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The becoming of boats

Some reflections on choices in the process of reconstructing archaeological vessels

ABSTRACT
Reconstruction is an essential tool for gaining knowledge of shipwrecks in maritime archaeology. This paper examines some theoretical and practical consequences of viewing vessels not as finished objects but as things that are continuously being made during their lifetime. This is done by proposing perspectives on things that uphold their biography as an essential characteristic. To illustrate this, the 16th-century shipwreck Bispevika 16 (Oslo harbour) will be an example of a vessel showing minor and significant technical changes throughout its life. Its most manifest change is the addition of an outer layer of carvel planks on the lapstrake-built hull. This makes this vessel one of a growing number of archaeologically known converted lapstrake-built vessels in Northern Europe.

Keywords:
Maritime archaeology, reconstruction, crafts, boats/ships, biography, things/objects.

INTRODUCTION

This paper examines a particular topic concerning reconstructing archaeological boats and ships. This topic has to do with the biography of the vessel. To incorporate a biographical perspective on things implies comparing them to other beings (like humans and animals) regarding their life cycle from birth to death. I became aware of this matter when systematising the data for my ongoing PhD thesis. In my work, I document and systematise technical variation and building methods of boats and ships in the Oslo fjord and Skagerrak region dating from AD1050 to 1700. My method of systematisation will not be treated in any detail here (see Falck & Dubbini, In prep.). It is based on a previous statistical analysis by Jan Bill, who did a multiple correspondence analysis (MCA) on archaeological boats and ships found in the Danish region from the Viking period to AD1600 (Bill, 2009). When doing the systematisation of the

112 finds from my area of investigation, I observed that the more knowledge I could obtain from a vessel, the more complex its biography stood out. This should, of course, hardly come as a surprise! However, it became an analytical problem for me, considering that each 'point' in the statistical plot I produced represented *one* vessel. Some vessels had long and eventful lives, visible as wear and tear, repairs, and rebuilds. They showed a greater variety of techniques than the vessels that went out of use a short time after their first construction.

Deciding what version of the boat will be built when reconstructing a vessel then becomes relevant. The question is skewed from *what* to *when* a vessel is. To rephrase from the conference session abstract: *whose* intentions do we want to investigate? A vessel with a long life is congested with various intentions from different times. I refer to this as the *becoming* of the boats in the title. Is the biography of the vessel sufficiently considered when doing reconstructions? And are there also some theoretical questions concerning things and their qualities that become relevant when addressing this? My intention for this paper points in two directions: one is founded in the *practices of reconstruction* and experimental archaeology, the other in theoretical questions of material culture and *the making of things*. This is not meant as a paper offering conclusions or guidelines but as a reflection on practices via relevant theoretical perspectives.

Things

Things are the primary source of information for archaeology. Stimulated by a material turn in archaeological theory, different 'new materialisms' have been activated under diverse labels such as poststructuralism, phenomenology, and actor-network theory (ANT) (Olsen, 2010, 151), as well as object-oriented ontology (See volume: Rich & Campbell (eds.), 2023, for perspectives in maritime archaeology). In various ways, these directions advocate for symmetrical approaches to humans and other beings (things and animals) in their abilities to act and be acted upon. Here, I will use Tim Ingold's definitions of things, which might seem intricate but are meaningful for the perspective on making things he is promoting (Ingold, 2012; 2013). Ingold distinguishes between objects on one side and things on the other. Objects, to Ingold, are 'completed forms that stand over and against the perceiver and block further movement'. On the other hand, he defines things as 'gatherings of materials in movement' (Ingold, 2012, 439). The aspect that I want to explore for the discussion in this paper is that from this position, objects are static and ready-made, while things are moving and made. Objects represent how we consider material culture within science, while things belong to life.

The biography of things

When considering things as having biographies, you acknowledge their ability to move and change. This is why the act of archaeological systematisation (like doing MCA, mentioned above) can be confused by the observation of ambivalence. Objectifying things for methodological purposes, led by the need for statistical rigour, is a constructive manner to create order in complex data. But the things resist this rigour by revealing their complex properties, many of which are accumulated over *time*.

The anthropologist Igor Kopytoff was an early contributor to thing biographies and pointed toward similarities between things/commodities and persons (Kopytoff, 2013 [1986]). For instance, he asked:

> What are the recognised "ages" or periods of the thing's "life", and what are the cultural markers for them? How does the thing's use change with its age, and what happens to it when it reaches the end of its usefulness? (ibid., 66-67)

Kopytoff also emphasises that, depending on perspective, several biographies can be written of the same thing, for instance, social, economic, or technical. Here, we are particularly interested in the technical biography since this is crucial knowledge for reconstructing a boat or ship using models or experimental archaeology. Still, it is reasonable to question the inclination to compartmentalise these different spheres, as they are indeed closely linked.

