



Maritime representations in vertical space

One of the most fascinating rock art sites in Bohuslän is situated in the inner parts of the Valby kile bay, within the Flögen area in Solberga parish (Fig. 1). In this narrow bay there are several prehistoric remains (Fig. 2). Inside a radius of 500 metres from the rock art panel there are two barrows, a prehistoric grave field and a prehistoric settlement. A cluster of cairns is located about 1,5 kilometres northwest of the rock art site, at the northern inlet of the bay. Moreover, two gallery graves are situated about 2 kilometres northeast of the panel Solberga

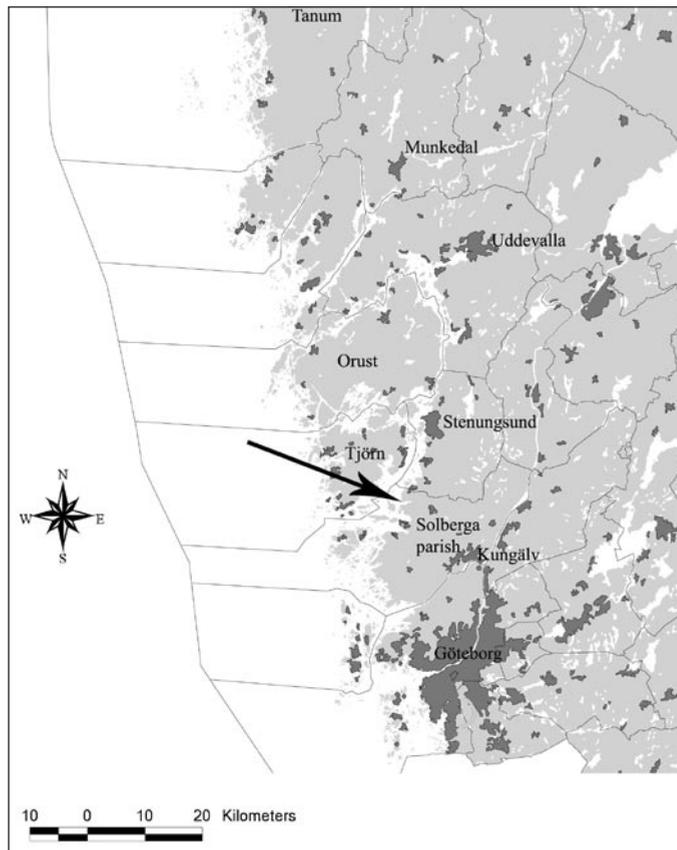


Figure 1. The study area, in Solberga parish, in the southern parts of Bohuslän. Maps by Johan Ling.

50:1, and a figurative rock art site is to be found about 1 kilometre further northeast with a cluster of 26 cup marks sites. One of these rock art sites encompasses no less than 700 cup marks and some ring marks.

The rock art panel, Raä 50:1 Solberga, is situated approximately 100 metres north of the present sea shore, on a vertical outcrop of gneiss just a few metres from a farmstead (Fig. 2). The location of the rock art panel is rather unique because one can actually observe the sea



Figure 2. The map illustrates the area Flögen with the rock art site Raä Solberga 50:1, marked with an arrow, and the other prehistoric remains in the landscape. Black dots represent figurative rock art, white circles with black dots demonstrate cup mark sites, black triangles represent cairns and the house shaped figures are gallery graves. The present coast line is marked by a black contour; the grey area shows the shoreline during the Early Bronze Age, at 10 metres above sea-level.

from it. Furthermore, the rock art panel on the vertical outcrop is sited between 4-5 metres above ground. The only possibility to reach the highest part of the engraved panel today is by ladder or sky-lift, which was used during the documentation of the panel (Fig. 3).

The platform of the sky lift was raised 3-4 metres above the ground, to a total height of 10,7 metres above sea-level, which more or less must have been the altitude from which the carvings once were pecked. The panel encompasses an area of 6 x 1 metres facing straight south towards the shore of the bay (which is oriented east-west).

