot be excluded, even more so in light of its sacrificial context. A curious detail is the two clumsily incised lines on the lower part of the grip-plate which cover the original decoration consisting of three lines. The lines are corroded but the patina is light green as opposed to the otherwise dark patina. It could have been done before the deposition, but more probably the green patina is secondary and the lines thus most likely executed at some point in time after the initial deposition.

HYPOTHESIS

A symbolic link between the damaged weapon, which may be seen as symbolically inverting the production process, and the metalworker may be assumed also for the Randsfjorden sword. However, because of the substantial combat damage documented on this piece, we find it more likely that the surrender of this weapon was directly related to warfare. The heavy wear and patina complicate the interpretation of the sword. Since it is a single find, there is little circumstantial evidence to date the deposition. Given that sword biographies may stretch over several generations (Garrow and Gosden 2012, p. 133, Pearce 2013), we cannot be absolutely sure that it was deposited immediately after a battle. But, being the more typical of the three weapon depositions discussed here, it seems reasonable to maintain that the Randsfjorden sword represents a wetland sacrifice and that it was possibly motivated by the belief in the power of a sword that had been used in combat. If we accept that the weapon may be perceived as an extension of the warrior (cf. Malafouris 2008), a damaged sword is prone to be intimately linked to the fate of its owner. The sword may very well have been sacrificed either

by the enemy or by the surviving kin because its owner had died or by a defeated but not dead warrior as a substitute for his or her life.

BIOGRAPHY OF THE THREE DEPOSITIONS

The life-cycle of a Bronze Age sword may be divided into conception, birth, life, death, burial and archaeological recovery (Molloy 2011). We shall concentrate here on the stages which have been made accessible to us through the above discussion of metal types, use-wear and context.

BIRTH: ORIGIN AND PRODUCTION

The Dystrup swords represent bulk production, yet seem to be ‘individualized’ since neither the ornaments nor the measurements are exactly similar. They represent a series of individual swords perhaps meant for particular individuals. Unlike most other swords of the H-A kind, they are cast in one piece and seem, possibly, to have been copied from a prototype without skilled knowledge of the usual procedure for making such swords. They are also unusually short, almost the size of a long dagger. These aspects tie in with the idea that the Dystrup swords symbolize the reception of a new technology. It is perhaps not too far-fetched to suggest that the creative adaptation of a new combat technology may have been caused by encounters with swordfighters with the usually much more sophisticated, long and heavy H-A swords (Horn 2014). The Randsfjorden sword is, on the other hand, although probably made of imported metal, firmly anchored in an already established Nordic metalworking tradition, in an era when sword technologies were no longer experimental.

The metal spearhead was an emerging form in the Nordic Bronze Age, and the Torsted type is thought to be the very first local form. Much like the Dystrup swords, these metal spearheads seem to represent bulk production

but at the same time a manufacturing technique that led to the production of difference and of spearhead ‘individuals’. It is possible to see the production of the 40 spears and seven axes from Torsted in the context of social units. It has been argued that the war canoe represents a particular form of Bronze Age male sociality (Ling and Cornell 2010). In the Swedish parishes of Kville, Svenneby and Bottna Early Bronze rock art ships have 6–13 lines indicating individual crew members with seven being the commonest number (Ling 2008, p. 191). Because the men are probably sitting in two rows, this would account for a crew of 12–26 men or, in most cases 14. Thus, the spears and axes from Torsted could have been produced to arm two to three crews, depending on how large the ship was and whether the cox of the boat is considered to be armed or not.

On one side of the spear with incised lines, at least 14 lines or line bundles are visible, dividing the spear into 15 sections. The number of incised lines and sections falls neatly within the range of crew members. If we apply this to the total number of weapons then the hoard could indeed represent the arms of three crews with 14–15 members (contra Randsborg 1995) and the three decorated spears could have been made for the three crew leaders. We might deduce from this that the spears were ‘born ranked’ and that they would visibly reinforce this hierarchical order throughout their ‘use-life’.

LIFE: USE AND EXCHANGE

Whereas the prehistoric damage to the sword from Randsfjorden may be fully explained as caused by other metal weapons during battle, the damage in Dystrup and Torsted is rather little, as also when compared with other contemporary swords and spears (see Horn 2013). It should, however, be kept in mind that damage to weapons is something fighters rather avoided, and that it is easily blurred by ancient repairs, corrosion and treatment after recovery.

