

## Changing perceptions of rock art: storying prehistoric worlds

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To cite this article: Astrid J. Nyland & Heidrun Stebergløkken (2021): Changing perceptions of rock art: storying prehistoric worlds, *World Archaeology*, DOI: [10.1080/00438243.2021.1899042](https://doi.org/10.1080/00438243.2021.1899042)

To link to this article: <https://doi.org/10.1080/00438243.2021.1899042>



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Published online: 23 Mar 2021.



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## Changing perceptions of rock art: storying prehistoric worlds

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### ABSTRACT

Temporality and changeability are here considered vital characteristics of rock art, expressed through shifting light and moving bodies. Demonstrating deliberate use of non-quantifiable elements such as light is challenging. Nevertheless, there are rock art sites where its importance is apparent. For example, the results of a 3D scan of the site Hammer IX in Central Norway show how the same lines make out both an elk head and a whale. Whereas in Vingen in Western Norway, 77 panels positioned across a scree slope, non-corporeal elements appear to be as important as the motifs. Approaching rock art in a non-representational framework, we consider the involvement of intangible elements as part of the constant knowledge production and shaping of realities at sites. This is the point of departure for our discussion of the making and use of rock art as a meaning-making and storytelling practice in Late Mesolithic and Early Neolithic Norway.



### KEYWORDS

Rock art; light; other-than-human agents; temporality; movement; storying

## Introduction

In many mythologies, light is the source of life. To have power over light, or to be able to manipulate life through light, enables and empowers gods and people. In this article, light is considered an active agent in the way the making of rock art created meaningful worlds in the Late Mesolithic (6000–4000 BCE) and Early Neolithic (4000–3300 BCE) in Norway. Traditionally, studies of images found carved, cut or painted on rock, have privileged form over process (cf. Cochrane and Jones 2012, 2), and usually archaeologists interpret rock art as communicating symbolic or social systems of a specific time or cultural group. That is, the motifs are approached as representations of something else. In our article, we will instead attempt to bridge this Cartesian divide between the world and its meaning. We thus apply more-than-representational perspectives and stress situated human engagement with the images on-site (see Cipolla and Gallo, Swenson and Cipolla, Tsiorki et al. this issue). In other words, we foreground the performative aspects of practice, ‘relational understanding of human existence and life, the relevance of perspective, experience and corporeal involvement in the world’ (Porr and Bell 2012, 184). Furthermore, we perceive the involvement and engagement of intangible elements as active agents, making temporality and changeability key characteristics of rock art.

Images are in essence a play of light and shadow at the moments of perception. Hence, to acknowledge light, position and time, as integrated elements and active agents in the constant making and remaking of meaning, is to recognize both sites and motifs as in a constant state of becoming. The motifs came to life again and again, continually creating and maintaining the social

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lives of hunter-gatherer-fishers in Late Mesolithic and Early Neolithic societies in Norway. Through their role in such knowledge production, rock art sites continually served as places of storytelling, as well as storied worlds, or *worlding* to use Donna Haraway's term (2016, 41). It is through active involvement and attention to experiences and places that engagement with materiality and contexts full of events and interactions occurs (Anderson and Harrison 2010, 8–9).

This meaning-making and worlding practice entailed the combined effort of both human participants and the active agency of other- or more-than-humans (cf. Porr and Bell 2012). As pertains to our paper, we will also focus on light as an active agent. In archaeology, there is a growing acknowledgement of light, or material qualities induced by light, as necessary experiential aspects of different objects or phenomena. This focus, for example, enabled a new understanding of artefacts, caves or architecture (e.g. Bjerck 2012; Bille and Sørensen 2016; Marila 2017; Nyland 2020), and in this study, we include open-air rock art sites to this list. An acknowledgement of immaterial as well as tactile qualities of the physical world serves to link mind, body and practice. Humans and other-than-humans respond and act on each other and they thus differently exert agency in performed encounters. The latter has been poetically described as 'the dance of agency' (Pickering 2010, 195). Although we call these elements human and other-than-human, the boundaries between them are not necessarily clear cut, as discussed in post-humanist theories where 'the givenness of the differential categories of "human" and "nonhuman" are called into question' (Barad 2003, 808). Nevertheless, we concur with the notion of making room for other-than-human social actors (Creese 2011, 4), a focus on practice, and the performative, to open rock art studies up to new understanding of how landscapes and rocky beings were involved in shaping past realities.

The acknowledgement of light and moving bodies as active agents and elements vital for understanding rock art poses challenges for documentation practices. However, the development of new methods in rock art documentation is enabling explorations into sensorial experiences of past worlds. As we will demonstrate, by scanning rock art panels and obtaining 3D images, one can later expose images by projecting light from different angles. This method has produced exciting results, capturing how light was a necessary part of completing and transforming a figure at the site Hammer IX, Steinkjer, in Trøndelag County (Figure 1). Another example of rock arts' temporality and transformability due to shifting light comes from the Vingen rock art site in Bremanger, Vestland County (Figure 1). There, instead of a single figure transforming, the location of numerous images, positioned on large and small blocks of rock in a scree slope, can create numerous scenes or indeed 'playlists' as one moves through the subsite or the sun moves across the sky. Hence, the perception of the rock art motifs is a dynamic and temporal experience. However, how can we document how rock art as well as the other-than-human elements or actors perform? And, what are we potentially documenting?

