

War Canoes or Social Units? Human Representation in Rock-Art Ships

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Scandinavian rock art may in general be regarded as idealized depictions of a social world, not a direct description of concrete social matters. Even so, rock art does convey important social information that calls for more thorough comment. This study concerns almost 1700 ship depictions from western Sweden that include human representations. The average ship is depicted with a crew of six to thirteen individuals and these craft may have represented prevailing ideals about the crewing of ships. The large ship images with numerous crews in clearly defined positions may be depictions of war canoes, staged for special maritime events. The study shows that the visual proportions of the rock-art ships are similar to those of the prehistoric war canoe from Hjortspring, Denmark. It is argued that the praxis of pecking ships into the rocks could have served to manifest the agency of the maritime social world and, to some extent, to make this ideology more dominant.

Keywords: rock art, ships, ship depictions, human representation, war canoes, social inequality, maritime initiation rites, maritime social world

INTRODUCTION

The coastal region of Bohuslän has Europe's largest concentration of prehistoric rock art (Figure 1), dated to about 1700–300 cal BC; some 1500 figurative sites have been recorded (Ling, 2008). The figurative rock art in Bohuslän is highly evocative, so it is hardly surprising that, over the years, this prehistoric feature or medium has inspired such a variety of interpretations (Almgren, 1927; Nordbladh, 1980; Goldhahn, 2006). The innovative expression and artistry of the rock art images are hard to put into words. Broadly speaking, the rock art may be seen as a selection of images that represent social actions, social positions, and ritual features (Coles, 2005). Some compositions

may be regarded as episodic, others rhapsodic, performed in a varied, ambiguous way. Mobility and conflict seem to go hand in hand, with highly ritualized scenes or compositions (Figure 2). A majority of the rock-art localities in Bohuslän were pecked close to the Bronze Age shore (Figure 3) and it is ship images that dominate the panels; about 10,000 ship depictions have been recorded (Ling, 2008). It follows that the rock art's general maritime location and content are highly relevant. Instead, the traditional focus of Scandinavian rock-art research has been on extravagant figurative rock-art motifs, such as ploughing scenes, wedding scenes, chariots, net figures, sun horses, and lure blowers, at the expense of what is by far the most common motif, namely the ship.

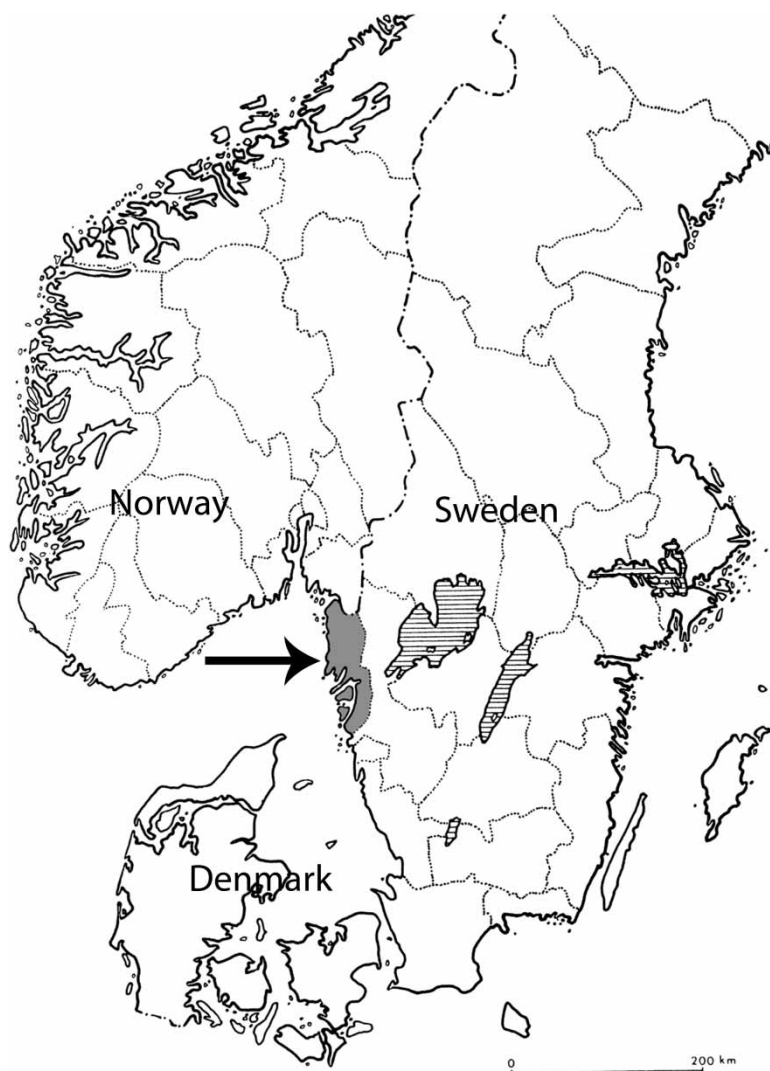


Figure 1. Map of southern Scandinavia. The grey shaded grey represents the coastal region of Bohuslän in western Sweden, where Europe's greatest concentration of rock art is found.

Image: J. Ling.

Why has so little interest been paid to issues to do with the great variety of rock-art scenes connected with the ship depictions?

Regarding the ship depictions, traditional rock-art research has mainly focused on mythological aspects, with hardly any comparisons or references to existing maritime archaeological finds from the Bronze Age or the Pre-Roman Iron

Age (PRIA) (Almgren, 1927; Hedengran, 1993; Goldhahn, 1999; Bradley, 2006). There has, however, been some discussion of more practical, social, and communicative issues to do with the rock-art ships. For example, Brøgger and Shetelig (1950), Marstrander (1963, 1979), and Strömberg (1983) used rock-art ships as an argument for the theory that Bronze Age A boats originated in a hide construction. Other

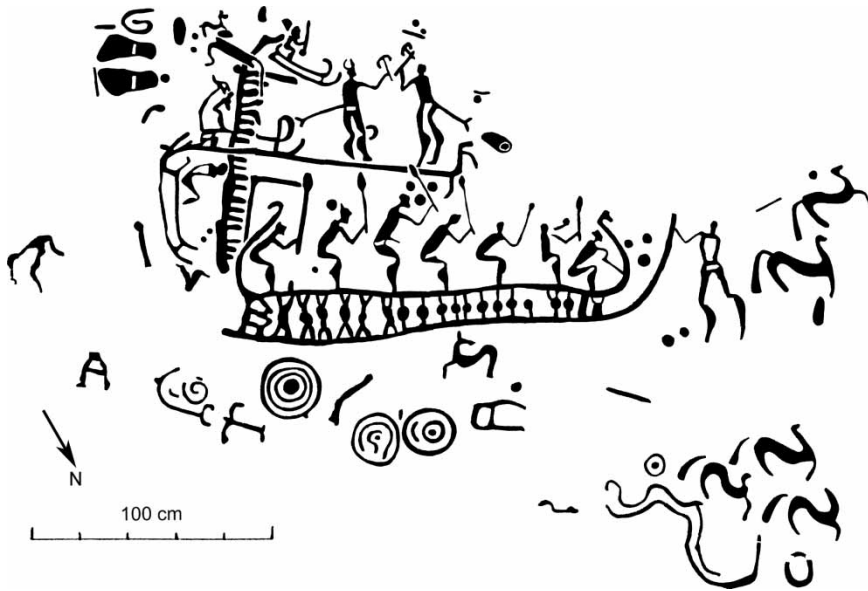


Figure 2. The elaborate rock-art panel from Skee 1539, northern Bohuslän, displaying idealized maritime features of the Bronze Age.

