

Narrative Aspects of Images of Spear Use in Scandinavian Rock Carvings

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Researchers have long discussed whether Scandinavian rock art reflects narratives. Their interpretations have frequently been based on inspections of rock art panels combined with knowledge from ethnographic and historical sources. Here, the authors adopt a more focused narratological approach that takes the concept of (visual) narrativity into consideration and draws on studies by literary analysts, cognitive psychologists, and semioticians. Images of spear use in the provinces of Bohuslän and Östergötland in Sweden, given their diversity and indexical qualities, are well-suited to such a study. They reveal different kinds of indexical relationships, i.e. how the spears direct attention to possible targets, arguably corresponding to action scripts well-known to Bronze Age communities. Many spear images may be regarded as mini-narratives and mnemonic devices intended to represent schematized action sequences. The authors suggest that concepts such as iconicity, indexical relationships, scripts, and mini-narratives could be fruitfully employed in research on Scandinavian rock art and beyond.

Keywords: narratology, indexical signs, pictorial narrativity, rock art, petroglyphs, Scandinavia, action script, mini-narrative, spear use

INTRODUCTION

Rock art in southern Scandinavia reveals detailed and expressive images, including ships, animals and humans, and human activities such as big game hunting and combat. For almost two centuries, researchers (Brunius, 1839, 1868; Homberg, 1848; Almgren, 1927; Nordbladh, 1980; Malmer, 1981; Fredell, 2003) have debated whether the images were intended to convey visual stories, or whether they just depict

individual motifs without any obvious narrative connections.

Researchers arguing for the existence of visual narratives in rock art, comparing images to ethnographic and historical sources, have tended to be concerned with the possible symbolic content of the images, though without satisfactory theoretical considerations explaining how narratives may be expressed by images. We believe that a promising point of departure would be to first attempt to clarify the concept of (visual) narrativity by drawing on the approaches of literary analysts, semioticians, and cognitive psychologists.

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In this article, we apply such theories to an investigation of rock images as iconic signs; that is, based on their visual resemblance to what they represent. In particular, we focus on images of spear use and the indexical relationships between the spears and their targets. In our analyses, we concentrate on their relatively unambiguous visual features and action constituents, which can provide methodologically credible and transparent results, rather than presuming elaborate story structures.

Based on these premises, we suggest an approach to the study of visual narratives in rock art from the Nordic Bronze Age (c. 1700–500 BC) in southern Sweden. Even though our examples are taken from Scandinavia, this new method of analysing indexical relationships between images has a wider significance and could be applied elsewhere, especially to figures that show variation in their use of weapons and tools.

NARRATOLOGICAL APPROACHES TO ROCK ART

In Scandinavian rock art research, narratological aspects of petroglyphs have been discussed for almost 200 years. The study of the southern rock art tradition was started in the mid-nineteenth century by scholars such as Georg Brunius (1839, 1868), Lennart Åberg (1839, 1843), and Axel Emanuel Holmberg (1848). Early research indicated that rock art must have originated in prehistoric times, since it did not contain any Christian motifs (for an overview, see Bertilsson, 2015).

According to Brunius, whose major field studies were in northern Bohuslän (on the north-western coast of Sweden), the images represented a kind of pictographic writing. Referring to ethnographic studies, he argued that pictography had preceded symbolic writing systems in various parts of the world. From this

perspective, he regarded that the rock art panels in northern Bohuslän were memorials depicting significant actual events or subjects (Brunius, 1868: 99–102; see also 1839). The pictographic writing was assumed to communicate something that mattered to the contemporary community.

Holmberg (1848) developed Brunius' ideas further and argued that many images were intended to render activities or action sequences deliberately. Moreover, these sequences showed both easily identifiable images (e.g. of humans, ships, etc.) and more ambiguous or non-identifiable examples, which thus seemed to have a symbolic meaning. Like Brunius, he believed some images were signs that belonged to a pictographic system (Holmberg, 1848: 28).

Since these images were made in a distant past, which could not be directly related to existing written sources and traditions, Holmberg was reluctant to give the images a more precise interpretation. He was critical of Brunius' attempt to give specific meanings to certain images, such as his suggestion that a bull symbolized strength (Brunius, 1839). According to Holmberg, we are on safe ground only if interpreting a bull as a bull; as to images without real-life parallels, their meaning was considered to be forever lost (Holmberg, 1848: 31).

In 1927, Oscar Almgren published his seminal work *Hällristningar och kultbruk* ('Rock Carvings and Cult Use'), based on a larger corpus of rock art in Bohuslän (Baltzer 1881–1908). He also relied on a firmer chronological framework which dated the rock art to the Bronze Age (Hildebrand, 1869; Montelius, 1876). Though an archaeologist, Almgren studied rock art primarily from the perspective of comparative religion. His main focus was on the sequences of actions on the panels, in particular in northern Bohuslän, which he regarded as more or less accurate depictions of past fertility rituals. However, he also acknowledged other kinds of

depictions and suggested that the southern Scandinavian petroglyphs consisted of three categories of images: symbolic signs, ritual scenes, and mythological representations (Almgren, 1927: 254). In Almgren's view, it was clear that the images, at least when referring to rituals and myths, related to storytelling.