## Playing with light at rock art sites

### *The Elk/Whale of Hammer IX, Steinkjer, Trøndelag*

The Hammer site is located on the south side of the Beitstad Peninsula, innermost in the Trondheim Fjord, Trøndelag County. The site comprises 17 subsites with panels scattered across a terrace about 500 m wide, covering an area of approximately 1 km<sup>2</sup>. There are around 40–50 figures and a range of different motifs: boats, footprints, handprints, birds, elk, whales and many incomplete figures and lines (Bakka 1988; Kirkhus and Stebergløkken 2019). The site forms part of a larger complex of panels, comprising not only so-called hunters' rock art but also later, Bronze Age motifs



**Figure 1.** Map with place names mentioned in the text. (Illustration: A.J. Nyland).

(i.e. Northern and Southern rock art traditions) (Stebergløkken 2016, 2017, *in press*; Sognnes 2017). The Beitstad Peninsula and inner Trondheim Fjord exhibit a high density of presumed Mesolithic rock art sites. For example, there is another large site, Bardal, only 7 km west of Hammer (Sognnes 2017). The Late Mesolithic and Early Neolithic people, who occupied numerous nearby settlements and made the rock art, subsisted by hunting, fishing and whaling, and later by incipient agricultural practices (e.g. Aspren 2013).

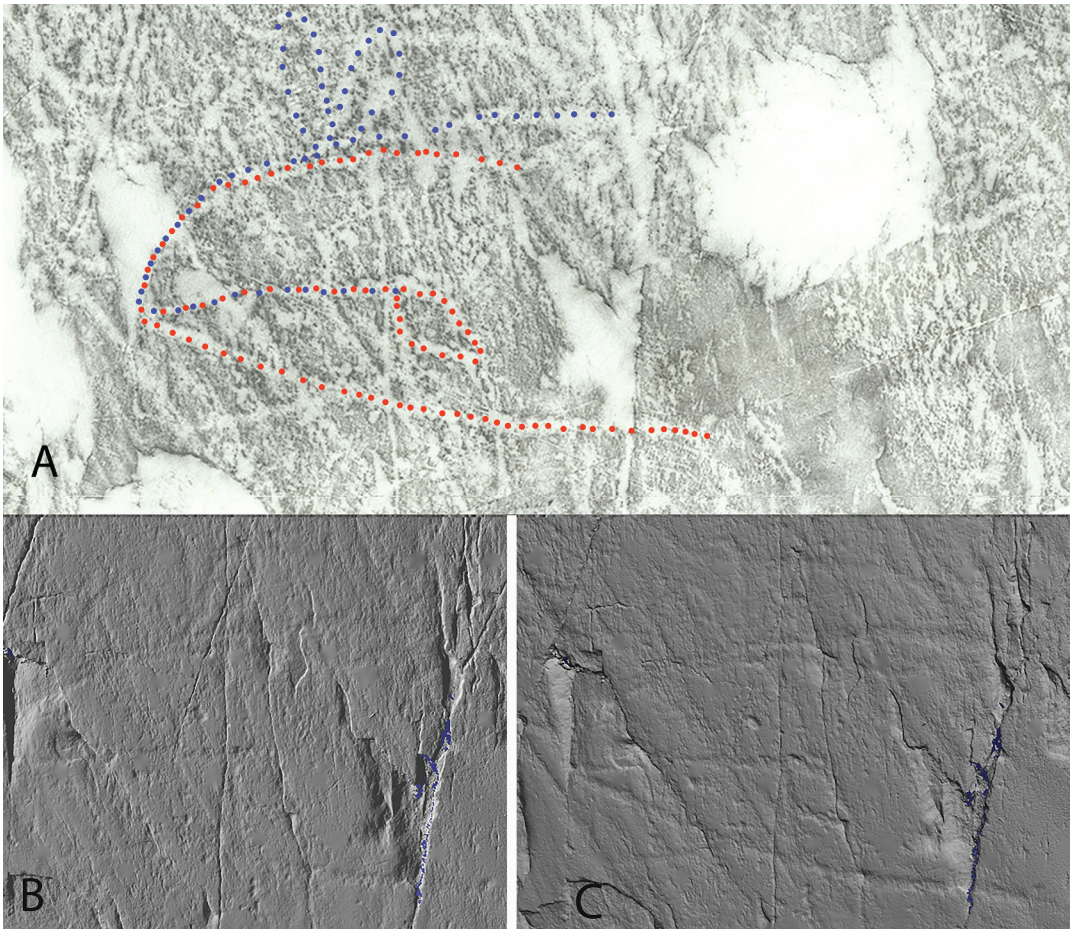
Shoreline dating suggests maximum dates for the use of these panels, as the sea was receding during the Stone Age. At Hammer IX, the site's oldest phase of use is arguably the Late Mesolithic, which is also supported by typological similarities to other contemporary dated sites in Norway (e.g. Sognnes 2003; Gjerde 2010; Fuglestvedt 2017). Accordingly, the Hammer IX panel has been shoreline-dated to 4400 BP, even if motifs on the panel, as well as other panels at Hammer, show that the panels were reused in later periods (Late Neolithic–Bronze Age) (Sognnes 2003; Stebergløkken 2016). Focusing in on the Mesolithic motifs of Hammer IX, there is a mix of terrestrial and marine animals. At three contemporary sub-sites, located about 200 m to the southwest, Hammer XIII, XIV and XV, whale figures dominate, although terrestrial mammals are also depicted.