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scholars, such as Dahlgren (1932), Althin (1945), Crumlin-Pedersen (1970, 2003a, 2003b, 2003c), Rausing (1984), Kaul (1998, 2003), and Kvalø (2004), pointed instead to the similarities between the Hjortspring ship and the rock-art ships from Tanum, which indicates that the Bronze Age and PRIA ships were plank-built (Crumlin-Pedersen, 1970: 232, 2003b: 228; Rausing, 1984: 70). However, Berntsson (2005: 206) stressed that fishing and long-distance sea journeys were made with small extended log boats and that the large rock-art ships holding multiple crews represent vessels that may have been used in ceremonial and ritual praxis.

Today, most scholars agree that prehistoric boat finds and rock art bear witness to a long boat-building tradition in northern Europe which may have included a variety of constructions: log boats, hide boats, and plank-built boats (Berntsson, 2005: 28–33; Crumlin-Pedersen, 2003b: 232; Kvalø, 2000). For overseas expeditions,

however, plank-built designs may have been most common and also the type that was primarily chosen for rock-art depictions (Kaul, 2003: 204; Crumlin-Pedersen, 2003b: 232; Kvalø, 2004; Østmo, 2005).

Many scholars have stressed the resemblance between ship images on rocks and those on bronze items (Glob, 1969; Ellmers, 1995; Randsborg, 1995; Kaul, 1998; Bradley, 2009). In his frequently quoted *Ships on Bronzes*, Flemming Kaul (1998) argues convincingly for a corresponding chronology for these materials but also for a clear difference in their significance: the rock art represents real actions and rituals in the landscape, whereas the depictions on bronzes are of a more normative, cosmological nature. At the same time, Kaul (1998, 2004) underlines the biases and interactions between these two socio-material spheres.

Prehistoric warfare has often been downplayed in traditional post-war Scandinavian Bronze Age research in favour of

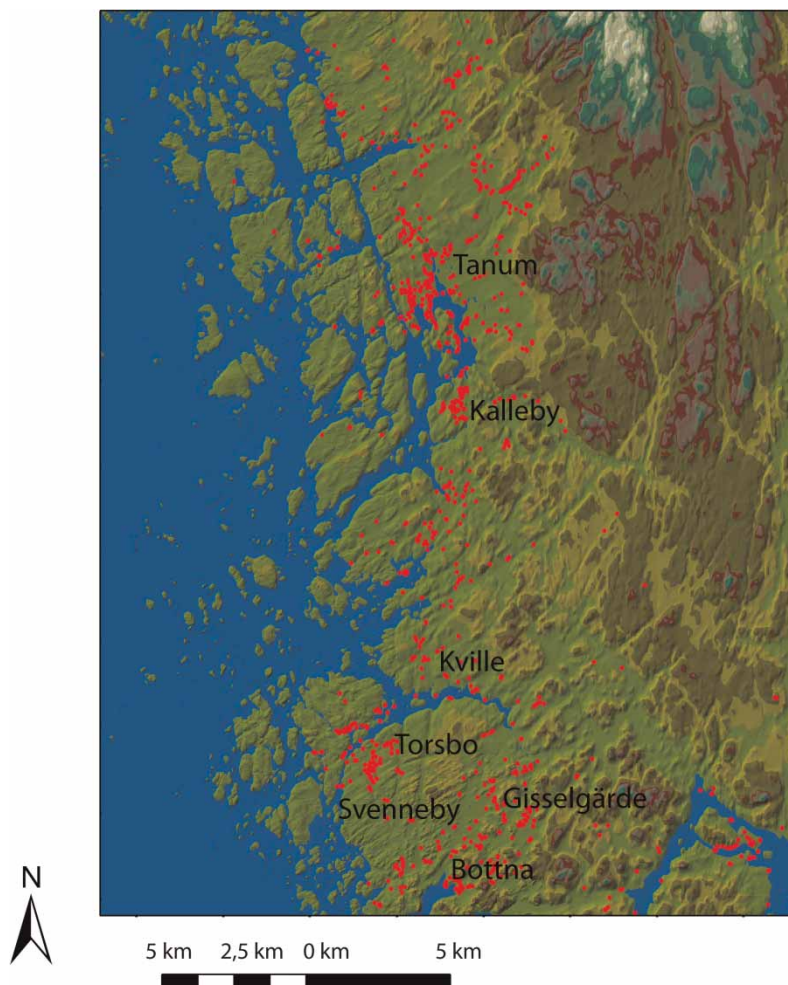


Figure 3. The study area in northern Bohuslän with rock art (red dots) and the situation with the Bronze Age shoreline at about 15 m above current sea level.

Image: J. Ling.

society's functional and ritual aspects (Vandkilde, 2006). This applies in particular to rock-art research (Almgren, 1927; Kaul, 2004). However, Scandinavian rock art does at least display ideal and generic features of Bronze Age warfare that we should not deny or be blind to (Nordbladh, 1989; Harding, 2007). In this context, Randsborg (1995), Kaul (1998), and Ellmers (1995) argue that some of the ships depicted on the rocks and on bronze items had a 'military' function similar to

that of the Hjortspring boat. Writing about war canoes, Richard Bradley (2009) recently compared and discussed ship settings, ships on bronzes and rock art ships located in eastern Sweden and Denmark. Another interesting discussion, put forward by Lindström (2009), is that the number of crew strokes in the rock-art ships corresponds to the Bronze Age settlement organization in some areas. These observations are highly interesting for this study and require some discussion.

Although the above-mentioned attempts are indeed intriguing, the studies are too brief, too reserved, or too general and seem to have been more-or-less dictated by single or random observations of rock-art ships. Hopefully, this study, which includes about 1700 rock-art ships, will throw more light on these issues. Note that the term 'ship' will be used in the following both for rock-art depictions and for archaeological finds of real boats.

AIM AND THEORY

Most of the objects depicted in rock art, such as weapons, lures, chariots, and ploughs, can be related to objects that were in use during the Bronze Age. And although the rock-art ships should not be seen as full-scale documentations of real boats, with all their details and traits, they do in my opinion convey important social information that calls for more detailed comment. At the same time, I am aware of the methodological problems involved in connecting rock-art ships to real boat finds and the discrepancies that obviously exist must not be overlooked.

There are, however, some general organizational and social features, such as the number and positioning of the ships' crews, which can be considered. These social settings may, indeed, reveal some interesting information about social norms connected with the boat in prehistoric times. Hence, the aim of this study is to focus on the social aspects and features so depicted on the ships on the rocks. The following questions can be addressed. How do these features, the proportions between ship and crew in the rock-art ships, appear in relation to the prehistoric boats? Is it reasonable to discuss proportions and settings like this? Or do the rock-art ships display different social and constructional features? Are the ships

proportional to the human representations or have the latter been enlarged or diminished? How do the human representations act and appear in the ships?

