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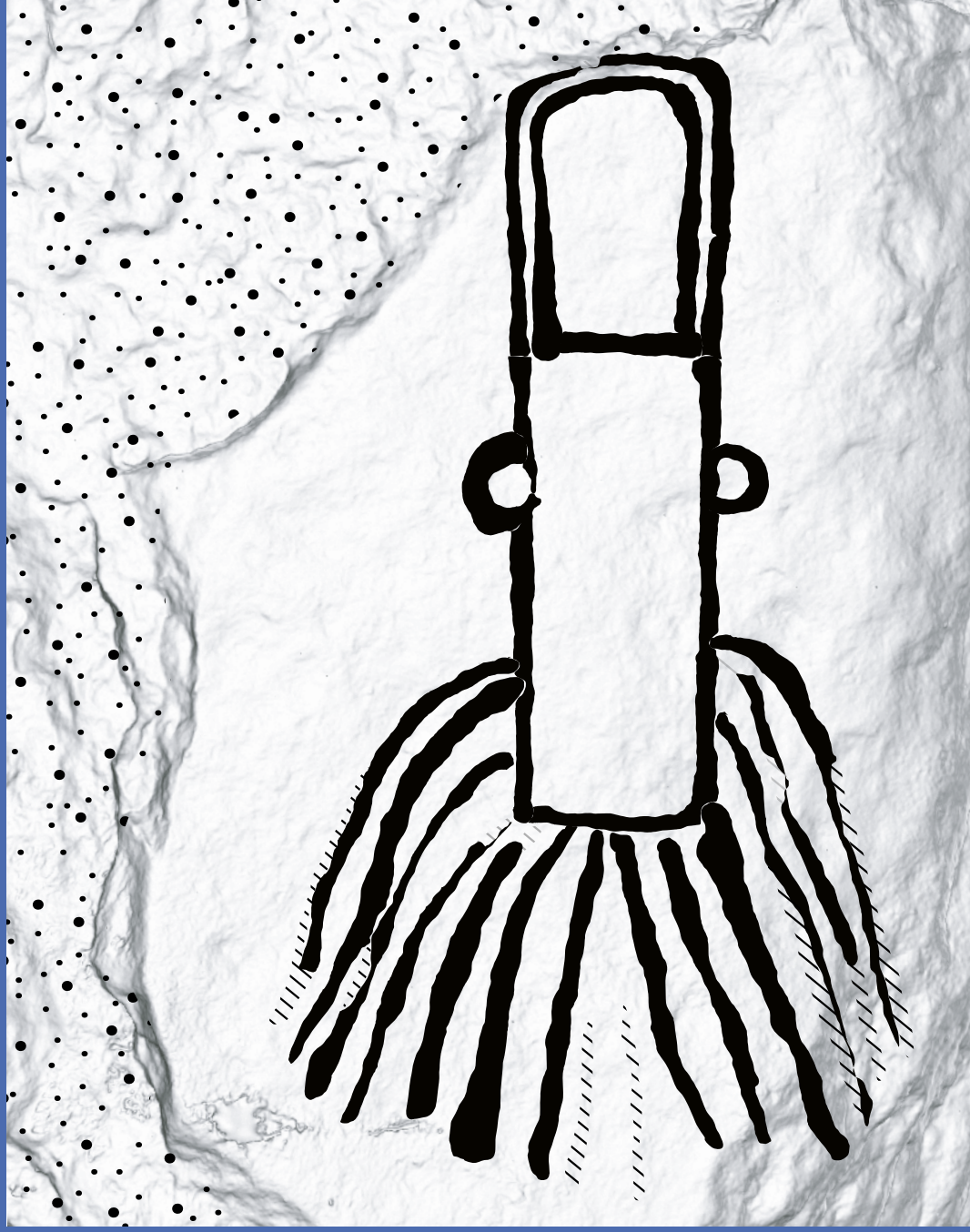
(Eds.)



IMITATIONS, SIMULATIONS, MOCK-UPS AND ILLUSIONS: SPECIAL VARIANTS AND INTERPRETATIONS IN MATERIAL CULTURE

CASE STUDIES FROM PREHISTORIC EUROPE

Propylaeum
SPECIALIZED INFORMATION SERVICE ANCIENT STUDIES

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In memory of
David
Fontijn

PREFACE

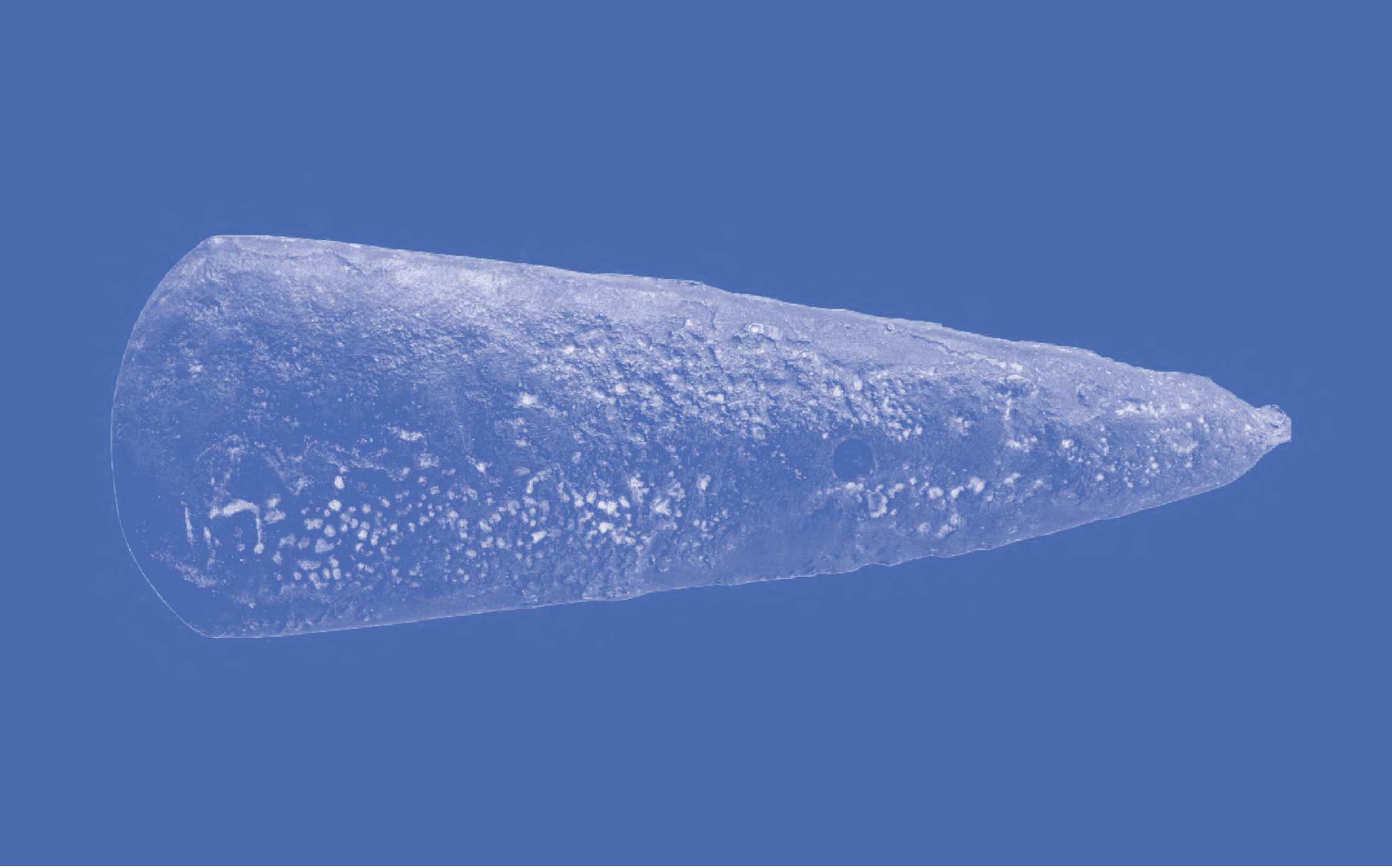
This small but selective volume focuses on objects that are out of the ordinary, not only in the sense that they imitate other objects, but also in the sense that they cannot serve the same purpose as the originals. As imitations, simulations, fakes and illusions, they deceive, pretend and distract – while also being displayed in such a way as to draw attention to themselves. In most cases, their anomalous status as curiosities makes it impossible to interpret them on the individual level. By adopting a more holistic perspective, however, we can shift our focus away from the individual cases, viewing them instead in the context of a broader cultural phenomenon. The essays collected here aim to shed light on this phenomenon, explore its diverse manifestations, question the purpose(s) of these objects and discuss their social implications.

The origins of this publication lie in session #259 *The Creative Reinterpretation of Material Culture in Prehistoric Societies: A Reappraisal*, organised by Ariane Ballmer and Daniel Neumann at the 25th Annual Meeting of the European Association of Archaeologists in Bern, 4–7 September 2019. Three papers from this session are published in the book (Ballmer & Neumann; Kaul et al.; Marangou), along with three further guest contributions (Amkreutz & Fontijn; Cabanillas de la Torre & Gomez de Soto; Cassen & Grimaud).

We wish to express our gratitude to the authors for their valuable contribution and their patience during the preparation of the publication. Thanks are also due to Hélène Blitte of the Cantonal Museum of Archaeology and History in Lausanne and Julia Hahn of the Romano-Germanic Commission of the German Archaeological Institute for their editorial support.