The carvings were discovered rather recently by coincidence by Mrs Märta Andersson who lives on the adjacent farmstead, although she has lived by the vertical cliff with the rock art since the 1950s. Lately she had been looking at a large loose boulder, worrying it would fall down. One evening when the sun was shining on the panel from the west, creating an oblique light, she discovered several ship carvings that, in the ray of the light, had “popped out” of the rock. The carvings were unknown before this event, as they are hard to see due to the rough rock surface. The rock had accordingly kept this secret for almost 4000 years.



Figure 3. The photo illustrates Lasse Bengtsson documenting the panel. It also demonstrates the altitude of the rock art and the sky lift. During the documentation of the rock art site the sky lift was raised 3-4 metres above the ground, to a total height of 10,7 metres above sea-level, which must more or less have been the altitude from which the carvings once were pecked. Photo: J. Ling.

The figurative carvings on the panel

The panel consists of 6 rather large ship carvings about 0,5-1,3 metres long and 0,2-0,5 metres high. It also encompasses another fragmentary ship carving, an animal figure, and some presumptive cup marks (Fig. 4).

The four ship carvings on the highest part of the panel demonstrate typical features of the Early Bronze Age (EBA), such as inward turned stems and horizontal or slightly upturned keel extension and crew lines (Fig. 4). The largest ship is attributed with a half circular bowed stem that ends in a point or dot. These traits are typical of the earliest ship carvings, which may be related to Montelius period I-Ib (Kaul 1998:88; Ling 2006). Several ship carvings located in

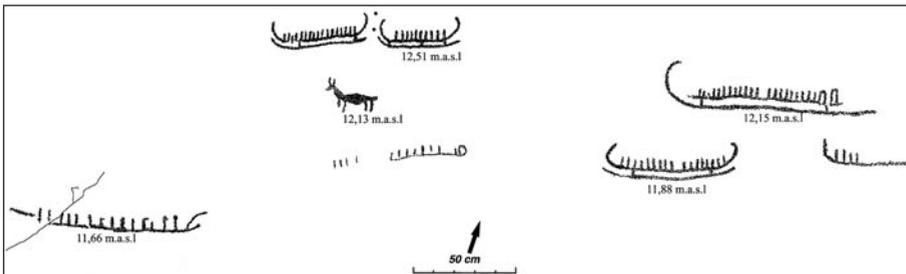


Figure 4. The rock art panel in Flögen, Raä Solberga 50:1. The altitudes of the most significant rock art images are demonstrated

the Tanum and Kville areas in northern Bohuslän have also been related to this period on the basis of similar traits (localities such as Tanum 22, 66, 1740 and Kville 156,157) (Almgren 1987; Kaul 1998; Kristiansen 2002; Ling 2004, 2006). However, an atypical feature of this ship is the inward turned stem which seems to have been made as a direct extension of the keel line. The other three ship carvings, on the upper part of the panel, are not attributed with the same shape of stem, rising from the keel line. Regardless of this detail they show similar general traits, such as inward turned stems, a horizontal or slightly upturned keel extension and similar crew lines (Fig. 5). These characteristics also indicate an early date of these particular ship carvings, presumably Montelius period I-II (Kaul 1998:96-97; Ling 2006).

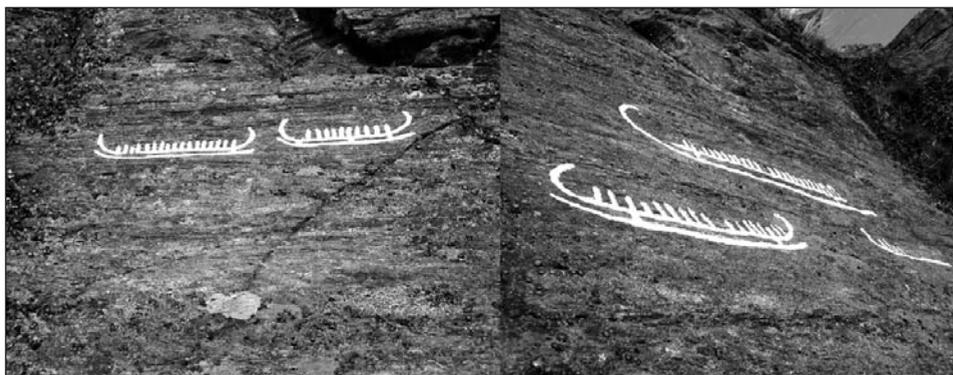


Figure 5. The ship depictions on the higher part of the panel. Photo: J. Ling.