Although Almgren's work gained wide acceptance, research followed a different path in the 1940s. Researchers tended to concentrate on accurate documentation and more fine-grained dating of the material, as exemplified by Anders Althin's dissertation on the rock art in Scania (Althin, 1945). Such a way of proceeding became even more obvious from the 1960s onwards: a general trend towards more empirical research prioritized documentation, comparisons, dating, and related issues (Burenhult, 1980; Malmer, 1981). Whether the rock art was 'telling stories' was thus often a non-question.

Jarl Nordbladh (1980) analysed rock art in northern Bohuslän from a semiotic perspective. He studied how cupmarks, ships, humans, animals, footprints, and wheel-crosses were combined on the panels, revealing that only a restricted number of the available combinations were used and displayed on the panels (Nordbladh, 1980: 62–63). The recurrent pattern of specific figure combinations indicated, in his view, that rock art was a system used for communication, even though the actual message was not intelligible to modern beholders (Nordbladh, 1980: 41–43).

At the turn of the millennium, a renewed interest in the narrative aspects of rock art is exemplified by the publication *Ships on Bronzes* by Flemming Kaul (1998). Based on a thorough study of decorated metalwork in Denmark, Kaul linked the ships on decorated razors to a story about the journey of the sun. His interpretations—which avoided references to written sources—gained wide acceptance and inspired new

research approaches to rock art (e.g. Kristiansen, 2010).

In 2003, Åsa Fredell published her dissertation, *Bildbroar* ('Bridging Images'), which marked a return to a narrative approach to rock art. Fredell was indeed inspired by a broad range of theoretical sources, including semiotics, and she also compared scenes on rock art with accounts from written sources from Old Norse religion and Indo-European mythology. She mainly considered images as symbolic signs; that is, where the relation between the expression and its content is conventional and culturally specific (Fredell, 2003; see also Fredell & García Quintela, 2010). In her work, Fredell outlined significant characteristics that could indicate forms of pictorial storytelling. These features, such as scenes, compositions, themes, gestures, and certain attributes, are linked through their closeness and orientation in relation to each other. For Fredell, certain attributes could be used to identify specific individuals, gods, or general characteristics, such as strength, wisdom, and fertility. Gestures, on the other hand, are not thought to identify specific individuals, but are considered indicative of feelings and emotions (Fredell, 2003: 179–84).

As this overview shows, a common approach in past rock art research concerned with its narrative aspects has been to analyse images as symbolic signs; that is, where the relation between the expression and its content is conventional and culturally specific. Many researchers have since attempted to relate the motifs on rock art to written sources, such as the Rigveda (a collection of Indian Vedic hymns; e.g. Kristiansen, 2010; Melheim, 2013). The underlying assumption is that there was a cluster of Indo-European myths and rituals shared across a large part of Europe, which can be traced to various sources such as Greek mythology, north European folklore, and Bronze Age

material culture (Kristiansen, 2010: 99). Here, we build on our previous attempts to analyse rock art from the perspectives of semiotics and narratology (Ranta et al., 2019, 2020; Rédei et al., 2019, 2020). In particular, this interpretative framework will be applied to a specific group of motifs in rock art, namely depictions of spear use.

THEORETICAL CONSIDERATIONS

The process of interpreting pictorial signs and narratives

Before we proceed to the analysis of rock art motifs, some theoretical clarifications are appropriate. One of our basic assumptions is that many petroglyphs are iconic signs based on relations of visual similarity, and thus refer to real-life objects and/or phenomena within their context of production (Peirce, 1998; Sonesson, 2008; Skoglund, 2016: 23–38). These signs indeed visually resemble objects, animals, and other phenomena still known to us today. More importantly for our study, human beings are depicted as agents involved in various activities, using familiar tools and weapons. In addition, we can make assumptions about the maker, i.e. that he or she was a person rooted in a Bronze Age culture and that this individual had specific intentions in acts of interpersonal communication. However, present-day viewers will inevitably apply their own background knowledge to make sense of what they observe on the panels.

In some cases, we can (re-)construe each petroglyph, or series of petroglyphs depicting acting figures, as a pictorial rendering of an event or a series of events. In a hermeneutic dialogue, the interpreter strives to understand the point of view of the sender, through the sign, and the sender's context by putting his or her own pre-understanding into play (Eco, 1990,

2003: 124–25). This hermeneutic process is ideally restricted by a 'textual economy' (Eco, 1990); that is, interpretations ought to be constrained by what is actually presented in the object being interpreted. Such an 'economy' also requires a degree of simplicity in the interpretation. As for Bronze Age petroglyphs, information about exact socio-cultural practices is now lost to us. Undoubtedly, such knowledge would be relevant for establishing well-founded and more detailed interpretations, but, even though the intentions of the maker remain unknown, the petroglyphs on the panels exist as iconic signs and thus can form a basis for interpretation.

