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A BADARIAN–NAQADIAN COGNITIVE LINK?

A POSSIBLE INSIGHT ON THE BASIS OF A BADARIAN HIPPOPOTAMUS-SHAPED PENDANT FROM EGYPT

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Abstract: This paper aims to broaden the current understanding of the interrelations between the Badarian and Naqadian periods (second half of 5th to end of 4th millennium BC) in Egypt through the analysis of a Badarian hippopotamus-shaped pendant. The argument is put forward that this pendant forms a miniature replication of a vessel that was used in the production, storage, and supply of malachite body paint. Due to its correspondence in colour with vegetation, malachite may have been believed to have endowed its wearer with the positive qualities of life, growth, fertility, and healing. On this basis, it is contended that the pendant functioned as an amulet by providing its wearer with magical access to malachite paint and its associated properties. Since a palette pendant from the Naqada IID–IIIB period is argued to have functioned in a similar way as the Badarian pendant, this is taken to suggest that the people who lived during the Badarian and Naqadian period were involved in parallel practices and displayed comparable cognitive processes.

Keywords: Predynastic, amulet, malachite, hippopotamus, Egypt, ornament, Badarian

The prehistory of the Qau-Matmar region, an area situated just southeast of Asyut in Middle Egypt, has been systematically studied following a series of archaeological campaigns from the beginning of the 20th century onwards (Brunton, Caton-Thompson 1928; Gabra 1930; Brunton 1937; Paribeni 1940; Brunton 1948; Holmes 1993; 1994; 1996; Holmes, Friedman 1994). The prehistoric cemeteries and habitation sites uncovered during these excavations can be dated to the Badarian and Naqada IB–III periods (Hendrickx, Van den Brink 2002: 353–357, 374–376, Tables 23.1–2).[1] Most of these were found by Guy and Winifred Brunton, who directed a series of archaeological campaigns in the Qau-Matmar region during the 1920s and 1930s. The results of these investigations were subsequently published in three separate volumes (Brunton, Caton-Thompson 1928; Brunton 1937; 1948), each of which deals with one of a total of three smaller districts in the

[1] In this paper, both the Badarian period and (most of the) Naqadian period are interpreted as being part of the Predynastic period, see Hassan 1988.

Qau-Matmar region: Badari (including Qau el-Kebir and Hemamieh), Mostagedda (including Deir Tasa), and Matmar. The unparalleled scale of Badarian remains uncovered in these districts, together with the additional presence of Naqadian remains, has made the Qau-Matmar region a unique area that is of key significance to the research of interrelations between the traditionally distinct Badarian and Naqadian "cultures" or "cultural" periods. Previous investigations have demonstrated that, with regard to the Qau-Matmar region, the Badarian and early Naqadian periods are not to be seen as two discrete units, but rather as two chronologically sequential and continuous parts of a single (but not necessarily culturally or ethnically identical) whole, which is in itself characterized by continuities, developments, and changes in material, technologies, and practices.

Following an overview of these earlier investigations, this paper aims to further contribute to an understanding of Badarian–Naqadian interrelations through the analysis of a hippopotamus-shaped pendant that was found in Badarian Grave 1208 in the Mostagedda district (Brunton 1937: 38, Pls XXII, No. 39, XXXIX, 21A2). This hippopotamus-shaped pendant forms part of a small group of Badarian zoomorphic pendants (traditionally referred to as "amulets"), which further includes a second hippopotamus-shaped pendant and a pendant in the form of an ibex head (Brunton, Caton-Thompson 1928: Pls XXIV, Nos 14–15, XXVII, No. 1). In contrast to these other two pendants, however, the hippopotamus-shaped pendant has a form that does not fully correspond to that of an animal or any smaller part of one. The presence of an unnatural projection on the animal's back demonstrates that the pendant signified not so much a hippopotamus as a biological animal, but another hippopotamus-shaped object. Since a similar practice is also known from the Naqadian period, this will be taken as the basis for more elaborate investigation, which will result in the contention that a cognitive link existed between the people living during the Badarian and the Naqadian periods. In addition, this paper will explore whether this practice also had a chronological continuation within the Qau-Matmar region itself. To this end, it will consider other Predynastic hippopotamus-shaped objects that were recovered from this region.

RESEARCH INTO BADARIAN–NAQADIAN INTERRELATIONS

NAQADIAN ARCHAEOLOGICAL ASSEMBLAGE

Archaeological remains dating to the Naqadian period had already been frequently attested in Upper Egypt prior to the archaeological campaigns in the Qau-Matmar region, and consisted primarily of cemeteries with large quantities of graves (Midant-Reynes 2000: 169; Hendrickx 1999: 60). Petrie's Sequence Dating system allowed a significant part of these graves to be gathered in chronologically sequential grave groups on the basis of resemblances in their pottery type contents. In turn, these grave groups were assigned to three archaeologically,

chronologically, and culturally distinct units, called the Amratian, Gerzean, and Semainean. The Predynastic period was used to refer to a combination of these three periods (Petrie 1899; 1901; 1920; see also Hendrickx 2006: 60–64). In the ensuing years, the Sequence Dating system saw a cumulative refinement by W. Kaiser (1957) and S. Hendrickx (1989; 2006: 66–71). As a result, Petrie's grave groups have been redefined and reordered into the chronologically sequential and continuous Naqada I–III periods, in which internal phases are characterized by a capital letter (i.e., "Naqada IA"). Contrary to Petrie, Kaiser (1957) and Hendrickx (2006: 55) claim that the continuous material development witnessed during these three Naqada periods is indicative of a common "Naqada culture".

BADARIAN ARCHAEOLOGICAL ASSEMBLAGE AND EARLY VIEWS ON ITS RELATION TO THE NAQADIAN

The Badarian assemblage was first encountered in the Qau-Matmar region and was interpreted by Brunton as a new cultural period within the Predynastic era (Brunton, Caton-Thompson 1928: 1). Its chronological position prior to the Naqadian was confirmed by Caton-Thompson's excavation of the habitation site of (North Spur) Hemamieh. This not only showed the stratigraphic superposition of Naqadian remains on top of Badarian remains, but also attested to the existence of a "transitional" level, in which both Badarian and early Naqadian artefacts were included. This, according to Caton-Thompson, provided evidence for the fact that the Badarian was not simply a distinct chronological and cultural predecessor of the Naqadian in the Qau-Matmar region, but was, in fact, to be understood as an earlier phase of it (Brunton, Caton-Thompson 1928: 74-75, 79; this evidence has subsequently been re-established by Holmes and Friedman (1994)).

In spite of Caton-Thompson's findings, Brunton asserted that there was no immediate connection between the users of the Badarian and the Naqadian archaeological assemblages. Instead, he surmised that the Badarian and Naqadian periods were divided by a short hiatus in which the "Badarians" would either have died out or would have been dispossessed by a culturally distinct, yet blood-related, "Amratian tribe" (i.e., tribe of early Naqadian date; Brunton, Caton-Thompson 1928: 40). The main motivation behind this claim was the absence of cemeteries in which both Badarian and early Naqadian graves were present. A further reason might well have been the fact that the Sequence Dating system had turned out to be unusable for Badarian graves (Hendrickx 2006: 60–71; Math 2007). The inability, therefore, to spatially and chronologically link the graves from both periods has stood at the base of Brunton's Badarian–Naqadian cultural division, of which at least the terminological framework has remained persistent in the study of Egyptian prehistory (see Midant-Reynes 2000; Hendrickx 2006; Bard 2008).[2]

[2] Brunton's theory of dispossession, for instance, re-emerged in Kaiser's theory of "Naqada expansion", in which it is claimed that the Qau-Matmar region was one of the first regions to be subsumed by a northward territorial expansion of the Naqadian culture from Upper Egypt. This expansion would have resulted in the removal of the Badarian culture and the installment of the Naqadian culture (Kaiser 1957; 1964; 1985: 82–86; Köhler 2008: 521).

CURRENT UNDERSTANDING OF BADARIAN–NAQADIAN INTERRELATIONS

The lack of Naqada IA burials and additional Naqada I habitation sites in the Qau-Matmar region supports an at least partial concurrent use of the Badarian and Naqada I assemblages in Middle and Upper Egypt (Hendrickx 1989; Holmes, Friedman 1994: 112–115; Holmes 1993: 24–25; Holmes 1996: 183–184; Hendrickx, Van den Brink 2002: 353–357, Table 23.1). Yet, it is challenged by the questionable distinction between the Naqada IA and IB phases, as well as the identification of a still earlier Naqadian phase at Abydos (Kaiser 1957; Friedman 1981: 70; Hendrickx 2006: 74; Hartmann 2011: 935). This makes it possible that the Badarian type assemblage was used for an extended period of time in the Qau-Matmar region, whilst, simultaneously, an early Naqada I type assemblage was being developed and used in other regions in Upper Egypt (Holmes, Friedman 1989: 18; Hendrickx, Vermeersch 2002: 42).