The ship carving in the lowest section of the engraved panel, at 11,66 meters above sea-level, demonstrates quite dissimilar forms and traits (Fig. 4). In contrast to the ships higher up on the panel, it is equipped with an outward turned stem. The crew strokes are also quite different from those of the other ship carvings on the panel, some of them being more anthropomorphic or zoomorphic in character. The outward turned stems also suggest a later date of this ship carving, presumably Montelius period III-IV. Thus we have found two general criteria that distinguish this particular ship carving from the others, namely the altitude and the style.

The depicted animal figure, beneath the two highest ship carvings, may also contribute in a dating discussion (Fig. 4). It represents either a bull or a horse. In fact, in the areas of Tanum, Kville, Svenneby and Bottna bull depictions often occur on low rock art panels with ship depictions from the EBA (e.g. Tanum Raä, 12A, 25, 62, 311, 304, Bottna Raä 334) (Högberg 1995; Fredsjö *et al.* 1971) or on panels on higher ground with ship depictions from EBA (e.g. Kville raä 161-163, Svenneby raä 214) (Fredsjö *et al.* 1971, 1981). Horses, the so-called sun-horses, are also to be found on panels with ship carvings typical of the EBA, such as Tanum 311, 210 (Kaul 2004). The most striking example of this combination is, doubtless, the sun-horse from Balken in Tanum parish, Tanum 273. Several ship carvings from the EBA also occupy this panel. Moreover, the representations of horses on bronze items and in graves from the EBA, such as the Chariot of the Sun from Trundholm, the bronze horse figurines from Tågaborg, or the horse representations from EBA graves such as Sagaholm and Kivik, (Goldhahn 1999:73-76; Kaul 2004) may also contribute to the chronological and symbolical interpretation of the animal figure at the panel.

The symbolic combination of the ship carvings and the animal figure will be discussed further in the interpretative part of the article. First, there are significant facts about the engraved panel that have to be mentioned.

The pecking technique of the rock art images

Parts of the vertical gneiss outcrop with the rock art panel in the Flögen area, Raä Solberga 50:1, are severely weathered. Despite this condition there are some interesting observations regarding the pecking technique of the different images. First, the lowest situated ship depiction on the panel seems to have been pecked with quite a different technique than the depictions higher up, as a rougher and broader pecking technique has been used (Fig. 4). On the other hand, this part of the panel is considerably more weathered. Regardless of this condition, the execution of this depiction is clearly different from the ones higher up. Regarding the latter images it seems as if both the ship depictions and the animal are executed in a similar way, in a more distinctive, smooth and graceful technique. However, the ship depiction on the highest left part of the panel is pecked with the most distinctive technique.

In summing up these observations the following conclusions can be made. The ship depictions at the top of the panel demonstrate not only a similarity regarding style but also in terms of pecking technique, especially in relation to the ship depiction in the lowest part of the panel. The lowest ship depiction (at 11,66 metres above sea-level, see Fig. 4) diverges considerably both in its technique and style.

The altitude, the making and the dating of the rock art images in relation to shore displacement

Let us turn to one of the main topics of this analysis, namely the altitude of the rock art images at Flögen. The altitude of the panel ranges from 11,66-12,51 metres above sea-level, and the entire panel has accordingly an altitudinal span of 0,85 metres (Fig. 4). The lowest ship depiction, at 11,6 metres above sea-level, equipped with an outward turned stem, could have been made by a person standing on the small shelf in the outcrop, situated beneath the engraved panel at 9,9 metres above sea-level. During the documentation of this particular carving this shelf was actually used as a platform.

However, the rock art higher up at 11,9-12,5 metres above sea-level was impossible to reach and document from this position, and required a ladder or sky-lift. Moreover, the shelf beneath the rock art is also too small and too steep for a ladder or any other construction.