Narrativity in rock art: a bottom-up perspective

As indicated above, archaeologists have mainly used two methodological strategies when trying to understand the possible narrative content of rock art. While one approach tends to focus on the directly observable, empirical characteristics of the images (e.g. Holmberg, 1948; Nordbladh, 1980; Kaul, 1998), the other also acknowledges written sources from comparable cultures (e.g. Brunius, 1868; Almgren, 1927; Fredell, 2003; Fredell & García Quintela, 2010; Kristiansen, 2010; Melheim, 2013). In the latter case, one might describe these as top-down approaches, which tend to project broader pre-existing narratives on the visible images.

Narrative approaches to rock art, as suggested by various researchers over the last two centuries, have tended to neglect any thorough discussion of the nature or core characteristics of narrativity. What exactly constitutes a narrative? Scholars in narratology, which has become an emerging discipline within the humanities, most notably among literary scholars and semioticians, have traditionally been concerned

with verbal forms of storytelling. Frequently, the representation of a sequence or series of events has been regarded as a crucial (core) condition for storytelling (e.g. Prince, 1982: 4; see Rudrum, 2005: 203), though the representation of only a single event might be sufficient. According to the narratologist Gérard Genette, ‘as soon as there is an action or an event, even a single one, there is a story because there is a transformation, a transition from an earlier to a later and resultant state’ (Genette, 1988, 18–19; see also Genette, 1982). The representation of such single events could aptly be termed ‘mini-narratives’, rather than fully-fledged, elaborated stories or plots.

Be that as it may, non-verbal, pictorial media could also be reasonably claimed to convey stories. Indeed, pictorial storytelling seems to have been a widespread global phenomenon. Well-developed forms of pictorial narratives occurred as early as from the third millennium BC onward, for example, in Mesopotamia and ancient Egypt. Apart from numerous Western examples, we may also find many narrative pictures outside of Europe, such as the Japanese *Tamamushi Shrine* (c. 650, showing the Bodhisattva in a continuous narrative) or from Persia, such as the illustrated version of *Tutinama* (‘Tales of a Parrot’), a fourteenth-century series of fifty-two stories (see also Ranta, 2011, footnote 2).

Stories can be manifested in non-verbal media, including those without (obvious) temporal structure, e.g. static pictorial representations, including rock art (Ryan, 2011; Ranta et al., 2019, 2020). Certainly, Genette’s criterion for ‘mini-narratives’ would permit classifying certain static pictures as narratives if they imply a past and a future or, in a Husserlian sense, are representations of temporarily extended events in terms of retention and protention (anticipation) (see Lewis & Staehler, 2010: 26).

Pictorial storytelling can certainly be achieved by serial, distinct images, in which temporal and causal relations are expressed overtly. Rock carvings, however, are not obviously linked in series and are sometimes even superimposed (Milstreu, 2017) and made at different times (Horn & Potter, 2018). Nevertheless, various forms of depicted actions may be identifiable from our general lifeworld experience. Indeed, we can discern moving animals or human figures engaged in fighting, dancing, ploughing, or hunting. From these images, especially those depicting significant moments in assumed action sequences, extended temporal events may be extrapolated. The comprehension of such ‘monophase pictures’ presupposes the assumption or imagination of a situation before and after the event depicted (see also Ranta, 2013: 8–11; Ranta et al., 2019).

Whether simple or complex, pictorial renderings of narratives seem dependent on the storage and activation of schemata and so-called action scripts, grounded in previous experiences of actions and events. Within cognitive psychology, schemata may be described as general, higher-level mental constructs that incorporate representations of similarities across events or objects, rather than the specificity that make those events or objects unique (Rumelhart, 1980). This lends the ability to generate mental representations stored in long-term memory which have a type-character, to which external things are compared. Not only objects, but also events and actions are subject to schematic and typifying processing. Schematizations of action sequences and their constituents have been called *scenarios*, *frames*, *scripts*, *event schemas*, or *plans* in cognitive psychology (e.g. Schank & Abelson, 1977). These include general, internalized, experientially based knowledge about the order in which specific events, as well as

decisive relations between them (see Mandler, 1984; Bruner, 1990), occurred. Repeated exposures to events and actions, either directly or through descriptions or narrative mediations, leads to the creation of schemata. Schemata and action scripts seem to be crucial for the comprehension and production of narratives in pictures, given their indeterminate meaning compared to verbal media (see Ranta, 2021).

Taking these assumptions into consideration, we suggest that, rather than employing top-down approaches, a bottom-up perspective could provide an empirically solid basis for interpretative, and especially narrative, analyses of rock carvings (see also Ranta et al., 2019).