The mythological aspects of rock-art ships have been studied and highlighted by several scholars and these aspects will be taken into account here (Kaul, 2004; Goldhahn, 2005; Bradley, 2009). There is, in fact, no contradiction between a social and a mythological view of rock art, because the making of rock art must primarily be seen as a socio-ritual act involving the depiction of highly staged objects and socio-ritual situations. Thus, rock art was mainly a social articulation, but not a direct description of social matters, values, and relations; it was rather a twisted and idealized depiction of a social world. The prehistoric practice of making rock art in the landscape had numerous dimensions. However, some depictions seem to articulate more social features than others (for a more thorough comment on this, see Cornell & Ling, 2010; Ling, 2008: 178). The following observations will be connected to the socially orientated discussion dealing with aspects of society, warfare, encounters, economy, and ideology in the Scandinavian Bronze Age (Randsborg, 1995; Vandkilde, 1996; Kristiansen, 1998; Kristiansen & Rowlands, 1998; Kaul, 2004; Coles, 2005; Harding, 2007; Bradley, 2009; Lindström, 2009).

MATERIALS AND METHOD

This study deals with almost 1700 ship depictions from northern Bohuslän that present various kinds of human representation. An SQL database was established for this purpose. About half of the ships (858) are in the parishes of Kville, Bottna, and Svenneby and about half (828) in Tanum parish (Figure 3). The

chronological framework I have developed and discussed earlier (Ling, 2008; see also Kaul, 1998) in relation to shore displacement makes it possible to divide the ships into three major chronological phases (Figure 4): the Early Bronze Age (EBA), Late Bronze Age (LBA), and PRIA. In brief, ship depictions with inward turned stems or prows dominate during the EBA (1700–1100 cal BC), whereas outward-turned stems terminating in animal heads are characteristic of the LBA (1100–500 cal BC), as are symmetrical ship images of the PRIA (500–200 cal BC). Thus, the major trait that chronologically distinguishes Bronze Age from PRIA ship images is their degree of symmetry. This has been stressed by a number of researchers (Kaul, 1998; Sognnes, 2001). The asymmetric tendency becomes less pronounced during the LBA, when keel extensions in the aft become longer and are curved towards a vertical position. Note, however, that some ship types from the EBA are generally symmetric.

GENERAL FEATURES OF THE ROCK-ART SHIPS

Before discussing the relationship between real boat finds and the rock-art ships, some facts and concepts need to be presented. The construction traits displayed by the rock-art ships are limited compared with those of a real boat. The EBA ship from Tanum 311 (Figure 5) illustrates the general features of a rock-art ship. The lowest part is constituted by the keel line (1). The extension of the keel line in the fore is called the keel extension (2), and the extension in the aft, the stabiliser (3). The fore and aft stems (4) connect the keel line and the gunwale (5). The hull is the bulk of the ship (6), and the prows (7) extend from the stems and the hull (Kaul, 1998; Ling, 2008).

Only one real boat find from prehistoric times in Scandinavia displays these general traits, namely the boat from Hjortspring in Denmark. This study is therefore confined to a comparison of the rock-art ships with the Hjortspring boat, which was found in the early twentieth century in a bog on the island of Als. The find was thoroughly investigated by S. Rosenberg (Crumlin-Pedersen, 2003a, 2003b). However, recent analyses and a reconstruction of the Hjortspring boat have yielded important new observations and results. Large numbers of weapons were found in the same context as the boat, including about fifty shields, 169 iron spearheads, about ten iron swords, and the remains of a mailcoat. Taken together, these finds all suggest that the Hjortspring boat was intended for military purposes (Kaul, 2003: 141). The boat itself, or rather ‘the war machine’, is estimated to have been about 18–19 m long overall, its interior (also named the cockpit, the space used while sitting or propelling the ship) about 13–14 m long, its maximum breadth about 2 m, and height about 0.7 m (Figures 6 and 7). The ten thwarts were set about 1 m apart, providing room aboard for about twenty to twenty-eight persons. The raw material is lime wood, radiocarbon dated to about 300–400 cal BC (Crumlin-Pedersen, 2003a: 36). The following quotation provides some of the most essential facts about this vessel:

According to Johannessen’s drawing, the interior length of the reconstructed vessel was 13.61 m (measured between the stems excluding the oak locking boards). If the beaks, assumed by Rosenberg to be 2.5–3.0 m long, are included, the total original length is approximately 18.6–19.6 m. The maximum external breadth is 2.04 m and the height amidships 0.705 ... Johannessen calculated the weight of the boat, with rudders and paddles, to be 530 kg. He assumed a crew