This notion is corroborated by the fact that the chronological passage from the Badarian into the early Naqadian period in the Qau-Matmar region encompassed a continuation and further development of certain material object categories, technologies, and practices (Brunton, Caton-Thompson 1928: 39; Kantor 1992: 9; Friedman 1994: 351, 868, 885; Holmes, Friedman 1994: 129–130, 135; Midant-Reynes 2000: 170). This chronological sequence is further supported by a recent appraisal of radiocarbon dates (Dee *et alii* 2013).[3] This shows that the start of the Badarian is to be dated to 4407–4308 BC (68% hpd range) or 4489–4266 BC (95% hpd range), whilst its end is to be dated to 3800–3667 BC (68% hpd range) or 3896–3616 BC (95% hpd range). The Naqada IB/IC transition is dated to 3690–3605 BC (68% hpd range) or 3731–3550 BC (95% hpd range) (Dee *et alii* 2013: 4–5, Table 1, 8).[4]

Brunton's theory of dispossession is further undermined by the fact that "Badarian" sites have also sporadically been found in Upper Egypt and the adjoining deserts. In addition, a number of other Upper Egyptian sites have shown dwindling numbers of "Badarian" type pottery in Naqada I and II contexts, which could prove that a Badarian-like phase had originally existed there as well (Hendrickx *et alii* 2001: 103; Friedman 1994: 357–358, 884; Holmes, Friedman 1994: 136–137). In light of this evidence, Friedman has stated that: "the ceramic evidence strongly suggests that an early common ceramic tradition existed in a relatively large part of Upper Egypt ..., certain facets of which remained in use within the settlement assemblages at different sites for varying lengths of time into the Amratian, regardless of whether this tradition can be considered 'Badarian'" (Holmes, Friedman 1994: 137; the Qau-Matmar region is understood here as belonging

[3] See this article and its supplement for references to earlier publications discussing absolute dates for the Badarian and Naqadian periods (for example, Hassan 1985; Hendrickx 1999).

[4] The end of the Predynastic period (accession of king Aha of Dynasty 1) can be dated to 3111–3045 BC (68% hpd range) or 3218–3035 BC (95% hpd range). This point in time is not equal to the end of the Naqadian period, however, since the latter continues into the Early Dynastic period (see Hendrickx 2006: 88–90).

to Upper Egypt). She further concluded that some form of regionalization could have existed within this early ceramic tradition, which would go hand-in-hand with the results of both lithic and ceramic studies that show that a similar variability was current during the early Naqadian period in Middle and Upper Egypt (Holmes, Friedman 1994: 137; see also Hendrickx *et alii* 2001: 85).

The above studies demonstrate that several regions within Middle and Upper Egypt witnessed heterogeneous material and technological developments that continued from a Badarian or Badarian-like period into the early Naqadian period. In conjunction with Köhler (2008: 523), this evidence opposes the idea of a "unidirectional Naqada expansion creating a homogeneous Naqada Culture within Upper Egypt" (the Qau-Matmar region is understood here as belonging to Upper Egypt). The notion of a continuous development from the Badarian into the early Naqadian period thus serves to discredit the postulated existence of two discrete Badarian and Naqadian groups in the Qau-Matmar region. Instead, it points to extensive relations between both "groups", even though it is hard to further characterize these relations on the basis of the available evidence.

ARCHAEOLOGICAL CULTURES AND THEIR VALIDITY

To some extent, the study of Egyptian prehistory is still dealing with the terminological framework that was first introduced by early scholars, such as W.M.F. Petrie and G. Brunton. This is illustrated by the hitherto persistent subdivision of the Predynastic period into a Badarian and a Naqadian "culture" or "cultural" period (see Midant-Reynes 2000; Hendrickx 2006; Bard 2008). This specific terminology has its roots in the cultural-historical perspective that was prevalent during the early days of Egyptology. This outdated perspective has, nevertheless, received detailed criticism in the archaeological discipline (for an in-depth discussion, see Jones 1997), which has resulted in the recognition that material culture in itself cannot be used to make statements about whether its users had a shared culture or ethnicity (Jones 1997: 108–109). This article, therefore, aims to use the terms "Badarian" and "Naqadian" to refer to specific material assemblages, and to thereby disassociate them from the cultural baggage with which they have long been linked. In addition, the terms will also continue to be used as designations for those specific chronological periods in which the material assemblages were produced and first used (excluding modern usages after excavation).

BADARIAN HIPPOPOTAMUS-SHAPED PENDANT

ARCHAEOLOGICAL CONTEXT AND DATING

The hippopotamus-shaped pendant discussed in this article was found in Grave 1208, located within Cemetery 1200 in the Mostagedda district [***Fig. 1:4***]. This cemetery consists of a total of 50 Badarian graves, five Naqada IID1 graves, and four Dynastic graves, two of which have been confirmed to date to the Old Kingdom (Brunton 1937: Pls VII–IX, XXIX, XLV–XLVI; Hendrickx, Van den Brink 2002: 354, Table 23.1; Seidlmayer 1990: 135, Table 31; Dubiel 2008: 22,

Table I.4). According to the cemetery plan, these graves were, to a certain degree, intermixed (Brunton 1937: Pl. IV). Grave 1208 was described by Guy Brunton as "thoroughly ransacked" (Brunton 1937: 38). The pendant in question was found together with a male body, a second skull (of unknown sex), skins, matting, as well as sherds of a Badarian-type pot. In case these objects form the disturbed remains of the original set of burial goods from Grave 1208, it is possible to date the hippopotamus-shaped pendant to the Badarian period on the basis of the available black-topped brown polished ("BB") potsherds (Brunton 1937: 38; for its dating, see Brunton, Caton-Thompson 1928: 21–22; Friedman 1994: 18). Unfortunately, there is no conclusive evidence on which this statement can be certified. The availability and intermixture of graves from different periods in Cemetery 1200 make it theoretically possible that the pendant derived from other disturbed graves in the vicinity, and, therefore, dates to a period later than the Badarian.

DESCRIPTION

The hippopotamus-shaped pendant (3.09 cm by 1.97 cm), currently at the British Museum (AN EA62167), was

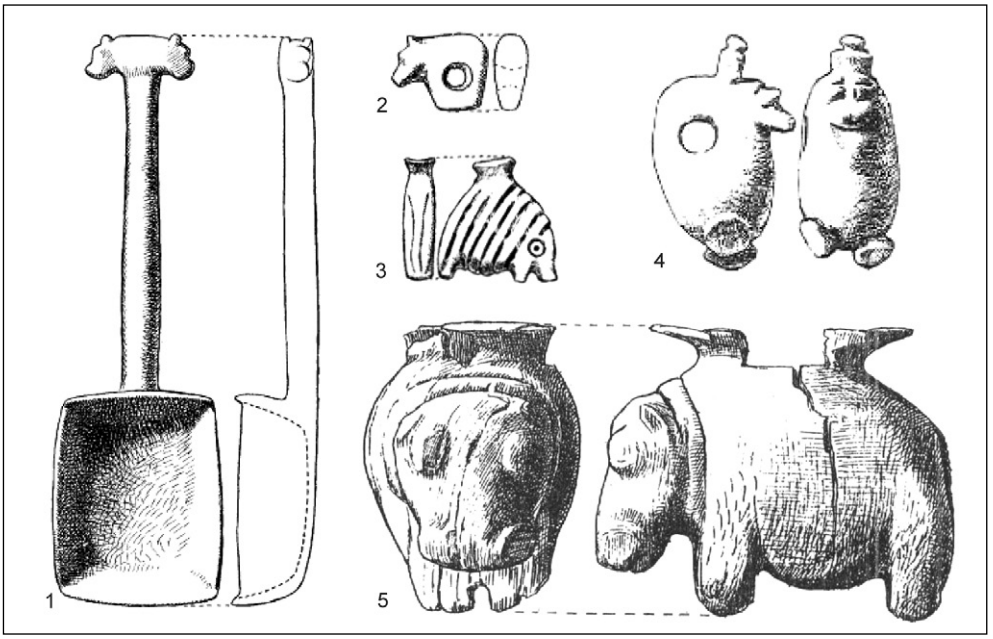

Fig. 1. Collection of hippopotamus-shaped objects from the Qau-Matmar region (not to scale): 1 – ivory spoon from Grave 5446; 2 – shell pendant from Grave 5740; 3 – ivory figurine from Grave 3823; 4 – chrysoprase pendant from Grave 1208; 5 – ivory vessel from Grave 3522 (Drawings originally published in Brunton, Caton-Thompson 1928: Pls XXII, No. 4, XXIV, No. 15, LIII, No. 42; Brunton 1937: Pls XXIV, No. 33, XXXIX, No. 21A2 © courtesy of the Trustees of the British Museum; Petrie Museum of Egyptian Archaeology, UCL)

originally identified by Brunton (1937: 38) as being made from green jasper. This identification is contradicted in the online British Museum collection database, where the pendant's material is described as chrysoprase, a green-coloured variant of the mineral chalcedony (see Aston *et alii* 2000: 25–26).[5]

