

PICTURING THE MEANING OF SCANDINAVIAN ROCK ART

Graphic Representations, Archaeological Interpretations and Material Alterations

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The paper presents a reflective overview of the recursive relation between the archaeological practice of picturing Scandinavian rock art in printed works since the mid-19th century, and how archaeologists have constructed its meaning. There seem to be an intimate connection between graphic representations of rock art and an interpretative bias towards the mimetic qualities of images. When picturing rock art, the identification of motifs is prioritized at the expense of the materiality of rock art. Ultimately, the production of graphic representations has influenced the antiquarian alteration of the archaeological remains. Today, major Scandinavian rock art sites are frequently painted red, with the purpose of highlighting the engraved imagery for visitor legibility. This practice transforms the materiality of stone into a visual language of graphic representations.

Keywords: Scandinavian rock art, archaeological illustration, history of archaeology, representation, visual culture, archaeology of images

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Scandinavian rock art researchers tend to deal with imagery in a dual manner. Parallel to the explicit interpretative focus on the vast quantities of rock art figures in the landscape, extensive efforts are also invested in the production of graphic representations of this rock art. Scandinavian rock art is distributed along the coasts, or in relation to waterways and lakes in the inland, of present-day Sweden and Norway. Areas with painted rock art have also been recorded in the central parts of Finland. Traditionally, Scandinavian rock art is categorized into two traditions; a northern tradition consisting of motifs depicting mainly wild animals and anthropomorphs and a southern tradition including depictions of boats, weapons, foot soles etc. Northern rock art is generally considered to be of older production date than the southern Bronze Age tradition, and associated with hunter-gatherer groups (Goldhahn *et al.* 2010). Ever since the mid-19th century, when the first systematic surveys were carried out in southern Scandinavia, the practice of documenting rock art has involved the act of picturing the perceived imagery through sketches, drawings, photographs and recently through digital 3D modelling (cf. Nordbladh 1981; Gjerde 2010; Ljunge 2015). Hence, the materiality of rock art, as it is studied at present, consists of two separate material settings, two mediums: on one hand the outcrops and rock panels in the open landscape, and on the other hand the large number of graphic representations published in books, reports and papers that has accumulated during the last century.

In recent years new documentation technology, especially 3D modelling based on digital photography and laser scanning, has led to digital representations of rock art, representations created by computer software that are later published as graphic representations. The implications of these technological tools for documentation have engendered a new wave of optimism in parts of Scandinavian rock art research, where the application of digital technology is expected to result in the uncovering of new, unseen features of rock art (e.g. Rabitz 2013; Bertilsson *et al.* 2014; Ling & Bertilsson 2015). One can easily see this anticipation that new technology will provide new answers to old questions as a sign of the times, with obvious parallels to the ongoing scientific “revolution” in archaeology in general. In the light of this development, discussions on the historical relation between archaeological representation and archaeological interpretation seem very much called for. In order to deal with current aspects of archaeological representations of the past we must understand the principles that have created such a relation during the history of the archaeological practice.

Archaeological practice causes a material translation of rock art from stone into paper or other non-stone media. The question that arises is in what ways this practice is of any meaning in itself, and how it is relat-

able to a contemporary gaze and the seeing of images firmly grounded in expectations related to the archaeological preunderstanding of the phenomena. And even further: how is the archaeologically shaped seeing of images related to the interpretations of the meaning of rock art? In the following it is argued that the meaning of rock art, as articulated in archaeological research carried out from the early 20th century to the present day, is constructed in between the materiality of paper and that of stone. I will try to show that the archaeological practice of picturing rock art has participated in determining which aspects of the phenomena are considered meaningful for archaeologists to study, and consequently and ultimately have led to actual alterations of the prehistoric remains in the landscape. There seems to be a recursive relationship between rock art and the ways it has been represented by archaeologists. Every encounter with rock art is prefigured by previous encounters as they are manifested in graphic representations of all kinds.

In what follows, the archaeological picturing of Scandinavian rock art will be discussed in between the materialities of stone and paper. The focus will be on general aspects of graphic representations in printed publications from the mid-19th century up to the present day. This selection reflects the period in time when archaeological images of the past grew into a mass material, and becomes a much more accessible alternative to study Scandinavian rock art than the actual sites in the landscape. My concern is to identify influential trends in the relationships between representations and interpretations throughout Scandinavian rock art research, and to pinpoint the cause of some of the main principles that have guided the archaeological seeing and visual perception of Scandinavian rock art. The scope of the paper does not allow any extensive account for all the exceptions and works that to some extent deviate or challenge the trends. Yet I will argue that certain principles for depicting rock art have profoundly influenced the ways archaeologists have perceived rock art in the landscape and consequently interpreted its meaning. These principles are still present to this day and ultimately have led to a transformation of the archaeological remains by the antiquarian practice of painting rock art.

ARCHAEOLOGICAL AND GRAPHIC REPRESENTATIONS OF ROCK ART: A SHORT HISTORY

In general, graphic imagery of varied types has been a prominent feature of archaeological publications ever since the formation of archaeology as a discipline in the 19th century. Indeed, the genealogy of such representa-

tion perhaps dates even further back in time to the activities of 17th- and 18th-century antiquarians (cf. Piggott 1978; Nordbladh 2007; Bertilsson 2015). Graphic imagery is to be understood as drawings, sketches, photographs, maps and more recently digital 3D modelling that have been used to represent artefacts, structures, spatial contexts and fragmented remains in printed publications of all sorts. Pictures of various kinds have also been produced by archaeologists to visualize interpretations of what ancient buildings and landscapes might have looked like in the past, or in order to recreate and reconstruct perishable materials such as clothes or head and facial hair. Looking back at the history of archaeological illustration, such imagery runs a clear risk of recreating ideals of the present rather than reflecting the reality of the past (Moser 1998; Smiles & Moser 2005). Graphic illustration of artefacts in archaeological and antiquarian practices has been critically evaluated by several scholars (e.g. Bateman 2006; Moser 2012; Cochrane & Jones 2012), and recently with the explicit aim of replacing drawn illustration with 3D technology (e.g. Gilboa *et al.* 2013; Carlson 2014). Important points have been made in relation to the different aspects of material translations involved in the process of reproducing documentation graphically, especially concerning the power of aesthetic and artistic formats and scientific ways of seeing. The following paper should be seen as an effort in the spirit of such a perspective on archaeological illustration, developed explicitly towards archaeological representations of rock art.

