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Petrified Life or Living Stone? The Problems of Categorisation

Exemplified by Fossils Found at Stone Age Sites in Rogaland, Norway

During archaeological excavations, artefacts are collected, tagged and stored. Based on these, archaeologists interpret peoples' social identity, relations and even world view. However, a narrow range of 'natural objects' are also collected, often if perceived as essentially different from the surrounding gravel or debris; that is, if odd or beautiful enough to the excavator. Fossilised Sea-urchins (Echinoidea) are such objects and have been recovered from hunter-gatherer-fisher coastal sites dated to Mesolithic and Neolithic. They are predominantly found in refuse layers and floor contexts. In this brief article, based on finds of fossils at recent excavations in Rogaland county, Norway, the fossils are considered as illustrative of the fluidity and transformability of life in a Mesolithic ontology that avoids the separation of nature and culture. Hence, life is stone, and stone is life. Contrasting this is the archaeological practice of separating 'cultural' from 'natural'. Does this limit our understanding of life in the Stone Age?

Introduction

From an Early Mesolithic short-term hunting campsite on coastal south-west Norway, several flint flakes were refitted forming the negative outline of a fossilised sea-urchin. Including this, and more recent finds at Mesolithic and Neolithic sites along the Rogaland coastline, this find category, fossils, serves as the inspiration for a consideration of a specific archaeological practice. In general at Stone Age sites, humanly made lithics are functionally defined and analysed, while non-worked stones rarely receive attention (Warren 2009). Despite the collection of some non-worked objects, which differ so much from the surrounding debris, an initial separation is made even during excavation between 'natural' and 'cultural' elements. This type of initial evaluation and categorization is pragmatic and tacit in modern cultural heritage management, hence influencing current sampling practices. However, the division between categories, the culture-nature, mind-matter dichotomies can be challenged from a Post-Anthropocene perspective. That is, recognizing the material world as being in a continual process of becoming, categories are 'essentially' fluid and unfixed (eg. Boivin 2004, Deleuze and Guatarri 2005 [1980], Olsen 2010, Conneller 2011, Ingold 2013). Moreover, 'natural' rock can have agency too, whether it transforms or is transformed by its own account, external powers, or human appropriation (cf. Warren 2009, Conneller 2011). With such ideas as my theoretical foundation, I ask whether the archaeological practice of predominantly collecting humanly worked objects from Stone Age sites narrows the interpretative lens we understand the prehistoric world through. To open the discussion, I use fossil sea-urchins (Echinoidea) found at both Mesolithic and Neolithic sites in Rogaland County as my point of departure (Figure 1).



1.

Fossil sea-urchin found at the Middle-Late Mesolithic site Sola Sentrum in Rogaland, Norway. Photo: Krister Scheie Eilertsen.



Distribution of Mesolithic and Neolithic sites with recorded fossils in Rogaland county, Norway. (Fossil sea-urchins found in Bronze and Iron Age grave contexts are not included).

Finds of sea-urchin fossils in Rogaland, Norway

In Rogaland County in southwest Norway, recorded fossils (including sea-urchins and cockles) in Stone Age contexts are all from coastal sites (Figure 2). Seven of the fossils are sea-urchins (Figure 3), all small, >5 cm in diameter. People of the past may have found fossils while roaming the beaches, but fossils were also revealed by people while knapping flint. From the sites, there are cores, nodules, flakes and blades where the fossil is still embedded in the collected objects, and the remaining imprints on collected flakes and fragments demonstrate how fossils were encountered while working flint, even if the fossils themselves are not found. The low number of finds can indicate that this was not a common event. Still, and as I will return to, the low number of fossils in the archaeological museums' storages might also be a result of collection strategies.

		EM	EM-MM	MM	MM-LM	LM	LM-EN	EN	MN	LN-BA	Not defined	SUM
	Sea Urchin	1			1		1		1		1	5
	Imprint	1					1	1			4	7
	Artefact with fossil	1				2	1	2			3	9
3.	SUM	3	0	0	1	2	3	3	1	0	8	21

Overview of finds of fossils, imprints, and finds where the fossil is still embedded, in the museum storage and database at Arkeologisk museum, University of Stavanger, Norway.