The pendant was tersely described by Brunton as merely representing the forepart of a hippopotamus. The absence of any hindquarters was supposedly due to the small size of the pebble out of which the pendant was shaped (Brunton 1937: 51). Yet, several new colour photographs granted by the British Museum have shown that this description is not entirely correct [***Fig. 2***]. Whereas the original photograph and drawings published by Brunton only show the front or side view of the object (Brunton 1937: Pl. XXXIX, 21A2, XXII, No. 39) [see ***Fig. 1:4***], its rear view has now also been captured on these new colour photographs. On the basis of these illustrations, it can indeed be confirmed that the pendant is hippopotamus-shaped. Firstly, the two paws are stump and flat-bottomed, a feature shared by hippopotami [***Fig. 3*** top]. Focusing on the head, we can recognize the protruding eye-sockets and comparatively small ears as being similar to those of a hippo, although the muzzle is relatively undersized (see also Hendrickx, Depraetere 2004: 812). Interestingly, the colour photographs have also revealed a tail on the upper rear part of the object [see ***Fig. 2***, bottom left]. Shaped in the form of an elongated triangle, it is again similar to that of a hippo [***Fig. 3***, bottom]. This previously unknown feature shows that not only the forepart of a hippo was intended to be shown. Instead, the animal is represented from head to tail, and only misses two paws. The absence of these front or hind paws might very well be due to material constraints, although this cannot be stated with certainty here.

Curiously, the presence of an upright cylindrical projection on the animal's back, behind its supposed ears, clearly does not conform to the body shape of a hippopotamus. The presence of a stringing hole in the hippopotamus body seems to exclude the possibility that this projection was used for the purpose of suspension. This is further corroborated by clear traces of use-wear along the edges of both ends of the stringing hole, which were caused by prolonged friction with a string or thong of an, as yet, unidentified material [see ***Fig. 2***, inset]. This wear is, therefore, not uniformly distributed along the edges of the perforation, but is instead restricted to those areas where such a string or thong was predominantly located. The photographs show that the worn down areas are similarly located on both ends of the perforation hole [see ***Fig. 2***, inset]. These areas of wear conform to a position of the pendant in which the head of the hippopotamus is faced away from the body of the person that is wearing it. The weight of the head and upright projection on the upper front side of the pendant would cause the pendant to slightly tilt forward and to balance on the string at these areas. In case the pendant was worn around the neck, the pendant would have rested against the chest with its lower backside.

[5] http://www.britishmuseum.org/research/search_the_collection_database/search_object_details.aspx?objectid=126697&partid=1&searchText=amulet+badarian&fromADBC=ad&toADBC=ad&numpages=10&orig=%2fresearch%2fsearch_the_collection_database.aspx&currentPage=1 (accessed 13 March 2013).

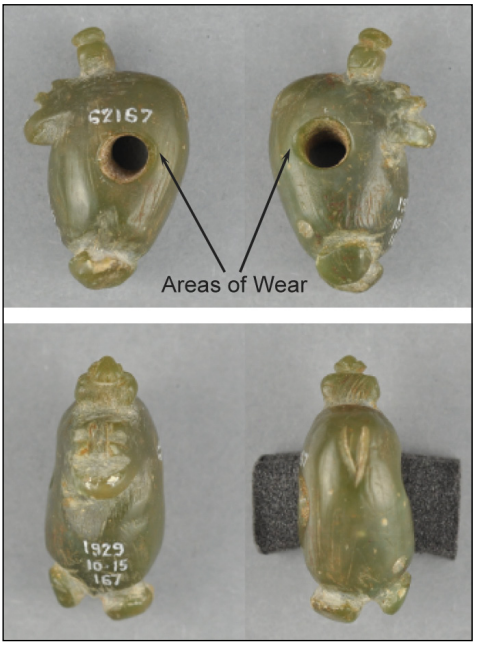

Fig. 2. The Badarian hippopotamus-shaped pendant from Grave 1208 in the Mostagedda district (British Museum, London, EA62167): four views, the tail visible in the lower left view; areas of use-wear indicated along the edges of both ends of the perforation hole (Photos M. Horn © courtesy of the Trustees of the British Museum)

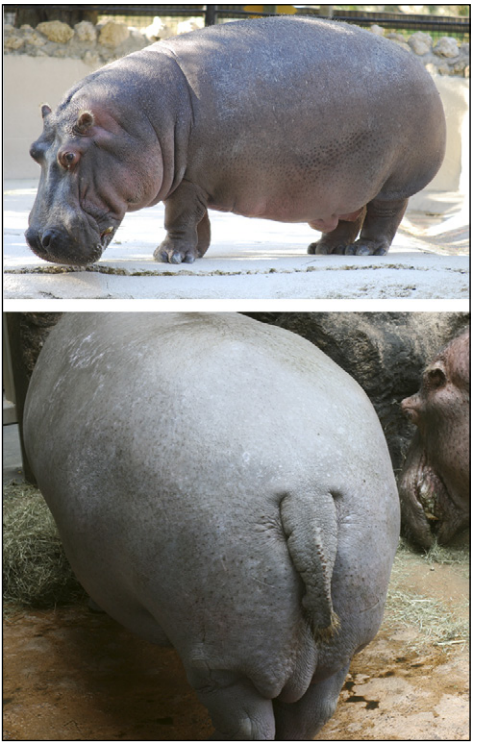

Fig. 3. Two views of a hippopotamus: side view showing its stump feet, small ears, protruding eyes, and large muzzle, and rear view showing its elongated triangular tail (Photos: top, © Micha L. Rieser; bottom, © Frank Vincentz)

INTERPRETATION

As a possible explanation for the upright cylindrical feature, we need to address certain observations made by Wengrow (2006: 105–107) for the later Naqada period. He has noted that during this period similar images were able to move between different object categories, so that certain animal shapes are encountered with combs, pendants, pins and palettes. The head of a bull (or elephant, see Craig Patch 2012a: 53) can, for instance, be found as a pendant, but also as the body of a stone vessel. Wengrow (2006: 105–107) further declares that not only a general image might be transferred, but also that "the form of an implement could be replicated in miniature for use as an ornament" (see also Schoske [ed.] 1990: 105–106, Cat. No. 67–69). This is exemplified by a pendant from Naqada IID–IIIB Grave 8 f 2 in Abusir el-Melek, which is the exact miniaturized version of a lozenge-shaped palette with

antithetically facing bird heads [*Fig. 4*] (Wengrow 2006: 107; Hendrickx, Van den Brink 2002: 352, Table 23.1).

The observations for the Naqada period can also be made for the Badarian period. Ibex and hippopotamus shapes are encountered here amongst different object groups, such as spoon handles, zoomorphic pendants, and the body of an ivory vessel (Brunton, Caton-Thompson 1928: Pls XXII, Nos 2–4, XXIV, 14–15; Brunton 1937: Pl. XXIV, Nos 23, 33; Spencer 1993: 22, 25, Fig. 8). This ivory vessel is shaped in the form of a hippopotamus, with the vessel's mouth situated on the animal's back, surrounded by a broad flaring rim [see *Fig. 1:5*] (Brunton 1937: 53, Pl. XXIV, No. 33). This object was discovered in pieces in Grave 3522 in Mostagedda, the same district as where the pendant was found, and is now housed in the British Museum (AN EA63057). Now, the rim of this vessel might find its (rough) parallel in the cylindrical feature on top of the pendant (for an opposing view, see Behrmann 1989: Dok. 7; 1996: 137, who interprets this feature as a harpoon). This is especially so when viewing the pendant from the front, as was the intention judging from the stringing hole [see *Fig. 1:4*]. The little knob on top of the feature is absent with the vessel, but might represent a stopper or lid of some kind. Alternatively, the entire projection could also represent a rim with a (leather?) cover fastened over it. This counters Droux (2011: 368), who claims that similar knobs with other hippopotamus-shaped objects do not represent rims. Instead, the knob and the narrowing at its base are purportedly used as an attachment for suspension (see also further below). Nevertheless, the aforementioned presence of a stringing hole makes such an identification doubtful (Brunton, Caton-Thompson 1928: 59). This increases the possibility that the pendant represented a miniaturized replication of a hippopotamus-shaped vessel, although not necessarily the one found in Grave 3522.