Accordingly, we should initially attempt to: (i) identify iconic representations of typified objects and subjects; and (ii) identify representations of schematized actions or action scripts.

The latter are arguably not full-fledged stories; that is, several causally or otherwise related event sequences intended to render fictional or historically situated narratives. Instead, they qualify as ‘mini-narratives’ (in Genette’s sense), meant to depict single events implying established action schemas.

The material used for creating pictorial narratives should also be considered. Unlike paper, textiles, wood, and so forth, the practical hardships not only of producing rock carvings, but to experience them, creates a need to be minimalist, and mini-narratives are more likely to develop. On the gneiss and granite outcrops that carry most of the rock art in southern Scandinavia, newly made carvings would stand out brightly against a darker background, but they would darken with time and become difficult to perceive by sight alone. The common practice of re-pecking carvings is a solution to this problem, but is also dependent on being able to perceive the older version to be re-pecked. The low

visibility of the images would encourage a multisensory approach, including tactile ones. This assumption is supported by what seem to be tactile markers, such as elaborate and exaggerated details on some images (e.g. prominent calves on human images and detailed prows on ships), which facilitate both visual and tactile recognition (Skoglund et al., 2020). Piecing together fragmented information from two senses requires time-consuming interaction with the rock surface, which naturally hampers the creation of complex narrative images in this medium.

Based on the above considerations, we shall turn to specific representations of events and actions in rock art, namely the use of weapons, particularly spears.

REPRESENTATIONS OF WEAPONS AND THEIR FUNCTIONS IN SOUTHERN SCANDINAVIAN ROCK ART

Bronze Age rock carvings in southern Scandinavia depict a variety of weapons, including swords, shields, axes, spears, and bows with hafted arrows (Figure 1). Such representations come in two forms: as objects depicted full-size or as objects in miniaturized images, often held by human figures. Most of the full-size swords and axes date to the Early Bronze Age and are concentrated along the Baltic coast of eastern Sweden, while objects handled by humans in miniaturized form include Late Bronze Age examples; they are more widely distributed, but are particularly common in northern Bohuslän.

Swords are predominantly depicted in their sheaths hanging passively from the waistline, bar a few local exceptions (Toreld, 2015), and they are not shown in combat, although combat would be a frequent real-life scenario. Use-wear analyses of Scandinavian Bronze Age swords demonstrate that many swords were used in



Figure 1. The Fossum panel in Tanum, northern Bohuslän, displaying numerous weapons and hunting equipment typical for southern Scandinavian rock art, including swords hanging from the waistline, axes held upright, spears used in hunting, and bows ready to shoot; in the centre, a circular image on the torso of a human may represent a shield. Photograph: Gerhard Milstreu, by permission of Swedish Rock Art Research Archives (ID 32).

combat and warfare (Kristiansen, 2002; Horn, 2013; Horn & Karck, 2019). In Scandinavia, swords are occasionally recovered in hoards, but typically they are found in graves, usually placed close to the inhumed body (Boye, 1896). In rock art, the swords' frequent attachment to humans points to a special significance, while their pragmatic purpose as weapons is rarely shown.

Shields are often represented as a visually integral part of the human body, where a circle replaces the torso. Occasionally the shield is held by a hand away from the body, emphasizing its protective function. Whether bronze shields were used in actual warfare has been a matter of debate (Uckelmann, 2011, 2014; Cowie et al., 2016). New analyses indicate that thin metal shields have a protective function,

although those made of wood or leather would have been more efficient in this respect. Shields are only rarely found in the archaeological record of southern Scandinavia, and exclusively in hoards (Uckelmann, 2011). In rock art, the shields are sometimes depicted in a passive way, attached to a body without its owner facing any obvious threat, while other images show them in combat situations.

Axes are regularly depicted in obviously active use, held in front of the body. In many cases, two or more figures stand opposite each other, holding axes above their heads, seemingly in attack positions. Different kinds of axes, such as palstaves, shaft-hole axes, and ceremonial axes, are represented in rock art (Kaul, 1998; Skoglund, 2017). Although the axes held by humans are regularly depicted as 'active'

objects (raised in action), not as ‘passive’ attachments like swords, there is little variation in the manner they are held or used.

Bows are shown being drawn by humans, and sometimes both upper limbs holding the bow and the arrow can be discerned, thus representing the moment immediately preceding the arrow leaving the bow. Bows are depicted either as hunting equipment, where a human is about to shoot an animal, or as weapons used in combat, where the arrow is directed towards an opponent. Occasionally, bows seem to be depicted without an arrow.

From a narratological perspective, one may conclude that only certain aspects of actual fighting and hunting were ‘worth telling’ or suitable for pictorial display (see Ranta et al., 2020). Furthermore, a sword hanging passively in its sheath does not represent an obvious activity, while an axe raised against an opponent’s head indicates an imminent outcome. Put in another way, different mentally stored action schemata or scripts become activated.