The fossils are found at sites dated from the Early Mesolithic to the Middle Neolithic. As figure 4 demonstrates, they peak around the Late Mesolithic-Early Neolithic transition. That there are more imprints than complete fossils found may indicate that the fossils were removed from the sites, kept or deposited elsewhere in contexts that are now archaeologically 'invisible', but to a prehistoric population, significant nonetheless. Seven of the listed finds are strays, but the majority are dated through relations to chronologically significant tools and production debris at settlement sites, in midden contexts, and in refuse layers. One (no.15) was found in a shallow pit filled with fire-cracked rock on a short term hunter-gatherer-fisher site dated to 4251–3999 BC (cal. 2 sigma)/ 5304±39 BP (UBA25045) (Fyllingen 2020). Although there is no major subsistence change at the onset of the Early Neolithic (Bergsvik et al. 2020), the Late Mesolithic period is still perceived as a period where human-rock relations materialize more broadly (Nyland 2020b). Should we understand the peak in fossils found at sites as part of this tendency?

The meaning or social significance of the fossils has probably changed over time, but the consistency with regards to the 'mundane' contexts indicates that they were integrated in the everyday sphere in hunter-gatherer-fisher societies. This does not, however, exclude them from being socially significant, representing fluid ideas, myths, or being food for thought to those encountering them. What we perceive as 'everyday' and 'invisible contexts' are reminders of the influence that known categories may have on us and our interpretations. Indeed, finding human remains or depositions of particular artefacts in Late Mesolithic waste- or floor layers is not uncommon in hunter-gatherer site settings in coastal West Norway (e.g. Bergsvik and Storvik 2012, Lindell et al. 2018, Meling et al. 2020).

Along the coast, both live sea-urchins and their shed shells are common elements of the marine environment (Figure 5). They have been part of prehistoric diets and their spikes have been used as raw materials for tools in the Mesolithic, Neolithic and later (eg. Melsæther 2011, Weisler et al. 2019). The fossilised sea-urchins or cockles inside flint nodules or other rocks would thus have represented

ID	Mus. ID	Туре	No	Site/ Location/ Municipality	Date	Comment		
1	S13872	Not defined	1	Site 3. Vågshaug, Laupland, Bokn	Late Mesolithic – Early Neolithic	Flake of flint with fossils		
2	S13693.21	Cockle	1	Hovland, Eigersund	Early Neolithic?	Flint blade with fossil on dorsal side		
3	S4435	Sea Urchin?	1	Stølen, Ogna, Hå	Undefined	Worked flint nodule with fossil; stray find		
4	S13668.2	Cockle	1	Bru, Hå	Late Mesolithic(?) (11 moh.)	Flint fragment with fossil imprint, stray find.		
5	S13887.68	Sea Urchin?	1	Unknown (not mapped), Hå	Undefined	Piece of flint with fossil imprint. Stray find		
C	S12176.ar	Sea Urchin	3	Hellevik 3a, Fosen, Karmøy	ik 3a, Fosen, Early Fossi ay Mesolithic outli			
6	S12176.ax	Sea Urchin	1	Hellevik 3a, Fosen, Karmøy	Early Mesolithic	Fossil imprint on flint frag- ment, part of refit that outline one Sea Urchin		
7	S8943	Not def.	1	Ringen, Karmøy	Undefined	Flint fragment with fossil imprint, stray find		
8	S12792.113	Sea Urchin	1	Helganes, Karmøy	Middle Neolithic	Midden context		
9	S3095	Sea Urchin	1	Vestre Bore, Klepp	undefined	Flint nodule w/ fossil imprint; stray find		
10	S5269.f	Sea Urchin	1	Horpestad? Klepp	Undefined	Stray find in area with other Stone Age finds		
11	S5266.e	Not def.	1	Øvre Horpestad, Klepp	Early Neolithic?	Crested macro blade of flint with fossil		
12	S10674.23	Not def.	1	Sande, Hommers- håk, Sandnes	Late Mesolithic?	Flint flake with fossil		
13	S11591	Not def.	1	Grannes (lok.1), Sola	Undefined	Macro flake of flint with fossil; stray find at the beach		
14	S12542.3	Not def.	1	Tjora, Sola	Undefined	Macro flake of flint with embedded fossil (Neo- lithic?)		
15	\$13224.42	Sea Urchin	1	Lok.10, Sømme, Sola	Late Mesolithic – Early Neolithic	Pit with fire cracked rocks (S32; Layer 3; (100-101x/500y).		
16	\$13462.28	Not defined	1	Tanangerveien, Sømme, Sola	Late Mesolithic – Early Neolithic?	Fossil imprint on flint fragment		
10	\$13465.22	Not def.	2	Tanangerveien, Sømme, Sola	Late Mesolithic – Early Neolithic?	Two flint fragments with fossil imprint found close to each other		
17	S13521.39	Sea Urchin	1	Lok 1. Ølbergveien, Sola	Late Mesolithic?	Part of beach pebble (flint)		
18	S13737.23	Sea urchin	1	Trælen, Ølberg, Sola	Early Mesolithic	Flint core with visible fossil near platform		
10	S14040.31	Sea urchin	1	A3, Sola sentrum, Sola	Middle – Late Mesolithic	Fossil		
19	S14040.44	Cockle	1	A3, Sola sentrum, Sola	Middle – Late Mesolithic	Piece of flint with fossil imprint		
20	S3744.ai	Sea Urchin	2	Kvernevik, Hålands- vannet, Stavanger	Late Mesolithic — Early Neolithic	One of the fossils still em- bedded in flint nodule		
21	S10301.br	Sea Urchin	2	Austbø lok.4, Hundvåg, Sta- vanger	Early – Middle Mesolithic?	One secure, one water rolled		