We dedicate this book to David Fontijn, our colleague and mentor, who sadly passed away in 2023. In our minds, he will continue to stimulate our thinking.

Ariane Ballmer
Daniel Neumann
January 2024



Copper axe from Hertinghausen (Kassel, Hesse, Germany), replicating a typical polished jadeite axe from the western Alpine tradition.

SKEUOMORPHS IN RITUAL PRACTICE:

MATERIAL REALITY AND THEORETICAL APPROACHES. AN INTRODUCTION TO THE BOOK

Ariane Ballmer

Daniel Neumann

In A. Ballmer & D. Neumann (Eds.), *Imitations, Simulations, Mock-ups and Illusions: Special Variants and Interpretations in Material Culture. Case Studies from Prehistoric Europe*. Propylaeum. https://doi.org/10.11588/propylaeum.1445.c20611

In this introductory essay, we explore the arts of imitation, simulation, mock-ups, and illusion, situating them within the broader framework of prehistoric archaeology. By examining the practice of pretending to be the same, while actually being different, we ask about the roles of these peculiar objects within the context of human–thing relations. The specific focus on skeuomorphs and their role in ritual practice makes it possible to discuss the means by which they are 'activated', especially their staging and their metaphorical capacity.

Skeuomorphs; ritual practice; ritual objects; staging; metaphors.

BACKGROUND

There exists ample evidence from European (pre-)history of artefacts that imitate things, while deliberately diverging from their originals. By this, we do not simply mean imitations in the sense of copies or counterfeits created to reproduce an original and make it accessible (e.g. Stockhammer, 2017). Rather, our concern here is with imitations that do not fulfil the original function of their prototype.[1] This phenomenon manifests in various ways: through formal alterations, through making the objects significantly too small or too large, or through the selection of atypical materials that prevent the objects from serving their original purpose. While these objects strongly reference the essence of their prototypes, the differences can be pronounced – although this is not always the case.

In the past, terms such as 'icon', 'idol', and 'fetish' were applied to such objects, and scenarios involving object worship, votive offerings, symbolic currency, and token exchange have been proposed as explanations (cf. Eggert & Samida, 2016, pp. 124–126) – concepts primarily drawn from anthropological studies or ancient texts from the Mediterranean region. Although it can be challenging to further develop the interpretation of these objects, we believe that it is important to revisit this discussion. After all, despite their status as exceptional, marginal, and curious specimens in material culture, such objects are remarkably present in the archaeological record. The following selection of examples illustrates the diversity of this phenomenon.

Clearly observable as a phenomenon from the Neolithic onwards, this form of imitation first becomes particularly evident in the form of miniaturized everyday objects such as houses, furnishings, tools, animals and, especially, human figures made from clay (e.g. Bánffy, 1997; Bailey, 2005; Hansen, 2007; Mina, 2008; Becker, 2011; Meskell, 2015; Insoll, 2017). Whether they are interpreted as votive offerings or children's toys, they are clearly miniaturized imitations that were never intended to be confused with the prototypes. These miniatures do not constitute deceptive mock-ups pretending to be real, but rather they evidently function as representations of and placeholders for realia (see the chapter by Marangou in this book).

A large number of objects reference prototypes made from metal. Imitation of these objects were produced using other materials, especially stone (e.g. Frieman, 2012), a practice which is generally interpreted as evidence for people's fascination with the novel material, including its substantial properties and potential (Klassen, 2004; Kristiansen & Larsson, 2005, pp. 51–60; Hansen, 2013). The Åtte sword (Føvling Sogn, southwestern Jutland) serves as a prime example of the emulation of a weapon type originally made from metal (Kersten, 1986, pp. 67–68, no. 3924). The composite sword, with a total length of 46 cm, consists of multiple flint elements (tip, edges, and hilt), which were originally mounted on a wooden body (Fig. 1),

1 In the following, the term 'prototype' refers to the original object that served as the model.

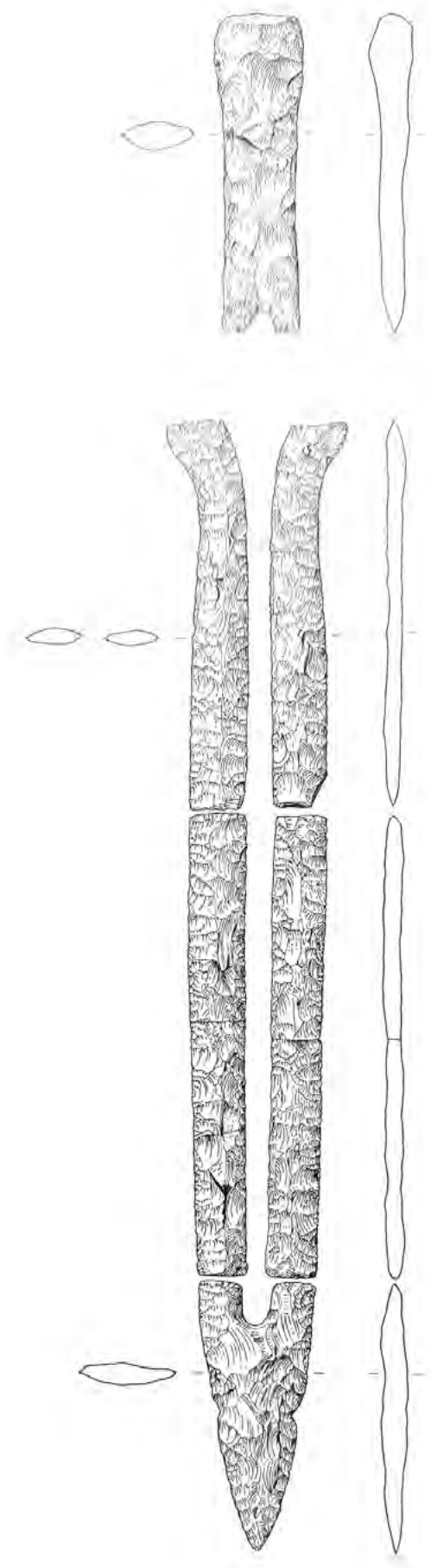


Fig. 1. Flint parts of the composite sword from Åtte (Føvling Sogn, southwestern Jutland). Total length: c. 46 cm.

imitating the shape of an Early Bronze Age short sword from the Bz A2 phase. The Åtte sword is the best-preserved example of at least seventeen comparable specimens known from Denmark (Rønne, 1987, p. 87). Clearly, it did not provide its user with the same functionality as the bronze prototype, and it remains unknown whether and how it was used prior to its deposition. In any case, this example reflects a creative response to the emergence of metal objects, by adapting established technological traditions to new forms. It is generally assumed that copper and bronze objects were relatively rare when metal objects were first introduced, especially in geographically peripheral areas (e.g. Rosenstock et al., 2016; Iversen, 2017, pp. 365–366, 370–371; Klimscha & Neumann, 2022, pp. 385–391). Consequently, the Åtte sword should also be viewed as evidence of the sociocultural impact of early metal objects in Northern Europe, where fully developed metallurgy was established relatively late, around 1700 BC (Vandkilde, 2014; Iversen, 2017, pp. 368–369; Nørgaard et al., 2019). Although quite rare, there are also cases in which stone prototypes were replicated in metal. One such example is the Late Neolithic copper axe from Hertinghausen (Kassel, Hesse, Germany) (Fig. 2), which replicates a typical polished jadeite axe from the western Alpine tradition (Kibbert, 1980, p. 61, no. 18; Pétrequin et al., 2012; Görner & Sattler, 2016).

Fig. 2. Copper axe from Hertinghausen (Kassel, Hesse, Germany), replicating a typical polished jadeite axe from the western Alpine tradition. Length: 12.6 cm.

Fig. 3. Miniature Fresach-type copper axes and a dagger from depositions at Pigloner Kopf, South Tyrol (Italy).

In other cases, imitations are made from the same material as their prototypes but significantly differ in size. The miniature copper axes of the Fresach-type have an average length of approximately 10 cm (Fig. 3) (Mayer, 1977, pp. 23–24; Neumann, 2015, p. 104, fig. 22). Barely functional as tools or weapons, the closest morphological parallels to them are found in Late Copper Age axes, particularly the shaft-hole axes of the Kozarac and Bányabükk/Baniabic/Vâlcele groups (Bátora, 2003; Hansen, 2009). The discovery and examination of the site at Pigloner Kopf in the Non Valley, South Tyrol (Italy) have made it possible to scientifically confirm the chronological assignment of these miniature axes through AMS dating of charcoal remains found on the artefacts' surfaces (Oberrauch, 2019; 2000; 2024).

The Bronze Age miniature swords, which are known above all from the Danish Isles, provide another striking example of the miniaturization of weapons. Although formally resembling contemporary sword types, they measure only a few centimetres in length. Interestingly, they are exclusively associated with Montelius periods IV and V of the Nordic Bronze Age (Notroff, 2015). They emerged around 1100 BC, at a time when burial practices were shifting from inhumation to cremation (Reiter et al., 2021; Sørensen & Rebay-Salisbury, 2023). This change is likely linked to a new conception of the afterlife, according to which the transition no longer required the physical integrity of the deceased or of the grave furnishings. This shift also opened the possibility of providing the deceased with placeholders for original grave goods, such as miniatures.