Despite the problems pointed out with archaeological “picturing” it seems evident that drawing and making pictures is an essential part of almost every archaeological practice, starting when excavations are documented and ending with the relationship between text and graphic illustrations materialized in the published archaeological literature. Images play a prominent role in the archaeological art of hypothesis building and argumentation, and contribute to the special rhetoric of our discipline. In other words, it seems quite obvious that the archaeological perspective on material remains and prehistoric societies involves, and is influenced by, multiple modes of graphic representation. To some extent, this could also be related to the nature of the archaeological method as such, where excavation literally destroys the material context of the archaeological source material (cf. Lucas 2004). Images and other forms of graphic representations are intended to serve as a replacement or proxy for what is lost. It has previously been argued that the processes by which artefacts are turned into images imply an aestheticization of prehistory that alienates and dematerializes things and objects, and simultaneously the representations themselves become things with a material presence (Jones 2001). In addition to such a discussion, it is important to bear

in mind that the function of images in the context of archaeological research and documentation operates on a scale between being intended as objective reflections of reality and being used as a tool for thought. The problems of archaeological illustration practices pointed out by the cited works of previous researchers lay not so much in the picturing of archaeology in itself. Problematic issues concerning the projection of modern presumptions when visualizing prehistory, or the loss of “original” context when representing artefacts graphically, seem to be either connected to a naive use of illustrations that neglects the power of images or related to a misconception of the function of illustrations.

The point of departure for graphic representation of south Scandinavian rock art partly differs from archaeological illustration practices of excavations and corpuses and catalogues. To start with, the archaeological documentation of rock art does not displace the source material. Unlike an excavation, rock art documentation can be repeated and redone numerous times. Places with rock art maintain their original position in the landscape. Even though parts of the material context of rock art have changed during modern times (such as vegetation, agricultural alteration of the surrounding landscape and so forth), the spatiality of sites and images originates from the deep past. However, the appearance of rock art can vary greatly in relation to temporal factors, such as weather and light conditions, the occurrence of lichens, mosses and so on (cf. Tilley 2008:63f; Ljunge 2013). Therefore, the perception of images on rock outcrops is very much related to a certain level of experience and training in the skill of detecting rock art. Hence, graphic representations of rock art are in some sense constructed in the relation between the trained eye and the material remains, a kind of situated knowledge based on visuality that resembles the paradigms of knowledge discussed in feminist theory (e.g. Haraway 1988).

Another distinguishable difference in relation to the illustration of artefacts concerns the nature of what is depicted. Artefacts and things are three-dimensional measurable objects; they very much resemble the state they were found in. Hence, a graphic representation of an object often departs from a set of more or less stable material qualities and dimensions. Rock art, on the other hand, presents itself in a variety of forms. Some images are clearly detectable, for example engravings pecked deep into the stone panel, while others demand a directed perception and artificial lighting in order to be seen at all. The temporal aspect of the presence of rock art mentioned above makes the experiencing and perceiving illustrator’s skill essential for the outcome of the graphic representation. In other words, rock art imagery could appear in a variety of ways due to the circumstances of a particular visit, circumstances that could change

from one day to the next. Hence the graphic representation of rock art is intimately entangled in the act of perceiving and identifying images, a process that is clearly related to the eye of the observer and the fluctuating state of the materiality that is observed. In the following, I will develop an argument that shows how the archaeological practice of picturing rock art is profoundly connected to the ways archaeologists have presented rock art imagery as meaningful throughout the entire history of Scandinavian rock art research.

THE AESTHETICS OF ROCK ART REPRESENTATIONS

Images made by archaeologists could be regarded as representations of the real world (as in the case of object corpuses, maps and excavation overviews), but to state that this representation is a mere reflection of reality would fail to acknowledge that the process of producing graphic representations is characterized by choices and implicit prioritizations. A mimetic (as well as symbolic) representation is never the only meaning of a picture. Neglecting other aspects of meaning, such as aesthetics, production practices or the effect of imagery over longer periods of time, runs the risk of excluding the complex social relationships that images depend on in order to be meaningful (cf. Mitchell 2005; Rosengren 2008; Sjöstrand 2012; Fahlander 2013). Generally, it has been shown that scientific illustration during the 18th and 19th centuries materialized modern ideals of objectivity and rational reasoning, and simultaneously took part in the formation of a disembodied and distant observation of the world that came to characterize positivism and natural science (Doorman 1989; Ford 1992; Harding 1992; Carlsson & Ågren 1997; Koj & Sztopka 2001). Such an ideal was very much dependent on what has been described as a specific way of seeing characterized by the “male gaze” such as it has been discussed by feminist art theorists (e.g. Berger 1972; cf. Korsmeyer 2004). Even though such a theoretical stance has not been developed in this paper, the discussion of the “male gaze” as normative for scientific notions of, for instance, objectivity could be of relevance for the modes of illustration used by Scandinavian rock researchers.