Compilation of the dated sites in Figure 3 from the different periods. (abbr. Early Mesolithic (EM), Middle Mesolithic (MM), Late Mesolithic (LM), Early Neolithic (EN), Middle Neolithic (MN), Late Neolithic (LN) and Bronze Age (BA). Note, at one site, there may be more artefacts and a small peak in the Late Mesolithic and Early Neolithic periods.

familiar forms to those encountering them, even if that state of being might have been unusual. Did prehistoric people consider fossils as essentially different than living sea-urchins, or 'the same'? As objects crossing boundaries of being, they are perfect examples of things that may have been both rock and more than rock, at the same time.

Human-rock relations

One may study and approach human engagement with rock in various ways. In the Renaissance, the artist Michelangelo is known to have said that he was only revealing the form that lay latent inside the stone. Hence, the way one works with rock can be perceived as an act of disclosure achieved through interaction. The currently much used analysis of investigating the *chaîne opératoires* of lithic tool production builds on the idea that culturally situated concepts of a certain social group or time period can be identified (Leroi-Gourhan 1964). However, this way of giving primacy to mental templates imposed on rock has received criticism (cf.



Sea-urchins on the shore. Photo: Heidi Nilsen Hammarstedt.

Conneller 2011:28). Conneller's critique builds on, among others, Heidegger's (1971) ideas of how technologies reveal the world rather than being the result of a projection of mental representation on formless matter. As pertains the fossils of the current paper, these lay latent inside the rock, they were revealed, but were not a product of humans. They were also part of making meaningful worlds but are not part of the culture-nature divide. Were they perceived as petrified life, were the stones alive, or in a different state of being?

Objects that evade a pragmatic and functional interpretation, are in archaeological research often considered magical or symbolic. Moreover, the mundane and common is often contrasted to the rare and exotic, where the rare is highlighted as valuable, costly or socially significant (cf. discussion of this perspective in Nyland 2020a). One fossil-related example of the latter is a fossil bivalve (*Cyrtodontula*) worked into a Venus-figurine, found at a Late Mesolithic coastal settlement in southeast Norway (Glørstad et al. 2004:96). This, and similar objects where human attributes and natural elements were combined were interpreted as highly potent in cultural and social constructions in the Late Mesolithic (Glørstad et al. 2004). Again, the tacit modern philosophical division of human/nature, mind/ matter surfaces. Alternatively, one may assume that the Mesolithic world was not separated into such categories; hence, objects affecting people are not even necessarily humanly made. Indeed, in some hunter-gatherer groups, rocks are considered as living entities themselves, transforming at will or giving themselves to humans (e.g. Hampton 1999, Dean 2010, Pétrequin and Pétrequin 2011).