During recent work with the Hammer IX site, a laser scanner (a HandyScan 700) and photogrammetry mapping of surfaces produced high-definition documentation of the rock surface (Kirkhus and Stebergløkken 2019), in addition to traditional documentation methods like tracing

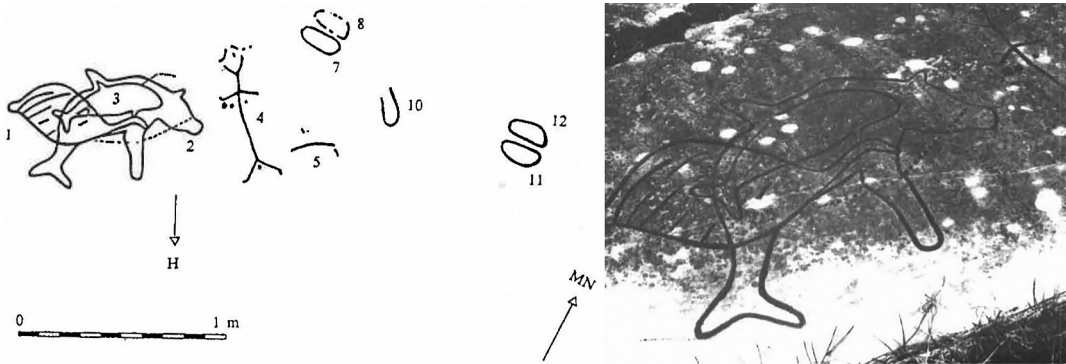


and frottage. Following the fieldwork, MeshLab software was used to recreate, or rather manipulate, light in order to illuminate the scanned panel from different angles, which revealed how the shifting light transformed an elk figure into a whale (Kirkhus and Stebergløkken 2019; Stebergløkken *in press*) (Figure 2). A similar example can be found at Evenhus V, in Frosta, Trøndelag County, where some figures show a possible intended dichotomy; a boat image with one stem can be easily mistaken for a bird image as one looks at the motif from different angles. Moreover, at Hammer V, not far from Hammer IX, another transforming figure, a 'whale-bear' was recorded (Bakka 1988) (Figure 3). Studies of the motifs clearly show that the double figures shared lines, but shifting light will highlight one or the other, or both at the same time. This is apparently not a coincidence but appears to be a deliberate effect.

Moreover, since the panel at Hammer IX is curved, different motifs would have appeared and disappeared at different times of the day (Figure 4). Depending on the position of the viewer or the path that people followed passing the panels and sites, this would have influenced what was visible



**Figure 2.** (a) The elk/whale head of Hammer IX shown as standard documentation (frottage), with blue dots highlighting the elk and red the whale (b), shown as a 3D scan where only the elk is visible; the same image in different light, showing only the whale (c) (Scan manipulated by L. Kirkhus, NTNU University museum. Illustration: H. Stebergløkken).



**Figure 3.** The bear/whale of Hammer V (no. 2). Left: tracings on paper made by Egil Bakka in 1988. Right: picture of the figures on the rock surface, painted by Bakka (1988, 19) before documentation.



**Figure 4.** Site Hammer IX in its landscape. (a) Southward view of the site. (b) The eastern part of the panel with whale-elk (seen towards the west). (Photo: L.V. Kirkhus, NTNU University museum).

at any time. Hence, light enables one to see more aspects of a specific figure or indeed to observe a transformation.

### ***The urane sub-site at the Vingen rock art site, Bremanger, Vestland County***

The Vingen rock art site is located in a small bay on the coast of Western Norway. The site covers approximately 1.2 km<sup>2</sup>. As of 2012, the site comprised a total of 2,195 images spread over 310 panels along a stretch of approximately 600 m. The site is divided into 15 sub-sites, and another four are in the immediate vicinity (cf. Lødøen and Mandt 2012). Most of the images were presumably made at the end of the Late Mesolithic (between approximately 5500 and 4000 BCE), with some continuation into the Early Neolithic (>3200 BCE) (Lødøen 2013, 22–29). The primary motif at Vingen is deer, some portrayed alone, others in clusters, comprising images ranging from naturalistic to more geometrical and abstract styles, with and without body-fill. There are figures interpreted as elk head poles (cf. Fuglestad 2017) and human figures interpreted as skeletal humans (cf. Lødøen 2014), alongside riders and geometrical patterns, although these are more infrequent. In the coastal region around