One of the most influential examples of early scientific illustration would be the large corpuses created by Linnaeus and his disciples, where the categorization of species was shown by drawings of plants and animals depicted out of context. Scientific images do not merely represent the world as it is; they are at the same time tools for thought and agents with potential to influence or control ideas of what reality consists of.

Acknowledging this dual function of scientific illustration enables us to analyse the depiction of rock art as a socially and historically constituted image-making practice. This “picturing” expresses aesthetic ideals in relation to scientific illustration, and also articulates the priorities and selections made when archaeologists construct narratives of the meaning of rock art in prehistory. In other words, we need to trace the format of rock art depictions back to the early days of the archaeological discipline in order to define how the norms for this particular graphic representation were established and in what ways the practice of picturing rock art has affected archaeological narratives of its meaning.

To pinpoint who created the first graphic representation of south Scandinavian rock art and when it was made is dubious and probably a matter of categorization. Records showing depictions of rock art contexts were produced as early as the 17th century, in the wake of the antiquarian interest in both Denmark and Sweden for the remains of antiquity (Goldhahn 2011). But it was not until the mid-19th century that more extensive and thorough surveys were carried out, focusing primarily on the large concentration of rock art in the province of Bohuslän in south-west Sweden, and Østfold in southern Norway. During these efforts, rock art sites were being documented and later presented graphically in corpuses consisting of drawn plates. Pioneering work in south west Scandinavia was carried out by Axel Emanuel Holmberg (1848), Carl Georg Brunius (1868), Martin Arnesen (1870) and Lauritz Baltzer (1881). At this early stage it became evident that graphic representations of rock art were given a standardized format, in which the perceived images on rock panels were depicted from an elevated all-seeing, “God’s eye” perspective (Figure 1). The perspective adopted could best be described as a cartographic one, aiming to show the rock art imagery in scale proportion, in relation to both size and relative positions.

Viewed in relation to the *zeitgeist*, the choice of a cartographic overview naturally relates to the aim of mapping the world that characterized the era of modern science (cf. Baigrie 1996). By adopting this perspective, a number of more or less implicit choices were made. Firstly, the perceived imagery was placed in the absolute centre of attention. The antiquarian eye was fixed on what was apprehended as culture, the human-made expression of a collectively constituted prehistoric mind (cf. Herva 2004). The rock, the medium for inscription, was more or less totally neglected and given the passive role of a background or canvas (Nordbladh 1981; Goldhahn 2005). Culture was extracted from nature and materialized in solitude by the 19th-century graphic representations.

By separating images and their material setting, rock art was abstracted and made totally independent of its materiality. Rock art im-



Figure 1. Drawn plate, by Axel Emanuel Holmberg, showing rock art at Tanum in Bohuslän. A typical example of the perspective adopted when producing illustrations of rock art, where the images are made in black against an empty background. (Holmberg 1848, SFHA bildid: 2112).

ages were drawn in black or grey on white paper, creating a result that resembles calligraphic writing. The level of abstraction also applies to the representation of the images themselves, which are pictured with smooth lines and free of all the ruggedness and irregularities that characterize them when perceived in real life. It is as if the illustrators of the 19th century sought to recreate the imagery as it was ideally apparent in the rock art artist's mind. By smoothing the images, filling gaps and making small additions where supposed details might be missing, the graphic representations of rock art developed a quite characteristic aesthetic appearance. Early on, rock art illustrations become frequently used images in archaeological publications, and the work of the 19th-century pioneer generation was reprinted numerous times during the following century (Ljunge 2015:33). Aesthetically, graphic representation of rock art is characterized by a clean directness (Figure 2). These representations seem to capture the essence of the symbolic connotations in the prehistoric mind. It is intriguing that even though these archaeological illustrations clearly were made in relation to the ideals of objectivity, as pictured in the illustrations of modern science and geography, they are far from being images of any material reality that is possible to perceive.

Another important aspect of the elevated cartographic perspective is the unreflective choice of temporality. Rock art imagery is pictured in its

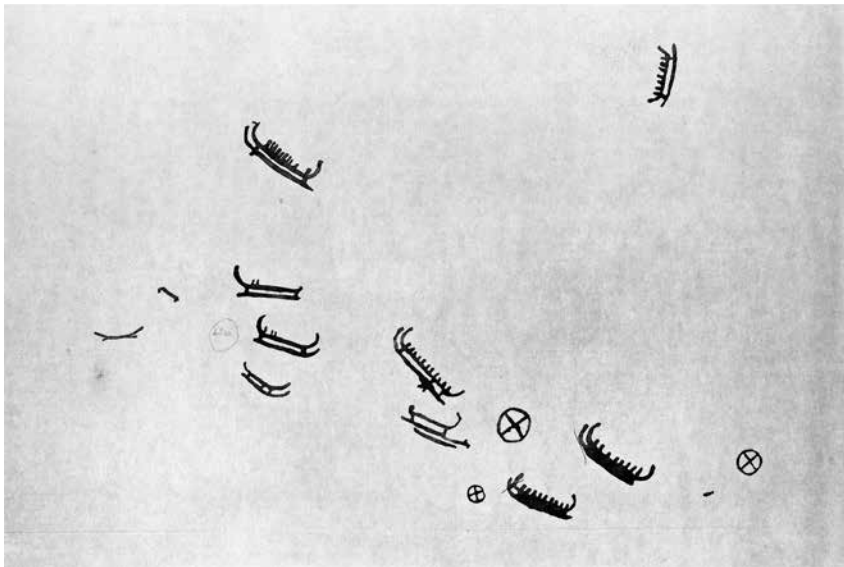


Figure 2. Graphic representation of Carl-Axel Althin's documentation of the rock art at Simris. The picture represents the ideal for showing rock art originating from the 19th century. The depiction of rock art is clean, with smooth lines that aim to capture the essence of the images seen by the archaeologist (Althin 1945:19).