Instead of trying to figure out what specific objects meant, to understand how objects mattered and affected practice may be more within our grasp. If acknowledging object agency, any object can legitimise a person's or place's enigmatic power or social significance in a specific cultural historical setting (Gell 1998:17–21). Still, it is not about ascribing human properties to things, but acknowledging the qualities of things that invite and engage humans (cf. Olsen 2003, Damm 2008). If the premise is that humans and everything material are inseparable, tightly entangled and intertwined, should we then try to define what is what? Is it at all possible if elements form hybrids, and understanding depends on situated knowledge? Even if one object embeds a specific meaning or quality, a similar object may not, due to its context of creation. For example, a defined social, ritual or even magical setting of transformation can influence whether or not a transformation is considered successful, or if an object comes to life (Saunders 1999, Ingold 2000). Some have called this the 'enchantment of technologies' (Warren 2009:102). Others emphasise objects' relations in an affective field, defined as "networks of relations that are produced through, and are themselves productive of, practice" (cf. Harris and Sørensen 2010:150). Another way of describing the relational character of meaning is how objects are entangled in social systems (Hodder 2012), becoming imbued with meaning through processes of appropriation (cf. Ferguson 2009,



Shed sea-urchin shells collected at the beach and arranged on a table. Photo: Lise Hauge.

Ferraby 2015). That is, even while collecting empty and dry sea-urchin shells for decorating our homes, we are creating hybrid assemblages (Figure 6).

People may have appreciated the fossils' beauty or oddity, or the fossils may have triggered emotions or associations. Encountering a fossil while knapping flint could have made the person reflect on different states of existence. In this way, fossils may have gathered varied elements and ideas, material and immaterial, like Heidegger's (1971:155) example of the bridge that constitutes so much more than the physical structure alone. In this light, human engagement is of key importance; any object would be significant, not necessarily objects worked by humans leaving certain attributes.

We can know little of the specifics of Mesolithic affective fields or ontological perspectives, but we do know that beings and raw materials constantly move between categories, statuses, or conditions. Wood and animal bones move from living beings, via blanks, to tools, waste, part of a refuse layer, and so on. The same applies to rock, especially if the rock was perceived as essentially alive. Tim Ingold (2013:20) argues that this kind of transformative process is as one of *continual growth*. Within such interpretative framework, material fluidity and transformability are crucial, not fixed categories. Moreover, there are Stone Age examples of so-called *skeuomorphs*, where one type of raw material imitates another, for example stones carved to imitate shells etc. (Conneller 2011:121–22). This example,

together with the knowledge that diverging ontological perspectives acknowledge different raw materials as sharing essential properties, indicates that we might be limiting our gaze if too occupied with our predetermined categories. The division between functional and non-functional, natural, and cultural should then be questioned.

Theory and practice: Final remarks

During archaeological excavations, one collects tools and production waste, whereas non-worked materials are left behind. During post-excavation work, the process of separation and classification is continued, often based on identifiable traces of human production. 'Cultural' elements are separated from 'natural'. Moreover, objects are then catalogued using predefined nomenclatures with characteristics that define the different types of tools or artefacts (eg. nomenclatures commonly used in Norway: Helskog et al. 1976, Ballin 1996). This helps systematic classification and enables comparative studies of large numbers of finds. But, how should we implement ideas stressing that some objects never became a 'thing'? That some objects were not curated; they were discarded and intentionally left in limbo and undetermined? A conspicuous example is fragments that may have the characteristics of cores, but are perhaps randomly produced, e.g. split from a rock surface when quarried. And should we regard unworked, water rolled beach flint nodules as something other than fossils?

The practice of systematic categorisation and definition vs. the crossing of boundaries and qualities depending on situated knowledge makes out an intriguing paradox in archaeological practice and interpretation. Current practice presupposes a "mutual implication of the unity of nature and the plurality of cultures" (Viveiros de Castro 1998:470), while in diverging ontologies, the "spiritual unity and a corporeal diversity" (*ibid.*) can dominate. Should we continue the western perspective, and hence, the practice of differentiating substances from each other by focussing in on essential and quantifiable properties, as well as the tendency to prioritise function? Are we delimiting our frame of interpretation while maintaining current archaeological practice? Is there an alternative for cultural heritage management? We cannot collect everything. However, acknowledging the multi-layered and situated meaning of all things could perhaps prompt a different way of recording odd stones on site, and open for recording the changing character of rock and stone in different ways, e.g. with shifting colours and light? The challenge is to argue any cultural-historical significance of any generated patterns, but the benefit is that we can broaden the understanding of life in the Mesolithic. This brief article perhaps raises more questions than it answers, but may give further inspiration to break out of the boxes we have created for ourselves.

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