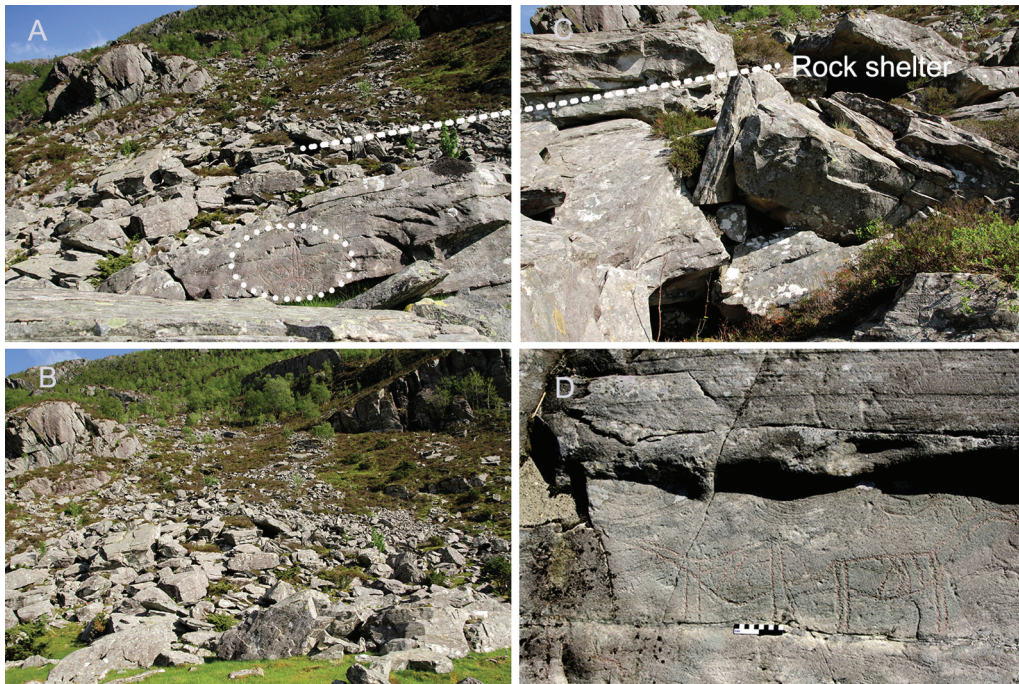
Vingen, there are numerous Mesolithic and Early Neolithic settlement sites (Bergsvik 2002). In Vingen, excavations and stray finds of points and production waste found across the site reveal the presence of hunters in both the Late Mesolithic and Early/Middle Neolithic (Lødøen and Mandt 2012, 439–452).

One of the sub-sites at Vingen, Urane [The Scree], consists of 178 motifs spread across 77 small and large stones, boulders and panels within a large and northward-facing scree slope (Lødøen and Mandt 2012, 359) (Figure 5). The scree covers an area of about 2,400 m<sup>2</sup>. Next to Urane is the sub-site Bakkane [The Hills], where 42 panels have been recorded, most of which are next to the western edge of the Urane sub-site (Lødøen and Mandt 2012, 337). Hence, more than 100 panels are clustered within a relatively small area (Figure 6). Moving past or through this landscape of scattered stones and blocks, panels face you almost wherever you turn. Indeed, the same is true for all sub-sites in Vingen, although many figures are also compiled at large, smooth rock surfaces (Figure 7). Furthermore, in the central part of Urane, some large blocks form a tunnel like rock shelter that one can move through with carvings on the inner walls (Figure 6(c), see also Figure 9).

The effects of the moving sun and the play of shadows at Urane were analysed during fieldwork on a summer day in 1997. During a single day, while documenting a panel at the foot of the scree, new images came into view and disappeared when looking at the scree from one and the same spot as the sun moved across the sky. The images appear to have been deliberately placed on specific blocks in the scree to exploit moving light, creating possibly sequential, scenarios and 'playlists'. The images' visibility is subject to the time of day and the season, including, how high, or if, the sun rose over the steep mountains directly south of the site. For documentation purposes, not only was



**Figure 5.** The site of Vingen, consisting of more than 2000 motifs scattered on the large flat surfaces, as well as smaller stones and boulders across the terrain. The red circle marks both the Urane and Bakkane sub-sites. (Photo: A.J. Nyland).



**Figure 6.** Collage of the subsite Urane seen from below (a and b). (b) also shows one of the iconic motifs of a human riding a deer in front, the central rock shelter (c), and (d) another panel in Urane showing two deer mirroring each other – moving in opposite directions? (Photo: A.J. Nyland).

careful planning required to recreate a particular experience, but fortune would also play a role, as the weather on the west coast of South Norway is highly variable. Whereas new motifs come into view depending on the sun's movement across the sky, the visibility of motifs also depends on the path the viewer follows through the landscape. Together, the other-than-human elements – the time of day, the weather and the seasons – influence what can be seen along the same path. At the same time, the onlooker was possibly expected to remain stationary, and social protocols may have regulated which route to follow across or through the area. We stress a key point here that we will return to shortly: the agency of the other-than-human elements actively influenced and determined the experience.

### Light and the temporality of perception

For anyone working with rock art, the focus on light is perhaps self-explanatory. Light is an essential tool for discovering and documenting the images. There is one type of light at sunset and another at mid-day or evening. Light can be 'flat' or 'skewed', and depending on the type of light, you can either see the images in front of you or not. In addition, one can either see or enhance the relief effect created by carved or cut lines in the rock by using other sources of light, like a torch or electric lamps, or by covering oneself and the surface with a dark cover to control an angled beam of light. As mentioned, making 3D scans can allow for later play with light and hence discoveries. Searching for rock art in torch light at night is also a well-known practice among archaeologists. In caves, artificial light is needed to see the images at all, although in the caves along the coast of Central and Northern Norway, the figures tend to be situated in





**Figure 7.** Moving through the Vingen site one will pass numerous motifs, on separate stones and boulders, or on large smooth rock surfaces. The photo in the upper register depicts the sub-site Brattebakken (The Steeper Hill) in the landscape, just west of Urane and Bakkane. Lower right corner: some of the motifs found on the surface. (Photo: A.J. Nyland).

the transition area between darkness and light. However, bringing light into the cave exposes what was once concealed by darkness, perhaps only meant to be partially seen, in flickering light to evoke specific feelings and sensations (Bjerck 2012, 55–57). In fact, modern documentation and recording practices might do sites and images an injustice, depriving the site of its originally intended setting and producing static representations of rock art images (Bjerck 1995, 2012). Hence, by displaying images in isolation or as complete images – or by viewing all images found at a site at once – we risk downplaying the importance

of light or other intangible actors, and by extension, obscuring what made the motifs come to life or transform.