The extraordinary swords of the Plougrescant-Ommerschans-type are perhaps the most prominent and well-known example of the opposite approach, in which objects were supersized (see Amkreutz & Fontijn in this book). In most cases, creating giant versions of ordinary objects must have been technologically challenging, and only a few examples of this practice are known. The large Jászladány-type axe from the Early Copper Age (5th millennium BC) found in Osijek, Croatia (Fig. 4), is an impressive early example of this practice (Jovanović, 1979, pp. 40–41, pl. II). Both the axe head

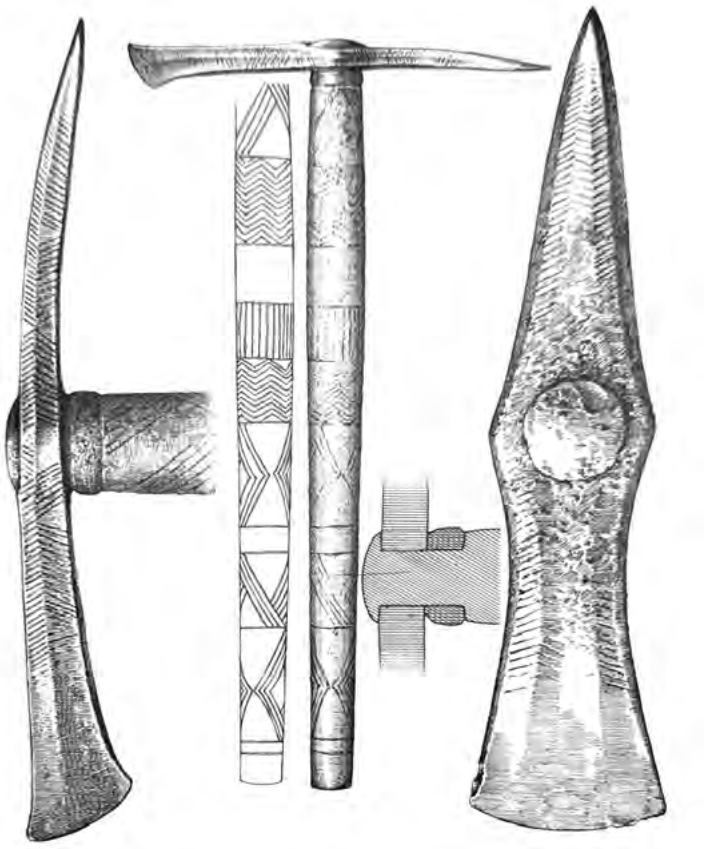


Fig. 4. Jászladány-type axe from the Early Copper Age (5th millennium BC) from Osijek, Croatia. Different scales. Height of axe with shaft: c. 76 cm; length of blade: c. 40 cm.

and shaft are solidly cast from pure copper and weigh approximately 18 kg in total. Not only must the effort involved have been considerable, but also the quantity of material resources used, enough to produce ten to twenty standard-sized shaft-hole axes.

In addition to miniaturizing and supersizing, mock-ups were also created using atypical materials, whose properties prevented the objects from fulfilling their original function. Extraordinary burials and hoards from the Late Copper and Early Bronze Ages in southeastern Europe have yielded weapons made from precious metals (Primas, 1988; Hansen, 2001; 2009). Among these are the gold daggers and silver axes from the Late Copper Age/Bronze Age tumulus at Mala Gruda on the Adriatic coast of Montenegro (Primas, 1996) and the Perşinari hoard in southern Romania (Vulpe, 1995; Popescu, 2020), which are notable examples of the practice of fashioning weapons from unusual materials. A series of miniature axes made from clay (instead of copper) from the late 4th and early 3rd millennia BC in central and southeastern Europe (Maran, 2008, pp. 178–181; Serengély, 2008a, pp. 62–63; 2008b, pp. 20–21) further illustrates that these objects can differ from their prototypes in both size and material.

IMITATIONS, SIMULATIONS, MOCK-UPS, AND ILLUSIONS: TERMINOLOGICAL AND CONCEPTUAL CONSIDERATIONS IN THE DISCUSSION OF SKEUOMORPHS

The exemplars presented above can best be categorised as skeuomorphs. Skeuomorphs (a neologism derived from the Greek σκεῦος [skeuos] = container or tool, and μορφή [morphḗ] = shape) are physical objects that reference the shape or style of other objects, primarily through visual similarities in form. The differences from the original or prototype are evident in the skeuomorph's size, texture, material, and method of production, although the degree of similarity or difference between the original and the skeuomorph can vary. These artefacts formally mimic prototypical objects by emphasising their specific features, yet they do not (or do not entirely) fulfil the original function (e.g. Conway, 2024; for an overview of the diverse understandings of skeuomorphism in research history, see Frieman, 2012, pp. 9–16). Despite the fact that they strongly reference existing material

culture, skeuomorphs are not perceived as 'regular' objects, unlike their prototypes. It is not uncommon for skeuomorphs to be unique pieces or to occur in very small numbers, although other skeuomorphs are found in large numbers, such as certain miniature clay figurines (Marangou in this book) or the Armorican socketed axes from the Early Iron Age (Cabanillas de la Torre & Gomez de Soto in this book).

We would like to integrate the terms 'imitation', 'simulation', 'mock-up', and 'illusion' into the discussion, as in some cases they may provide a more accurate description of the circumstances. While these terms are not fully congruent with the concept of skeuomorphism, they do overlap in certain areas.

Imitations (Latin *imitatio* = replication; mimicking) are not simply copies, in the sense of a precise reproduction of many aspects of an object, but they also include objects that deliberately pretend to be something else, while remaining consciously incomplete. The concept of imitation also encompasses joking and cynical or malicious mocking. While a skeuomorph imitates parts of a prototype, most imitations are not skeuomorphs. Rather, imitations can be fully functional replicas of originals, as is often seen in material culture (e.g. Biehl & Rassamakin, 2008). Strictly speaking, for instance, imitations of exclusive vessels (whether made from the same or different materials) are not necessarily skeuomorphs (e.g. Gill, 1986; Vickers, 1989), since these copied vessels typically retain the same functional properties as the prototypes.

The concept of ***simulation*** (Latin *simulatio* = appearance, disguise, deception) is more complex. Colloquially, the term refers to the imitation of an original process, with the aim of creating a pretence, but Jean Baudrillard's theory of simulation offers a deeper socio-philosophical perspective on this phenomenon (Baudrillard, 1981). He defines *simulations* as imitations of the operation of a real-world process or system, and *simulacra* as copies of things that never existed or that no longer have an original. In *Simulacra and Simulacrum*, Baudrillard distinguishes four stages in the development of the image: the first reflects a deep, generally accepted reality; the second is a recognisable copy that masks and distorts this deep reality; the third masks the absence of deep reality; and the fourth is pure simulacrum, where the simulacrum has no relation to any reality whatsoever. *'The simulacrum is never that which conceals the truth – it is the truth which conceals that there is none. The simulacrum is true'* (Baudrillard, 1981, p. 9; our translation). Consequently, drawing on the example of the Åtte sword mentioned earlier, Tim F. Sørensen argues that such objects should not be seen as 'copies of originals', but rather as 'original copies' (Sørensen, 2012, pp. 57–59). He claims that the composite swords made of flint do not demonstrate the inability to create bronze weapons from stone, but instead reflect attempts by Early Bronze Age manufacturers to distance themselves from both bronze craftsmanship and the formal language of the flint tradi-

tion. In this sense, Sørensen ascribes a higher degree of independence to these flint/wood swords, understanding them, in Baudrillard's terms, as *simulacra* – copies without an original that exist independently of the original meaning.

In contrast, a ***mock-up*** also pretends to be something, but is conceived from the outset as a dummy, intended to hold a place, either for the purpose of practicing something or to deceive.

Finally, an ***illusion*** (from the Latin *illusio* = irony, deception, or distorted imagination) is a distortion of perception, often leading to the misinterpretation of sensory information. Illusions can occur across various sensory modalities, including sight, hearing, touch, and smell, and can either be created intentionally or occur naturally. Visual illusions, for example, can make objects appear to the eye to have a different size or shape than they actually do, or they can create the illusion of movement where none exists. Certain skeuomorphs produce effects that create illusions, such as the rock art presented by Serge Cassen and Valentin Grimaud (in this book), which can indeed be understood as illusory. From our perspective, the engravings appear to depict axes, although in reality they may represent squids. It is not only the detailed research and deep analysis that has brought the squids to light, but also the second glance to that illusions typically elicit.

Deception occurs when the non-functionality of an object is not immediately apparent. We distinguish between skeuomorphs that clearly serve as references and whose non-functionality is obvious (such as the Late Neolithic/Copper Age miniature axes made from clay, as mentioned above) and those that are intentionally designed to conceal their non-functionality at first glance (such as the Early Iron Age socketed axes presented by Cabanillas de la Torre & Gomez de Soto in this book).

THE ACTIVATION OF SKEUOMORPHS AS RITUAL OBJECTS: A HYPOTHESIS AND ITS IMPLICATIONS

To explore the social context and significance of skeuomorphism, we will examine the relevant objects within their ritual contexts, drawing on insights from other disciplines, particularly ritual studies, social anthropology, and sociology.

While the production of skeuomorphs may have been motivated by various considerations and served different purposes (Frieman, 2010, pp. 36–38, tab. 1; 2012, pp. 9–16, tab. 15), this discussion focuses on their potential as ritual objects. Ritual objects are items used as utensils, devices, or implements in ceremonial rituals. They hold significance in the cognitive, emotional, and sensory experiences of the participants. In order for objects to be suitable for ritual use, they sometimes undergo an authentication process (Brosius et al., 2013, p. 13; Meier & Zotter, 2013, p. 139). Once they attain the status of ritual objects, they are permanently separated from non-ritual use. As ritual devices, they were never intrinsically effective. Instead, their meaning and 'power' resulted from the active attribution of meaning in the process of their creation and use in the context of ritual performances.