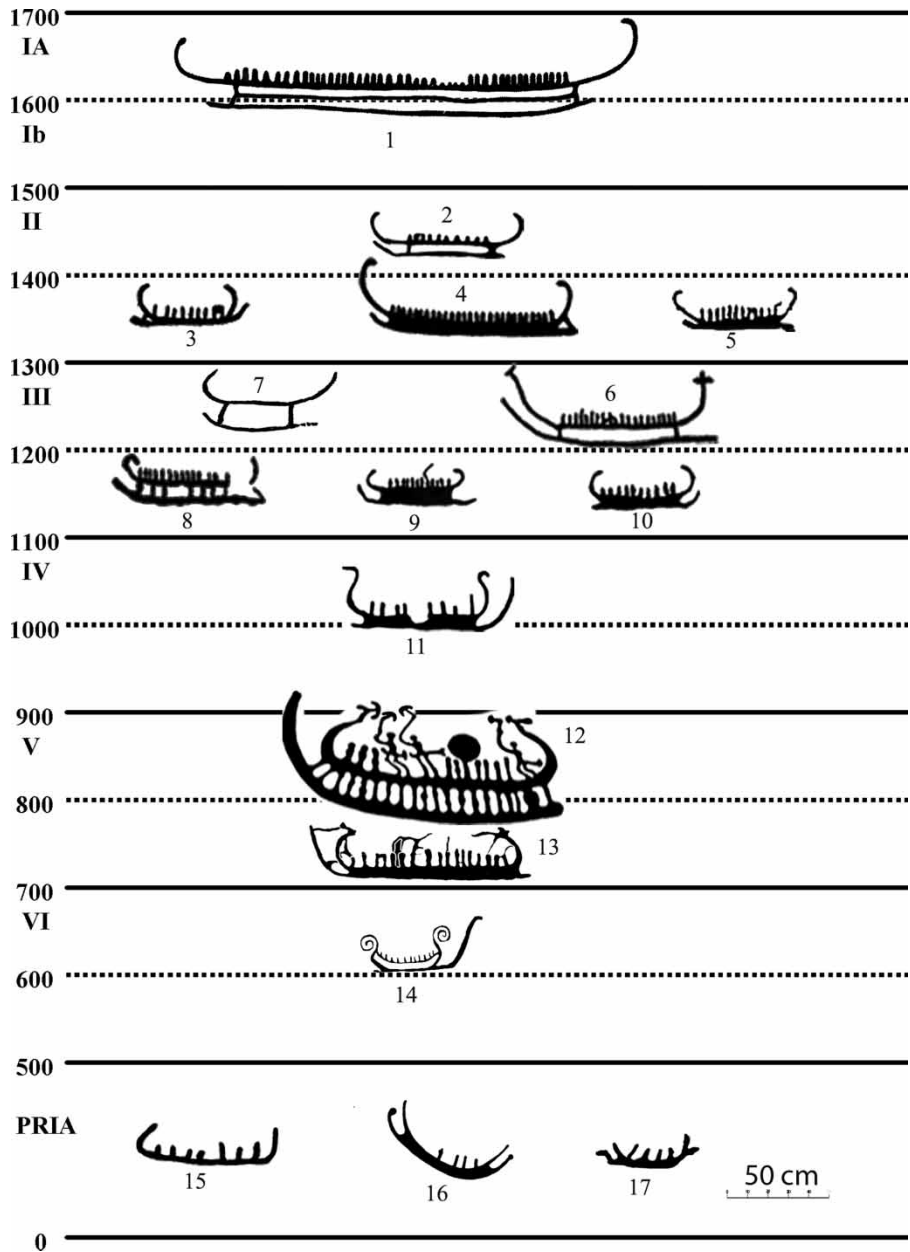


Figure 4. Rock art from Bohuslän chronologically determined in relation to shoreline dating: 1–10, ship depictions from the EBA; 11–14, ship depictions from the LBA; 15–17, ship depictions from the PRIA. After Ling, 2008.

would consist of 24 men, each weighing 72 kg with 16 kg weapons and equipment, giving a total weight of 2640 kilo. (Crumlin-Pedersen, 2003a: 36)

The same author has also described the basic construction:

The boat had been constructed as a delicate shell around one central bottom strake

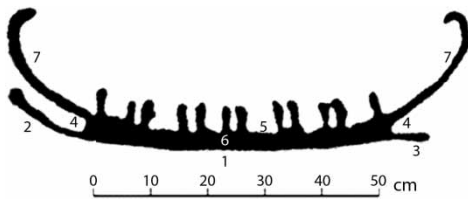


Figure 5. Names of parts of a EBA ship from the panel Tanum 311 showing the crew arranged in pairs and two single crew strokes in elevated positions in the fore and aft, possibly signifying the helmsman and the stemsman.

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with two broad strakes on each side, fastened to each other by means of sewing along the overlaps of the planks ... Inside the boat were found remains of ten rows of cleats for fastening lashings around the elegantly-shaped frames, each consisting of a thwart with carved seats for two men, ... The central bottom strake extended from both ends of the boat proper, forming sturdy, upwards-turning horns with oval cross-sections. At each end of the boat, a large winged stem rested on top of the bottom plank and the ends of the side strakes were attached to this.

(Crumlin-Pedersen, 2003c: 234)

As mentioned earlier, a comparison of rock-art ships with the Hjortspring boat clearly has to be limited to some general proportional and technological features.

However, the profile of the reconstructed Hjortspring boat can be used to exemplify them (Figures 4–6).

First, it has to be stressed that the hull of rock-art ships should not be equated with the interior, that is, the space used while sitting or propelling the ship. When the Hjortspring boat is seen in profile, the interior is not visible, only the hull (Figure 6). The same applies to many rock-art ships (Figures 4 and 5). The hull of the Hjortspring boat includes the stem and prow features in addition to the extent of the boat's interior (Figures 6 and 7). So the length of the hull is greater than the length of the boat's interior, and it may then be supposed that the number of crew represented in a rock-art ship could have been adjusted accordingly. In fact, many rock-art ships seem to have room for more paddlers.

In that rock-art ships are depicted in profile, the number of crew should perhaps be twice what one sees, assuming that they sat in pairs. However, some ship images clearly display paired crew strokes with a space in between; this is also evident in ship renderings on bronze items (Kaul, 1998: 76; Bradley, 2009). Moreover, some ship images contain fully formed representations of humans and these ships are similar in size and crew numbers to the ships with crew strokes only. The next section presents some



Figure 6. Reconstruction of the Hjortspring boat, at sea.
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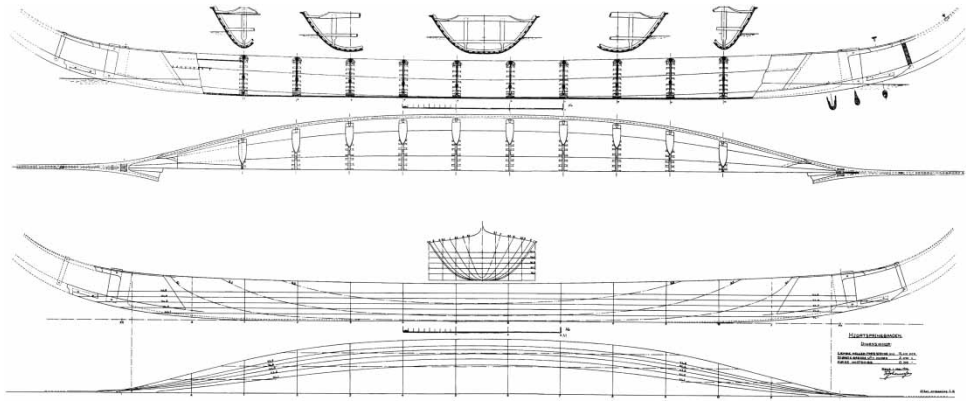


Figure 7. *F. Johannessen's drawing of the Hjortspring boat.*
After Rosenberg (1937).

general results, after which we discussed more specific proportional, chronological, and social traits of the rock-art images.

CODES OF DIMENSION

The rock-art ships from the study area clearly follow a strict dimensional code, for instance as regards the internal length of the hull between the stems. In general, the hull was made so that it accounted for 70 per cent of the ship's total length; the prows and keel extensions in the fore and aft accordingly made up 30 per cent of the total length. These proportions tend to apply to the rock-art ships regardless of their size and more or less regardless of their period. For instance, both EBA and PRIA ship images generally display these proportions.

The general visual proportions of the rock-art ships correspond very well to the proportions of the Hjortspring boat. The latter's hull constitutes about 70 per cent of its total length and the exteriors – prows and keel extension – about 30 per cent (Crumlin-Pedersen, 2003a: 36). This general proportion is to be found in about 90 per cent of the rock-art ships with

crew, regardless of their location and chronological period (Figure 4).

Although PRIA rock-art ships can be distinguished by their general symmetry and most Bronze Age ships are asymmetric, the general proportions of the hull and prows are very similar. The characteristics that generally distinguish PRIA from Bronze Age ships are the length and shape of the keel extension fore and aft and the shape of the prows. Thus, it is the PRIA ships that have the strongest proportional and figurative resemblance to the Hjortspring boat in profile (Figure 8), especially the longer and slender examples of rock-art ships from sites like Tanum 75, 208. The following section presents a more explicit account – broadly divided into three chronological phases – of crew strokes, sizes, proportions, chronology, and other features of the ships.