final state of production, possibly the state of abandoned places (Nordström 2002). And even in its final state, when the last figure had been added, it would be risky to assume that all rock art figures were clearly visible. In accordance with the statement made earlier, rock art presents itself in various ways, where some images might have clear visual traits while others are practically invisible (Ljunge 2013). The 19th-century perspective manifested by the early graphic representations of rock art takes no account to the variations in visual accessibility, even though the difference in depth between images is sometimes noted in text (e.g. Nordén 1917). It is evident that these depictions of rock art mediate what was (and perhaps still is) regarded as the primary meaning of the rock art phenomena; the intended use of images as representations of aspects of culture and society. The focus is almost exclusively directed towards the reconstruction of the act of production, the artist's intentions both in relation to design and symbolic content. The medium (stone), and the afterlife of images and their potential visual accessibility were not treated as an important part of the meaning of rock art.

The aesthetic norm created in the 19th century became a standardized format for graphic representation of Scandinavian rock art documentation. Starting at the end of the 19th century and continuously after that, all the major rock art regions in southern Scandinavia have been the target of several more or less comprehensive surveys with the aim of finding and documenting as many rock art figures as possible. Every generation of rock art researchers up until the at least the 1980s produced updated graphic representations of their study area. Newly discovered images were added, other images were seen in new ways, but the archaeological illustrations continued to be made in the same all-seeing cartographic perspective as before, with the rock art pic-



Figure 3. Graphic representation of rock art at Eskilssäter produced by Andreas Toreld in 2009. Made 150 years after the initial picturing efforts, the main principle for showing rock art graphically remains unchanged. Rock art is still illustrated as black pictures against a white background, together with some features of the stone such as cracks (SFHA bildid: 980).

tured in black against an empty background. Although elements of the “natural” canvas, such as prominent cracks or mineral veins, had been added in the illustrations as early as in the 20th century, they still occur as part of the background framing the imagery (Figure 3). In very general terms, the traditional way of picturing rock art described above seems to be more related to the act of discovering images and perceiving what they might depict, rather than showing the material context of the phenomena.

CHALLENGING THE GRAPHIC NORM?

In some sense, every graphic representation of rock art made in the all-seeing cartographic perspective is a reproduction of a specific mode or format of illustration. The choices made by the illustrators of rock art in the 19th century, however subconscious or unarticulated they may be, remained unchallenged throughout almost the entire 20th century (Ljunge 2015:25; cf. Skotnes 1996). Viewing and picturing rock art as black, iconic images on an empty white canvas seems to be a result of a panoptic effect caused by the aesthetic qualities of rock art illustration. In theory, other modes of graphic representation of the rock art context are both possible and feasible. The all-seeing principle could hypothetically be replaced by the illustration of an embodied perception, where the skewed distortions caused by an emplaced perspective would be reproduced. Or why not illustrate a cross-section of the panel, showing the morphology of the surface and the depth of the carved imagery? I do not suggest that either of these modes of graphic representation is more suitable or superior to the all-seeing overview. My point is that, in theory, the choice of perspective could be adopted to other priorities than showing rock art imagery abstracted from its material setting and in scale proportion.

To some degree, this has also been done throughout the history of rock art documentation and graphic representation. During the first decades of the 20th century, some researchers experimented with alternative documentation methods, for example casts made of plaster. Plaster was simply poured on an image, creating a negative representation in three dimensions when hardened (e.g. Nordén 1925; Almgren 1927:128). The plaster castings captured the material qualities of rock art effectively by showing the ruggedness and depth of chosen motifs. But they were limited to the representation of single motifs, or at most a small part of a rock art panel. And in published and printed works, the casts still had to be represented graphically through photographs.

Apart from drawings, and the experiments with plaster, photographs started to occur more frequently in rock art publications at the beginning of the 20th century. Early on the quality of printed works was generally of poor quality, and photographs showing rock art occurred mostly as overviews of the surrounding settings. In fact, the low resolution of the printed photos required that the rock art imagery was reinforced in order to appear at all (Figure 4). Hence chalk was used to fill in the images, making them clearly visible in a bright white colour against the dark greyish stone panel. To my knowledge, the chalking of images represents the first antiquarian effort to enhance the experience of seeing visibly accessible depictions on the panels of a rock art landscape. This materialization of the antiquarian gaze, and an articulation of what has been regarded as the primary meaning of rock art since the mid-19th century is a mimetic representation of things, notions and ideologies.

Towards the second half of the 20th century, photography was to a higher extent applied as a method for documenting rock art contexts. A pioneer in the area of rock art photography was the Norwegian archaeologist Per Fett who as early as the 1930s outlined the benefits of photography when used as a structured method in rock art documentation (Fett 1936). Fett defines three main purposes for the use of photography: the technical photograph directed at documenting details of rock art in close-ups; photographs showing the orientation of rock art



Figure 4. Photograph of rock art at Stora Viggeby in Uppland taken by Gunnar Ekholm. The two ship images are accentuated by chalk in order to stand out in the picture (Ekholm 1916:281).



Figure 5. Photograph of documentations of rock art using a large camera rack in order to create a wide angle. Photo by Sverker Stubelius (SHFA bildid: 2400).

on the panel and the individual relations of the motifs; and photographs showing the surrounding landscape (Fett 1936:78–79). In addition to these methodological points, Fett also explicitly discusses the possibilities of using raking light in rock art surveys. This technique is still used when finding and documenting rock art imagery.