It is certainly striking that, in the archaeological record, skeuomorphs are rarely associated with everyday contexts. On the contrary, they are often separated from them. This separation typically manifests in spatial terms, such as the deposition of skeuomorphs in special pits, at ceremonial sites, like sanctuaries or communal gathering places, or in burials. For instance, the curious wood/flint sword from Åtte was found in a burial mound, alongside a stone axe (Kersten, 1986, pp. 67–68, no. 3924). Likewise, the miniature Fresach copper axes are found exclusively in the eastern part of the Alps, mostly in the form of isolated single finds (possibly depositions) or within hoards. Interestingly, few other metal finds dating to the same period are known from the area of distribution of the miniature Fresach axes in the 3rd millennium BC (Oberrauch, 2024, p. 2, fig. 1). While there is a gap in knowledge with regard to many skeuomorphs found in unknown contexts, the majority of miniaturized and supersized weapons, as well as weapons made from precious metals, dating from the Bronze and Iron Ages, have been discovered in hoards and burials.

The deliberate and obvious separation of these objects from everyday contexts connects to Catherine Bell's ritual theory, in which the ostentatious setting apart of certain social practices plays a key role (Bell, 1992; 1997, pp. 90–91). In many cases, the special handling of the objects can be observed: from how they were manufactured to the fact that they were created in a way that made them unusable for their original purpose to the distinctive way in which they were displayed and disposed of. These special forms appear to have been subject to very specific treatment. Ritualised practices involving material culture are typically not performed with insignificant objects. Therefore, even if we run the risk of engaging in circular reasoning (i.e. the presence of skeuomorphs points to a ritual context, while the ritual context indicates that the skeuomorphs are significant objects), it is clear that we must attribute a greater social significance to the skeuomorphs in practice.

ACTIVATION THROUGH STAGING AND *MISE-EN-SCÈNE*

It must be assumed that skeuomorphs were displayed within ceremonial rituals, made visible by various means, brought to attention, and emphasised for inspection (Rappaport, 1999, p. 140; Coupaye, 2013, p. 278). The staging of objects in ritual performances involves the intentional arrangement and placement of various items, artefacts, or props within a ritual space. This enhances the symbolic meaning, aesthetic appeal, legitimacy, and efficacy of the ritual (Bell, 1992, pp. 74, 90). This approach is common across diverse cultural and religious traditions, and it plays a significant role in shaping the sensory experience and narrative of the ritual for both participants and observers. Through the deliberate arrangement and manipulation of ritual objects, participants and observers engage in a symbolic dialogue with both the natural and supernatural worlds, as well as the community.

The archaeological findings discussed in this book show clear signs of staging, in the sense that the relevant objects were selectively arranged within distinct frameworks – whether through the placement of figurines in specific scenes, the deposition of bronze objects in graves or hoards, or the creation of images on stone monuments. This observation is significant because it reveals the intentional handling of these objects, as well as highlighting the importance of context in the functioning of skeuomorphs. Staged within these ceremonial ritual performances, the skeuomorphs likely played a role in co-creating and conveying content related to collective identity and universal realities, such as the mythical past of a community (e.g. Ballmer, 2015, pp. 74–79).

ACTIVATION THROUGH METAPHORS: SAMENESS, DIFFERENCE, AND TENSION

Skeuomorphs should be considered material metaphors, that is, physical objects that refer to other things by means of an obvious citation of shape or style. Similarities and differences in form suggest which aspects of the original are to be interpreted via the skeuomorph (Frieman, 2012, pp. 11–13). As we have seen, the staging of objects is a crucial means for inducing individuals to inspect and consciously engage with them. In the case of skeuomorphs, staging, among other things, leads to an aesthetic experience of resemblance, i.e. the perception of similarities and redundancies (Bateson, 1973; Harman, 2018, p. 73). In rituals, the awareness of difference, in turn, plays a fundamental role in both creating cognitive tension and resolving it (Coupaye, 2013, pp. 278–284). Roy A. Rappaport (1999, p. 150) suggests that the substantial nature of the representation is as important to its success as its metaphorical characteristics are. Unlike the prototype, the metaphor has the ability to create tension.

Metaphors rely on specific knowledge of references, shaped by cultural values and material practices. Moreover, the metaphorical effect is not static, as it does not merely depend on resemblance. Instead, *'material metaphors are neither straightforward nor necessarily factually imitative; they rely on a play of similarity or distance, likeness and difference between index and prototype'* (Ortman, 2000, p. 87). Thus, the metaphor unfolds its power through a dynamic process, working in an interplay of similarity and difference across various aspects between related objects. It is in this field of tension – where the experience of difference is both recognised and corrected – that cultural anthropology and ritual studies identify a kind of 'logic of magical action' (Tambiah, 1973; Taussig, 1993, p. 42; Rappaport, 1999, p. 149). Considering skeuomorphism as a specific vehicle for metaphorical relationships, the implications of its context are the most important aspect. It must be assumed that skeuomorphs were carefully conceptualised and manufactured with high awareness of their metaphorical potential and that just the right degree of resemblance and variation was applied to make the object an effective metaphor. Conversely, their discarding can be understood as the abolition of the relationship of metaphorical tension.

SKEUOMORPHS AND BEYOND. CASE STUDIES FROM PREHISTORIC EUROPE: ABOUT THE BOOK

At the beginning of this essay, we introduced a series of objects in order to exemplify the initial situation: objects that imitate originals but that cannot be used for their original purpose, primarily due to their size or the choice of material from which they are made. However, the five case studies in this book take a much freer approach and expand on the issue. They explore mock-ups of tools no longer in use, the creation of oversized weapons, miniaturized real-life scenes, objects, and creatures in clay, optical illusions in rock art, and the adoption of foreign forms as vehicles for indigenous iconographic programs. Not only do these case studies involve different material expressions and practices, but they also employ a variety of theoretical and interpretive approaches. Chronologically, the case studies span from the Neolithic to the Early Iron Age – roughly from the end of the 7th millennium to around 500 BC – and feature objects from across Europe, including the French Atlantic coast, Brittany, the Netherlands, the Alpine region, southeastern Europe, the Balkan Peninsula, and the Aegean, extending as far as Egypt.

Serge Cassen and Valentin Grimaud explore the motif of the 'sleeved axehead,' an iconography that was widespread from the 5th millennium BC in northwestern France. Employing scientific expertise and keen insight, they challenge the optical illusion of the Neolithic everyday tool, convincingly reinterpreting it as a giant squid. Christina Marangou examines Neolithic and Early Bronze Age figurines from northern Greece and neighbouring regions, discussing their role as imitations and miniature models of humans, animals, and houses. Focusing on the archaeological context of these skeuomorphs, she emphasises the polyvalent character and significance of these figurines and models, as well as the variety of practices in their use.

Luc Amkreutz and David Fontijn present the Bronze Age hoard from Ommen (Overijssel, the Netherlands), famous for its spectacular oversized sword. This mega-sword is a representative of the Plougrescant-Ommerschans-type, which includes objects that are too large, heavy, and unwieldy to serve the same purpose as their prototypes. The symbolic significance of these objects seems obvious, especially since they were deposited in wetlands. Flemming Kaul, Karin Margarita Frei, and Samantha S. Reiter

follow the single-edged razor with a handle shaped like a horse's head, tracing its journey from the eastern Mediterranean to the Nordic Circle, where it was widely distributed during the Bronze Age. The case they examine might not be an example of skeuomorphism in the strict sense, but rather a complex simulation in which originally foreign tools were transformed into bearers of indigenous iconography – or as the authors put it *'an inventive reinterpretations or creative processes of iconographic translations'.* Finally, Gadea Cabanillas de la Torre and José Gomez de Soto take us back to northwestern France, specifically to Armorica, the primary region for Early Iron Age socketed axe hoards. The axes seem to have been formally inspired by Late Bronze Age socketed axes, but lack their original functionality. In the Early Iron Age, these axes were manufactured in large quantities and carefully stored away: many have been discovered in Brittany and Normandy. While the authors acknowledge that the meaning of these objects and the practice of hoarding them remains unclear, they convincingly interpret this phenomenon as an intentional attempt by Early Iron Age peoples in Brittany and Normandy to connect with their past, at a time when change required legitimation.

CONCLUSION

It is not always clear to what extent illusory and deceptive effects were intentionally created by the manufacturers of skeuomorphs and to what extent these effects are partly a result of modern misunderstandings. This issue arises, for example, in the case of art that makes an observer think of an axe when they are looking at a picture that actually represents a squid (see Cassen & Grimaud in this book). Did the stone carvers intend to obscure the squid's true nature for reasons that remain unclear? Or were the squids clearly recognisable to the Neolithic eye, while our preconceived notions and sometimes limited imagination prevent us from identifying them? In their contribution, Gadea Cabanillas de la Torre and José Gomez de Soto wisely note that the deception by Armorican Early Iron Age axe manufacturers, who imitated Bronze Age axes, has been entirely effective to this day, as these objects have long been accepted as Late Bronze Age tools by modern archaeologists.

The essays in this book not only reveal the many facets of skeuomorphism, but also propose possible scenarios for the effectiveness of these objects within their social context. Beyond the process of manufacture itself, which would certainly have had extraordinary significance in all the cases presented, it is the objects' roles in social relations – personal, political, supernatural, and in life and the afterlife – that transformed them into highly significant vehicles of worldviews, cosmology, and the mythical past. In some cases, their appearance may have already provoked confusion, distraction, or deception – prompting observers to take a second glance. As is clear, skeuomorphs were powerful primarily through their stimulation ofmetaphorical dynamics, which reveal the complexity of object–human relationships.