CREW, SIZE, PROPORTIONS, AND OTHER SOCIAL FEATURES OF THE EBA SHIPS

Of the total of 418 studied ship depictions from the EBA in the parishes of Kville, Svenneby, and Bottna, a large proportion have six to thirteen crew strokes, whereas

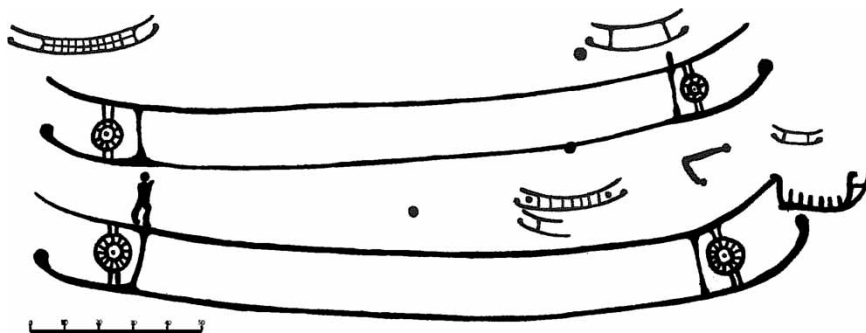


Figure 8. PRLA ship from the rock-art site Tanum 75. The largest ship is 280 cm long.
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fifty-one have no crew strokes at all. The results for the Tanum area are fairly similar: a total of 276 ship depictions with crew strokes and forty-seven with no crew strokes; the number of crew strokes ranges from six to fourteen. These features may indicate that in these areas there was a similar way of building, and crewing real ships during the EBA. The length of the ship depictions is generally 30–35 cm and the hull is 15–25 cm (Figure 4: 2–10 and Figure 5). The height of the crew strokes is generally 2–5 cm. The dimensions tend to increase with the number of crew strokes; for instance, ships with thirteen to fifteen crews are in general 45–55-cm long and their hulls 30–40 cm.

The largest rock-art ship in all these areas, in Torsbo, Kville 157 cm, measures about 4.5 m overall, the hull measures 3.9 m and holds 125 crew strokes, each about 5 cm tall (Coles, 2005; Figure 9). However, the number of crew seems to be disproportionate to the size of this ship. Half the number of crew, about 60, might be more in keeping with the ship's proportions. The most common large ships from the EBA do, in fact, have thirty to sixty crew members (Figure 4: 1, 4 and Figure 9). Still, this particular ship may have been made to illustrate a specific social event, and for this purpose it may have been 'loaded' with more people than

would usually be the case for transport or sea ventures.

Some of the ship images of the EBA are depicted with a line leading from the last crew stroke in the aft, downwards to the steering ore (Figure 9). In these cases, the last crew stroke has been made at some distance from the others, towards the aft prow in a more elevated position to represent the helmsman. From the EBA there are examples of two single crew strokes in elevated positions in the fore and aft, respectively, possibly signifying the helmsman and the stemsman (Figures 5 and 9). This way of signifying social differentiation may relate to ancient maritime norms connected with the shape, size, and structure of the ship (Randsborg, 1995; Varenus, 1998; Lindström, 2009).

An interesting study in this context is Detlev Ellmers' (1995) 'Crew structures on board Scandinavian vessels'. The point of departure is the ship depictions on the EBA sword from Rørby, dated to period Ib of the EBA; Ellmers notes that the crew are arranged in sixteen pairs, with each man represented by a single line with a dot at the top representing the head. This indicates that the ship held a crew of about thirty-two to thirty-four, which is highly interesting as it corresponds to the above-mentioned large

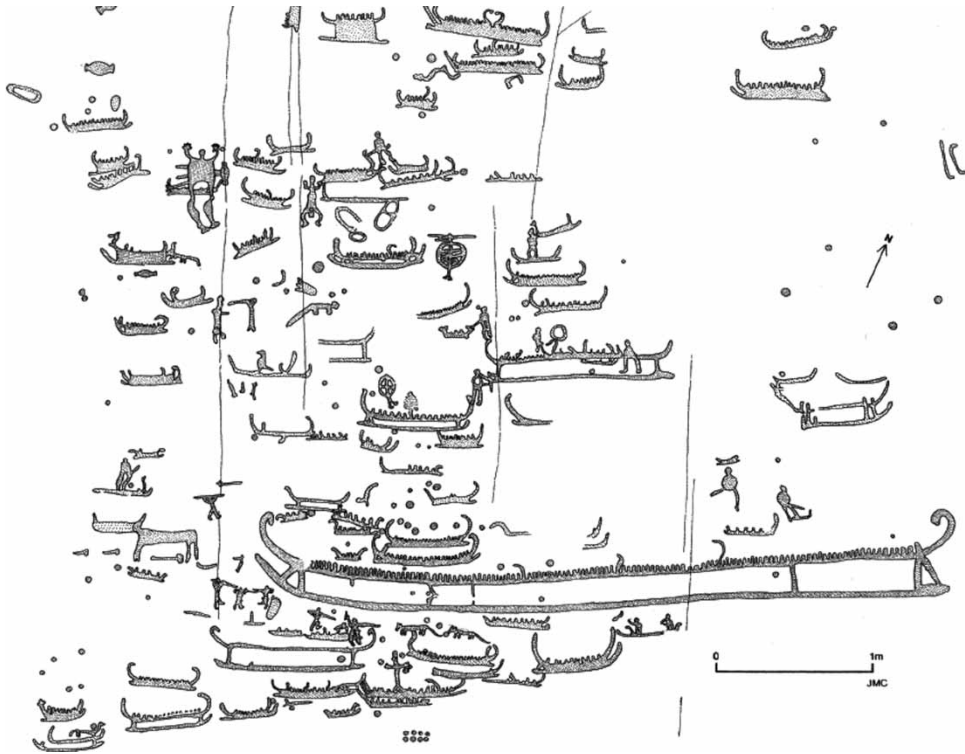


Figure 9. The panel Kville 157 in Torsbo with EBA ship images; the largest ship image or war canoe is 4.5 m long.

After Coles, 2005

rock-art ship from the EBA. Moreover, the sword from Rørby seems also to display the single man in the stern, the helmsman, and the man in the prow/stem – the stemsman. According to Ellmers, this structure seems to have governed the prehistoric and historic way of manoeuvring and propelling boats for over 3500 years.