Fig. 4. Palette pendant from Grave 8 f 2 in Abusir el-Melek (5.2 cm by 2.5 cm) associated with beads und pendants. Ägyptisches Museum und Papyrussammlung, Berlin, ÄM 19145 (Photo Andreas Paasch © courtesy of the Ägyptisches Museum und Papyrussammlung)

The original meaning of the pendant can only be interpreted with difficulty, since neither the original meaning nor

the content of the ivory vessel have been established. Hippopotamus-shaped objects from the Predynastic period are generally considered to have been imbued with positive, apotropaic, or protective quali-ties, even though evidence for this is rather limited. The fact that hippopotamus figurines have been found in the earliest temples of Egypt has, for instance, been taken as a reason to attribute a positive quality to these objects (Behrmann 1996: 143; Hendrickx, Depraetere 2004: 815). Hendrickx and Depraetere (2004: 815) have further suggested that the aggressive character of the hippopotamus might have bestowed an apotropaic value on these objects. This value does not appear to be conveyed in Naqadian scenes of the hippopotamus hunt: here, the hippopotamus is represented as an element of chaos that needs to be controlled by positive forces. Nevertheless, Hendrickx, Depraetere (2004: 815) have argued that an apotropaic or protective value is still articulated by the scene in its entirety. More evidence is needed before such a theory can be confirmed. As a consequence, it remains uncertain whether, on this basis, Badarian hippopotamus-shaped objects can be regarded as having apotropaic or protective qualities.

A different point of view has recently been given by Craig Patch (2012a: 39). She suggests that a certain number of "rimmed" stone hippopotamus-shaped figurines from the Naqadian period are represented in the form of pregnant animals. In these cases, the belly of the hippopotamus can be seen to droop to the level of the feet and to come into contact with the ground. According to Craig Patch (2012a: 39), a pregnant hippopotamus might have had a positive connotation during this early period. She draws an analogy with the later goddess Taweret, whose composite visual iconography includes a pregnant hippo, and who was considered to be a protector of pregnant women. Unfortunately, it is not possible to verify whether the Badarian pendant is meant to signify a pregnant hippopotamus as belly was not clearly represented here. In the case of the hippopotamus-shaped vessel, however, the stomach does not come down to the level of the feet. If the pendant forms a miniaturized version of this particular vessel, there would be no "physical" reason to assume that they represent pregnant hippopotami. A positive or protective value cannot, therefore, be assumed on this basis.

Lastly, the meaning of the pendant could also be inferred from the original content of the hippopotamus-shaped vessel. Since this content has not been identified yet, it might be comparable to that of a number of stone hippopotamus-shaped vessels dating to the Naqadian period. Hendrickx and Depraetere (2004: 815) have suggested that the small size, heavy weight, high quality, specific shape, and infrequency of these vessels could point towards the storage of luxury products, such as cosmetic oils or ointments. Most of these attributes are also found with the Badarian hippopotamus-shaped vessel. This is with the exception of the heavy weight: according to the British Museum collection database, the vessel only weighs 89 grams. This low weight is, nevertheless, a natural consequence of the fact that it is made from elephant ivory. Its small dimensions (height 6 cm; length 7.5 cm; width 4.5 cm, according to the British Museum online collection database) are also not intentional, but are related to the

dimensional constraints of the ivory tusk out of which it was cut. Apart from these differences, the vessel does represent a high quality piece of work, and forms the (so far) only known elephant ivory hippopotamus-shaped vessel from the Predynastic period. On this basis, it is hard to imagine that it was merely used for mundane purposes. Like the stone vessels, its specific shape makes it impractical for pouring out liquids. It is, therefore, likely that this Badarian vessel also contained luxury cosmetics, products that in themselves could have been bestowed with protective meaning (Hendrickx, Depraetere 2004: 815). Indeed, Baumgartel (1960: 57–58) already postulated that the Badarian vessel contained malachite, given that two (out of ten) other, non-theriomorphic (*i.e.*, not having an animal form) ivory vessels from the Badarian period contained traces of malachite paste or ore (Brunton, Caton-Thompson 1928: 7, 31, Pl. XXIII; Brunton 1937: 41–42, Pl. XXIV, No. 18).[6] Traces of malachite powder or paste have also been discovered in, or in combination with, other non-ceramic containers, such as ivory (and bone?) spoons, *Mutela* shells, and a hippopotamus tusk (Brunton, Caton-Thompson 1928: 15, Pl. XXII, No. 1; Brunton 1937: 34, 37–38, 43, 57, Pl. XXIV, Nos 22, 29).

In the light of this evidence, it is possible that a protective or apotropaic meaning was attributed to the Badarian hippopotamus-shaped vessel on the basis of its contents, and perhaps on the basis of its shape as well. If these interpretations are correct, the pendant could have been bestowed with similar apotropaic or protective qualities in its evocation of the hippopotamus-shaped vessel and its contents. This possibility will be further discussed below. In any case, the use-wear exhibited along the perforation hole demonstrates that such qualities, if existent, would not only have benefitted the dead, but also the living. Whether the pendant was actually worn by one of the grave occupants with whom it was found is a question that is more difficult to answer. Due to processes such as gift giving by the living to the dead, the pendant does not need to have been possessed and worn by one of the grave occupants during their lives. On the other hand, the pendant might not only have been worn during the life of one of the grave occupants, but also during the lives of other people. This can, for instance, be the case when heirlooms are buried with the dead, an event which might or might not have been caused by the lack of an appropriate living inheritor (see Parker Pearson 1999: 10, 85).

OTHER PREDYNASTIC HIPPOPOTAMUS-SHAPED OBJECTS

RECORD OF HIPPOPOTAMUS-SHAPED OBJECTS

The previous sections already alluded to the fact that the Badarian pendant is not the only known hippopotamus-shaped object from the Predynastic period. In fact, it fits in well with a larger, but varied group of Badarian and Naqadian

[6] According to Aston *et alii* (2000: 43–44), malachite is a vivid green hydrous copper carbonate mineral, sources of which are found in the Eastern Desert and the Sinai Peninsula.

hippopotamus-shaped objects that have been extensively dealt with in a number of publications (Behrmann 1989; 1996; Hendrickx, Depraetere 2004; Hendrickx, Eyckerman 2011; Droux 2011). Apart from the Badarian pendant, which has received limited attention (Baumgartel 1960: 72; Behrmann 1989; 1996), these publications also refer to other Predynastic hippopotamus-shaped artefacts from the Qau-Matmar region. The proposed cognitive interlink between the Badarian and the Naqadian periods in the Qau-Matmar region can be further assessed by comparing these artefacts to the Badarian pendant.[7]

Besides the hippopotamus-shaped pendant, the Badarian period includes the already mentioned ivory vessel from Grave 3522 in the Mostagedda district, as well as the second hippopotamus-shaped pendant from Grave 5740 in the Badari district [see ***Fig. 1:2***] (Brunton, Caton-Thompson 1928: 16, Pl. XXIV, No. 15; Brunton 1937: 53, Pl. XXIV, No. 33). Since this second pendant lacks any artificial features, it is likely to refer to the animal itself (Brunton, Caton-Thompson 1928: Pls XXIV, Nos 14–15, XXVII, No. 1). Another potential candidate is an ivory spoon that was found in Grave 5446 in the Badari district [see ***Fig. 1:1***] (Brunton, Caton-Thompson 1928: Pl. XXII, No. 4). The handle of this spoon terminates in two possible hippopotami heads that face away from each other. However, their joint backs are not surmounted by an upright projection. This also holds true for a pottery hippopotamus(?) that was found in habitation site 6000 (Brunton, Caton-Thompson 1928: 6, Pl. XXVII, No. 5, top left corner).

For the subsequent Naqada period, the publications refer to three almost identical ivory figurines from Naqada IC Grave 3823 in the Badari district [see ***Figs 1:3; 5:1***] (Brunton, Caton-Thompson 1928: 51, 59, Pls XXXIV, No. 4, LIII, No. 42), a part of a possible hippopotamus pot from Naqada IIC Grave 3759 (Brunton, Caton-Thompson 1928: 54, Pl. LIV, No. 15), an undated, but presumably Predynastic figurine of pink limestone found in Area A6 at North Spur Hemamieh [***Fig. 5:2***] (Brunton, Caton-Thompson 1928: 102–103, No. 130, Pl. LXXIII, No. 176), as well as five small ceramic figurines that have been affixed to the rim of a late Naqada I–early Naqada II bowl from Grave 2646 in the Matmar district (Brunton 1948: 13, 100, Pls 8, 12, No. 7; see also Craig Patch 2012a: 35, Cat. 22). In addition, a set of two hippopotami have been painted on the interior walls of White Cross-lined bowls, one from Naqada I–IIA Grave 1805 in the Mostagedda district (Brunton 1937: Pl. XXXIV, No. 30), the other from Naqada IC Grave 2717 in the Matmar district (Brunton 1948: Pl. XI, No.32). Amongst these Naqadian figurines and representations, only the ivory and pink limestone figurines exhibit distinct projections on their back.