Using raking light in night photography became a challenge to the drawn graphic representations of rock art as soon as the costs for printing high-resolution photographs decreased. Starting in the 1960s, raking light photos were used to a higher degree as illustrations of rock art in books and papers. The use of photos could presumably have functioned as a challenge to the graphic norm and the all-seeing perspective. Photography carries its own ontological baggage of viewing the world in sequences of single moments from the positioned perspective of a distant observer (Sturken & Cartwright 2009:ch. 4–5). Considering the emplaced perspective that is materialized in photographs, the all-seeing cartographic principle of rock art illustration could have meant that new ways of showing rock art graphically were explored. However, that did not happen. Instead, different methods were used to neutralize the perspective of photography. The camera was fixed on top of racks or large tripods to create a wide angle (Figure 5). When the camera was handheld, only single motifs or small areas of panels were photographed, which maintained the perspective established by the drawn representation.

One important new dimension, lacking in the drawn representations, was introduced by the use of raking light as a photographic method; a strong sense of the materiality of rock art. Published night photographs clearly show the contours of and marks in the rock surface, an effect caused by the shadows created by the artificial lighting (Figure 6). Suddenly, the materiality of rock art was clearly present in graphic reproductions. In some sense, the rock art imagery was contextualized by the publication of night photos without losing the representation of what was depicted on the panels. Still, the raking light method creates a visual abstraction consisting of an appearance more or less impossible to experience without the aid of electric light. It must be stated, however, that the application of raking light probably has inspired researchers to think about the context of experiencing rock art, for example in relation to the use of fire next to rock art panels (Fredell 2003:243; Bengtsson 2004:119) or if the seasonal and temporal changes in daylight conditions could have been of some importance (Arbman 1958:13; Ljunge 2015:167).

The increased use of photographs as graphic representations of rock art contexts did not challenge the all-seeing principle, or the dominating focus on the images themselves. However, processual archaeology and its methodological applications in rock art research during the 1970s and 1980s led to novel modes of representing images in stone graphi-



Figure 6. Night photograph of rock art at Ekenberg outside the city of Norrköping taken by Nils Lagerman using raking light (SHFA bildid: 8812).

Table 28. The large engraving areas. Distribution of figures

E-a	Sf	Hf	Fs	Af	Cf	Rc	Cm	Of	Tot
Tanum 66	28	7	1	41	2		906	1	986
Tanum 184:1	10	7		6		2	482	1	508
Tanum 326a	46	23	24	14		8	350	3	468
Tanum 96:1							465	-	465
Foss 6	150	30	55	6	1	3	150	3	398
Skredsvik 101:1							300	80	380
Tanum 1	70	43	6	15	4		170	5	313
Skee 632	30	13		4			240	13	300
Bro 26A	42	5	1	3	1	4	226	14	296
Hogdal 210	59	32		26	1		150	6	274
Kville 157:1	100	30	6	5		1	120	9	271
Tanum 12	109	27	4	27	2	4	83	11	267
Kville 74	40	9	4	4			204	-	261
Kville 124	4	16		3	8	1	220	6	258
Kville 172	7		1				230	1	239
Tanum 185:1	2	1		1			225	-	229
Tanum 75:1	70	3	4	20			130	-	227
Kville 28							205	6	211
Tanum 311	65	11	6	12	3	1	91	16	205
Kville 82:4	40	25				1	126	4	196
Tossene 10	24	6		2		1	156	2	191
Tanum 91	1	2					180	4	187
Kville 80	27	8		3			140	5	183
Tanum 253	5	1	1		2		152	8	169
Bottna 37:1	38	5	1	17	13	1	92	1	168
Tanum 254	29		5	1			130	2	167
Tot	26 996	304	118	210	21	27	5923	201	7800
\bar{x}	38	12	5	8	0.8	1	228	8	300

Figure 7. The table as a graphic representation of rock art. Here, images are translated into numbers and figures (Bertilsson 1987:154).

cally (cf. Ljunge 2015:37–41). Processual rock art researchers explicitly formulated their aims and questions in direct opposition to the work of archaeologists in the first half of the 20th century, which was labelled as a speculative search for the religious notions represented by the studied imagery (Nordbladh 1978; Burenhult 1980:11). Instead, it was argued that rock art should be studied with archaeological methods guided by an archaeological agenda. This change in the direction of rock art research lasted from the late 1970s to the early 1990s and consisted of an increased study of the detailed chronology and chorology of rock art, which aimed to discuss large-scale distribution patterns and to identify areas of invention.

Interestingly, the focus taken by processual rock art archaeology altered the modes of graphic representation profoundly. Especially in publications published during the 1980s, drawn illustrations of rock art made from the all-seeing perspective are almost entirely missing, and replaced by all sorts of semiotic or symbolic representations of the archaeological categorization of motifs and images. Rock art motifs were either graphically represented as types, that is to say stylized images showing typical features, or translated into figures or numbers compiled in tables or diagrams (Figure 7). Such graphic representations did not aim to show rock art as it presents itself as imagery, but rather to illustrate how it was archaeologically categorized or to show quantifications and chorological patterns. In these studies, the meaning of the mimetic representation of rock art was considered of secondary importance. Categorizations of motifs, such as “ships”, “animals” or “swords”, were merely regarded as descriptions of the format of rock art and were not primarily used as a starting point for discussing the meaning of images. If the early 19th-century all-seeing perspective was characterized by a sole focus on rock art as clearly distinguishable images, the focus of the processual illustration practice was redirected from the image as such to the conceptions of the archaeologist. The abstraction of the gaze was replaced by a total abstraction of the source material.