Consequently, three general criteria distinguish the higher ship carvings from the lower one; namely, the altitude, the technique and the style. These different aspects in relation to the shore displacement data of the area may therefore contribute to answer the following questions: How were these carvings originally made? And to which chronological period could these be related? Could data regarding the shore displacement shed more light on these issues?

The shore displacement data of the area demonstrate that the shoreline was about 11 metres above sea-level in the beginning of the Bronze Age and about 7 metres towards the end (Fig. 6) (cf. Påsse 2003; Berntsson 2005:33). It is to be noted that the difference between high and low tide at the coastal strip of central and northern Bohuslän is very slight, only about + 0,3 metres. However, the fluctuation increases during heavy currents and bad weather. Thus the normal maximal high tide is then calculated to + 0,43 and the normal low tide is – 0,52

metres (Rydberg 2000). However, these values are anomalies, occur once or twice per month and often succeed each other during days of low pressure. It is impossible even for today's forecasters to predict at what specific hour the low tide will turn in. Therefore the issues are more connected to weather and currents than tides governed by lunar movements. It is likely that the same conditions existed in the area during the Bronze Age (Rydberg *pers. comm*). It therefore seems far more logical to assume that the rock art was made without the interruption of the tides (Ling 2006).

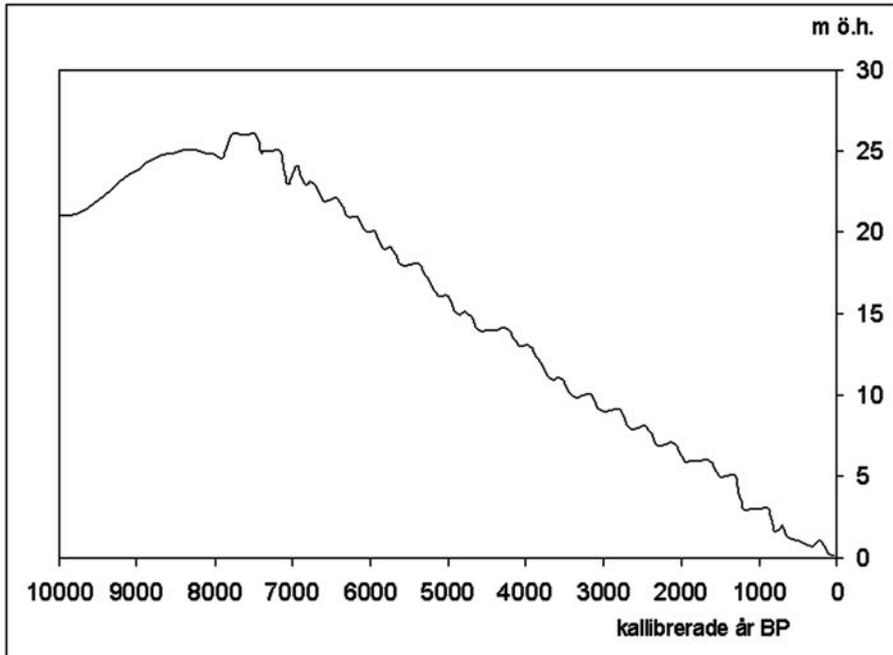


Figure 6. The shore displacement data of the area, in calendar years BP. After Påsse 2003.

First of all, this indicates that these carvings could not possibly have been made during the Late Neolithic period II (LN II), the shoreline then being about 12,5-13 metres above sea-level. The highest ship depiction, at 12,51 metres above sea-level, could theoretically have been made by this time but only during low tide, which seems fairly unlikely. It is more reasonable to assume that this ship was made when the tides no longer affected or interrupted the pecking process.

This condition could have been existent during the beginning of the EBA because the shoreline was then closer to 11 metres above sea-level (Fig. 6). During the EBA period III the shoreline had retreated to approximately 9-10 metres above sea-level. Finally, during the end of the Bronze Age the shoreline had retreated to about 7 metres above sea-level (Fig. 6). Based on the shore displacement data a maximum dating of the rock art panel could be connected to the period LN II. The engraved panel was raised from the sea at the transition between LN II - EBA period I. During the preceding EBA phase it would have been possible to carve on the entire surface.