HIPPOPOTAMUS-SHAPED FIGURINES WITH PROJECTIONS

The ivory figurines were found together with a palette and two pebbles, resin, pieces of ostrich eggshell, leg-bones of an

[7] Although other Badarian and Naqadian zoomorphic pendants are known from the Qau-Matmar region, these cannot be readily identified as representing other objects (Brunton, Caton-Thompson 1928: Pls XXIX, Nos 14–15, XLIX–L; Brunton 1937: Pl. XXXIX; Brunton 1948: Pl. XV).

Fig. 5. Predynastic hippopotamus-shaped objects: 1 – side view of one of the three ivory hippopotamus-shaped figurines from Grave 3823 in the Badari district, front part of head not preserved, Manchester Museum, Manchester, 7250 (Photo © courtesy of the Manchester Museum, the University of Manchester); 2 – side view of a pink limestone hippopotamus-shaped figurine from North Spur Hemamieh, Petrie Museum, London, UC10058; 3 – side view of a "rimmed" stone hippopotamus-shaped figurine, unknown provenance, Petrie Museum, London, UC71630 (Photos © courtesy of the Petrie Museum of Egyptian Archaeology, UCL); 4 – side view of an ivory hippopotamus-shaped figurine, unknown provenance, rear part not preserved, Royal Museum of Art and History, Brussels, E.7123 (Photo © courtesy of the Royal Museum of Art and History)

ox (?), and wood fragments in the shape of a boat prow, in a basket in the south-western corner of Grave 3823 (Brunton, Caton-Thompson 1928: 51). The three figurines are now housed in the Ashmolean Museum (AN 1924.334), the Manchester Museum (AN 7250), and the Petrie Museum (AN UC9573) [see ***Figs 1:3, 5:1***]. In spite of their schematic rendering, it is possible to interpret these rather flattened figurines as hippopotamus-shaped through a comparison with two ivory hippopotamus figurines from Naqada II Tomb 10 in Mesaid (Museum of Fine Arts Boston, AN 11.297–8). In both groups of figurines, the top end of the muzzle is turned upwards, a feature that can be correlated with the location of the upward facing nostrils of a hippopotamus (see Hendrickx, Depraetere 2004: 810). From the nostrils up, the head shortly tapers before becoming wider again in the region of the eyes, features that are again consistent with a hippopotamus head. Both groups also show comparable stubby legs, and bodies that are rounded and covered by incisions (though in different patterns).[8] However, the two groups also show distinct differences. Whereas the eyes or eye-sockets are only roughly indicated in relief on the Mesaid figurines, inlaid disc beads have been used for the Badari figurines. The ears, which are shown in relief on top of the heads of the Mesaid figurines, are entirely absent with the Badari group. The projections on the backs of the Badari figurines are, on the other hand, not encountered with the Mesaid figurines. These differences do not impede the Badari figurines from being interpreted as hippopotamus-shaped, even though this interpretation remains tentative.

The highly schematic manner in which the pink limestone figurine (Petrie Museum, AN UC10058) has been fashioned, complicates an identification of the animal it represents [see ***Fig. 5:2***]. A further hindrance is caused by the fact that the front part of the head is partly broken off. Nevertheless, the theriomorphic shape of the object bears similarities to a number of "rimmed" stone hippopotamus-shaped figurines recently discussed by Droux (2011: 354–368, see also the following sections). This especially concerns the short, stubby legs, bulging belly and large head. In addition, its excavator, Caton-Thompson, mentioned that a "short tail is indicated by an incised line in the back section", which she believed to correspond to that of a hippopotamus (Brunton, Caton-Thompson 1928: 103, No. 130). Since similarly shaped tails are also mentioned for the rimmed figurines (Droux 2011: 354), there seems to be no reason to contradict such an identification.

The projections on the backs of the ivory and pink limestone figurines are dissimilarly shaped. Even though the projections on top of the ivory figurines all have a narrowed base, presumably for fastening a string or thong for suspension, their upper parts are either conical (object in the Manchester Museum, see ***Fig. 5:1***), or flattened (objects in the Ashmolean Museum and Petrie Museum, see ***Fig. 1:3***). A side-view drawing of the figurine in the Ashmolean Museum shows that, for this particular object, the upper part is not flat,

[8] The incisions cannot be securely linked to any physical counterpart. The incisions on the Badari figurines were once completely filled with an unidentified black substance, of which now only traces remain. The white colour of the ivory would have stood out against the black-filled incisions.

but rather slightly depressed (Brunton, Caton-Thompson 1928: Pl. LIII, No. 42) [see ***Fig. 1:3***]. It is unknown whether this also holds true for the figurine in the Petrie Museum. The cone-shaped projection on the third figurine is distinct from the others, which might either be intentional, accidental, or due to the fact that it was left unfinished. Lastly, the projection of the pink limestone figurine also has a narrowed base, but is surmounted by a knob that has not been hollowed out [see ***Fig. 5:2***] (Droux 2011: 368).

POSSIBLE INTERPRETATIONS OF THE PROJECTIONS AND FIGURINES

Droux (2011: 368) has interpreted the projections on top of these figurines by comparing them to the projections on top of a number of early Naqadian hippopotamus-shaped figurines [exemplified by ***Fig. 5:3***].[9] These solid stone figurines exhibit circular rims with narrowed bases on their backs. The areas enclosed by the rims are slightly depressed, symbolizing the supposedly hollow interiors of the objects. The bases below the rims have pierced holes for the symbolic attachment of lids, or for the functional use of suspension (Droux 2011: 354–368, 370). Droux (2011: 372) argues that these objects are stone evocations of yet another, contemporary set of ivory hippopotamus-shaped figurines [***Fig. 5:4***]. These smaller figurines display large "hippopotamus tusk-shaped"[10] containers on top of their backs. They have been fashioned out of the lower incisor of a hippopotamus: the container part was carved out of the section that surrounds the natural pulp cavity, whilst the hippopotamus part was carved out of the solid ivory above this cavity. The container has a hollow interior and contains holes along its opening. It is unknown whether this interior space fully corresponded to the natural pulp cavity of the incisor, or whether it was, in part, hollowed out (Droux 2011: 352–353).

Droux's proposition that these "rimmed" stone figurines are an evocation of the ivory figurines is based on the idea that the former group has rims and shallow depressions that symbolize containers, whilst the latter group has actual containers, in spite of their small and possibly non-functional nature. Moreover, both sets of figurines occur as "pairs of identical twins", which, according to Droux (2011: 353, 370–373), emphasizes their direct relations. Yet, this hypothesis does not take into account that the two groups vary in size, and that the container/rim and theriomorphic elements are differently proportioned in both groups.[11] Futhermore, the outward protruding rims of the stone figurines are not encountered with the ivory figurines, where the container is a smooth and straightforward cone. The features on top of the stone figurines rather seem to symbolize the rims of storage spaces that are located within the hippopotamus body, much like the Badarian ivory vessel discussed earlier. This is in contrast to the ivory figurines, where the storage units are located outside of the

[9] These figurines are either unprovenanced or have derived from locations outside of the Qau-Matmar region.

[10] Droux (2011: 352) believes that these containers represent or symbolize hippopotamus tusks on the basis of their formal, cone-like resemblance. There is, however, no specific evidence to support this interpretation.

[11] Maximal dimensions of ivory figurine in ***Fig. 5:4***: height 7.9 cm, length 3.6 cm, thickness 2.7 cm; of the "rimmed" stone figurine in ***Fig. 5:3***: length 6.8 cm, height 5.3 cm, thickness 1.5 cm (Droux 2011: 361, Table 2, for the broadly similar dimensions of the other figurines, see Tables 2–3).

theriomorphic body. These differences indicate that the sym-bolic link between these stone and ivory figurines is perhaps not a valid one, in spite of the fact that both object groups occur in pairs of twinned figurines.

In essence, both groups of figurines could be interpreted either as materializations of similar concepts in which hippopotamus body and container have merged, or, alternatively, as material representations of such materializations (i.e., of other hippopotamus-shaped objects). The small depressions on top of the stone figurines only seem to imply storage spaces. It is likely, therefore, that these objects were material representations of an extant hippopotamus-shaped object group. However, the specific group they refer to remains obscure, since none of the known hippopotamus vessels show a similar combination of attributes (see Behrmann 1989; Hendrickx, Depraetere 2004; Droux 2011). For instance, while some stone hippopotamus vessels have openings with holes along their rim (see Hendrickx, Depraetere 2004: 804–806, Figs 2-4), these openings are in themselves different in that they extend over the entire back of the animal and are not provided with an outward protruding rim. In contrast to the stone figurines, the ivory figurines have actual containers on their back, which makes their interpretation more difficult. Their small size could either indicate that they were not used for storage, or that the substance that was stored inside was precious and/or available in low quantities only (see also Droux 2011: 370). This hinders their interpretation as either a materialization of a concept or as a material representation of an already existing materialization.