Many scholars have claimed that Bronze Age people did not possess the technology to build ships such as those depicted on the rocks, which should therefore be seen as mythological vessels unconnected with real maritime situations (Almgren, 1927: 7–85; Berntsson, 2005: 51). These evolutionary assumptions overlook analogies between archaeological finds and non-western ethnographic traditions of

maritime craft-building. This is a pity because there are interesting instances of ethnographic craft that basically share the Hjortspring boat's sewn and plank-built technology. One example is the 'Tomoko' war canoes from the Solomon Islands which, just like the Hjortspring boat, have a bottom plank to which two side strakes are attached, one on either side of the hull (Clausen, 1993: 29). These canoes are, in fact, more slender than the Hjortspring boat, but the largest can hold a crew of sixty and are primarily designed for military action or manifestations of power and prestige (Clausen, 1993: 25). It is worth mentioning that the most common large rock-art ships from the EBA hold a crew of thirty to sixty, which more or less agrees with the large war canoes in Melanesia

(Clausen, 1993: 21). Even if the proportions of the large ship at Torsbo in Kville are most probably exaggerated, the Melanesian war canoes demonstrate that the large EBA ship images could have represented existing craft. Thus, the fact that the large ship representations on rock have much the same proportions as the Hjortspring boat indicates that there were norms in Scandinavia which apparently governed conceptions of maritime craft during the Bronze Age and the PRIA (Crumlin-Pedersen, 2003a: 36).

Late Bronze Age

A total of 433 ship images with crew strokes classified to the LBA derive from the parishes of Kville, Svenneby, and Bottna. The number of crew is mostly in the range of six to thirteen; about 134 of the ship images have no crew strokes at all

(Figure 4: 11). There are two sites with ship images that have thirty-eight crew strokes (Kville, 149: 1–2).

The 503 LBA ship images from Tanum parish with human representations (143 are without) are generally similar to the above in terms of size and crew numbers. The number of crew mostly ranges from five to twelve. However, the Tanum ship images generally represent larger craft with more crew strokes than those from the other parishes (Figures 10–12). One of the largest ships, from Kalleby (Tanum 249), has seventy-five crew strokes. Thus, the most common LBA ship depictions with crew from all the studied parishes are 35–45 cm long overall, with a hull 20–25 cm long; they have six to thirteen crew strokes and are double lined. As in the case of the EBA ships, the proportions of the LBA images – overall, and hull and prow height – increase with the scale of the representation and the

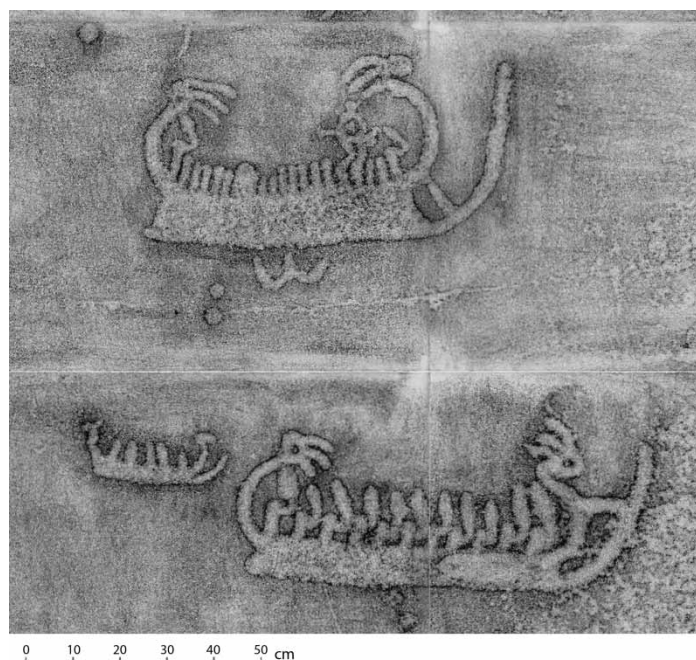


Figure 10. *LBA ships from Tanum 192:1; some of the ship images show crew holding paddles.*
Copyright: Tanums Hällristnings Museum, 2006. Source: Swedish Rock Art Research Archives



Figure 11. Warriors in action by rock-art ships, at the site Tanum 255:1.
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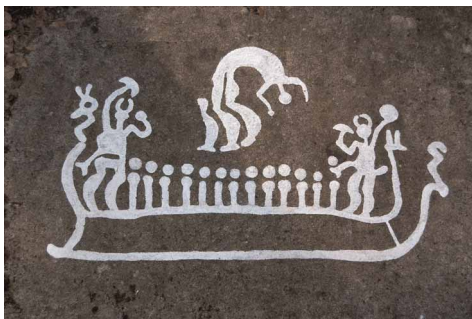


Figure 12. Rock-art site Tanum 356 with scenes of social inequality aboard the ships and of acrobats jumping above the ships.
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number of crew. This may favour the hypothesis that we are dealing with rather realistic representations of boats. A few LBA ship images display more functional actions such as fishing scenes. However, these are clearly exceptions; there is, in fact, only one site in these parishes with explicit fishing scenes. The most illustrative are the well-known scenes from southern Ödsmål in Kville parish, Kville 151, with ships that display typical traits of the LBA period V, such as out-turned prows ending up in animal heads and a hooked upward-turned keel extension (Fredsjö et al., 1956: 115). The type of fishing rods attached to the two humans in the ships and the length of

the rods, the hooks and the anchor have been related to the traditional form of deep-water fishing designed to angle for pollack, cod, or mackerel (Fredsjö et al., 1956: 115).

During the LBA, the social or functional differentiation in the ships is more pronounced than previously. Some scenes show enlarged horned warriors, elevated fore and aft in what seem to be commanding positions, often with weapons or other items aimed, pointed or directed at an anonymous bunch of crew strokes in the mid-section of the ship (Figures 10 and 12). This can be interpreted in terms of codes of social inequality in the ship. Indeed, social norms could hardly be represented more explicitly than this. In other words, these scenes suggest that the ship could have functioned, at least metaphorically, as an important arena for the display and performance of social norms and inequalities (e.g. Varenius, 1998).

Depictions of humans holding paddles are evident in some of the LBA ships. But, it does not seem to be the act of propelling the boat that is depicted; it is more as though different poses and performances are illustrated (Figures 10 and 12). These positions and performances are strongly reminiscent of rituals that Kwakiutl Indians, on the northwest coast of America, performed in their war canoes, which were used for military and ceremonial events (Boas & Codere, 1966).

Pre-Roman Iron Age

The ship images from the PRIA generally have fewer crew than those from the Bronze Age. However, their general proportions are similar to those from the Bronze Age, with the interior making up about 70 per cent of the overall length and

the exterior features 30 per cent. Thus, there are striking similarities between the PRIA rock-art ships from Tanum, such as Tanum 75, 208, 241, and 325:3 (Figure 4: 16 and Figure 8), and the Hjortspring ship.

Of the ship images assigned to the PRIA, 130 derive from Tanum parish; only forty-nine of these have human representations, 81 do not. The number of crew is mostly in the range of one to seven; the largest number is seventeen. This is considerably less than the Bronze Age ships' crews, especially those from the EBA. The parishes of Kville, Svenneby, and Bottna have seventy-two ships classified to the PRIA, sixty-three with crew strokes, only nine without.