What swords, shields, axes, and bows have in common are relatively stereotypical renderings, with little variation. Spears, however, are displayed in more diverse ways, showing distinct positions and most probably different uses. Such variation in visual expression serves more iconically based meanings, signifying specific uses of an object or situations that differ from other similar uses or states. Formulaic displays, on the other hand, suggest more general and hence conventional (symbolic) meaning, pertaining to abstract classes of objects, people, and events.

Taking depictions of ‘a deer hunter’ versus ‘a king’ as an example, the ‘king’ is signified partly by attributes that have been learned by convention, such as wearing a specific headdress, while images of a deer in combination with a human figure raising a spear can be recognized as

a hunting scenario through resemblance (iconicity). Empirically, conventions make meaning opaque to an outsider, while interpretations based on iconicity are still possible as long as one is familiar with the entities that the images resemble. It follows that similarities and differences between images as such cannot be informative from a purely conventional perspective when ‘insider knowledge’ is lacking: the presence or absence of the attributes of kings means nothing if these do not signify ‘king’ to the onlooker. Variation in depiction, however, is unquestionably a valuable tool in the interpretation of narratives based on iconicity, in the absence of insider knowledge of conventions.

The spear is a special type of iconic image which also has a high degree of indexicality (a ‘pointing quality’; see Figure 2). Indexes are signs that depend on a relation of ‘factoriality’ (part to whole relationship) or ‘contiguity’ (nearness in time or space) to another thing (Sonesson, 2008: 49). For example, a shoe in a shop window indicates that one will find more shoes in different sizes in the store; the shoe displayed is a factorial index of the stock kept in the store. Traces of feet in the sand, on the other hand, indicate that somebody has been there quite recently; the footprints then become indexes for a human based on contiguity. Recognition of the human footprint, in turn, also has an iconic relationship to the human foot, i.e. they look much like one another.

For spears, contiguity is a relation in space where, for example, nearness to the point of a spear directs attention to something, whether displayed or only indicated by the tip and direction of the spear. Accordingly, the image of a spear is an icon that may show indexical relations between the spear and other objects or phenomena. Any use of weapons or equipment depicted in rock art may allude to a wider action sequence (Goldhahn, 2014),



Figure 2. Example of a combat scene depicting humans with spears held above the head, Tanum RAÄ 192, Bohuslän. Photograph: Bertil Almgren, by permission of Swedish Rock Art Research Archives (ID 11815).

and hence is a ‘mini-narrative’, but perhaps more so regarding spear use, due to their enhanced indexical properties as ‘pointy weapons’ and clearly indicated states of transition (in Genette’s terms).

The use of spears in actual fighting is supported by use-wear analysis of 154 spearheads and fifty swords dating to period 1 of the Nordic Bronze Age (1700–1500 BC) found in Denmark, northern Germany, Sweden, and Norway. The sizes and position of notches and damages indicate that spears and swords were largely used in similar styles of fighting; that is, fencing, which includes both cutting and thrusting motions (Horn, 2013; Horn & Karck, 2019). Several ways of using or holding spears are discernible on the rock art panels, which inevitably guide our interpretation and categorization of the depicted actions. The variety suggests that the images of spears have a narrative component because they show

different events, as opposed to the otherwise relatively limited ways of representing other weaponry and hunting equipment noted earlier.

CATEGORIZATION OF SPEAR USE

Two regions were selected to gain an overview of different spear uses represented in rock art: the provinces of Bohuslän and Östergötland in Sweden. Access to relevant samples was provided through consulting the Swedish Rock Art Research Archives (SHFA) online image database (www.shfa.se). The material was selected by using the keywords ‘Anthropomorphic: Spearman’, thus focusing only on spears associated with humans. These images are unevenly spread throughout Scandinavia, and we chose examples from the two regions where such images are well represented. Any panel that included one or

several persons holding a spear was listed and identified by its National Heritage Board ‘RAÄ number’. In one case, in which humans holding spears occurred in two different panels sharing the same RAÄ number, a subdivision was made by adding a letter to the RAÄ number. The use of RAÄ numbers makes it possible to identify the panels using SHFA’s image database and the option ‘Advanced search’ as well as the National Heritage Board’s database, ‘Fornsök (<https://app.raa.se/open/fornsok>), where additional descriptions are offered. Altogether, the material consists of forty-eight panels displaying one or several people holding a spear.

The sites were not visited or recorded specifically for this study, although many of the sites in our dataset have been examined by the authors. We defined the occurrence of different ways of handling spears at the level of the individual panel, since the actual number of humans with spears at each site cannot be detected accurately by relying solely on the SHFA database.

Based on the idea that indexical relationships are important in establishing a narrative context, the material was organized at three levels, which are summarized in [Table 1](#):

The first level of analysis relates to whether there is an indexical relationship or not, i.e. whether the human holding the spear is related to a target in the form of another human or animal (X), or whether there is no apparent target (Y).