When studying an archaeological vessel, it often turns out to be assembled using various techniques that can be applied simultaneously or at different events. A vessel can be assembled by rivets with roves but *also* by hooked nails and treenails. In many cases, but not necessarily, these technical choices belong to different 'ages'. How do we operate within this complexity (Figure 2)?

FIGURE 2. In the Bispevika 16 shipwreck from the late 16th century, hooked nails (left) and rivets with roves were used. These are just some examples of technical diversification found in vessels from the 16th century. Photo: S. Fawsitt/NMM.

A pertinent understanding of how and when things are made is required when accounting for the biography of things. According to Ingold, one needs to promote an ontology that assigns primacy to the processes of formation as against their final products (Ingold, 2022, 255). The dominating perspective which Ingold labels the hylomorphic model of creation (Ingold, 2012, 437, 439; 2013, 20-21; 2022, 254-255) is too complex to elaborate on here, but a main line of argument is that when treating things as finished objects, via the doctrine that making involves the imposition of preconceived form on matter, one loses an essential quality of things: *life*. This implies that looking at ships and boats as finished objects conflict with Ingold's proposed ontology of making. The rather ordinary example with the use of different 'clinker' techniques above indicates that the Bispevika 16 was not finished but continued being made throughout its lifetime. I want to demonstrate that the continuous making of this boat materialised in much more radical ways than the mixed use of spikes and rivets.

Conversions and repairs. The Bispevika 16

As indicated, the Bispevika 16 is an example of a vessel with a complex biography. The vessel was excavated in 2019 and is still undergoing post-documentation at the Norwegian Maritime Museum. For my research, I have had access to the excavation records and preliminary reports (Rodum, in prep.). Bispevika 16 is one of more than 60 shipwrecks found and excavated in the harbour of Oslo (Vangstad et al., 2020). The excavated measurements of the Bispevika 16 are 11 m x 5 m. It has a beam-shaped keel of 7.60 m, 14 strakes, and 25 frame stations. The average distance between the floor timbers is circa 0.32 m. It has similar qualities to many other vessels found in the harbour. They are mainly small to medium-sized, lapstrake-built cargo carriers with one or two masts, a robust keel, and closely fitted floor timbers. Within this superficial description, though, there is much variation regarding techniques, the choice of materials, and form.

In Northern Europe, the Bispevika 16 is also one of what appears to be a growing number of lapstrake-built vessels that has an outer layer of flush-laid planking (Gøtche, 1985; Mäss, 1994; Ossowski, 2006; Nymoen, 2007; Lemée, 2006; Förster, 2009; Auer et al., 2010; Heinze & Schmidt, 2010; Nielsen, 2010; Auer & Ditta, 2016; Daly & Belasus, 2016; Grabowski, 2018; Bednarz, 2021; Gutehall, 2022; Grue & Vangstad, In prep.; Steen, in prep.). In the table, I have listed 18 converted vessels, where all except one have a layer of carvel planking on the outside of its lapstrake-built hull.[1] The exception is

the Masthamnen 2 (Gutehall, 2022), which has a double layer of lapstrake planking. One of the vessels, the Dębki wreck, might be constructed with double planking from the original building phase (Ossowski, 2006, 262). Even though most cases point towards conversion, Adams is also open to the possibility that some vessels were constructed this way (Adams, 2013, 57). The finds date from the mid-1500s to the last half of the 19th century. The Bispevika 16 is dated AD 1589-1603 (Daly, 2019) (Table 1).

TABLE 1. List of 18 archaeological finds with a double layer of planking (the Oslo finds are yet to be published). The finds spread geographically from Estland in the Eastern Baltic via Poland and the Southern Baltic to the Skagerrak and Oslo fjord area in the west. They are dated from the 16th to the 19th century. The geographical spread and the dating over several centuries make it likely that various causes must explain the phenomenon.