The shoreline parameters of the Bronze Age could not directly determine the maximum age of this particular rock art site (Fig. 6). However, in the following we will argue that the altitude, the position and the style of the carvings are all factors indicating that the rock art images were made during the EBA.

To be able to document and understand the process of making the carvings on the higher part of the panel we had to use a sky-lift which was raised to 10,5-11 metres above sea-level. In fact, the shoreline had this altitude during the EBA Montelius period I-II (Fig. 7). This is highly interesting because it correlates to the comparative dating of these particular ship depictions (see above). Moreover, regarding the making of the lowest ship depiction at 11,66 metres above sea-level with typological traits of the EBA Montelius period III, the most favourable position for this purpose was to use the small shelf beneath the carving at 9,9 metres above sea-level. Interestingly enough, the altitude of the shoreline was actually about 9-10 metres above sea-level during the EBA Montelius period III.

Thus, the conditions for making the rock art correlated with the comparative dating of the ship depictions of the panel. In fact, the altitude, the technique, and the style of the rock art in relation to shore displacement all speak in favour of the assumption that the rock art images were made on different occasions during the EBA period I-III, from the sea, presumably from a boat (Fig. 7). Could this actually be the case?

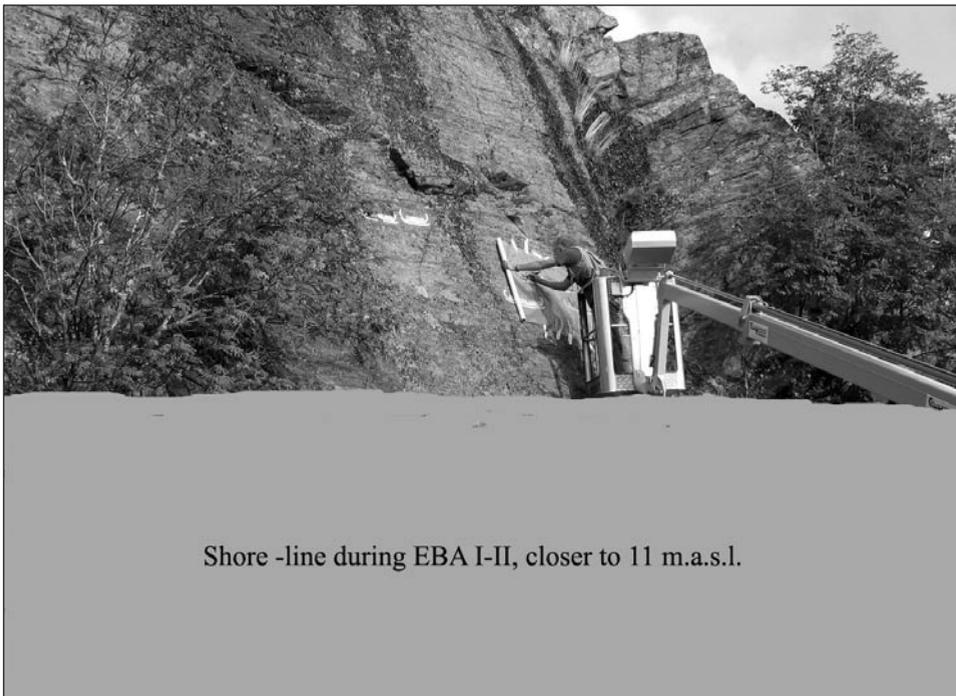


Figure 7. An illustration of shoreline during the EBA I-II, at about 11 metres above sea-level, in relation to the rock art panel. This must, more or less, have been the altitude from which the carvings were pecked. Photo: J. Ling.