The visibility of images also changes with time in another capacity. That is, when rock art was freshly made, it would have been whiter and more visible, even when light conditions were poor. However, this effect wears off relatively fast. The images may also have been painted in the past. There is painted rock art in Norway dated to both the Late Mesolithic and Early Neolithic (Sognnes 1999), and there are also a few examples of colour pigments found at pecked sites, e.g. a pecked boat image at Sandhalsan, in Åfjord, Trøndelag County (Gjerde & Steberg-løkken 2018). In Vingen, there are pecked images inside a rock shelter in the scree, where no trace of deliberate painting has been detected (so far). Hence, not all carved/pecked rock art was painted. It seems apparent that variations evoked by viewing the figures at different times, or from different vantage points, may have mattered more than seeing everything at once. Adding varying social context, sites are never static galleries, but the motifs are active players together with humans, movement, time and light.

Recently, there has also been a new focus on light as an active agent in archaeological interpretations, especially related to spaces created by people, such as buildings or tombs. Archaeologists have argued that light is a powerful social agent, something that is actively engaged with to situate a person or a thing in the spotlight, while casting others into darkness (e.g. Bille and Sørensen 2007; Moyes 2014; Bille and Sørensen 2016; Sørensen 2016). Open-air rock art sites with panels of pecked, cut or ground figures should not be viewed any differently. We argue that there is social significance tied to temporality, light and movement, influencing or determining which rock art images could be seen and when. As the day passes and the light changes, images come and go with the moving shadows. Moreover, even weather should be perceived as an active agent, as the lines in the rock can be enhanced by the occasional rainfall making the surfaces wet. The key point here is the co-dependency between motifs and light, time, movement, and indeed weather, for the motifs to make sense and story worlds. This is a step away from a traditional understanding of animism, where any element of the world may be perceived as alive and infused with spirit. Instead, the 'new' animism emphasizes awareness of the fundamental condition of life itself (Porr and Bell 2012, 189). This perspective places emphasis on the relational epistemology and ontology, and recognizes that the world's elements are alive through their relations and engagement with each other. This understanding also weaves into current ontological debates in archaeology, which are increasingly concerned with the nature of being (cf. Jones 2017) and the primacy of movement of all entities of the world (Ingold 2006, 14). 'Animic ontology', to quote Tim Ingold (2006), does 'not universally discriminate between the categories of living and non-living things'; there is no 'infusion of spirit into substance, or of agency into materiality, but [this] is rather ontologically prior to their differentiation'.

As mentioned, topography obscures or hides motifs, making movement of the observer imperative (e.g. Janik 2014). Indeed, at most rock art sites, a characteristic feature is that curved or differently oriented panels, combined with light, movement and other elements slowdown perception and invite one to experience the motifs in sequences (Figure 8). When including the active viewer, one must also reckon with the viewer's shifting height or posture, as well as social guidelines or protocols dictating who was permitted to see or experience the different sites. To live is to be in motion and in transition. This indicates that the communicative power of the rock art images and sites may have depended on knowledge of where to move at what time and to which rhythm – like dancing – or knowing when to stand still to see a temporary transformation of a figure, as the examples from Hammer might indicate. Rock art sites might thus have been places where stories came alive, were discovered, shared or learnt while moving among the rocks and images. Although motifs, such as the deer, bear or whale may have expressed specific meanings, there are also numerous examples of singular lines or patterns that may have been equally potent because of their unfixed character. The earlier mentioned peck marks and lines inside the rock





**Figure 8.** Motifs (mainly deer) are scattered across the large panel at the sub-site Vehammaren (The Crag). To see them all one needs to move, exemplified here by visiting archaeologists in 2013. (Photo: A.J. Nyland).



**Figure 9.** Unintelligible motifs may have been as powerful as any identifiable motif. Perhaps this is the case with the scattered peck marks and lines inside the rock shelter in Urane. (Photo: A.J. Nyland).

shelter at Urane provides one such example (Figure 9). The stories could also be altered or changed by adding new images or lines, or by the viewer moving in the opposite direction. Shifting light, song and dance may have added to, complemented or changed how an image communicated or ‘told’ a particular story (cf. Jones 2017, 171). Hence, although cut in rock, temporality and changeability form integral



characteristics of the meaning and embodied experience of rock art sites. They are places of a kind described in human geography as ‘relational-material “crossroads”, where many different things gather, not just deliberative humans but a diverse range of actors and forces, some of which we know about, some not, and some of which may be just on the edge of awareness’ (Anderson and Harrison 2010, 12).