Name	Building date	Overall length	Find site	Found	Reference
Bispevika 4	a. 1540	20-22	Oslo, Norway	2015	Grue & Vangstad, In prep.
Båtflak Bi04	1500s	NA	Oslo, Norway	2015	Grue & Vangstad, In prep.
Maasilinn	a. 1546	<16	Väike-Väin, Estonia	1985	Mäss, 1994 (Arens, 1987, see also Zwick, 2016)
Dębki	1508-1653	>9,2	Dębki, Poland	2002	Ossowski, 2006
Bispevika 19	a. 1586	>10	Oslo, Norway	2019	Steen, in prep.
Bispevika 16	1589-1603	>11	Oslo, Norway	2019	Rodum, in prep.
FPL 77	ca. 1590	10-12	Prerow, Germany	2009	Auer, 2010, Nielsen, 2010
W-36	a. 1596	15-18	Gdynia Orłowo, Poland	2001	Ossowski, 2006
Masthamnen 3	a. 1646-1646	>14	Gothenburg, Sweden	2020	Gutehall, 2022
B&W 6	a. 1639 (wrecking)	<20	Copenhagen, Denmark	1996-97	Lemée, 2006
Mönchgut 67	a. 1654	NA	Mönchgut, Germany	2008	Heinze & Schmidt, 2010 (see also Nielsen, 2010)
W-34	a. 1690	15-18	Gdynia, Redłowo, Poland	1991	Domżał & Ossowski, 1999, Grabowski, 2018
Masthamnen 2	1700-1720?	>12	Gothenburg, Sweden	2020	Gutehall, 2022
F32.8	a. 1789	15-18	Puck Bay, Poland	2014	Bednarz, 2021
Hiddensee 12	a. 1804	28	Hiddensee, Germany	1996	Förster, 2009 (see also Daly & Belasus, 2016)
Nors Å	1800s	NA	Klitmøller, Denmark	1981	Gøtche, 1985
Ågabet/ Pettu	1865	25-27	Ågabet, Denmark	2010	Auer et al., 2013 (Auer & Ditta, 2016)
Strømsø	Ca. 17-1800s.	NA	River Drammen, Norway	2007	Nymoen, 2007, unpublished.

The reason for adding a layer of flush-laid planking is debated, and one should be open to different explanations in different contexts. Also, the conversion methods vary; for instance, the Bispevika 16 only shows double planking at the bottom of the hull. Olof Hasslöf related it to the need to consolidate the hull of worn lapstrake-built vessels with 'good properties' (Hasslöf, 1970, 62; see also Nielsen, 2010, 45ff; Adams, 2013, 56). Considering that many details of the Bispevika 16 are still unidentified, I will not propose an analysis now. Here, the mixed-use of techniques in the vessel's lifetime is of interest, including the significance this has for reconstruction. The mixed-use of techniques is intriguing. In addition to the converted vessels, we are familiar with vessels built as *half-carvels* from written sources and archaeological finds. This technique refers to using the lapstrake technique in the bottom and flush-laid strakes above the water line (Eriksson, 2010). Maritime archaeologists (and boat builders?) are trained to think of 'clinker and carvel' in binary terms, with the opposites 'shell-first' versus 'skeleton-first' following these terms closely. Hasslöf pointed out the shortcomings of this template-like presentation using his ethnological approach (Hasslöf, 1970, 59ff). He refers to vessels with flush-laid planking built in a shell-first manner and shipbuilders applying both lapstrake and carvel techniques in the same vessel. Later, the concept of bottom-based building (Hocker, 1991, iii; 2004) became a much-applied term in

archaeology suitable to nuance the dichotomy. This also concerns the concept of Dutch flush building (Maarleveld, 1994; 2013). These concepts refer to the manner of building both lapstrake and carvel-built vessels in a shell-first procedure. In both these concepts, the assembling of the planking generates the shape of the hull, not the frames or prefabricated moulds. This is considered important partly because it tells us about the need for pre-planning, drawings, and measurements before building. It also questions the dichotomy between the two building techniques, a questioning that should impact our understanding of building traditions.

FIGURE 3. From the excavation of Bispevika 16, Oslo, in 2019. The photo shows the keel (right), with the garboard carvel bottom planks and the 2nd to 6th inner strakes of lapstrake planks. The outer layer consists of four carvel strakes. The last carvel plank shows from underneath the 6th strake (left). Photo: S. Fawsitt/NMM.

An interesting characteristic of the Bispevika 16 is that the dendrochronological dates indicate that the second layer of planking has probably not been added to repair an outworn ship but is likely to have happened not long after the construction phase. This raises questions about the context of the making of the vessel, both in its construction phase and later. It makes concepts from craft theory relevant, like communities of practice, reification, and negotiation (see Ravn, 2020). Who were the builders and re-builders of the Bispevika 16? What craft traditions did they belong to? Were they familiar with both techniques, clinker and carvel? In what contexts/traditions did they learn their crafts? What intentions did they have?

Some strategies when reconstructing boats.

Making reconstructions is a highly appreciated tool within maritime archaeology, and for good reason. There are several different justifications for doing reconstructions, and I will present some superficially here. The options span from the reconstruction of the *form of the vessel* to the other end of the spectrum, where the *bodily aspects of the craft's performance* are targeted. These strategies are not mutually exclusive, though, in practical experiments.