Interpretation

The inaccessible setting of the rock art on the vertical cliff leads us to the last subject which also may highlight the dating issue; how were these carvings originally made? In any case, the carver must have used the sea level as an infrastructure, which means that the carver worked the surface from a boat or standing on ice (Fig. 7). The carver could of course have used a rope fixed from above while producing the carving, but this seems too complicated, especially as the shoreline was just beneath the carvings. A more logical assumption would be that the carver worked the surface from a boat or from the ice. In this context the boat and the ice theory seems considerably more logic than the “rope theory”. In fact, the boat or the ice theory on making rock art has been proposed regarding the rock art sites in Scandinavia situated on vertical cliffs adjacent to water (Brunius 1868; Gjessing 1936; Bakka 1975; Østmo 1990; Mandt 1991; Sognnes 2001, 2003). The closest parallel to the situation of the rock art images in Flögen are actually the rock art localities at the lake Tyrifjorden, at Berget, northeast of Oslo (Østmo 1990:35–44). Here several ship depictions from the EBA Montelius period I-II are situated on vertical outcrops approximately 1,7-1,8 metres above the surface of the lake (Figs. 8-9). There are indeed many similarities regarding the situation, the altitude, and the style between the localities at Berget and the one in Flögen. Moreover, according to Einar Østmo the most logical way to have made the engravings at Berget must have been from a boat (Østmo 1990).



Figure 8. Berget III. Towards south. After Østmo 1990.



Figure 9. *Berget IV. Towards south. After Østmo 1990.*

If we first consider the “boat theory”, this requires some basic criteria, for instance that the boat had to be firmly anchored and steadily fixed by ropes. This praxis is, indeed, very basic and crucial for any kind of action at sea. This also requires some physical prerequisites in order to attach the boat to the cliff. At first glance, it does not seem as if this cliff provides any of these conditions near the rock art panel. However, above the carvings there is a small shelf which could have been used as a hold during the pecking process.

If one considers the warm days during late spring and summer time, when the sea is very still and calm, especially in inner bays like this, it would have been rather easy to work the surface from a well anchored boat. As the climate was warmer during the Bronze Age, conditions like this may have been even more frequent. Bearing this in mind, much speaks in favour of the boat theory.

The ice theory is also reasonable to some extent, but it involves some considerable implications that could contradict the theory in question. First, during the Bronze Age the area with the carving was not just the narrow bay it is today. Instead, the carvings were sited in a large bay area that comprised an area five times as large as and also deeper than the existing bay (Fig. 2). The possibilities of this rather extensive and deep bay being iced over would therefore be slim. Moreover, during the Bronze Age the climate was warmer overall, up to 1-2 degrees. Thus,

it was not likely that ice thick enough to walk on would form. Finally, if there had been ice beneath the carvings it would, in fact, have been very fragile at this very spot, because ice is at its most fragile near vertical outcrops. However, there are some facts that speak in favour of the ice theory as well, not least a solid and firm ground where one could stand or sit while making the carvings. The panel has also some prerequisites in favour of this hypothesis. It faces south, and just above the carvings there is a small shelf which protects the panel from water. According to Mrs. Andersson at the farmstead, the panel is free from ice even during the coldest days of the winter. Moreover, the authors made some additional documentation of the carvings during a cold winter day and noticed that even if there was ice on other parts of the panel, the carvings were ice free. These conditions may actually speak in favour of the ice theory.

All together, there is much more in favour of the boat theory than the ice theory. However, the strongest argument may be the time and the occasion for the pecking of the images. The average time consumption of making one of the larger ships on the panel may amount to 8-10 hours (Bengtsson 2004). This means that the surface was worked on several occasions. It is also logical to assume that rock art in general was made during the ice free season (Helskog 1999:93). In this case, the rock art at the vertical cliff in Flögen could have been made on a repeated basis, presumably from a boat, in accordance with the conditions of interaction and communication with the sea.

The content and situation of the panel may also speak in favour of the assumption that these images were meant to reflect the actions, conditions, traditions, or ideals at sea. In fact, this particular rock art site could only have been visible from the sea, at least from a short distance. Moreover, the ship depictions also have the greatest impact and dominate the panel not only by their size and frequency but also with their elaborate styles and utterances. Consequently, the making, the situation, and the content of the panel could therefore be connected to human interaction with the sea.