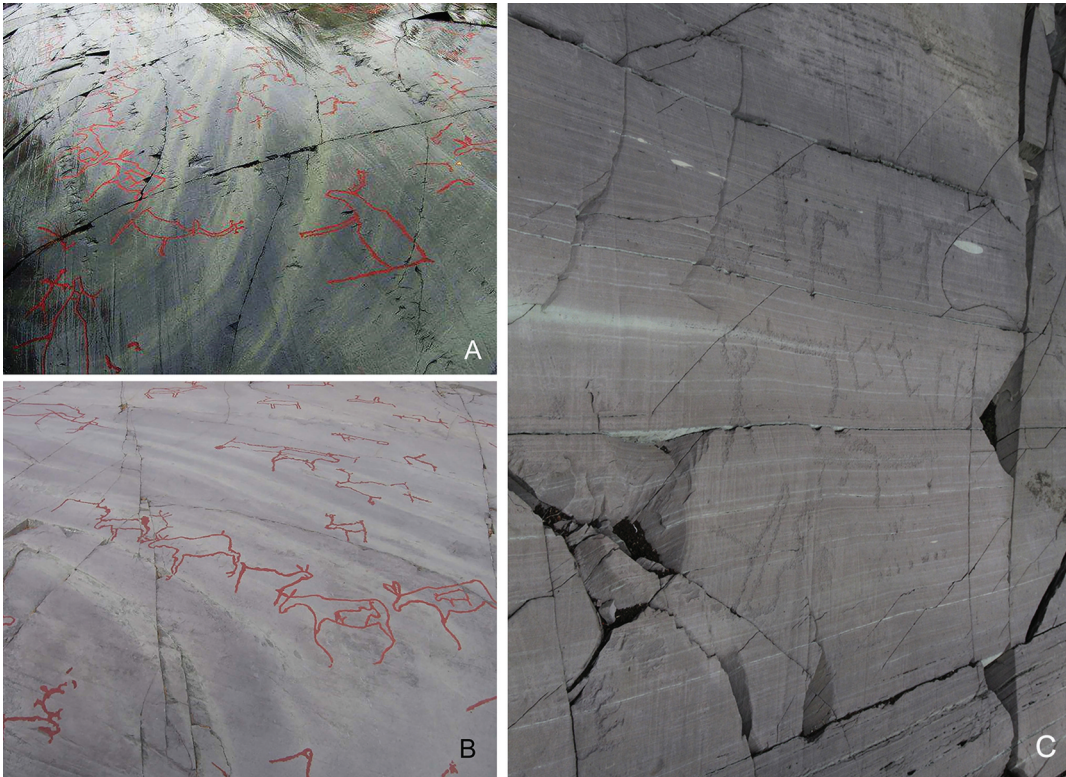
### Perception: more than meets the eye

We have argued that light, shadow/darkness and movement were all important elements in the immediate experience and understanding of rock art. However, if the intention was for the viewer to observe the images in a particular order, it follows that the affordances of rock surfaces, topography and geology played an agentive role in the production of rock art. This idea of looking beyond motifs is not new. Indeed, in order to enable new interpretations, rock art research has long included elements beyond the images themselves, in particular, the relationship between rock art and its surrounding physical environment and landscapes (e.g. Helskog 1999, 2004; Lahelma 2005; Gjerde 2010, 2013). This includes significance ascribed to the actual surface of the rock face, where rock art panels may be interpreted as maps, mirroring larger landscapes (e.g. Taçon and Ouzman 2004; Gjerde 2015, 2019). Yet even these studies often rely on recreating and documenting what we can see. Another focus explores the tactile or sensuous properties of rocks, such as the texture of the panels, the interplay of colour, fault lines and cracks, which are considered and recorded in shifting light and different seasons, in order to make sense of specific landscape settings or topographical peculiarities (Gjerde 2010; Danielsson, Fahlander, and Sjöstrand 2012; Jones 2012; Gjerde 2013; Rainio et al. 2014; Gjerde 2019).

It seems safe to assume that neither the choice of place to make rock art nor the type of rock used for the carvings were a coincidence. For example, in Alta, in Finnmark County, in a depression of a relatively horizontal rock art panel that fills with water every time it rains, the image becomes one where a whale dives into a water pool or a maelstrom (Gjerde 2010, 243). There are also other geological features that strengthen our impression of the importance of light. For example, in Kåfjord, also in Alta, a sandstone-type rock in cords of red, yellow and green exhibit surfaces that resembles the motifs floating in the northern lights (Tansem and Johansen 2008, 80). On this surface, one human figure holds up its hands and touches a strip of light green-yellowish rock flowing like the northern lights across the panel (Figure 10).

At the Leirfall rock art site in Stjørdal Municipality, in Trøndelag County, the main panel (no. III) has several square holes from eroded or removed pyrites, also known as ‘fool’s gold.’ When light would hit the panel, the rock may thus also have come alive. Today, almost all the pyrites have weathered away, but small, rusty holes are still visible (pyrite consists of 47% iron (Fe)) (Sognnes 2011, 194). Indeed, shimmering stones may explain why certain panels were chosen for rock art production. Another geological feature repeatedly found is thin quartz veins zig-zagging through parts of panels. For example, figures were placed in relation to quartz veins on the surface at Leirfall and Åskollen, Late Mesolithic sites in Trøndelag and in Viken County, respectively. It seems significant that both pyrite and quartz were utilized as strike-a-lights and that quartz can emit a bluish glow when struck (cf. Herva and Lahelma 2019).