The second level of analysis concerns forms of indexical relationships. (X) are classified according to the following criteria:

- X1: contact between the tip of the spear and a human (see [Figure 2](#))
- X2: contact between the tip of the spear and an animal ([Figure 3](#))

- X3: a human is pointing a spear at another human, with separation between spear and target (see [Figure 4](#))
- X4: a human is pointing a spear at an animal, with separation between spear and target.

In cases without apparent indexical relationships to an intended target (Y), we distinguished two categories, depending on whether the spear was held in an active or passive way. Active poses refer to spears held horizontally or diagonally by visible hands in an attack position; passive poses consist of spears placed horizontally on the shoulder or held vertically. The spears with no obvious indexical relationships were thus categorized as Y5: active (pose types A, B, and C; [Figures 2–4](#)) and Y6: passive (pose types D and E; [Figures 5–6](#)).

A third level of analysis, based on iconicity, is needed to categorize whether (Y) represents an active or passive pose. The poses are differentiated as follows:

- Pose A: a spear held horizontally with one or two raised hands (see [Figure 2](#))
- Pose B: a spear held diagonally (see [Figure 3](#))
- Pose C: a spear held horizontally by downward stretched hands ([Figure 4](#))
- Pose D: a spear placed horizontally on a shoulder and kept in place without visible hands ([Figure 5](#))
- Pose E: a spear held vertically ([Figure 6](#)).

The result of our categorization is illustrated in [Table 1](#). Rows 1–6 refer to panels that contain images with spears directed towards a target, rows 7–14 to panels with spears both with and without obvious targets, and rows 15–17 to examples of panels where obvious targets are missing.

In cases where there is a target (rows 1–6), an indexical relationship exists between

Table 1. The forty-eight panels summarized in the last column with one or several humans holding a spear, organized into two plus six groups (columns) of indexical relationships and iconicity. Rows 1–6 (dark grey) refer to panels with spears directed towards a target, rows 7–14 (medium grey) to panels that contain spears both with and without obvious targets, and rows 15–17 (light grey) to examples of panels where obvious targets are missing. Data source: see Supplementary Material, Appendix 1.

	X Target	Y No apparent target	X1 Contact human	X2 Contact animal	X3 Pointing at human	X4 Pointing at animal	Y5 Active poses	Y6 Passive poses	Number of panels
1	■		■	■	■	■			1
2	■		■		■				2
3	■			■		■			1
4	■			■					2
5	■				■				4
6	■					■			3
7	■	■	■		■		■		2
8	■	■	■					■	3
9	■	■		■			■		2
10	■	■			■	■	■	■	1
11	■	■			■		■		3
12	■	■			■			■	1
13	■	■				■	■		1
14	■	■				■		■	1
15		■					■	■	1
16		■					■		17
17		■						■	3
Total									48



Figure 3. Hunting scene with spear held diagonally (pose B). Example of contact between the tip of the spear and an animal (X2), Tanum RAA 255:1, Bohuslän, Sweden. Photograph: Bertil Almgren, by permission of Swedish Rock Art Research Archives (ID 13389).

the spear and its target, i.e. the spear is either in contact with or even pierces a target, which may be another human (X1) or an animal (X2). Alternatively, a human or an animal is held ‘at gunpoint’, with a distance between spear tip and target (X3 and X4 respectively). Holding a spear in attack or gunpoint positions threatens an opponent or prey, and it contextualizes these images into a fighting or hunting situation.

In cases where targets are missing and there are no indexical relationships (rows 15–17) we must rely on iconicity and may conclude that these spear usages cannot be given a precise meaning. However, people creating and comprehending images of humans holding spears without a target must have been aware also of instances in which people were pointing their spears towards other humans or animals, i.e. they had knowledge of such indexical relationships. Here we note that the different ways of holding spears are evenly distributed, without clusters in specific regions (see Supplementary Material, Appendix 1). When considering these spear configurations (rows 15–17), it is difficult to isolate iconicity from indexicality. Indexical relationships between the spear



Figure 4. Combat scene with spears held horizontally by downward stretched hands (pose C). Examples of ‘gunpoint’ position without contact (X3), Bro RAA 33:2, Bohuslän, Sweden. Photograph: Andreas Toreld, by permission of Swedish Rock Art Research Archives (ID 5714).

and a target known from fighting or hunting contexts will influence the general understanding of the spear’s iconicity. Consequently, spears without targets could also be seen as referring to a fighting or a hunting context.

This would be especially evident when the spear is held by one or two hands, either horizontally or diagonally (poses A–C), demonstrating skill and knowledge in handling a spear just before it pierces a combatant or prey. Interestingly, in the group without an obvious target (rows 15–17), this way of holding a spear is clearly dominant. Instances of spears without a target and held in passive mode occur rarely (row 17). Thus, when depicting humans holding spears without an obvious target, the maker generally tried to visualize the moment before the spear entered a human or a prey animal.