These assumptions lead us to the key issue of this study. For what purpose, meaning and action were these images made? The purpose of making rock art must in general be regarded as a ritual and/or a symbolical action. Nevertheless, the situation and content of this maritime panel calls for specific interpretations. Even if the majority of the rock art seem to have been made close to the sea in Bohuslän during the Bronze Age (Fig. 10), only one other site in the Tanum area, Tanum 234, demonstrates a similar extreme maritime connection as the site in question (Ling 2006). If we assume that this panel was made from a boat on several occasions, and that the panel was only accessible and visible from the sea during the Bronze Age, what kind of action could the making of the rock art images have been connected to? In this context, it seems logical to relate this action to maritime praxis and rituals.

There are several historical and ethnographic accounts of rituals performed in connection with different missions at sea such as fishing, transport, communication, warfare, and travels (Solheim 1940; Malinowski 1961; Weibust 1958; Ginkel 1987; Hultkrantz 1992; Westerdahl 2005). The seasonal occupation at sea has traditionally been regarded as a severe contrast to ordinary terrestrial life and work. Hence a totally different world confronted people at sea. A world filled with dangerous natural forces such as harsh weather, waves, rocks, and shoals. But the sea was also a world of great possibilities, utilities, hopes, and desires. In this context it is logical to understand that extraordinary disciplines, rituals, skills, initiations, norms, and

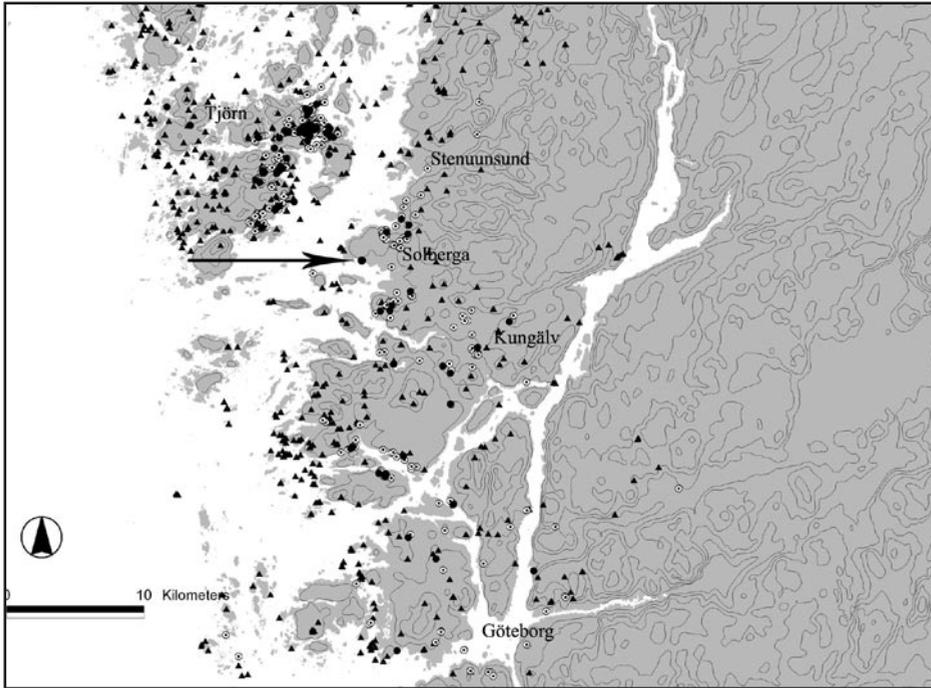


Figure 10. A larger view of the area during the EBA Montelius I-II, with a shoreline at 10 metres above sea-level. The rock art locality Raä Solberga 50:1 is marked by an arrow. White circles with black dots represent cup mark sites, black triangles represent cairns. Note that a majority of the figurative sites, illustrated with black dots, seem to have been sited close to the shore. Note also the distance and relation between the rock art site Raä 50:1 Solberga, and the concentration of rock art at the island of Tjörn.

demands have fulfilled a special need for coping with the hazardous and daring circumstances at sea. Anthropologists such as Arnold van Gennep, Boris Malinowski and Rob van Ginkel emphasize concepts such as anxiety, ambiguity and liminality to describe the socio-ritual or socio-structural behaviour, such as “rite de passage” or taboos, used at different missions at sea (Gennep 1960; Malinowski 1961; Ginkel 1987). “Seamen have to cross the land - sea boundary time and again and conduct thereby transitions from one physical and cognitive domain to another. From the time of their departure until the moment of their return they are liminal personae who must serve many prohibitions” (Ginkel 1987:62).