The alternative modes of illustrating rock art applied in archaeological studies of processual character pinpoint a key aspect in the practice of representing prehistoric imagery graphically. Choosing how to picture rock art, both in relation to perspective and the selections made of what to depict and what to leave out, seems to be intimately connected to notions of how images are of meaning (cf. Jones 2001:337; Ljunge 2015:62). Picturing rock art is a practice performed in close relation to interpretations of the meaning of the phenomenon, even if the illustration practice itself is carried out by surveyors without any aims of raising research questions. Making representations of images in stone becomes an explicit expression of how rock art should be perceived in order to understand its meaning, but it is equally a practice that tends to influence archaeological interpretations. Images tend to influence the mind, whether they are made in past or in the present.

MATERIALIZING THE ARCHAEOLOGICAL GAZE

Even though the archaeologists working and writing in the processual paradigm of Scandinavian rock art archaeology tried to challenge the normative format of representing rock art graphically, their contribu-

tion in terms of format and aesthetics was short-lived and must be regarded as a parenthesis in the history of the illustrational practice of rock art research. Retrospectively, the semiotic translation from image to sign that characterizes processual rock art illustration seems paradoxical considering that the guiding star for the research in the era was the purpose of returning to the archaeological source material using archaeological methods (Burenhult 1980:11). The result, in terms of how the archaeological contexts were mediated by graphic representations, was quite the opposite: an abstraction based on archaeological categorizations rather than the materiality of rock art, a materialization of the archaeological process.

In the early 1990s, when postmodern thought broke through and radically transformed the basis for archaeological research in Scandinavia, the pendulum turned back to the all-seeing cartographic principle established in the 19th century. Post-processual rock art researchers explicitly formulated their point of departures in opposition to their processual precursors (e.g. Hauptman Wahlgren 1995; Goldhahn 1999; Olausson 1999; Thedéen 2002). This also led to an active re-use of graphic representations made by archaeologist in the early 20th century. It is as if a kinship with the pioneers of rock art research is sought and articulated by many researchers fostered in the post-processual era (e.g. Hauptman Wahlgren 2002; Skoglund 2006; Goldhahn 2013). In some sense the kinship, however implicit it may be, can also be traced in the interpretations made of the meaning of Bronze Age rock art. Cosmological and religious symbolism was back on the agenda in the late 1990s, and was given a great deal of attention when rock art was discussed in terms of the representation of ideas and notions (e.g. Larsson 1999; Fredell 2003; Kristiansen 2010)

The postmodern theoretical pluralism that influenced rock art research in the 1990s led to a combination of a turn back to symbolic and iconographic interpretations of images based on their mimetic references, as well as a reclaiming of the all-seeing cartographic perspective. Once again, both the meaning of rock art and its graphic representation were primarily associated with what images were perceived to depict. This gives us a reason to return to the introductory claim that practices related to archaeological illustration reflect essential presumptions about the ontological qualities of the materialities studied by archaeology. When reviewing the history of rock art illustration back to the mid-19th century, it becomes quite evident that notions of what the primary meaning of rock art consists of is connected to the ways it is illustrated and graphically reproduced. Graphic images also reflect ideals of science in connection to the study of rock art, and how they change

over time. If the graphic representations of rock art in the 19th century and early 20th century are characterized by an unarticulated ideal of objectivity, the shift in the format of illustrations made by rock art researchers in the processual era was part of an explicit orientation towards the qualitative methods of science. Rock art stopped being studied primarily as a source to reach any understanding of the cosmological or mythological notions of the people creating it. Instead it was turned into abstract categories used as measurable data, in order to detect patterns of distribution, chronology and areas of invention and origin (e.g. Welinder 1974; Malmer 1981; Bertilsson 1987). One of the most influential and well-cited studies in Scandinavian rock art research that is representative of such a processual stance would be Göran Burenhult's (1980) work on the Bronze Age rock art in southern Sweden, in which motifs are typologized based on extensive stylistic definitions. Burenhult's studies of style comprised not only element of the motifs, but also the depth and profiles of the engravings. When representing the categorizations graphically, motifs are abstracted in order to show types rather than real, perceivable examples of rock art. Types are represented graphically in sequences, separated from their material context and their relation to other motifs (e.g. Burenhult 1980:52).

Intriguingly, the post-processual re-invention of the all-seeing cartographic overview in rock art research was developed into a representation not only of the actual and perceivable rock art, but also of the researcher's interpretation of its meaning. The graphic overviews of rock art panels did no longer mediated only the appearance of images in black against an empty background, but were elaborated on in order to display selected aspects of meaning. Examples of such graphic representations are archaeological images showing different groups of motifs in different colours for the purpose of showing specific arguments concerning the interpretation of the meaning of rock art, or to illustrate chronological sequences by excluding images of late date (e.g. Hauptman Wahlgren 2002:193; Goldhahn 2005:585).

The usage of graphic representations of rock art as simultaneously part of an interpretive argumentation and as an authentic reflection aiming to show an accurate appearance of the archaeological remains, could be seen as a merging of the principles of both the early cultural-historical efforts and the processual illustration practice. Graphic representations of rock art are produced in between the visual appearance of the actual remains, as they show themselves during surveys and visits, and the interpretative process of the researcher (cf. Ljunge 2015). This dual character is made explicit by graphic representations from the mid-1990s onwards, but the tension between the aim of objectively showing

the archaeological context and at the same time illustrating its meaningful aspects is present during the entire practice of picturing rock art. Graphic representations of rock art were guided by the archaeological and antiquarian gaze right from the start; it was the visual identification of clearly definable images on the rock panels that was illustrated. The interpretative prioritizations of archaeologist formed the basis for the exclusion of everything but the imagery.