As an empirical practice, archaeology primarily records quantifiable properties. That is, landscapes or physical environments, panel topography, motifs or other remains; these are all tangible elements that can support one’s interpretations. Motifs are also gratifying objects of study since many of the images still makes sense to us in that we can identify the animals or scenes, even if the specific narrative or meaning remains a matter of interpretation. Nevertheless, keeping this focus



**Figure 10.** Rock surface resembling the northern lights *Aurora Borealis*. A and B show site Ole Pedersen 11A in wet (a) and dry (b) conditions (Photo: H. Stebergløkken). C shows the rock at site Kåfjord, in Alta, where the motif is placed so the human figure looks like it controls the light. (Photo: A.J. Nyland).

also maintains the primary emphasis on rock art as a visual medium and the images as representations, symbolic or otherwise. Creese (2011) argues that archaeologists should not privilege humans over other-than-human elements that together make up a rock art site. Creese stresses the interaction and reciprocity of humans, landscape features, and animals, as well as moral and social knowledge; one element is nothing without the other, and only together and over time did they create or sediment a place. A rock art site is not just ‘a place’, but it is a place where ‘everything takes-part and in taking-part, takes-place’ (Anderson and Harrison 2010, 14).

This is thus a step away from giving primacy to representation, but it has not happened in a vacuum. In the last 20–30 years, a growing number of archaeological and rock art studies have acknowledged the involvement of sensorial experiences beyond visual perception (e.g. Fahlander and Kjellström 2010; Skeates 2010; Day 2013; Hamilakis 2013). For instance, scholars have explored the possible strategic exploitation of haptic sensations or acoustics that have expanded the interpretative horizon (Ouzman 2001; Danielsson, Fahlander, and Sjöstrand 2012; Allen et al. 2013). Rock art has also arguably been placed in locations where dramatic natural elements such as the sound of river rapids (e.g. Goldhahn 2002) or the echoing sound of hammering on rock (Rainio et al. 2014) would add to the total experience of the sites. While dramatic or otherwise significant locations contributed to the experience, we argue that the subtlety of moving daylight, a rain shower or a slight shift in the viewer’s position would have equally triggered dramatic sensorial effects in the

right social context. In rock art studies, it becomes acute how '[t]he move toward performative alternatives to representationalism shifts the focus from questions of correspondence between descriptions and reality (e.g. do they mirror nature or culture?) to matters of practices/doings/actions' (Barad 2003, 802).

There is great potential in the recognition of rock's agency, where external elements, such as light or water, enable the expression of rock's potential capacities, as exemplified by Ingold's analysis of the (2007) changes a wet rock undergoes as it dries: '[s]urfaces are where radiant energy is reflected or absorbed, where vibrations are passed to the medium, where vaporization or diffusion into the medium occur, and what our bodies come up against in touch' (Ingold 2007, 15). In this description of the ongoing changes between elements, there is also acknowledgement of time as an active agent. Similarly, the meaning of rock art may lay in its temporality. Hence, rock art is a meaning-making practice in which other-than-human elements are key actors and co-producers of meaning.

### Storing the Late Mesolithic and Early Neolithic

The tradition of making rock art in Norway goes back to the Early Mesolithic, but the specific meanings of the images and practices presumably changed over time and across regions. Nevertheless, most of the images makes sense to us in that we can identify the animals or scenes involving people tracking or hunting animals. Norway and Fennoscandia witnessed an intensification of the rock art tradition after 5500 BCE (e.g. Gjerde 2010; Herva and Lahelma 2019). At the same time, there seems to be a tendency to more often depict multiple animals together, a tendency interpreted by Fuglestad (2017) as reflecting the value placed on the collective in society, expressed in images of the herd. Although this is a powerful claim, the specific narrative or meaning of rock art is still a matter of interpretation. It may even be a mistake, as Andy Jones comments (2017), to aim for the identification of a specific meaning, since neither the image nor its meaning would have been static or two-dimensional. As for the Hammer IX site, there are figures from later periods carved on the same panels. Even the motifs we assume are contemporary may have been added over time, and we cannot be sure when the different motifs were added. Hence, to identify specific meanings based on motif collections is challenging. The motifs' dependency on the socio-cultural situated human agents, as well as the other-than-human elements, adds to this complexity.

The Hammer and Vingen sites were both made and used by hunter-gatherer-fishers living within the same areas in the Late Mesolithic and Early Neolithic. It is important to note that, in Norway, the Mesolithic–Neolithic transition does not include a major shift from hunter-gatherer subsistence to farming as elsewhere in Northern Europe. Instead, hunting-gathering-fishing and a mobile or semi-mobile lifestyle remained the dominant way of life in most of Norway until the Late Neolithic (2300–1800 BCE) (cf. Nyland 2019a). There were changes in material practices and, to some degree, mobility patterns (Bergsvik 2001), but traditions linked to the hunter-gatherer-fishers' way of life, including rock art, endured. Moreover, although Mesolithic hunter-gatherer societies, in general, have been regarded as more or less egalitarian, this is not to say that hunter-gatherer-fisher societies lack structures, be they based on gender, age or knowledgeability. Although increased external contact or impulses may have reinforced the need to intensify or strengthen cultural affinity (Barth 1969), people in both egalitarian or otherwise structured societies demonstrating strong continuity also have a need to create and certify stories. Rock art sites thus possibly serve to emplace the stories of how a community's world was created, sustained, and represented. They may also have memorialized places that reinforced relations between elements in the world, and hence people's sense of ontological security.