Re-sharpening may have taken place many times (Kristiansen 1984, 2002). Judging from the grinding that has erased or blurred the circular motifs on the Randsfjorden sword, it is likely to have been re-sharpened and to have been involved in combat more than once. It may consequently have aided its user in considerable blood-shed. Two marks of blows were possibly caused by different weapons indicating that at least once the sword received damage that was hardly repairable, but remained in use. In both instances there is a chance that the user suffered a hand injury. Whether the sword was ritually killed in the end (Horn 2011) or fractured during combat cannot be decided. Nevertheless, considering its history in combat it may be assumed that it had gained meaning through memorable fights that transformed it from a mere fighting implement to a sword laden with symbolic value (Vandkilde 2000, p. 7).

In comparison there is little reason to suggest that the swords of Dystrup or the spears of Torsted gained meaning through repeated use in fights. Indeed, they may have had very short use-lives. An interesting aspect is the communal character of these finds and their common origin, which make it likely that they had been made for and belonged to a community of fighters. The combination in the Dystrup case of an unfinished blade and newly made weapons with slight wear-marks is conspicuous. Marks of blows come only from direct metal-to-metal contact and the swords could theoretically be used in fights for some time without such incidents occurring. They may, for example, have been used in the training of swordfighters or in ritualized fights where the aim was not necessarily to harm or kill. Although some of the use-wear of the Torsted spears may come from actual fighting, they have been used very briefly. However, if this is not a post-depositional phenomenon, the metal appears to be very brittle. Possibly, therefore, this batch of weapons was surrendered because it was realized that they were not suitable for fighting. Similarly, the Dystrup swords may have been tested and considered to be bad.

DEATH: DEPOSITION AND RITUAL

On the basis of context and treatment the Torsted and Dystrup finds have more in common with sacrifices than with storage hoards. However, the significance of these weapons may rest more strongly on the symbolism of swords and spears as groups of weaponry than on their individual use-lives. In both cases, roughly half of the deposited pieces have signs of damage in a parallel position affecting their most 'vital' part: the tip. Perhaps this should be considered against the ritual background, as caused by the intentional destruction of some of the sacrificed weapons just prior to deposition. Though it may not be an ecstatic event this destruction would have required some force and may be considered a performative act.

Damaging of the points is a terminal 'injury' to weapons like spears and swords. Because it robs the weapon its functionality such destruction can be regarded as a 'killing' of the weapon (Horn 2011, cf. Nebelsick 2000). Though we have to keep in mind that death may have been desired rather than feared by a warrior (Redmond 1994), the weapons underwent a destructive process that was parallel to the constant danger fighters risked of being taken out before their time (Molloy 2011). If we accept that the weapon becomes an integral part of a fighter's body and mind, then we may even assume that a warrior was also perceived by others to be embodied in the weapon.

The idea of a close connection between the death of a fighter and the death of a weapon may be supported by the stone setting the Torsted hoard was discovered in, which is conspicuously similar to the stone settings the dead were buried in, commonly referred to as cists. One of few parallels is the stone packing of a hoard from Tinsdahl near Hamburg, Germany (Schindler 1960, p. 225), although in this case one spearhead was deposited in a vessel together with a variety of other things. If we consider the stone setting to imitate a burial, the spears from Torsted

may symbolize the potential life-histories of the warriors they embodied. Some of the spears had been injured before or after the removal of the hafts which made them useless as spears, through the damaging of the tips. If the Torsted hoard actually reflects the organization of a Bronze Age war band/canoe crew, the act of hoarding may have been explicitly related to a hostile campaign and perhaps to warriors who never returned.

The Dystrup hoard may also fit within this frame of reference. The large flat stone was possibly a marker of the approximate place where the sacrifice took place or, the other way round, the hoard was put down there because the stone marked the place of an event. The hoard potentially established or referred to something in the social memory that structured the surrounding ritual landscape. This seems to have attracted burials in later times as the discovery of a cremation grave next to the hoard and barrows in the immediate vicinity exemplifies (Wincentz Rasmussen and Boas 2006). A plausible interpretation is that the later ritual activities were structured by the memory and knowledge of the deposition or of the events leading up to it. In this scenario, the slight wear-marks and the intentional destruction of these weapons may even point to a ritual enactment of real combat made to commemorate an event. That would mean it is a deposition post-combat, which potentially, through the magnitude of the event (extraordinary event = extraordinary deposition), held a secondary agency in the structuring of the ritual landscape.