In sum, the many different ways of using a spear displayed in rock art, especially when compared to other weapons, suggest that they represented various indexical relations, which in turn might correspond to various kinds of action scripts or schemata. A presumption for comprehending the images according to such scripts is that contemporary beholders had knowledge of related real-life situations. As noted earlier, damage on actual metal weapons such as swords and



Figure 5. A spear placed horizontally on the shoulder and kept in place without visible hands (pose D). Example of passive spear use without an obvious target (Y5), Tanum RAA 12:1, Bohuslän. Photograph: Bertil Almgren, by permission of Swedish Rock Art Research Archives (ID 13114).

spears demonstrates that these were used for fighting; the spears were probably also used for hunting.

SPEAR SCENES IN ROCK ART AS MNEMONICS

Several questions arise in terms of the interpretation of scenes in which spears are used. Are they intended to be descriptive or normative? In the former case, they may be rendering actual, historical combat or hunting scenes. Or they may represent real but generalized events, i.e. ‘this is how combat or hunting activities typically take place’. In the latter case, they show prescriptive or idealized events, i.e. ‘this is how combat or hunting scenes ideally ought to take place’. But it is also often far from obvious that it is combat or hunting scenes that is being displayed, whether real or idealized. Possibly, ritualized events, such as ceremonial dances incorporating the use of spears, which in turn refer to spear uses in real situations, are depicted; in that case, they would act more as ‘images of (performative) images’ (see also Maddox, 2020).



Figure 6. Spear held vertically (pose E). To the right, example of contact (X1), Tanum 460:2, Bohuslän. Photograph: Sven-Gunnar Broström, by permission of Swedish Rock Art Research Archives (ID 5579).

Returning to Table 1, we may conclude that in almost half the panels two different ways of handling a spear are combined on the same panel. For example, a person holding a spear attacking another human could be combined with a person holding another human at gunpoint (row 2). Twelve such mixed configurations can be inferred from Table 1 (see also Figure 2). Thus, many panels represent different stages of motion sequences; some show only crucial or ‘pregnant’ moments in such sequences, from which preceding and succeeding stages must be inferred (rows 1–6; Figure 7).

Medieval manuscripts on fighting and combat techniques, such as Fiore dei Liberi’s *The Flower of Battle* or Hans Talhoffer’s *Fight Books*, may provide clues for the potential functions of these images (Talhoffer & Rector, 2000; Fiore dei Liberi, 2017). As Eric Burkart (2017: 13) has argued, illustrations in such fight books were not supposed to be naturalistic depictions of actual fights, but normative and didactic, aimed at illustrating ideal fighting techniques with various weapons. These illustrations were usually accompanied by short mnemonic verses and descriptions in prose. Contemporary interpreters had to be acquainted with the practical know-how, which neither images nor



Figure 7. Rock art panel from Fiskeby outside Enköping, Östergötland, displaying humans and spears in crucial or ‘pregnant’ moments in possibly larger action sequences. Östra Eneby RAA 8:1. Structure from Motion imaging by permission of Ellen Meijer, Swedish Rock Art Research Archives.

written additions could provide or explain (Burkart, 2017: 124).

Only a few images in these medieval manuscripts show different stages of motion sequences; most show crucial or ‘pregnant’ moments in such sequences, from which preceding and succeeding stages have to be inferred. Generally speaking, they were embedded in overarching ‘cultures of fighting’, which comprised a codified set of fighting techniques, or action schemas, prescribing certain actions. The complexity of actual combat had to be reduced to certain ideal type-situations (Burkart, 2017: 117),

and the illustrations are intended to show such types. Thus, practical training lessons were necessary for acquiring satisfactory fighting skills, whereas the illustrations had an auxiliary function as mnemonic anchors for recapitulating, memorizing, and organizing previous lessons (Burkart, 2017: 120).

In the preliterate societies of the Bronze Age, auxiliary literary means for teaching fighting techniques were not available, and we have no evidence that rock carvings depicting spear use fulfilled such a specific function. Nevertheless, we may assume that these petroglyphs similarly focused on

significant segments of action sequences, already familiar to the intended audience. They also may have functioned as mnemonic devices referring to common practical knowledge or linked to oral traditions (see Kelly, 2015: 63–65). And they may also have belonged to specific cultures of fighting or hunting, presupposing tacit knowledge of ideal type-situations of spear use. Although such detailed knowledge is not available to us, we may assume that the images of spear use correspond to action scripts well-known to contemporary Bronze Age societies.

CONCLUDING REMARKS

Does Scandinavian rock art represent stories, and how can narrative interpretations be corroborated? That depends on how the concept of pictorial narrativity is defined. If it requires the explicit and extended representation of sequences or of a series of events, it is doubtful that pictorial storytelling can be taken to be a typical aspect of the carvings. Furthermore, when such sequences do exist, narrative readings by present-day beholders may easily lead to speculative interpretations. Coexisting and adjacent images may just have been positioned side-by-side without being related to each other, and we have no conclusive evidence to confirm or inform narrative connections between them. Establishing larger narrative connections, even in displays with concurrent scenes, must remain conjectural.