BIBLIOGRAPHY

Ballmer, A. (2015). *Topografie bronzezeitlicher Deponierungen. Fallstudie Alpenrheintal.* Verlag Dr. Rudolf Habelt GmbH.

Bánffy, E. (1997). *Cult objects of the neolithic Lengyel culture. Connections and interpretation.* Archaeolingua Alapítvány.

Bateson, G. (1973). Style, Grace, and Information in Primitive Art. In A. Forge (Ed.), *Primitive Art and Society* (pp. 235–255). Oxford University Press.

Bátora, J. (2003). Kupferne Schaftlochäxte in Mittel-, Ost- und Südeuropa. (Zu Kulturkontakten und Datierung – Äneolithikum/Frühbronzezeit). *Slovenská Archeológia, 51*(1), 1–38.

Baudrillard, J. (1981). *Simulacres et simulation.* Éditions Galilée.

Bailey, D. W. (2005). *Prehistoric Figurines. Representation and Corporeality in the Neolithic. Routledge.* https://doi.org/10.4324/9780203392454

Becker, V. (2011). *Anthropomorphe Plastik der westlichen Linearbandkeramik.* Verlag Dr. Rudolf Habelt GmbH.

Bell, C. (1992). *Ritual Theory, Ritual Practice.* Oxford University Press.

Bell, C. (1997). *Ritual. Perspectives and Dimensions.* Oxford University Press. https://doi.org/10.1093/oso/9780195110517.001.0001

Biehl, P., & Rassamakin, Y. (Eds.). (2008). *Import and Imitation in Archaeology.* Verlag Beier & Beran.

Brosius, C., Michaels, A., & Schrode, P. (2013). Ritualforschung heute – ein Überblick. In C. Brosius, A. Michaels, & P. Schrode (Eds.), *Ritual und Ritualdynamik. Schlüsselbegriffe, Theorien, Diskussionen* (pp. 9–24). Vandenhoeck & Ruprecht.

Conway, S. (2024). Insights from obsolescence: The interpretive potential of skeuomorphs. *Journal of Material Culture, 29*(2), 141–157. https://doi.org/10.1177/13591835241248322

Coupaye, L. (2013). *Growing artefacts, displaying relationships: yams, art and technology amongst the Nyamikum Abelam of Papua New Guinea.* Berghahn Books. https://doi.org/10.3167/9780857457332

D'Alleva, A. (2001). Captivation, Representation, and the Limits of Cognition. Metaphor and metonymy in Tahitian *tamau*. In C. Pinney & N. Thomas (Eds.), *Beyond aesthetics. Art and the technologies of enchantment* (pp. 79–96). Routledge. https://doi.org/10.4324/9781003084808-5

Eggert, M. K. H., & Samida, S. (2016). Mensch und Dinge. Anmerkungen zum Materialitätsdiskurs. In H. Kalthoff, T. Cress, & T. Röhl (Eds.), *Materialiät. Herausforderungen für die Sozial- und Kulturwissenschaften* (pp. 123–140). Wilhelm Fink Verlag. https://doi.org/10.30965/9783846757048_008

Frieman, C. (2010). Imitation, identity and communication: The presence and problems of skeuomorphs in the Metal Ages. In: B. V. Eriksen (Ed.), *Lithic technology in metal using societies.* Proceedings of a UISPP Workshop, Lisbon, September 2006 (pp. 33–44). Jutland Archaeological Society; Aarhus University Press.

Frieman, C. (2012). *Innovation and Imitation: Stone Skeuomorphs of Metal from 4th–2nd Millennia BC Northwest Europe.* BAR Publishing. https://doi.org/10.30861/9781407309521

Gill, D. (1986). Classical Greek Fictile Imitations of Precious Metal Vases. In M. J. Vickers (Ed.), *Pots and pans: A Colloquium on Precious Metals and Ceramics in the Muslim, Chinese, and Graeco-Roman Worlds, Oxford 1985* (pp. 9–30). Oxford University Press.

Görner, I., & Sattler, A. (2016). Frühes Kupfer in Hessen – Ein Kupferbeil aus Hertingshausen. In Museumslandschaft Hessen Kassel (Ed.), *Unter unseren Füßen. Altsteinzeit bis Frühmittelalter* (pp. 54–55). Michael Imhof Verlag.

Hansen, S. (2001). Waffen aus Gold und Silber während des 3. und frühen 2. Jahrtausends v. Chr. in Europa und Vorderasien. In H. Born & S. Hansen (Eds.), *Helme und Waffen Alteuropas* (pp. 11–59). Verlag Sammlung Guttmann bei P. von Zabern.

Hansen, S. (2007). *Bilder vom Menschen der Steinzeit. Untersuchungen zur anthropomorphen Plastik der Jungsteinzeit und Kupferzeit in Südosteuropa.* Philipp von Zabern Verlag.

Hansen, S. (2009). Kupferzeitliche Äxte zwischen dem 5. und dem 3. Jahrtausend in Südosteuropa. *Analele Banatului, 17,* 141–160.

Hansen, S. (2013). Innovative Metals: Copper, Gold and Silver in the Black Sea Region and the Carpathian Basin during the 5th and 4th Millennium BC. In St. Burmeister, S. Hansen, M. Kunst, & N. Müller-Scheeßel (Eds.), *Metal Matters. Innovative Technologies and Social Change in Prehistory and Antiquity* (pp. 137–170). Verlag Marie Leidorf GmbH.

Harman, G. (2018). Object-Oriented Ontology. *A New Theory of Everything.* Pelican Books.

Insoll, T. (Ed.). (2017). *The Oxford Handbook of Prehistoric Figurines.* Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199675616.001.0001

Jovanović, B. (1979). Rudarstvo i metalurgija eneolititskog perioda Jugoslavije. In Đ. Basler, A. Benac, S. Gabrovec, M. Garašanin, N. Tasić, & K. Vinski-Gasparini (Eds.), *Praistorija Jugoslavenskih Zemalja. III, Eneolitsko Doba* (pp. 27–54). Akademija Nauka i Umjetnosti Bosne i Hercegovine.

Iversen, R. (2017). Big-Men and Small Chiefs: The Creation of Bronze Age Societies. *Open Archaeology 3*(1), 361–375. https://doi.org/10.1515/opar-2017-0023

Kersten, K. (1986). *Die Funde der älteren Bronzezeit des nordischen Kreises in Dänemark, Schleswig-Holstein und Niedersachsen.* Bd. 8: Ribe Amt. Karl Wachholtz Verlag.

Kibbert, K. (1980). *Die Äxte und Beile im mittleren Westdeutschland I.* Prähistorische Bronzefunde IX(10). Verlag C. H. Beck.

Kiernan, P. (2009). *Miniature Votive Offerings in the Roman North-West.* Verlag Franz Philipp Rutzen.

Klassen, L. (2004). Jade und Kupfer. *Untersuchungen zum Neolithisierungsprozess im westlichen Ostseeraum unter besonderer Berücksichtigung der Kulturentwicklung Europas 5500–3500 BC.* Aarhus University Press.

Klimscha F., & Neumann, D. (2022). A longue durée perspective on technical innovations in the Late Mesolithic and Early Neolithic of the North European Plain. In F. Klimscha, T. Terberger, D. Raemaekers, M. Heumüller, & H. Peeters (Eds.), *Stone Age Borderland Experience. Neolithic and Late Mesolithic Parallel Societies in the North European Plain* (pp. 377–401). Verlag Marie Leidorf GmbH. https://doi.org/10.11588/diglit.66745.28

Kristiansen, K., & Larsson, T. B. (2005). The Rise of Bronze Age Society. Travels, Transmissions and Transformations. Cambridge University Press. https://doi.org/10.5860/choice.43-6621

Maran, J. (2008). Zur Zeitstellung und Deutung der Kupferäxte vom Typ Eschollbrücken. In F. Falkenstein, S. Schade-Lindig, & A. Zeeb (Eds.), *Kumpf, Kalotte und Pfeilschaftglätter. Zwei Leben für die Archäologie. Gedenkschrift für Annemarie Häußer und Helmut Spatz.* (pp. 173–187). Verlag Marie Leidorf GmbH.

Mayer, E. F. (1977). *Die Äxte und Beile in Österreich.* Prähistorische Bronzefunde IX(9). Verlag C. H. Beck.