In all societies, to story one's reality is necessary. Rock art may have communicated and mediated cosmology or other histories and traditions firmly entrenched in contemporary societies. But the rock art did much more than narrate myth. As recited in Porr and Bell (2012, 181), for certain aboriginal groups in Australia, a rock art site concentrates 'images with energies that keep us alive – every person, everything we stand on, are made from, eat and live on'. We argue that Mesolithic Norwegian rock art may also have stimulated, increased and renewed energies, and they were possibly recharged as sacred objects through painting, repainting, poetry and dance. People may have been introduced to motifs and stories at different stages in their lives or during different initiation rites (Tilley 1994). They may have been introduced to stories as children. Alternatively, meaningful and sensorial encounters with rock art may have been orchestrated during initiations into adulthood or when individuals attained status as elders. People *live with* elements and thereby story their place in the world, fundamentally creating and maintaining relational security (Haraway 2016). Perception and experience are socially situated and this mediation facilitates 'the transition and transformation of situatedness into knowledge' (Stoetzler and Yuval-Davis 2002, 316). The practice of making rock art is thus part of storying the Late Mesolithic and Early Neolithic worlds. Although the motifs obviously had specific meaning, they were nothing without the gathering of, or interplay between, motifs, landscapes, light, weather, movement and people.

## Conclusion

Light and movement as constitutive of the Late Mesolithic and Early Neolithic reality and worlds can also be found beyond rock art. One can argue that there was an emphasis on light in social practices, such as lithic procurement and production. In some societies, like the Maya civilization in Mesoamerica, it was believed that one could harvest the fertilizing power of light by transforming materials through specific rites and contexts (Saunders 1999, 2004). The great power of light may also explain patterns in rock crystal procurement, distribution and production in Late Mesolithic–Early Neolithic Western Norway. For example, in Rogaland, a county where the utilization of flint dominated ('beach flint' – flint found as drift waste along the shores), coastal populations collected rock crystals from large quartz sources in the mountains. Assemblages in both coastal and montane areas demonstrate how rock crystal formed a continuous part of people's toolkit in both the Mesolithic and Neolithic, even if other rock types may have been easier to access (Nyland 2020). Was it, perhaps, its capacity to capture light that made this rock type important to obtain and carry? In a society where there was no artificial light, people *lived with* light, or sometimes the lack of light, in a way perhaps lost to our modern society where we can turn on a switch, or play with light on scanned images on our computers. In the past, light may have been experienced as an independent actor. Thus, to control or strategically exploit it for story rock art or other lithic production may have added social significance to the practices.

In an academic climate where evidence generated from the 'hard and objective' natural sciences has primacy, sensorial explorations are often regarded as 'soft', secondary or too subjective. In archaeological reports, where properties are presented before qualities, sensorial encounters are more often than not 'lost in translation' (Nyland 2019b). It is often a pragmatic rationale that determines how we document sites. Nevertheless, when new possibilities to document rock art sites, including 3D studies, and recognition of varied sensorial perception and experiences are combined, it allows for exciting new stories can be told. However, this also requires a changed perspective regarding how we understand rock art in a wider context. Rock art, indeed, all

prehistoric remains demonstrate ways for prehistoric people to story their world. Yet this has to be combined with the authority of indigenous epistemology (Porr and Bell 2012).

The above examples emphasize light and movement as actively transforming and influencing perception. In some cases, the role of light seems obvious, as demonstrated by the deliberate placement of certain motifs in caves or at specific locations. Yet by allowing the light to play, rock art comes alive. While we cannot know who told the stories – whether one believed it was the sun itself, the rock, or the people experiencing the light show, the story clearly entails more than the images and rock surfaces we can document. Hence, it is not only a question of site formation, but also an ontological one (Jones 2017, 176). Furthermore, by stressing the importance of shifting light, one acknowledges that time is an active agent and by extension, we decentre the human subject. This perspective chimes with recent theoretical developments advocating a flat ontology and acknowledging other beings' capacities to affect and influence human lives, as championed by perspectives in post-humanism, post-anthropocentrism, as well as non-representational theories that focus on bodies (human and non-human), relational materialism, process and performance (Viveiros de Castro 1998; Anderson and Harrison 2010; Haraway 2016). This emphasis on relationality also challenge 'claims to preexistent fixed substances' (Jones and Alberti 2013, 16). Instead of focusing on the identification and classification of the depicted image – fixating on a figure as meaning one thing – we have considered movement, light, perception and the knowledgeability of the viewer to demonstrate that the meaning of figures, and hence the stories, were open, temporally dynamic and variable. Accordingly, rock art sites become places of continual *wayfaring* and relational *worlding* of worlds, to again use Haraway's terms (2016). The sites and motifs are fluid and dynamic, they have performative power, as has been argued for art in general (cf. Bolt 2004), to shape and renew realities.

## Acknowledgments

Thank you to the editors and reviewers for their insightful comments to our paper. Astrid Nyland would like to thank to Gro Mandt, a former professor at the University of Bergen, who introduced her as a fresh student to rock art studies and the Vingen site, enabling her to experience the site for weeks at a time in changing light and weather. Heidrun Stebergløkken will forever be thankful to Kalle Sognnes, former professor emeritus at NTNU, her mentor and supervisor who is deeply missed. She would also like to thank Jan Magne Gjerde, researcher at the Norwegian Institute for Cultural Heritage Research, for sharing knowledge and discussions about rock art in its surrounding micro and macro landscape.

## Disclosure statement

No potential conflict of interest was reported by the authors.

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