In returning to the Badari and Hemamieh figurines, Droux (2011: 368) postulates that the projections on their backs do not represent rims, but should rather be seen as knobs intended and used merely for suspension. This purely functional interpretation is based on the supposed lack of depressions on top of the projections and the comparatively small size of the figurines in relation to the rimmed stone figurines (Droux 2011: 368). The absence of pierced holes marks a further distinction from the rimmed stone figurines, which might be taken as proof for the knobs' use for suspension. The question is, however, whether such use should disable the evocation of a rim. The Badarian pendant is a clear indication that similar projections need not even have been used for suspension, thereby demonstrating that they could have had a meaning beyond the purely functional. It is, therefore, possible that the projections on top of the Badari and Hemamieh figurines are stylised versions of a rim. In theory, the more rounded and conical projections could even be interpreted as rims covered by a lid, which would explain the lack of a depression and of any pierced holes. Moreover, the additional use of a string or leather thong could have added to the evocation of a covered rim, since these might originally have been employed to fix the lid with the help of the pierced holes at the narrowed base of the rim.

Even though such interpretations are hard to prove, and may very well turn out to be incorrect, the possibility should at least be entertained that also such less elaborate projections could have had a representational value. This is especially so when one considers that the projections

on top of the Badari and Hemamieh figurines have only been classified as functional due to a lack of resemblance to the projections on top of the rimmed stone figurines. Yet, the rimmed stone figurines form a well-defined group of paired objects that, apart from certain stylistic differences between the pairs, generally show a repetition of the same set of attributes (see Droux 2011: 354–355). These attributes can again be found with the pink limestone figurine from Hemamieh,[12] except for the fine detailing of the head, a depression in the area encircled by the rim, and holes in the narrowed base below the rim [see *Fig. 5:2*].[13] The fact that this figurine was already partly broken upon discovery, and was found in a habitation site instead of the more usual tomb environment, could indicate that it was never completed (Brunton, Caton-Thompson 1928: 103, No. 130, Pl. LXXIII, No. 176; see Droux 2011: 355, Tables 2–3). In this respect, its knob-like projection might simply reflect a work-in-process, never finished due to the fracturing of the head. If so, the figurine may also have been interpreted as a material representation of an extant hippopotamus-shaped object group upon completion. Its projection, once finished, could have been used for suspension (on the body or elsewhere) and, in doing so, have served to evocate the appearance of a fixed lid.

In contrast to the Hemamieh figurine, the ivory figurines from Badari fall outside of the group of rimmed stone figurines on the basis of their size, material, and, to some extent, morphology. To base an interpretation of their projections on their similarity to the projections of the stone figurines is, therefore, reminiscent of comparing apples and oranges. Instead of treading this risky path, the ivory figurines should be analysed as a distinct group of their own, whereby their interpretation is independent from their degree of similarity to the stone figurines. Unfortunately, the differences between the projections on top of the ivory figurines hinder such a pursuit from becoming more than mere speculation. Since no evidence can, therefore, be provided to support either a functional, representational, or combined functional-representational interpretation of the projections, the option should remain open that either one of these (or other) can be valid.

REPRESENTATIONAL VALUE OR MORE?

MALACHITE: CONTENT, USE, AND MEANING

In the previous discussion, the Badarian hippopotamus-shaped pendant has been interpreted as a miniature replication of another object, which could possibly be identified as the ivory hippopotamus-shaped vessel from Grave 3522 in Mostagedda or another, analogous object. The non-biological feature on top of the

[12] This even extends to the pink limestone from which the figurine was manufactured. Other hippopotamus-shaped artefacts are also frequently made from a red or pink material, most probably in order to imitate the pinkish or reddish skin of a hippopotamus. This colour is caused by the secretion of a viscous substance from the mucous glands that protects the skin against sunburn, water loss, and perhaps infection (Hendrickx, Depraetere 2004: 812; Droux 2011: 354–355).

[13] Although Droux mentions that it is smaller (about 4.1 cm by 3.6 cm) than the other stone figurines, this partly relates to the missing front part of the head. In its complete state, it would have been similar in size to the smallest rimmed figurines cited by Droux (2011: Table 2, Nos 16 and 21).

pendant can, in this way, be understood as a representation of the rim on top of such a vessel, to which a stopper or lid should perhaps be added. Yet, it seems unlikely that the pendant only had a representational value and was merely meant to symbolize another object (cf. Boivin 2008). The notion that it was worn, in both life and death, for more than a symbolic purpose can be inferred from the possible use and meaning of the object it most likely mimicked. As discussed, the hippopotamus-shaped vessel may very well have been imbued with an apotropaic or protective meaning, not only on the basis of its hippopotamus shape, but also on the basis of the product that it had stored inside. Baumgartel (1960: 57–58) already postulated that this product could be identified as malachite paint on account of the fact that malachite was found inside two other Badarian ivory vessels from the Qau-Matmar region. Even though this argument is speculative, it may be supported by the fact that malachite was also attested inside other Badarian non-ceramic containers.

In presuming, then, that a malachite substance was kept inside the hippopotamus-shaped vessel, we can further inquire into the specific usage of this material during the Badarian period. For most of the Naqadian period, malachite is known to have been ground on grey-green stone palettes with the help of a pebble or rubbing stone (see Brewer, Friedman 1989: 8–9, Fig. 1.1; Baduel 2008; Craig Patch 2012a: 25, 219, Note 11).[14] The obtained powder was subsequently transformed into a paste and applied to the body as paint (Baduel 2008: 1059–1061). This specific cosmetic utilization is illustrated by a number of Naqadian male and female figurines, whose eyes are outlined in malachite (e.g., Ayrton, Loat 1911: 12–13, Pl. XV, No. 1; Baumgartel 1960: 82; Craig Patch 2012b: 122, 127–128, Cat. 102, 106).[15] Although a similar usage is not borne out by the small quantity of figurines from the Badarian period, the parallel presence of palettes, pebbles, and malachite does point to a cosmetic utilization of this mineral during this period.[16]

Nevertheless, the value or meaning that was ascribed to malachite paint is harder to grasp. For the Dynastic period, there are a number of sources that provide information on the value of green malachite in its use as eye-paint. Several references in the Old Kingdom Pyramid Texts emphasize its green colour and its likeness to vegetation, and thereby associate it with positive concepts of youthfulness, health, growth, and renewal. Malachite eye-paint also figures prominently in the mythical restoration of the eye of Horus. It is, therefore, not surprising that this mineral was also employed as an ingredient in medications against eye diseases, in addition to being used in treatments against infections of bodily wounds (Troy 1994: 351–353; Nunn 1996: 147; Manniche 1999: 137; Harrell 2002: 239; Stevenson 2007:

[14] This grey-green stone has been wrongly referred to as "slate" or "schist", and is most probably to be identified as either mudstone, siltstone, or greywacke (Stevenson 2007: 150).

[15] The term "cosmetic" is solely meant to refer to the application of mineral pigments to the body. It does not, therefore, mean to include modern Western connotations of cosmetic use (cf. Stevenson 2007: 150).

[16] Curiously, there are only two Badarian graves (5112 and 5719, Badari region) in which a palette, malachite, and a pebble have been found in association with each other (Brunton, Caton-Thompson 1928: 7, 15, 28).

150; Kuhn 2013: 131). In Spell 125 of the Book of the Dead, it is, furthermore, stated that the deceased are required to put on eye-paint before being able to enter the realm of Osiris (Manniche 1999: 136–137). This indicates that eye-paint figured prominently in beliefs surrounding the rebirth and resurrection of the dead.

The absence of textual sources complicates an understanding of the concepts that were associated with malachite paint during the Predynastic period. Even so, some scholars have suggested that these concepts might not have differed much from those entertained during the Dynastic period. Hassan and Smith (2002: 61), for instance, have linked the use of green pigments and green-grey palettes for the application of eye-paint to the increased importance of plant cultivation for the sustainment of life during the Predynastic period. From their point of view, painting the outlines of the eyes could be interpreted as a "... transformative life-giving, health-promoting, and healing act" (see also Stevenson 2007: 152).[17] More recently, Baduel (2008: 1061) has indicated that pigments, such as malachite, could have been used for a wider range of purposes, namely as "a prevention of disease, a form of medicine, body decoration, functional or magical protection and the practice of magic ..." (see also Baumgartel 1960: 82; Kuhn 2013: 131–135). She points out that in the Predynastic cemetery of Adaima malachite paste was not only applied to the contours of the eyes, but also to other parts of the face. She further argues that the whole body could have been painted. According to her, a number of Naqadian figurines show that the female body could have been adorned with images of plants, water, and animals, which, she believes, were connected to a common theme of fertility. Another interesting point is the burial of two children at Adaima. Grains of malachite had been placed on parts of their bodies that had been affected by illness, thereby supporting the view that, at least in these cases, malachite had a magical-medicinal value (Baduel 2005: 46–48; 2008: 1060, 1085; Crubézy *et alii* 2002: 463–464; Wengrow 2006: 101; Kuhn 2013: 132).