Meier, T., & Zotter, A. (2013). Ritualgegenstände und Materialität. In C. Brosius, A. Michaels, & P. Schrode (Eds.), *Ritual und Ritualdynamik. Schlüsselbegriffe, Theorien, Diskussionen* (pp. 135–143). Vandenhoeck & Ruprecht. https://www.utb.de/doi/epdf/10.36198/9783838538549-135-143

Meskell, L. (2015). A society of things: animal figurines and material scales at Neolithic Çatalhöyük. In L. Foxhall & S. Barfoed (Eds.), Miniaturization. *World Archaeology, 47*(1), 6–19. https://doi.org/10.1080/00438243.2014.991800

Mina, M. (2008). *Anthropomorphic figurines from the Neolithic and Early Bronze Age Aegean. Gender dynamics and implications for the understanding of Early Aegean Prehistory.* BAR Publishing. https://doi.org/10.30861/9781407302416

Neumann, D. (2015). *Landschaften der Ritualisierung. Die Fundplätze kupfer- und bronzezeitlicher Metalldeponierungen zwischen Donau und Po.* DeGruyter. https://doi.org/10.1515/9783110311235

Nørgaard H. W., Pernicka E., & Vandkilde H. (2019). On the trail of Scandinavia's early metallurgy: Provenance, transfer and mixing. *PLoS ONE,* 14(7), Article e0219574. https://doi.org/10.1371/journal.pone.0219574

Notroff, J. (2015). The differentiation of identity: A hierarchy of symbols? Initial thoughts on the informative potential of the Nordic Bronze Age miniature swords. In P. Suchowska-Ducke, S. Scott Reiter, & H. Vandkilde (Eds.), *Forging Identities. The Mobility of Culture in Bronze Age Europe. Report from a Marie Curie Project 2009–2012 with Concluding Conference at Aarhus University, Moesgaard 2012. Volume 1* (pp. 93–99). BAR Publishing. https://doi.org/10.30861/9781407314334

Oberrauch, H. (2019). Zum Ursprung der Brandopferplätze. In S. Hye & U. Töchterle (Eds.), *UPIKU:TAUKE. Festschrift für Gerhard Tomedi zum 65. Geburtstag* (pp. 435–456). Verlag Dr. Rudolf Habelt GmbH.

Oberrauch, H. (2000). Ein Depotfund von vier Kupferäxten am Pigloner Kopf (Südtirol). *Archäologisches Korrespondenzblatt, 30*(4), 481–498.

Oberrauch, H. (2024). Copper Age Metallurgy in the south-eastern Alps. The production, trading, and ritual offering of miniaturised copper shaft-hole axes. *Der Anschnitt, Beiheft, 53*, 1–26.

Ortman, S. G. (2000). Conceptual Metaphor in the Archaeological Record: Methods and an Example from the American Southwest. *American Antiquity, 65*(4), 613–645. https://doi.org/10.2307/2694419

Pétrequin, P., Cassen, S., Errera, M., Klassen, L., Sheridan, A., & Pétrequin, A. M. (Eds.). (2012). *Jade: Grandes haches alpines du Néolithique européen: Ve au IVe millénaires av. J.-C.* Presses Universitaires de Franche-Comté.

Popescu, A.-D. (2020). Prestige Artefacts during the Bronze Age: The Perşinari Hoard and the Precious Metal Weapons in the Area between the Middle Danube and Mesopotamia. In J. Maran, R. Băjenaru, S.-C. Ailincăi, A.-D. Popescu, & S. Hansen (Eds.), *Objects, Ideas and Travelers. Contacts between the Balkans, the Aegean and Western Anatolia during the Bronze and Early Iron Age. Volume to the memory of Alexandru Vulpe. Proceedings of the Conference in Tulcea, 10–13 November, 2017* (pp. 221–250). Verlag Dr. Rudolf Habelt GmbH.

Primas, M. (1988). Waffen aus Edelmetall. *Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz, 35*(1), 161–185. https://doi.org/10.11588/jrgzm.1988.1.83145 Primas, M. (1996). *Velika Gruda I. Hügelgräber des frühen*

3. Jahrtausends v. Chr. im Adriagebiet – Velika Gruda, Mala Gruda und ihr Kontext. Verlag Dr. Rudolf Habelt GmbH.

Rønne, P. (1987). Flintægsværd fra bronzealderen. *Aarbøger for Nordisk Oldkyndighed og Historie,* 85–96.

Rappaport, R. A. (1999). *Ritual and religion in the making of humanity.* Cambridge University Press. https://doi.org/10.1017/CBO9780511814686

Reiter, S. S., Møller, N. A., Nielsen, B. H., Bech, J.-H., Olsen, A.-L. H., Jørkov, M. L. S., Kaul, F., Mannering, U., & Frei, K. M. (2021). Into the fire: Investigating the introduction of cremation to Nordic Bronze Age Denmark: A comparative study between different regions applying strontium isotope analyses and archaeological methods. *PloS One, 16*(5), Article e0249476. https://doi.org/10.1371/journal.pone.0249476

Rosenstock, E., Scharl, S., & Schier, W. (2016). Ex oriente lux? – Ein Diskussionsbeitrag zur Stellung der frühen Kupfermetallurgie Südosteuropas. In M. Bartelheim, B. Horejs, & R. Krauß (Eds.), *Von Baden bis Troia. Ressourcennutzung, Metallurgie und Wissenstransfer. Eine Jubiläumsschrift für Ernst Pernicka* (pp. 59–122). Verlag Marie Leidorf GmbH.

Serengély, T. (2008a). *Endneolithische Siedlungsstrukturen in Oberfranken I. Wattendorf-Motzenstein: eine schnurkeramische Siedlung auf der Nördlichen Frankenalb. Studien zum dritten vorchristlichen Jahrtausend in Nordostbayern.* Verlag Dr. Rudolf Habelt GmbH.

Serengély, T. (2008b). Die Grabungskampagnen 2005–2006 am Motzenstein bei Wattendorf – ein zusammenfassender Überblick der Ergebnisse. In J. Müller & T. Serengély (Eds.), *Endneolithische Siedlungsstrukturen in Oberfranken II. Wattendorf-Motzenstein: eine schnurkeramische Siedlung auf der Nördlichen Frankenalb. Naturwissenschaftliche Ergebnisse und Rekonstruktion des schnurkeramischen Siedlungswesens in Mitteleuropa* (pp. 11–27). Verlag Dr. Rudolf Habelt GmbH.

Sørensen, T. F. (2012). Original copies: seriality, similarity and the simulacrum in the Early Bronze Age. *Danish Journal of Archaeology,* 1(1), 45–61. https://doi.org/10.1080/21662282.2012.750446

Sørensen, M. L. S., & Rebay-Salisbury, K. (2023). *Death and the body in Bronze age Europe: From inhumation to cremation.* Cambridge University Press. https://doi.org/10.1017/9781009247429

Stockhammer, P. W. (2017). The Dawn of the Copy in the Bronze Age. In C. Forberg & P. W. Stockhammer (Eds.), *The Transformative Power of the Copy: A Transcultural and Interdisciplinary Approach* (pp. 169–189). Heidelberg University Publishing. https://doi.org/10.17885/heiup.195.c1634

Tambiah, S. J. (1973), Form and meaning of magical acts: A point of view. In R. Horton & R. Finnegan (Eds.), *Modes of Thought. Essays on Thinking in Western and non-Western Societies.* Faber & Faber.

Taussig, M. (1993). *Mimesis and Alterity: A Particular History of the Senses.* Routlege. https://doi.org/10.4324/9781315021409

Vandkilde, H. (2014). Breakthrough of the Nordic Bronze Age: Transcultural Warriorhood and a Carpathian Crossroad in the Sixteenth Century BC. *European Journal of Archaeology, 17*(4), 602–633. https://doi.org/10.1179/1461957114y.0000000064

Vickers, M. (1989). The Cultural Context of Ancient Greek Ceramics: An Essay in Skeuomorphism. In: P. E. McGovern, M. D. Notis, & W. D. Kingery (Eds.), *Cross-craft and Cross-cultural Interactions in Ceramics* (pp. 45–63). The American Ceramic Society, Inc.

Vulpe, A. (1995). Der Schatz von Perşinari in Südrumänien. In: A. Jockenhövel (Ed.), *Festschrift für Hermann Müller-Karpe zum 70. Geburtstag* (pp. 43–62). Verlag Dr. Rudolf Habelt GmbH

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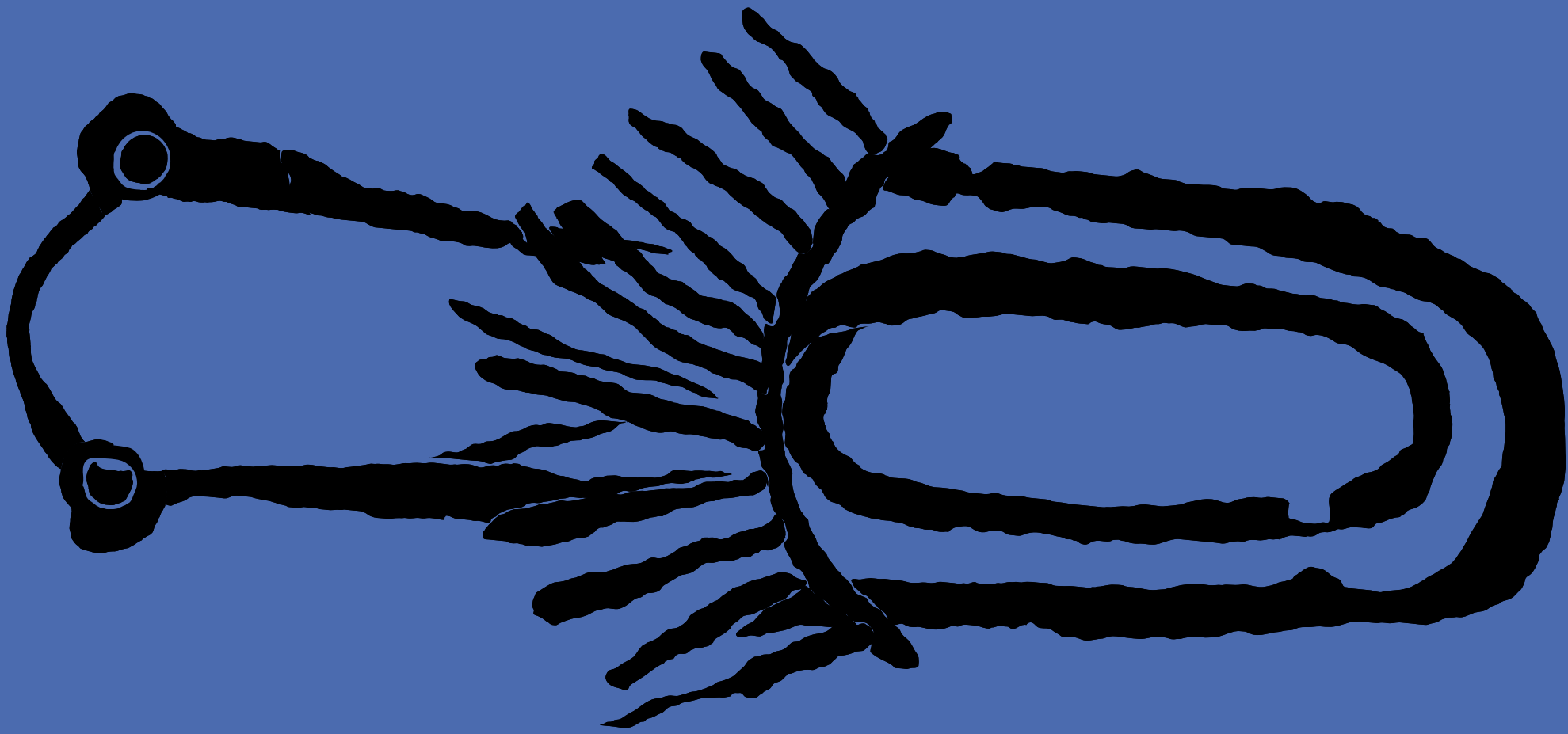