For the identification of mini-narratives, the situation is different. Petroglyphs, here iconic signs with a typically high degree of indexicality showing various forms of spear use, may easily be conceived as ‘mono-phase narratives’. The spears’ pointing quality raises the question ‘pointing at what?’, and hence they contain seeds of further narrative scripts. In these cases, we

can clearly discern (significant moments of) action sequences implying a past and a future, perhaps even suggesting the beginning of a mini-narrative. And, as mnemonic devices, they allude to and evoke hunting and combat scripts (and possibly their ritualization) familiar to contemporary beholders.

With petroglyphs providing a framework (and/or their production within certain rituals or other social contexts), viewers are reminded of particular action themes (such as hunting and combat), which functioned as condensed external reminders that could be expanded with more particularized mental images, whether socially widespread or more idiosyncratic. This interpretation of the function of the images is supported by the absence of visual details that would make them more specific.

Our analysis, based on the unique variation that can be found in spear images, provides support for the notion that, at least in some measure, mini-narratives were displayed in Scandinavian rock art. Our approach depends on empirical evidence, where the variation observed can be interpreted in terms of actions, and is therefore amenable to comparison. We believe that several narratological concepts and considerations, such as indexical relationships and scripts, may fruitfully be employed in future rock art research in Scandinavia and beyond.

SUPPLEMENTARY MATERIAL

To view supplementary material for this article, please visit <https://doi.org/10.1017/ea.2021.52>.

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Aspects narratifs de l'utilisation des javelots dans l'art rupestre scandinave

On a longtemps discuté si l'art rupestre scandinave représentait des récits. Les chercheurs ont souvent interprété les panneaux contenant ces pétroglyphes en combinant leur examen visuel avec leurs connaissances des sources ethnographiques et historiques. Les auteurs de cet article adoptent une approche liée aux concepts de la narrativité (visuelle) en s'appuyant sur des études littéraires, cognitives et sémiotiques. Les représentations de l'utilisation des javelots dans le Bohuslän et l'Östergötland en Suède se prêtent à cet exercice, vu leur qualité d'indices et leur diversité. L'étude révèle différentes sortes de rapports indiciels, en particulier la façon dont les javelots attirent l'attention sur des cibles potentielles, ce qui pourrait correspondre à des scénarios d'action bien connus pendant l'âge du Bronze scandinave. De nombreuses images de javelots peuvent être considérées comme des mini-récits ou moyens mnémoniques destinés à représenter des séquences d'action schématisées. Les auteurs suggèrent que les notions sémiotiques-cognitives d'iconicité, de rapports indiciels, de script et de mini-scénarios pourraient être mises à profit en recherche sur l'art rupestre en Scandinavie et au-delà. Translation by Madeleine Hummler

Mots-clés: narratologie, signes indiciels, narrativité visuelle, art rupestre, pétroglyphes, Scandinavie, scénario d'action, mini-récit, usage des javelots

Narrative Aspekte der Darstellungen des Speergebrauchs in skandinavischen Felsritzungen

Seit Langem wird debattiert, ob die Darstellungen in der skandinavischen Felskunst Erzählungen widerspiegeln. Interpretationen von Forschern beruhen oft auf einer Kombination von visuellen Untersuchungen der Bilder auf den Felsplatten und Erkenntnissen aus ethnographischen und historischen Quellen. In diesem Artikel verfolgen die Verfasser einen anderen Ansatz, welcher Konzepte der (visuellen) Narrativität und literarische, kognitionspsychologische und semiotische Studien hervorhebt. Die Darstellungen des Speergebrauchs in Bohuslän und Östergötland in Schweden sind wegen ihrer Vielfalt und indexikalischen Eigenschaften für eine solche Untersuchung besonders geeignet. Diese veranschaulichen verschiedene indexikalische Zusammenhänge d.h. die Speere richten den Blick auf

potenzielle Ziele und sind möglicherweise mit bekannten bronzezeitlichen Handlungsszenarien übereinstimmend. Manche Bilder von Speeren können als Mini-Erzählungen oder Gedächtnisstützen für schematisierte Handlungen betrachtet werden. Die Verfasser sind der Meinung, dass die Anwendung von semiotisch-kognitionswissenschaftlichen Konzepten wie Ikonizität, Indexikalität, Handlungsszenarien und Mini-Erzählungen in der skandinavischen Felskunstforschung und darüber hinaus fruchtbar sein könnte. Translation by Madeleine Hummler

Stichworte: Erzählforschung, Narrativität von Bildern, Felsritzungen, Petroglyphen, Skandinavien, Handlungsszenario, Mini-Erzählung, Verwendung von Speeren