FUNCTION OF HIPPOPOTAMUS-SHAPED VESSEL

This leads one to question why a malachite substance would have been placed inside the hippopotamus-shaped vessel in the first place. Wengrow (2006: 51) has stated that during the Badarian period small ivory vessels and hollowed tusks were used for the mixture and manipulation of fluids. Even though the form of the hippopotamus-shaped vessel does not appear to be suitable for pouring out fluids, the vessel could conceivably have been used for the mixture or manipulation of dry or paste-like substances. One could even suppose that the vessel was used for transforming ground malachite into a paste (paint?) by mixing it with other substances (Krzyżaniak 1977: 79–80; see also Schoske [ed.] 1990: 25; Manniche 1999: 135–136; Aston *et alii* 2000: 44; Kuhn 2013: 131). Yet, the variable contents of the other

[17] Similar conclusions have been drawn for the Levantine region, where the emergence of green stone beads has been associated with the onset of agriculture at the end of the Natufian period (Bar-Yosef Mayer, Porat 2008). Bar-Yosef Mayer and Porat (2008: 8549) argue that the green colour of these beads "mimics the green of young leaf blades, which signify germination and embody the wish for successful crops and for success in fertility" of plants, animals, and humans.

Badarian vessels, makes such a hypothesis difficult to support. The two other Badarian ivory vessels contained either a malachite paste or a few grains of raw malachite (Brunton, Caton-Thompson 1928: 7; Brunton 1937: 42). The other containers included either a malachite paste (ivory spoon, *Mutela* shells; Brunton 1937: 34, 43) or a malachite powder (ivory spoon, hippo tusk; Brunton, Caton-Thompson 1928: 15; Brunton 1937: 34). As a consequence, the exact state of the malachite contents inside the hippopotamus-shaped vessel, if at all present, is difficult to assess.[18]

The broad flaring rim of the vessel does indicate, however, that its internal space was meant to be sealed off and to be used for the storage of goods. Such a prolonged containment of contents involved an extended period of time during which the goods were at risk of being affected. It is possible that this threat was the reason for giving the vessel its specific hippopotamus shape. Hippopotami stand out in using their aggression in order to protect themselves, their territories, and their young calves from danger (De Jong 2001: 100). This aspect of the hippopotamus could have served to provide the vessel, and thus its contents, with an active protection against harmful forces. Alternatively, the hippopotamus could have been perceived as a material metaphor for the protective qualities of the malachite contents.

BADARIAN HIPPOPOTAMUS-SHAPED PENDANT OR AMULET?

The theory that a malachite substance was stored inside the hippopotamus-shaped vessel serves as a possible explanation as to why the Badarian pendant was made from green chrysoprase. Since the small size of the pendant did not allow for the provision of an internal storage space, and neither, therefore, for the storage of any contents, this green-coloured variant of chalcedony might have been deliberately chosen in order to emulate the malachite kept inside the hippopotamus-shaped vessel. In this way, both the shape and content of the vessel could be effectuated by the manufacture of a single, green substance.

In order to further interpret the Badarian pendant, it is necessary to compare it once more to the palette pendant from Naqada IID–IIIB Grave 8 f 2 in Abusir el-Melek (Scharff 1926: 51, 61, Nos 312, 392, Pl. 36) [see ***Fig. 4***].[19] Scharff (1926: 50) has stated that the small size (5.2 cm by 2.5 cm) of this and other palettes from Abusir el-Melek would have precluded them from being used for grinding. For the palette from Grave 8 f 2, this seems to be supported by the fact that it was perforated and found in association with beads and pendants.[20] In concurring with Scharff, Schoske (1990: 105–106, Cat. Nos 67–69; see Regner 1996: 34) has stated that such small palettes were worn as amulets.[21] Since

[18] Alternatively, one could suppose that the hippopotamus-shaped vessel was used for the storage of different states of malachite in the *chaîne opératoire* of malachite paint production.

[19] This pendant is housed in the Ägyptisches Museum in Berlin (ÄM 19145). Similar-sized palettes are known from Abusir el-Melek and other Predynastic sites (see also Regner 1996: 34–41).

[20] This palette pendant will be used as an example here. Further research is needed to determine the use of other Predynastic miniature palettes. Such research needs to take into account factors such as context and use-wear, and cannot merely rely on a valuation of size (see Stevenson 2009: 3–4).

[21] Scharff (1926: 50, No. 297) has, however, interpreted one of the small palettes (from Grave 58) as a palette model, since a small rubbing stone was found in association with it in the grave.

palettes were employed in the production of prophylactic eye-paint, she argues that palettes, and, by extension, the miniature palettes, were believed to have a similar protective or apotropaic effect (Schoske [ed.] 1990: 106, Cat. No. 67). Stevenson (2007: 152), on the other hand, has pointed out that the green-grey stone from which the larger-sized palettes were made, was exclusively used for the production of that group of artefacts (see Baduel 2008: 1062–1063). This shows that the stone itself was already invested with some social value, and that the meaning of the palettes is not necessarily derived from that of malachite paint.[22]

In building further upon the ideas of Hassan and Smith, Stevenson (2007: 152) proposes that this green-grey stone could have been perceived to "... impart or enhance the life-giving properties of the pigment that was ground on its surface". She further notes that the presence of malachite-stained palettes in Predynastic burial contexts is an indication for the fact that both palettes and malachite were used during the funerary ritual. In light of their possible connections with concepts of life, fertility and growth, their inclusion in the funerary ritual could be linked with ideological concepts of regeneration and rebirth (Stevenson 2007: 152–153).[23] The finding of stained palettes in the domestic area of Adaima in Upper Egypt has proven that the practice of malachite grinding also occurred there amongst the living.[24] The relatively larger variety of palette shapes in the domestic area, as well as the relatively higher percentage of fragmentary palettes in the mortuary area of Adaima show that the palettes were primarily produced there in order to be used by and for the living (Baduel 2008: 1067–1068). It remains to be established whether this was also the case at other Egyptian sites.

The palette pendant from Abusir el-Melek was not only shaped in the form of these larger palettes, but was also produced from the same green-grey stone. Thus, the palette pendant may be understood as having been accredited with the same qualities as the larger-sized palettes. It is not unthinkable that these properties were partly attributed to this pendant on the basis of its association with palettes, malachite, and the production and use of paint. One can even suppose that it enabled the wearer to have continued access to paint by magical means (see also below). From this point of view, the pendants bestowed on the wearer some sort of magical protection against death, ageing, infertility, non-development, and sickness, during his or her life. Since the object was uncovered in a grave, its use during life needs to be proven by the presence of use-wear. Like the palettes, the pendant's employment in the funerary ritual could have served to achieve the regeneration and rebirth of the deceased after death.

[22] Baduel (2008: 1057, 1062) has rightfully stated that the palette is as important as the ore, since it allows the metamorphosis of the ore.

[23] This notion is supported by the fact that some palettes are shaped in the form of animals that are specifically linked to concepts of revival, reproduction, and renewal (Baduel 2008: 1064–1066). The scenes that are depicted on certain palettes from the early Naqadian period onwards have been linked to the concept of control over the divine and animal world, but can, in this context, also be understood as the power to be safe, alive, and protected.

[24] Interestingly, there seems to be a division in the type of pigment used in the domestic and mortuary sphere at Adaima. Green (malachite) paint was predominantly used in the mortuary sphere, whilst red paint was predominantly used in the domestic sphere (Baduel 2008: 1067-1068).

An interpretation of the meaning of the Badarian hippopotamus-shaped pendant can be given along similar lines. As stated, the hippopotamus-shaped vessel could have been used for mixing ground malachite into a paste, for storing this paste, and for supplying the paste for use as body paint. Under the premise that the pendant is a miniature replication of such a vessel, and that its manufacture out of green chrysoprase served to effectuate the presence of malachite therein, the meaning of the pendant can be linked to the production, storage, and use of malachite paint. It can then be proposed that, instead of merely *representing* or *symbolizing* a hippopotamus-shaped vessel, the pendant was believed to *be* such a vessel and to posses the same range of properties and associations (cf. Boivin 2008: 103–104). From this point of view, the pendant would have been accredited with the power to magically provide for the production, storage, and use of malachite body paint.[25] This magical provision meant that the wearer could also benefit from the positive qualities (life, growth, youth, fertility, health, and healing) that were associated with green malachite. These qualities were considered to be beneficial to both the living and the dead, since the pendant was used by the living and buried with the dead. As stated for the palette pendants, the need for magical access to malachite paint in the grave can be related to ideological concepts of resurrection and rebirth after death.[26] The hippopotamus shape of the pendant could have been perceived as acting as a deterrent or *apotropaion* against anything that could affect the (provision of) malachite paint, or, alternatively, as a material metaphor for the protective qualities of malachite paint.