To summarize, it seems almost impossible to view the history of interpreting rock art imagery without reflecting on the archaeological practice of making graphic representations of rock art. Both these relations to rock art are characterized by a focus on depiction. The interpretative and analytical process is designed with the explicit aim of identifying images that depict objects, creatures and things. The gaze of the archaeologist is almost entirely directed by the visual detection of that kind of imagery. When making graphic representations, the focus on depiction has two dimensions: firstly it becomes a filter that reduces everything but the imagery to a more or less prominent background. Secondly, depicting rock art true to scale or shape and appearance is a basic principle of the cartographic perspective, resulting in a projection that will always lead to some kind of distortion in relation to either size or shape. In a meta-perspective, archaeological rock art illustration could be described as depicting depictions. Ultimately, this has led to a situation where categorizations and interpretations of the meaning of rock art are one and the same. An image categorized as a boat also has meaning as a depiction of a boat, whether it is discussed in terms of symbolism or realism. Seeing images is related to thinking about them, and consequently the practice of making graphic representations (both in the past and in the present) is equally connected to both seeing and thinking. Furthermore, the visual appearance of rock art, when turned into the materiality of paper, is almost solely an illustration of the focused embodied gaze of the archaeologist and hence a reinforcement of a specific way of thinking about images, the notion of images as meaningful primarily as depictions.

To conclude, it is quite intriguing that graphic representations of rock art derived from 3D modelling that have been recently published in printed work does not differ to any great extent from the illustrational norm that has been outlined in this paper (e.g. Ling & Bertilsson 2015:9), so long as the purpose is to visualize the rock art and not the technique in itself (cf. Rabitz 2013:111). Perhaps this observation is uncalled for; the main purpose of making digital representations of rock art in 3D is not to publish two-dimensional copies of them in print. They should be seen on the computer through software that enables ac-

tive viewing. Still, the main medium for archaeological representation in an academic context continues to be printed works, and it remains to be seen whether and how digital documentation techniques will have any effect on the modes of representation of Scandinavian rock art. An interesting note to this development is that 3D technology acquires an additional representational translation when the digital representation of rock art is materialized into paper when printed.

FROM THE PRACTICE OF PICTURING, TO THE ALTERATION OF ARCHAEOLOGICAL REMAINS

Picturing rock art, whether this is a practice performed within the context of surveys and documentation or at the researcher's desk, is essentially connected to how archaeologists have perceived the phenomenon as meaningful. It is quite safe to conclude that the practice of making graphic representations and the interpretative focus on rock art as depictions have enhanced each other, and narrowed the perspectives on the ontological dimensions of visual culture and imagery during prehistory. In general, one can describe Scandinavian rock art research as dominated by a representational paradigm. But isn't rock art and our understanding of its meaning all about interpreting imagery? In part, this is an ontological discussion of how images contain and mediate meaning, and how that meaning should be related to makers and viewers of imagery and also to the dimensions of space and time. Judging from just about any art tradition, imagery seems to convey a number of meaningful layers that could be activated by different circumstances or passivized in other social contexts (cf. Sandqvist 1992; Holmes 2011).

Discussions about the ontology of images lie beyond the scope of this paper, I have merely pointed out that the graphic representation of Scandinavian rock art captures and materializes certain antiquarian selections at the expense of other kinds of experiences of the materiality of rock art. By passively reproducing the normative aesthetics of rock art illustrations, a very specific quality of these images (their ability to mimic the shape and form of objects and beings) is highlighted as their primary meaning at all times. As a review of the history of rock art discourse, we could easily be satisfied with this conclusion. But the relation between archaeological practice and interpretations of the meaning rock art conveyed in archaeology has yet another twist; the actual alteration of the remains in the landscape.

At present, the majority of all major Scandinavian rock art sites are regularly painted red (or in some cases white) by heritage management

organizations. Painting rock art is motivated by two main reasons: the caring of the sites, where coloration is supposed to alert visitors to the presence of rock art and therefore act as a call to respect the site. The second reason is a pedagogical one, making the images visually accessible for a public audience. To determine when this practice started and when it was formalized as part of heritage management is not easy, but evidently there was an ongoing discussion within the antiquarian and archaeological community from at least the 1930s on topics related to methodology and choice of paint and cleaning fluids (Gustafsson & Karlsson 2004:34). Some researchers also articulated reflections on the possibility of empirical evidence for the painting of rock art in prehistory and concluded that no such practice could be traced in the archaeological record (e.g. Hallström 1931; Johansen 1944). Even though the question concerning the existence of colour applied to rock art in prehistoric times is raised from time to time (e.g. Bengtsson 2004; Goldhahn 2008), the general view of the matter is that rock art, in terms of petroglyphs, were not painted to any great extent, if at all.

Painting rock art is clearly an antiquarian business and its origins seem to be connected to the practice of painting rune stones. Runes on standing stones and rock panels are painted red (if they originate from the Late Iron Age), a practice associated with interpreting the written messages on the stones as well as part of the measures taken to care for the stones. The painting of rune stones in present-day Sweden appears to have been formalized during the 1930s and 1940s, when guidelines for the methodology of this practice are published (e.g. Moltke 1932; Gustawsson 1941). Since then, the practice of painting rune stones has been incorporated as part of heritage management and is controlled by the Swedish National Heritage Board. But the painting of rock art is a different matter, it is practised in a much more decentralized manner and its organization varies from region to region. Sometimes painting is initiated and carried out by museums, at other locations by the local municipality. Methodological issues concerning this practice have been debated from time to time, but rock art painting appears to be a much more arbitrary practice in terms of organization than the painting of rune stones.