'Sleeved axehead' engraved on orthostat L11 in Gavrinis passage tomb (Larmor-Baden, Morbihan).

THE FORM OF AN AXE:

THE PROCESS OF RECONNAISSANCE AND OF MISAPPREHENDING AN IMAGE WITHIN THE NEOLITHIC ICONOGRAPHIC REPERTOIRE

Serge Cassen

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In A. Ballmer & D. Neumann (Eds.), *Imitations, Simulations, Mock-ups and Illusions: Special Variants and Interpretations in Material Culture. Case Studies from Prehistoric Europe.* Propylaeum. https://doi.org/10.11588/propylaeum.1445.c20612

This essay is a non-conforming presentation of a motif that is well known in the Neolithic iconographic repertoire of the west of France: the 'sleeved axehead'. The identification of this 5th millennium BC motif remains an unresolved issue – just as the identification of the 'axe-plough' could have been, had it not been recognised as a sperm whale. It is now 20 years since the latter motif was deconstructed and reinterpreted as part of a painstaking study that wanted not only to approach designs in a sincere manner but also to undertake an exercise into how archaeological knowledge is constituted. The 'sleeved axehead' was one of the terms whose legitimacy was gained partly through a widespread iconographical tendency to take an ambiguous visual stimulus and make it into a clear and identifiable item, through a kind of optical illusion, and partly through its evocation of an iconic object – the axe with its polished stone axehead – which represented the Neolithic par excellence, emblematic of an agricultural way of life and of an epoch, in just the same way as the 'axe-plough' reflected the agrarian status of all these useful and practical symbols – domestic animals and tools. In this study, that symbolic tool of the Neolithic forester is metamorphosed into another legendary beast of the Ocean: the giant squid, a favourite prey and adversary of the sperm whale.

Neolithic engravings; sleeved axehead; giant squid; sperm whale

INTRODUCTION

This essay is a non-conforming presentation of a well-known motif in the Neolithic iconographic repertoire of the west of France: the 'sleeved axehead' (the sleeve being part of a composite haft). The identification of this 5th millennium BC motif remains an unresolved issue – just as the identification of the 'axe-plough' could have been, had that motif not been recognised as a sperm whale. It is now 20 years since the latter motif was deconstructed and reinterpreted as part of a painstaking study that wanted not only to approach designs in a sincere manner but also to undertake an exercise into how archaeological knowledge is constituted.

In the publication *La forme d'une Chose* (Cassen & Vaquero, 2000), an improbable instrument of everyday domestic agriculture (i.e. the 'axe-plough'), laborious and practical, was transformed into a fabulous animal, the sperm whale (*Physeter macrocephalus*) – one of Nature's wildest creatures. In the present essay, *La forme d'une Hache*, the symbolic tool of the Neolithic forester (i.e. the axe) will also be metamorphosed into another legendary beast from the Ocean, the giant squid (*Architeuthis dux*), a favourite prey and adversary of the sperm whale.

The endless game of 'Chinese whispers' between the initial form of a motif and its successive reinterpretations, including over the course of the Neolithic, is without doubt a fascinating aspect of the studies undertaken in the world of representations. Moreover, because people have been able to invent ingenious graphical solutions to the challenge of making an abstract representation of creatures as extraordinary as the sperm whale and the giant squid, we realise at what point, and to what extent, a non-conforming figure can depart rapidly from its original model. The terms 'resemblance' and 'imitation', versions of a concept deriving from the Latin word *conformitas,* do not operate according to fixed norms, procedures or standards. In reality, non-conformity is the norm in this symbolic world, creating a gap between the reference object and one or more of its representations. Herein lies the difficulty in participating in this domain of investigation, and the ease with which attempts are ridiculed...

While we shall not be describing the *chaîne opératoire* that has led us to our new interpretations of these engraved symbols in this article, we have to underline how important it is to our research to adopt an appropriate technical approach to the subject matter, ensuring the reproducibility of our results, and at the same time to bear in mind the iconographic schemes within which the motifs are found. We cannot resolve an archaeological enigma without achieving a good spatial resolution in setting out our data.

Let us now review the elements of the *corpus*.

THE *CORPUS* AND ITS CHRONOLOGICAL ELEMENTS

Just five sites, with a series of five objects, are involved. One is in Finistère and the others are in Morbihan; all are in coastal locations (Fig. 1). We begin by describing the engraved stones, putting them back into the context of the funerary architecture which must have 'animated' them and tracing the sequence in which the designs were engraved. Each graphic unit will be tested and interrogated against what we know about the repertoire of Armorican iconography. Out of this analysis there will emerge the image of a cephalopod, a mythical animal and the 'consort' of the sperm whale.

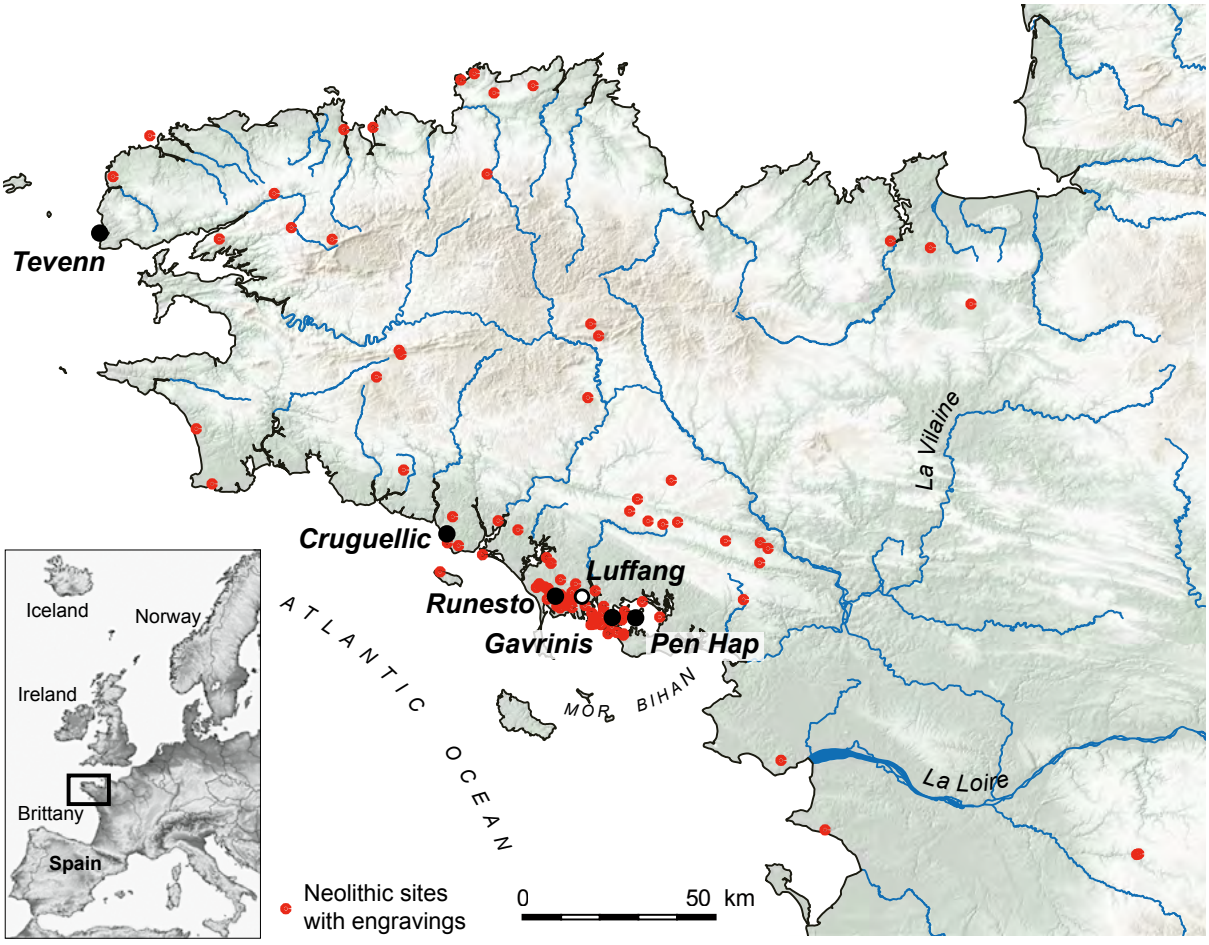

Fig. 1. Distribution of Neolithic engraved slabs in western France. Location of the five funerary sites containing the engraving of the so-called 'sleeved axehead' *(Hache-engainée)* and location of the tomb of Luffang with its so-called 'octopus'. Smaller map shows the main places where giant squid were historically observed, from Iceland to the northern coasts of the Iberian Peninsula.