The interpretations given above are admittedly based on a large number of assumptions and suppositions, which will either be affirmed or disproved in the future. If the Badarian pendant was, nevertheless, perceived as magically providing its wearer with access to malachite paint and its associated protective qualities, the pendant can positively be identified as an "amulet". According to Andrews (1994: 6), an "amulet, talisman or charm is a personal ornament which, because of its shape, the material from which it is made, or even just its colour, is believed to endow its wearer by magical means with certain powers or capabilities. At the very least it should afford some kind of magical protection, a concept confirmed by the fact that three of the four Egyptian words translated as 'amulet', namely *mkt* (*meket*), *nht* (*nehet*) and *s3* (*sa*) come primarily from verbs meaning 'to guard' or 'to protect'. The fourth, *wḏ3* (*wedja*), has the same sound as the word meaning 'well-being'". If indeed so, the Badarian hippopotamus-shaped pendant forms the earliest known amulet that can be identified as such along the Egyptian Nile Valley.[27]

[25] The fact that the pendant was worn may indicate that this access to body paint was believed to be enabled through bodily contact with, and through the sensory experience of, the pendant's material.

[26] The fact that the hippopotamus-shaped vessel was also found inside a grave, shows that also this object was employed in the funerary ritual, probably after a prior usage outside the mortuary sphere.

[27] Another possible amulet is known from a Final Neolithic context near Nabta Playa in the Western Desert of Egypt. It was found near the chest of one of the deceased in a double burial at Site E-75-8. The pendant appears to be a miniature replication of a caliciform beaker (for a remarkable parallel, see Kobusiewicz *et alii* 2009: 169, Fig. 30). The pendant is hollow and made of fired clay. Its vertically pierced lugs could have been used for hanging and/or for sealing off its

BADARIAN–NAQADIAN INTERRELATIONS REVISITED

The present paper set out to further understand the Badarian-Naqadian interrelations on the basis of an analysis of the Badarian hippopotamus-shaped pendant. This analysis has resulted in the proposition that the pendant constitutes a miniature version of a hippopotamus-shaped vessel, which was used for the production, storage, and supply of malachite body paint. The pendant's manufacture out of the green mineral chrysoprase is understood as an intentional act that was meant to effectuate the presence of malachite contents "within" the pendant. In this way, the pendant could have been perceived as an amulet that was able to magically provide its wearer with the production, storage, and supply of malachite body paint. Through its association in colour with vegetation, malachite could have been believed to endow an individual with positive qualities of, for instance, fertility, life, growth, and healing, during both life and death. The significance of these qualities in the funerary ritual can be linked to a belief in resurrection and rebirth after death, and thus in an afterlife.

One of the more specific aims of this paper was to explore whether the cognitive processes that underlie the use and meaning of this pendant had a regional continuation from the Badarian into the Naqadian period. This has led to an investigation into the use and meaning of a number of Naqadian hippopotamus-shaped figurines from the Qau-Matmar region that are similar in shape to the Badarian pendant. The analysis of these ivory and pink limestone figurines has, nevertheless, come to a dead end. Whilst it has proven hard to identify the artefact group of which the pink limestone figurine forms a miniature replication, it has not even been possible to confirm whether the ivory figurines are actually replications of other objects. These constraints have, for now, prevented further analyses to be undertaken of their possible usages and meanings in the past. This means that the comparison with the Badarian hippopotamus-shaped pendant cannot proceed here beyond a stipulation of their formal likeness, and, in the case of the pink limestone figurine, the notion that both form a replication of another hippopotamus-shaped object.

In spite of this outcome, the Badarian–Naqadian interrelations can still be further evaluated when the restriction to the Qau-Matmar region is disbanded. In the above discussion, a comparison has been made between the Badarian pendant and the Naqada IID–IIIB palette pendant from Abusir el-Melek, a site near the Fayum to the north of the Qau-Matmar region. Like the Badarian pendant, the palette pendant can be interpreted as a miniature replication of another object that was associated with malachite body paint. Since palettes form a necessary tool in the production of this paint, it is possible that the palette pendant was attributed with the power to magically supply its wearer with malachite paint and its associated properties. It can, in this way, be interpreted as having had a similar

possible contents. Even though the pendant's meaning is as yet unclear, it may have been related to its undisclosed contents (Wendorf, Schild 1980: 161–165, Figs 3.107–3.109a; Gatto 2006: 105; Kobusiewicz *et alii* 2009: 151).

amuletic value as the Badarian pendant, even though the hippopotamus-shaped vessel had an altogether different relation to malachite body paint. Furthermore, the green-grey stone (i.e., either mudstone, siltstone, or greywacke) of the palette pendant has also been inferred, on account of its green-grey colour and specific use, to have magically bestowed the wearer with benefits that are similar to those provided by green malachite. If so, this might also hold true for the chrysoprase from which the Badarian pendant was manufactured. Further reassessments of the material constituency of Badarian objects in the Qau-Matmar region should be able to demonstrate whether this green mineral had a similar restricted usage then and there. If so, the colour green itself, and not a specific green material, can be interpreted as having been used in the past as a metaphor for positive concepts such as growth, life, healing, which was, itself, based on people's experience of the properties of vegetation in the material world. In this respect, green-coloured materials were not merely perceived as a passive metaphor, since they were believed to be able to actively provide people with these very properties.

Overall then, how can the aforementioned findings enhance our comprehension of the interrelations between the Badarian and Naqadian periods? Firstly, the production and use of malachite body paint was an active practice during both periods. This is in spite of the fact that there is still much to be learnt about the exact contextual utilizations and meanings of malachite paint during these periods (see Baduel 2008: 1059–1061). The inclusion of this paint in both Badarian and Naqadian funerary contexts in the Qau-Matmar region does, however, appear to support the notion of a regional continuation in the production and use of malachite paint from the Badarian into the Naqadian period (for Naqadian burial contexts, see Brunton, Caton-Thompson 1928: Pls XXX–XXXIII; Brunton 1937: 86–87; 1948: 22). Even though malachite has been recorded for Naqadian domestic contexts in this region (Brunton, Caton-Thompson 1928: 85–87; Brunton 1937: 78; 1948: 12, 22), it has not been recovered from Badarian habitation sites (except perhaps for the find in "Hut Circle" 262 at North Spur Hemamieh, see Brunton, Caton-Thompson 1928: 85–87; Holmes, Friedman 1994: 123–124). Unfortunately, these malachite finds cannot be directly connected to a cosmetic use for the living in the Qau-Matmar region, as has been possible at Adaima.

Secondly, the previous section has shown that during the Badarian and Naqadian periods, extant objects were manufactured in miniature to be worn as pendants. The analogy does not stop there, however. Provided that the interpretations in this paper are correct, the people that lived during these periods also shared the belief that these pendants were able to provide the living and the dead with magical access to malachite paint, and that, in turn, the (magical) cosmetic consumption of this paint could benefit its users by means of its life-giving and protective properties. This demonstrates that the people that lived during both periods had a similar understanding of how these pendants could function as amulets. The notion that similar qualities were attributed to malachite (and perhaps other green substances) could, furthermore, point to comparable systems of value in both

periods. If these theories can be verified, they will prove that the Badarian and Naqadian periods not only show a broad chronological continuance and a sustained material development, but also that the people that were living during these periods were involved in similar practices and exhibited comparable cognitive processes. Unfortunately, the absence of Naqadian palette pendants from the Qau-Matmar region has prevented these conclusions from being fully appreciated on a regional level. Even though these findings cannot be used to claim the cultural union or difference of the people living during these periods in Egypt, they do highlight the fact that the long-lasting "cultural" division of the Badarian and Naqadian archaeological assemblages has wrongly served to uphold the idea that the groups of people that were engaged with them were in some way to be seen as unrelated or distinct.

CONCLUSION

To conclude, it is only recently that items of dress[28] have been subjected to more extensive scrutiny within the field of Egyptian prehistoric archaeology. This has already led to some interesting conclusions on their contextual usages and meanings (see Duchesne *et alii* 2003), and it is expected that considerations of their production technology, their relations to issues of identity and craft specialization, as well as their role in Egyptian state formation, will follow swiftly. If anything, this paper hopes to have contributed to this development, and to have demonstrated that the study of dress items is an important field of investigation that, in spite of its concentration on the smaller items of material culture, can equally lead to a better understanding of the larger issues of research within Egyptian prehistoric archaeology.

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[28] "Dress" is used here as an alternative to the ethnocentric terms "personal ornaments" and "jewelry". Dress is an anthropological term, which is understood to include all modifications and supplements to the body, see Eicher 1995: 1.

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