From the perspective developed in this paper, the intriguing part of the painting of rock art is the premises for its execution. When painting, documentations of rock art in the form of graphic representations in books and reports are used as both a guide and a model for identifying the location of images on the panel and what they look like. Ideally, the red painting is done right after new documentation has been done. But this is not always possible; in some cases older documenta-

tion is used, which creates time gaps between the actual initial seeing of images, the production of the illustration and later the painting of rock art. Criticism against the practice of painting has often focused on the unfortunate side effects caused by the paint and cleaning fluids used for the preparation of the rock panels, which has evidently led to erosion and damage to the rock surface (Gustafsson & Karlsson 2004). In later years such hazardous materials have been banned in favour of water-based paint and more gentle methods of removing vegetation and cleaning the panels.

But the painting of rock art leads to yet another concern related to how these archaeological sites are managed in the light of the history of documentation and interpretation. When painting, archaeologists take active measures to transform the materiality of rock art into the appearance of the graphic representations produced on paper. Sites in the landscape are altered based on the aesthetics that characterize rock art drawn on paper. Consequently, the material context of the production of rock art in prehistory, as well as later interactions with the sites throughout history, is changed profoundly. The actual rock is turned into a background for the shining red images, and becomes the same passive canvas as the white sheets of paper in books. All the qualities and features that create the meaning of rock art in relation to its social context in prehistory and history are dimmed and neutralized. Such traits concern the great variation in the visual appearance of rock art, variations related to the depth of images, to the occurrence of lichens and to the effect of time, when ageing images are transformed from their initial shiny, almost white colour, to a nuance that makes them vanish into the surrounding rock.

Painting rock art destroys the effect of the materiality of stone in relation to images. The red colour makes all images equally visible, putting the ontological dimension of visual appearance out of play. I would argue that the visual aspect of rock art is most probably a key issue for understanding its meaning over time (cf. Hauptman Wahlgren 2002; Ljunge 2015). In order to stay meaningful through active use over longer periods of time, rock art has to maintain a visual accessibility. Some images were made deep, others are so shallow that they are almost impossible to detect without special knowledge about their whereabouts or by adding artificial light sources to create raking light. Visual material qualities are essential when discussing whether some images were intended to be seen, while others did not stay meaningful over any long periods of time. Such a reflection is also important when interpreting the relation between images, how new images were produced in relation to older ones and whether there are compositions on the panels etc.

One could of course argue that such a reflection is part of a research process that operates from an awareness of the material conditions that characterize the present experience of rock art. Such an attitude is dangerous, because it runs the risk of underestimating the power images are able to exert over the mind. Images tend to guide the mind, creating associations and hence control notions of their meaning (Ortony 1979). To say that archaeologists simply can ignore the present-day painting is a naive premise. The sharp focus on rock art as depictions that characterizes the bulk of the research that has been published on the subject during the last century is perhaps an indication of the difficulties related to removing oneself from the antiquarian gaze, a gaze that has been materialized over and over again in the materiality of paper.

In conclusion, the painting of rock art with red paint represents the final stage of process where the material reality of archaeological remains is altered in coherence with archaeologically shaped notions of how images are of meaning. That process started in the mid-19th century, when the practice of turning documentations of rock art into cartographic overviews, showing only the motifs, started. I have argued that the history of rock art research is characterized by a focus on depiction, both in terms of how rock art was meaningful during prehistory and as a principle for creating graphic representations published in books and reports. Thinking about rock art seems to be intimately connected to a specific archaeological gaze, a focused seeing that prioritizes the identifications of depictions at the cost of other aspects of rock art that might have been equally important. Rock art research has been dominated by a paradigm where the representational aspect of the mimetic qualities of images has been made the centre of attention, and that paradigm was born in between stone and paper and is still influential today when rock art research stands at the threshold to the digital world.

CONCLUDING REMARKS

When reviewing the general trends of graphic representation of Scandinavian rock art, it becomes quite evident that the practice of picturing rock art is deeply entangled in the ways of seeing rock art in the landscape and consequently thinking about its meaning. Even though illustration of rock art has a lot in common with the production of graphic representations of archaeological source material in general, I would argue that rock art illustration differs on one vital point: graphical illustration of rock art presupposes a total material translation from stone to paper. In the case of artefacts, the materiality of things is to

some degree depicted due to the fact that it is a materialized object that is graphically represented. When it comes to rock art, what is actually depicted is a carved or pecked-out void in the medium of stone. It is the perceivable surface variations that form what is seen as images, images that are then reproduced in the medium of paper and then materialized in a completely different material setting.

The relation between seeing, picturing and interpreting the meaning of Scandinavian rock art is ultimately united in the notion that images are representations of ideas, concepts or events and practices and therefore possible to “read” or “decode” regardless of the media they are produced in. Such a representational paradigm has very much set the agenda for Scandinavian rock art research, and the practice of illustrating rock art documentation is both an expression of such a perspective and has played an active part in forming and deepening it. The guiding principle for graphical representation of rock art is that of mimesis; rock art is believed to have been of meaning primarily in relation to what it depicts and therefore the archaeological picturing is a depiction of images. Images are regarded independent of their materiality, which allows archaeologists to move them between different media and still address their meaning. The ironic twist caused by the archaeological image-making practice in relation to Scandinavian rock art would be the painting of the rocks in the landscape. By altering the appearance of archaeological rock art sites, a practice based on the graphic representation of rock art documentation, the actual remains are not only turned into the pages of rock art publications. Rock art is also given an additional materiality; the void in the rock is filled with paint: a material addition to the stone media that not only changes the visual qualities of rock art, but alters the material composition of the phenomenon in a profound way, making rock art a thing of the present rather than the past.

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