Summary

To sum up, the most frequent ship types from the EBA to the PRIA seem to have some general traits in common. The ship images are in general 30–40 cm long, with a hull of 20–30 cm. The crew strokes are in general 3–5 cm high, and their height increases with the size of the ships. Ship depictions from the EBA generally have more crew strokes than those from the LBA, which in turn have more than those from the PRIA. Moreover, the EBA ships are generally longer than those from the PRIA, whereas the average LBA ship seems to be longer than the average EBA ship. Ship images without crew strokes are more frequent in the LBA and the PRIA than they are in the EBA. The most common number of crew in the EBA and LBA ship images is in the range of six to thirteen. The general difference between EBA and LBA compositions of rock-art ships lies in the figurative representation of humans. During the EBA periods I–II, human representations seem to have primarily taken the form of crew strokes. The

first known representations of warriors are from period II to III (Kville 98, 157:1, 171:1, Tanum 6, 18, 304). These military representations become more accentuated in the following period and reach a peak during period V (Kville 124, 182, Tanum 1, 12 18, 255, 365). Warriors are also represented during the PRIA (Tanum: 72, 75 241 and 369), at least up to 300 cal BC (e.g. Kaul, 2003). However, the social representation of conflict seems to have been stressed far more often during the LBA than during the EBA and the PRIA (Vogt, 2006). Thus, the chronological differences between the figurative expressions in the rock art may reflect societal changes.

WARRIORS, ACROBATS, ADORANTS, AND LURE BLOWERS ON THE SHIPS: GENERAL COMMENTS

Most of the depicted warriors and combat scenes were made close or adjacent to a contemporary ship depiction and in some way appear to be attached to the ship (Figures 2 and 11). This repetitive maritime pattern is too evident to be ignored. Many scholars have separated the warriors from this context (Bertilsson, 1987; Nordbladh, 1989; Vogt, 2006). Instead, the warriors should be discussed against this maritime background and perhaps be broadly described as maritime warriors. Although there are not many combat scenes on the ships, they frequently occur just outside the ships and are more or less confined to the LBA. The general characteristics can be further distinguished as scenes of conflict and of loyalty. Scenes of loyalty are more frequent than scenes of conflict but the latter are more striking, such as on the panels Tanum 1, 12, 192, and 255, Kville 216.

All depicted acrobats from the parishes of Kville, Svenneby, and Bottna (3) and Tanum (6) seem to be attached or related

to ships (Figure 12). Most of the jumps or volts are executed over ships. Adorants are mostly inside ships in Kville, Svenneby, and Bottna (twelve of sixteen sites), but in Tanum more of them occur just outside ships (twenty-eight of forty-four sites).

Furthermore, most of the lures and lure blowers are depicted in or just beside the ships but their representation varies (Figures 9 and 11). In the parishes of Kville, Svenneby, and Bottna, there are about thirty-five ship representations with lures from the EBA and thirty-three from the LBA, whereas in Tanum the number – twenty-two – remains the same in both periods. The difference is that all the lure blowers from the EBA are seated in the ships, while during the LBA some are depicted in a more individualistic manner just outside the ship, sometimes enlarged and horned; well-known examples are those from Kalleby and Fossum (Tanum 248, 255, and 405). In both the EBA and the LBA, however, the majority of lure blowers are located on ships. Although LBA ship representations are more numerous in these areas, lures seem to be a more common trait in the EBA. It is noteworthy that no lure blower has been related to the PRIA.

Another intriguing observation concerns the large depictions of humans in the areas of northern Bohuslän where rock art is plentiful. On higher ground, away from the shore, the human figures are abnormally large in relation to the ship images (Figure 11). These depictions may contain a social statement, as I will discuss below.

DISCUSSION

Scandinavian Bronze Age rock art may in general be regarded as a distorted and idealized representation of a social world, not a direct description of concrete social matters. However, the rock-art ships do

convey important social information and this study has revealed some prescribed social features, such as the number and positioning of crew in the ships. These social dimensions may, indeed, reveal something about the prehistoric societal norms that could have existed around the maritime world in Scandinavia during the Bronze Age.

Regardless of the area or chronological period, the rock-art ships clearly follow a strict dimensional code. In general, the hull makes up 70 per cent of the craft's total length, whereas the prows and keel extensions fore and aft account for the remaining 30 per cent. This study has shown that the average Bronze Age ship was depicted with a crew of six to thirteen. This may be indicative of a common practice or tradition behind the size and construction of local ships in the Tanum and Kville areas during the EBA to LBA. These craft may have represented prevailing norms and ideals among the local social units as regards the building and crewing of ships for more everyday maritime missions: short and medium-distance transport, trading, or communication. The large ship images in turn, with numerous crew or crew with clearly defined positions in the ships, including elevated or enlarged individuals with warrior attributes, may be regarded as military or ceremonial craft, such as war canoes, staged and used for special maritime events.

Furthermore, the comparisons with archaeological data indicate that the large Bronze Age ship images with many crew strokes could have been based on real boats. This contradicts those religiously oriented interpretations of rock-art ships as primarily fictional representations with no reference to a maritime reality. The proportions of the hull, stem, and prows on the rock-art ships correspond very well with those of the Hjortspring boat, which may indicate that the rock-art ships could

have been based on a similar plank-built tradition. The general similarity between the Hjortspring boat and the ship depictions on the rocks supports the hypothesis of a continuous ship-building tradition in Scandinavia from the EBA to the PRIA (Crumlin-Pedersen, 2003b: 228; Kvalø, 2004; Østmo, 2005).

Another point worth noting is that the Hjortspring boat has been interpreted primarily as a highly effective war craft rather than as a 'functional' craft (Crumlin-Pedersen, 2003b). There are indications that the rock-art ships represent a similar military function. One is the mentioned correspondence between the proportions of the rock-art ships and the Hjortspring boat (Ellmers, 1995; Randsborg, 1995). Another is the depiction of large craft with large crews. A third is the combat scenes with armed warriors in and adjacent to the ships. The representation of conflict, power and mobility is a very obvious trait of many rock-art sites from the LBA to the PRIA.

I have already mentioned that it is logical to assume that the most common rock-art ships represented more standard prototypes for regular maritime missions (e.g. Crumlin-Pedersen, 2003b: 232; Ling, 2008: 188, 253). They are, however, very different from the few depictions of fishing vessels on the rocks, but have the same general features as the larger 'war canoes'. This might indicate that the common smaller boats could have operated in real warfare. In this context it is worth mentioning Kristiansen's ideas about Bronze Age warfare, for instance that Bronze Age fighting units consisted of small warbands or raiding expeditions (Kristiansen & Rowlands, 1998: 199). Thus, in a real conflict it may have been more rational to attack an enemy with several smaller ships than just one large vessel, as this would have constituted a less vulnerable and more mobile and effective force. Moreover, in a real conflict, several small ships could have supported a larger vessel. In fact, many

rock-art scenes depict smaller ship images positioned around a larger ship, as if they were supporting it.

Another theory is that the most common ships represent local social units or households. Lindström (2009) stresses this aspect regarding the ships from Sweden's second densest rock-art area – the Uppland region. It is interesting that the rock-art ships there seem to have been crewed in a similar way to those in Bohuslän, with a crew of six to twelve. In line with this, Lindström (2009) claims that the number of crew in the rock-art ships roughly corresponds to the number of Bronze Age households that constituted the smallest settlement units in the landscape. Moreover, these smaller social units could have been incorporated in a larger 'chiefdom', corresponding to an area about 25 km in diameter (Kristiansen, 1998; Artursson, 2009; Lindström, 2009). This may, then, have comprised about ten small units and a population of about 1000–1500. Social, political, and ritual aggregations would have been important features for such chiefdoms and it is tempting to assume that the rock-art areas with a maritime location were used for this purpose (Lindström, 2009).