Building scale models is an established starting point for any reconstruction project in maritime archaeology. The main intention is to re-establish the form of a vessel from the documentation of the 'as found', distorted and fragmented material (Crumlin-Pedersen & McGrail, 2006, 53-54; Bischoff et al., 2014, 23-24). Dealing with fragmented and flattened remains of vessels, the knowledge gained by piecing together a find in three dimensions is significant. Scale models provide a systematic means to recreate the approximate shape of a vessel, including estimating standard properties like length, beam, and cargo capacity. The model-maker can also be said to *mimic* the actual craft of building the boat concerning the building sequence. However, the process lacks the bodily knowledge of using the right tools and a sensitivity to the right materials. This suggests that reconstructions, in the manner of replicating the craft by building full-size replicas of archaeological finds, open up a whole new context of knowledge (Crumlin-Pedersen, 2003; Ravn et al., 2011, 239). Best practice experimental archaeology provides multidisciplinary practical knowledge that involves skills, dexterity, and know-how regarding the use of tools and the ability of materials. Harald Høgseth has worked systematically with methods for documenting bodily movements when using tools. One purpose is to identify technical performance using skilled experts, potentially making it possible to read techniques from tool marks (Høgseth, 2013). Another take on reconstruction is to focus on the intentions or patterns of the building. This approach stresses that each tradition has an internal logic or a unique pattern (Planke et al., 2022). Concerning the reconstruction of the late 16th century Barcode 6 boat, Planke and Stålegård claim it is (…)

> (…) their goal to understand how the individuals of the past thought within their culture and traditions, what choices they faced, and what constituted the pattern or connections in their understanding of the object in use. (Planke & Stålegård, 2014, 371, my translation)

This is comparable to studying Communities of Practice (Wenger, 1998) and theories of Situated Learning (Lave & Wenger, 1991). Morten Ravn has used these concepts to understand the social complexity in play in the building of two 11th-century ships (Fotevik 1 and Skuldelev 3) and has been able to illustrate how degrees of individual participation and choice of methods and techniques differ in the two (Ravn, 2020). The implication of such theories in the practical experimental work improves the scientific value of the reconstruction projects within maritime archaeology.

Reconstructing Bispevika 16?

What makes Bispevika 16 an interesting input in the debate is due to its unmistakable appearance as a thing in becoming, a not finished object. It is a thing with a biography that started as a lapstrake-built vessel but later was converted with a layer of flush-laid strakes on the outside bottom. If one were to reconstruct the Bispevika 16, deciding what version of the vessel to build would be necessary.

If it were to be built as a minimum reconstruction or a first scale model, the focus on the form would have made the model builder assemble the planks and constructional timbers as a functional shape based on its *as-found* situation. However, building a full-scale reconstruction raises different problems if one is to be true to the practical aspects of crafts and the vessel's building. The garboard carvel plank of the Bispevika 16 has replaced an original lapstrake construction. A significant difficulty in converting the vessel lies in removing the clinker garboard plank and refitting the bottom with a carvel one. From a perspective where the vessel's life is evaluated as a crucial quality, these processes of making and re-making are as essential to reconstruct as their form or ideal shape. How to deal with this in a practical experiment is not apparent but must be addressed.

Full-scale reconstructions significantly impact our understanding of a vessel; they present themselves as *truth*. As a reminder that all these reconstructions are based on choices and inter-pretations, emphasising the more ambivalent uses of techniques in a boat or a ship is valuable. This ambivalence is evident in a vessel like the Bispevika 16, with clear building phases and the mixed use of lapstrake and flush-laid planking. It is also visible in more subtle properties, like using various clinker techniques. Enhancing these ambivalent properties potentially brings life back to things.

CONCLUSION – THE BECOMING OF BOATS.

In the introduction to this paper, I clarified that my intentions pointed in two directions. Theoretically, looking at things from a biographical perspective fit very well when studying archaeological boats and ships. They are not static objects but complex things that kept on becoming during their lifetime. They were on the move, both technically and geographically. Archaeologists must address, discuss, and understand this complexity, whether in the acts of systematisation or reconstruction and experimental work. When doing experimental archaeology, this implies that the choice of what version of the boat to build and why is essential to explain. The Bispevika 16 was chosen as an intriguing example, accompanied by other vessels with similar properties. Not only are the converted vessels excellent examples of things that change their qualities and appearances during their lifetime, but they are also doing this by displaying different techniques and ways of doing things from a craft perspective. Still, as illustrated in the discussion on the historically known mixed use of lapstrake and carvel building techniques, focusing on the converted vessels is also helpful to nuance the picture of these techniques as mutually exclusive traditions. Even if the Bispevika 16 is a manifest example of things with a complex biography, views on things and making, inspired by Ingold, make similar questions relevant in all kinds of craft research. Giving primacy to the processes of formation against their final products will open the investigation to new questions and discussions.

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[1] Some uncertainties are connected to the two Oslo-found vessels, Bispevika 4 and Båtflak Bi04. The final reports are in production.