The frequent ship representations during the Bronze Age, in rock art, on bronze items in graves and grave forms, also indicate that human action and mentality seem to have been preoccupied with and orientated towards the sea (Artelius 1996; Kaul 1998; Kvalø 2000; Nordenborg Myhre 2004; Kristiansen & Larsson 2005). The making of the rock art images on the vertical outcrop in Flögen may also have been incorporated in some kind of maritime ritual or initiation rite and could subsequently have been made either before a mission at sea or after the arrival from such a mission (Fig.10). Gennep described a similar structure of maritime ritual behaviour as follows: “The acts of embarking and disembarking are often accompanied by rites of separation at the time of departure and by rites of incorporation upon return” (Gennep1960:23).

How should the animal figure, the horse or the bull depiction at this maritime panel be interpreted? In this composition, the animal depiction may have served as an alternative, but nonetheless important, metaphor of power, and in combination with the ship features it may have completed the ritual composition, function and significance of the engraved panel (Kaul 1998, 2004).

Conclusion

- The altitude, the technique, and the style of the rock art in relation to shore displacement speak in favour of the fact that the rock art images were made in different periods during the Bronze Age, presumably EBA period I and III.
- During the Bronze Age this particular rock art site could only have been visible from the sea.
- Furthermore, the carver must have used the sea level as a favourable structural element in the sense that he/she most likely worked the surface from a boat or perhaps from the ice.
- The content and situation of the panel may also speak in favour of the fact that these images were meant to reflect the actions, conditions, traditions, or ideals at sea.

On different symbolic and pragmatic levels the seascape may have inspired and affected the making, the choice of form, the position, and the content of rock art during the Bronze Age. However, there are also areas with lots of carvings on higher ground at some distance from the sea. It is therefore important to define and distinguish the different patterns and relations of rock art. A pattern of interest is that complex rock art sites tend to be situated at accessible and communicative locations in the landscape, away from the settlement. This applies both to the “maritime” rock art as well as the rock art on higher grounds, while less complex localities tend to be sited closer to settlements and graves (Ling 2004, 2006; Bengtsson & Strid 2005). The element of water seems to be a general aspect of rock art, both in terms of the localities situated on higher ground and the maritime sites (Bengtsson 2004). Hence the rock art on higher ground seems to have a close spatial relationship to springs, streams, bogs, creeks, and rivers, and water symbolism and rock art seems thereby to be a recurrent theme (Bengtsson 2004, Coles 2005).

The situation of this particular rock art panel, adjacent to the present sea, indicates that there are probably a vast number of rock art localities with a similar setting that have not been found yet, because the documentation and inventory of rock art localities have traditionally been done in higher situated “agricultural” areas. Finally, based on the maritime situation of this panel, the authors of this article are planning a specific survey in lower situated areas in Bohuslän, areas that used to be straits, islands, isthmuses, bays, or lagoons during the Bronze Age (Fig.10).

Summary

The land uplift phenomenon has always challenged the interpretations of the original setting of rock art in the landscape of Bohuslän. The aim of this article is to communicate the situation and the documentation of one of the most fascinating rock art sites in Bohuslän. This particular rock art site and its unique setting concludes not only the land uplift process, its situation opens up for new spatial, social, chronological and ritual issues regarding the

rock art in Bohuslän. The subjected rock art panel is situated only some 100 metres from the present sea shore, on a vertical outcrop of gneiss. Furthermore, the rock art panel is sited between 4,5-5 metres above the ground. The only possibility of reaching the panel today is by ladder or sky-lift, which actually was used during the documentation of the panel. The platform of the sky-lift was raised 3,7 metres above the ground to a total height of 10,7 metres above sea-level, and the carvings must have been pecked at this level.

This means that the prehistoric carver probably used the sea level as an infrastructure when he/she pecked the images, either from a boat or from the ice. It is suggested here that the situation of this particular panel reflects maritime interactions, ideals, landscapes, traditions, and rituals.

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