With regard to the common smaller ship depictions on the rocks, it is also interesting to consider the outcome of Bradley's study of ship settings on the island of Gotland, dating to the LBA (Bradley et al., 2010):

Most of the ship settings on Gotland depict small vessels with crews of under twenty. Sometimes they show considerably fewer people. The same applies to most of the rock carvings in South Scandinavia which feature ships with a similar number of individuals on board.

(Bradley et al., 2010: 53)

To return to the rock-art ships in Bohuslän, the general difference between EBA and LBA representations of humans

on these ships is that the former tend to be anonymous and collective, whereas the latter are more socially stratified, with staged representations of warriors and crew. These differences may be related to changing perceptions of society and the individual. During the transition from the EBA to the LBA, southern Scandinavia underwent some major geopolitical changes that might be explained by an eastward extension of the Nordic Bronze Age due to new exchange networks as well as an over-exploitation of soil in the west (Kristiansen & Rowlands, 1998: 96–97). This may have triggered hostile situations. It was also during this transition that the first antagonistic scenes appear on the rocks.

There are several ship scenes from the LBA which may indicate that norms of social inequality were formulated and performed in the ships. The clearest examples depict enlarged warriors together with numerous smaller anonymous 'collective' crew strokes. The articulated differences in the size, attributes, poses, gestures of the anthropomorphic representations in the ships may serve as a starting-point for a further discussion of rock art's manifestation of social differentiation. There are also cases where social functions and positions, such as steering and manoeuvring, seem to be represented in the boats. During the EBA, this is done with two single crew strokes in elevated positions fore and aft, possibly signifying the helmsman and the stemsman, while during the LBA there are pronounced figurative differences, such as enlarged and horned warriors fore and aft.

A tempting assumption concerning the panels in the maritime zone is that some of the rock art in Bohuslän was produced in accordance with maritime, martial initiation rites, that is, rites for maritime tasks such as sea ventures, involving maritime skills combined with martial arts

(Ling, 2008; Ling & Cornell, 2010). For instance, many maritime actions, such as rowing, paddling, and winching, require accurate timing, orchestrated by oral, bodily or rhythmic performances (Weibust, 1958). Consequently, rock-art ships with crew in kneeling, sitting, or other poses, raising paddles or weapons, or blowing lures, may be related to social and ritual concepts of group behaviour or group cohesion (Figures 2 and 10). Furthermore, these maritime codes, conceptions and symbols were organized, manifested, and ordered in relation to the ship. All these indicate that these societies were oriented towards the maritime realm, which may have both formed and influenced social relations. In this context, it is also worth considering ethnographic and historical accounts of rituals performed at the shore in connection with sea missions such as long-distance travel and trade, warfare, launching of ships, and deep-water fishing (Malinowski, 1922; Weibust, 1958; van Ginkel, 1987; Helskog, 1999; Kristiansen, 2004; Westerdahl, 2005).

In Bohuslän, the majority of rock-art ships were made at maritime locations and on these panels the human representations seem to be more or less proportional to the ship images. On higher ground, away from the shore, the human figures are abnormally large in relation to the ship images (Figure 11). This spatial variability is probably of social significance. This indicates that the maritime grounds could have worked as a space for collective maritime aggregations and interactions, represented by the 'collective' ship depictions. On higher ground, the abnormally large humans in relation to the ships could indicate a space in which more individual actions and positions were of great importance. Thus, individual social action and collective action at different levels and in different settings in the landscape,

ranging from the household to the crew of a ship, were all socially relevant to Bronze Age society in Bohuslän, and the rock art may reveal some of this social structure. For instance, heavy maritime labour, such as ship-building, warfare, long-distance travel and trade, must have been dependent on other levels of social organization, such as the household. The ship may have acted in some way as a collective and unifying feature, but also as a demanding and alienating feature. In this context, the rock-art could have served to accentuate and manifest the agency of the maritime social world and the generic code of fighting, and even, to some extent, to make this ideology more dominant.

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Canoës de guerre ou unités sociales? Représentations humaines dans les bateaux de l'art rupestre

L'art rupestre scandinave est considéré généralement comme représentation idéalisée d'un monde social, et non pas comme une description immédiate de questions sociales concrètes. L'art rupestre transmet toutefois d'importantes informations sociales qui exigent des commentaires plus approfondis. La présente étude traite de presque 1700 représentations de bateaux incluant des représentations humaines en Suède occidentale. Ces bateaux comptent en moyenne un équipage de 6 à 13 individus, ce qui pourrait correspondre aux idéaux en vigueur. Les grandes représentations de bateaux avec de nombreux membres d'équipage dans des positions clairement définies montrent probablement des canoës de guerre, mis en scène pour des événements maritimes spéciaux. Les recherches montrent que les proportions visuelles des bateaux rupestres sont similaires à celles du canoë de guerre préhistorique de Hjortspring en Danemark. On soutient que la pratique de graver des bateaux aurait pu servir à manifester l'agentivité du monde social maritime et, dans une certaine mesure, confirmer cette idéologie. Translation by Isabelle Gerges.

Mots clés: art rupestre, bateaux, représentations de bateaux, représentation humaine, canoës de guerre, inégalité sociale, rites d'initiation maritimes, monde social maritime

Kriegskanus oder soziale Einheiten? Menschliche Darstellungen auf Schiffsabbildungen der Felsbildkunst

Skandinavische Felszeichnungen sind grundsätzlich als idealisierte Abbildungen einer sozialen Welt, nicht als eine direkte Abbildung konkreter sozialer Inhalte zu betrachten. Dennoch transportiert Felsbildkunst bedeutende soziale Informationen, die nach eingehender Kommentierung verlangen. Die vorliegende Studie behandelt nahezu 1700 Schiffsdarstellungen mit Abbildungen von Menschen aus Westschweden. Allgemein werden die Schiffe mit einer Crew von sechs bis 13 Individuen dargestellt, dies ist als das damals vorherrschende Ideal einer Schiffsbesatzung anzunehmen. Bei den großen Schiffsdarstellungen mit verschiedenen Besatzungen in klar definierten Positionen wird es sich um Bilder von Kriegskanus handeln, die für besondere maritime Ereignisse inszeniert wurden. Die Studie zeigt, dass die visuellen Proportionen der Felsbild-Schiffe denen des prähistorischen Kriegskanus von Hjortspring (Dänemark) ähneln. Es wird erörtert, dass die Praxis des rituellen Einmeißelns von Schiffsdarstellungen dazu gedient haben könnte, die Einwirkung der maritimen sozialen Welt zu manifestieren und in gewissem Maße diese Ideologie zu bestärken. Translation by Heiner Schwarzberg.

Stichworte: felszeichnungen, schiffe, menschliche darstellung, kriegskanus, soziale ungleichheit, maritime Initiationsriten, maritime soziale welt