The context of the Randsfjorden sword stresses the importance of water both as an appropriate location for sacrifices and as an arena for waterborne mobility. Again, if the various strands of evidence are combined, an association of the deposition with fighting, death and the liminality that goes with both (Turner 1969, p. 95) is certainly possible. Although a one-off in its area, the deposition is perfectly in harmony with the documented preference for singular river/lake depositions that was typical for

both southern Scandinavia and Central Europe around 1500 BCE. We argue against this background that the find from Randsfjorden includes an element of travel or mobility.

That the inland waterways in this part of Norway were in fact travelled in the Early Bronze Age seems to be further supported by rock-art ship images on panels along lakes and rivers. A case in point is the carvings at Berget in Tyrifjorden, a lake connected to Randsfjorden by a meandering river (Fig. 6). The Berget ship image is of the Rørby type and dates to Montelius period I (Kristiansen and Larsson 2005, fig. 92). The deposition may also in this respect tie in with the notion of water as a liminal element (Westerdahl 2005, 2011). We may imagine the sword by the end of its use-life in possession of a band of warriors travelling by water. It is feasible that at least one of the fighting parties had travelled into and entered a foreign territory. However, the lake in question need not necessarily be perceived as local, as it is part of a larger water system that may have been seen as a link to other worlds, real or imaginary. Whether it belonged to them or was acquired by means of violent exchange is unclear. Perhaps it was experienced as a burden. It may have represented the link to a revengeful ghost of a killed enemy or other otherworldly entities related to the dead demanding sacrifice to cut off these ties (Horn 2011, cf. Turner 1969, p. 123).

According to Turner (1969, pp. 52–53) the meaning of a symbol is bound to its context and placed within a frame of binary oppositions which opens up the possibility of reversal of meaning. Indeed, the reversal of status is one of the important aspects of rituals (Turner 1969, pp. 177–178, 183–185). Building on our previous argument that the destruction of weapons involved an element of mechanical de-construction which may be seen to mirror the production process, we propose that the metalworkers' agencies also played a role in the sacrificial performances through the reversal of their craft. This is most clearly seen in Torsted, but the destruction of the tips and the placement of the unfinished



Fig. 6. The wider context of the Randsfjorden sword: the Tyrifjorden-Randsfjorden watercourse and the Berget rock art. Source: Østmo (1990). Drawing: Rich Potter/Archaeo-Design. © Rich Potter. Printed with permission.

sword in Dystrup seem to follow a similar logic. In both cases the common workshop origin is reflected, and possibly emphasized,

by the weapons being deposited together. The metalworker, perhaps having accompanied a retinue and fashioned its weapons,

would hold a special place in this scenario by providing the means to ensure victory or by being held responsible for defeat by providing ‘bad’ weaponry. A link to the metalworker through an inversion of the production process has been discussed even for the Randsfjorden sword, but due to the massive marks of blows on this sword, we consider this find likely to be more strictly related to combat.

CONCLUSIONS

We have stressed in this article certain aspects of the adoption of new weapon technologies which led to a production of difference. Judging from ornamental variation on otherwise very similar artefacts, the production of difference was partly willed. This has allowed us to suggest that Early Bronze Age weapons were ‘born’ as individuals, a point which ties in with the idea that, during their use-lives, the weapons could accumulate histories and be imbued with agencies. This generated meaning, which again strongly affected the ritualized surrender of weapons. We have demonstrated that weapons with limited signs of use and presumably short life-histories might still have been considered significant and powerful in ways that had to be dealt with accordingly. When considering the many facets of the three individual depositions discussed here – the weapons potentially used in combat versus the perhaps un-used, the intentionally destroyed pieces versus the intact ones and circumstantial evidence like the stone-setting in Torsted, the large stone in Dystrup and lake Randsfjorden as an arena for waterborne mobility and feuding – we get a small glimpse of the huge variation within the patterned behaviour and the complexity of Early Bronze Age ritual performances.

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