THE STANDING STONE OF TEVENN

The Kermorvan isthmus (Le Conquet, Finistère) was a special location during the Neolithic. A stone row is recorded on the ridge that leads to the tip of the peninsula (La Poix de Fréminville, 1832, p. 250) and P. du Chatellier listed four long, low barrows (Chatellier, 1903). Fieldwork by M. Le Goffic has enabled the identification of one of these funerary monuments (18 x 14 x 0.5 m), in the middle of which stood a standing stone between 2–3 m in height, with a sunken rectangular cist 4 m to the west. (The plan is reproduced in Pailler, 2007, fig. 143).

The engraved standing stone that is the object of our attention (Fig. 2) was discovered in 1916 at Tevenn by P. Montfort and G. du Plessix (Plessix, 1918; Devoir, 1917). It was lying at the north-west extremity of a low, 1 m-high barrow similar to the aforementioned examples, with its basal part still embedded within the sediment of the barrow. The stone had thus clearly been erected at this place during the Neolithic. The engravings on the side facing the ground had been relatively well preserved, thanks to the collapse of the stone. At the centre of the barrow was a cist, its walls formed by slabs laid edgeways. The interior of the cist (measuring 1.2 x 0.5 m) produced nothing except for 'small, formless bits of pottery' (Plessix, 1918, p. 8). While we cannot say any more about the pottery, it is nevertheless possible to say that this architectural form (i.e. the long, low barrow) is characteristic of the 5th millennium BC, before the development of passage tombs (Boujot & Cassen, 1992).

The recording of the engravings was undertaken using a technique known as ICEO (*Images compilées sous éclairages obliques/Compilation of obliquely-lit images*) while the morphology of the decorated slabs was extracted from a 3D photogrammetric model (Cassen & Grimaud, 2017). The design features just a single motif, which has been described since the 19th century as 'sheathed dagger' or 'sleeved axehead'. The motif is in relief: much of the surface of the stone around the motif had been lowered by means of regular picking.

THE CRUGUELLIC ORTHOSTAT

The passage tomb of Cruguellic (Ploemeur, Morbihan) was constructed on a slope overlooking the sea. The type of tomb has traditionally been termed 'double-transepted tomb' (L'Helgouach'h, 1965) and this is the most westerly example, the others mostly located between the Carnac region and Basse-Loire. The cairn is almost square, revetted by drystone walling.

Two granite slabs (W4 and E7) have an engraved design, interpreted in each case as being derived from the 'shield' motif – a motif known in the repertoire of passage tomb iconography (Le Roux, 1975, p. 538).

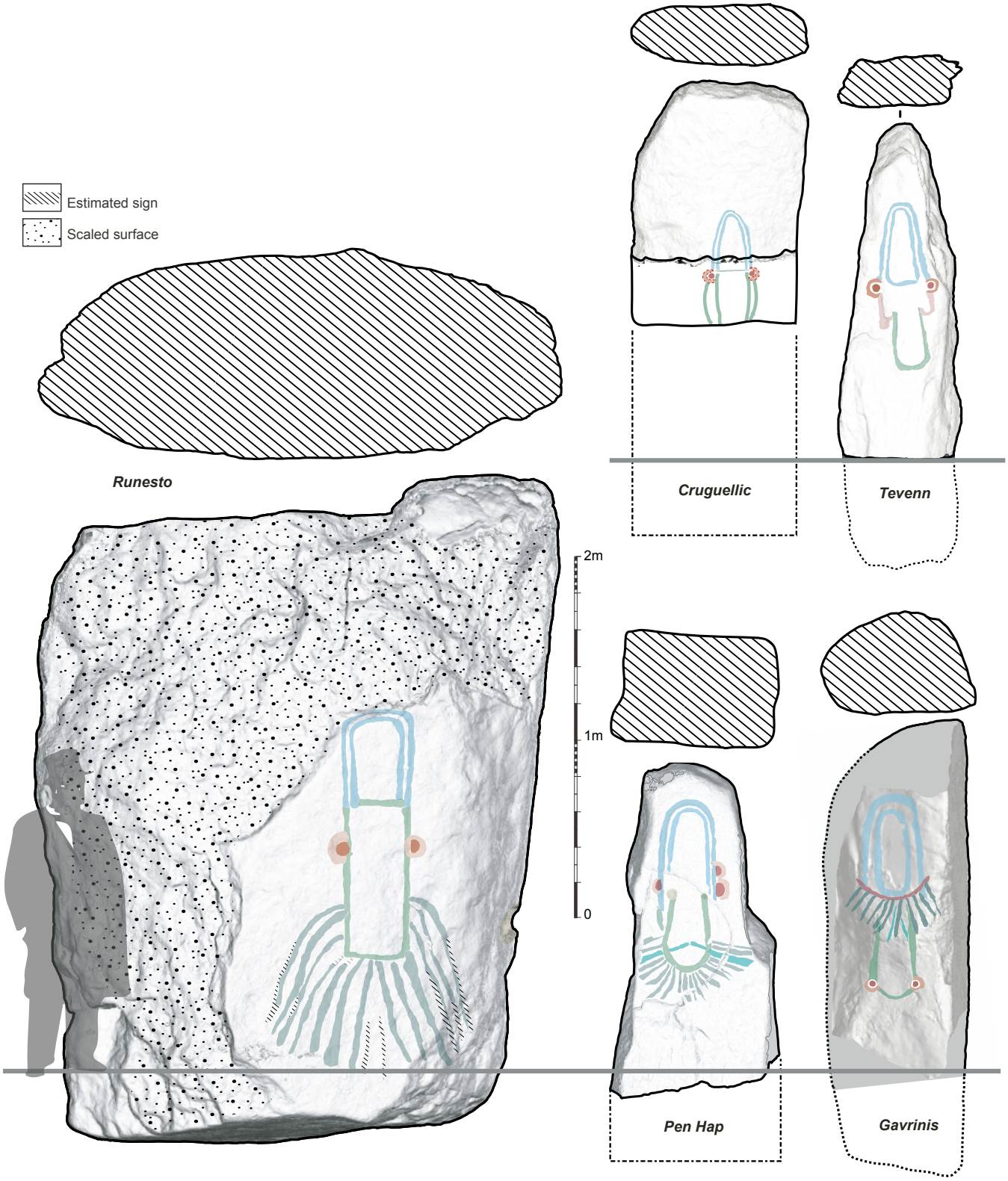

Fig. 2. Inventory of 'sleeved axehead' motifs engraved on stelae.

Slab W4, which is of principal interest to our study (Fig. 2), is intact in its upper part but its lower part has clearly been truncated across the design, as a photograph taken when part of the stone broke off makes clear (Le Roux, 1977). Unsurprisingly, two lines have been recorded as belonging to a single motif; no other design could be detected on the upper part of the stone, despite a careful search (Cassen & Grimaud, 2020). The design is complete and it resembles the 'buckle' that is generally visible at the top of representations of the 'axe-plough' and of the 'sleeved axehead'.

Three large motifs from the Armorican repertoire were identified on slab E7 (Fig. 3): two examples of the crook-shaped throwing-stick, a hafted axehead, with the axehead at right-angles to the haft, and a sperm-whale in the act of spouting. The whale is similar to that depicted on the capstone of the tomb of Kercado (Carnac), where one part of its disc was recently detected at the extremity of the head. The presence of a protruding penis is, moreover, an important point of comparison (Cassen et al., 2018). It should be noted that slab E7 was re-erected at the beginning of the 1970s, but orientated inversely to its current position in the restored monument; in other words, the whale motif had been upside down when the stone was originally erected in the tomb during the Neolithic.

Transepted passage tombs are found along the whole of the southern coast of the Armorican Massif, and they date to the threshold between the 5th and 4th millennia BC (L'Helgouac'h et al., 1989). The ceramic and lithic assemblages from these monuments date to the Middle Neolithic and, unsurprisingly, are characteristic of the Auzay-Sandun culture. The Cruguellic tomb was reused during the Late Neolithic and the Beaker period (Le Roux, 1978; Cassen & François, 2009).

The chronological information obtained from the artefacts cannot be taken as proof of when the engravings were made; they can only provide pointers. The two engraved stones were erected side by side in the centre of the tomb, and this positioning must be deliberate. But one of the motifs (the 'axe-plough') is presented upside-down while the other (the 'sleeved axehead') is not only interrupted by a break but also remains partly concealed by the way the orthostat was (re)-erected (in prehistoric times). These obvious signs of re-use thus indicate that we are dealing with two important standing stones that must have been taken from another, earlier, context. These stones must have retained considerable evocative power for them to be positioned so intentionally within the tomb.

THE CAPSTONE OF RUNESTO

The tomb of Er Roh at Runesto (Plouharnel, Morbihan) is a large cist under a 165 m long barrow. Two polished axeheads and a chisel were discovered, of which one of the axeheads is large and made of jade, while the other is of fibrolite. This assemblage, which is exceptional with regard to funerary

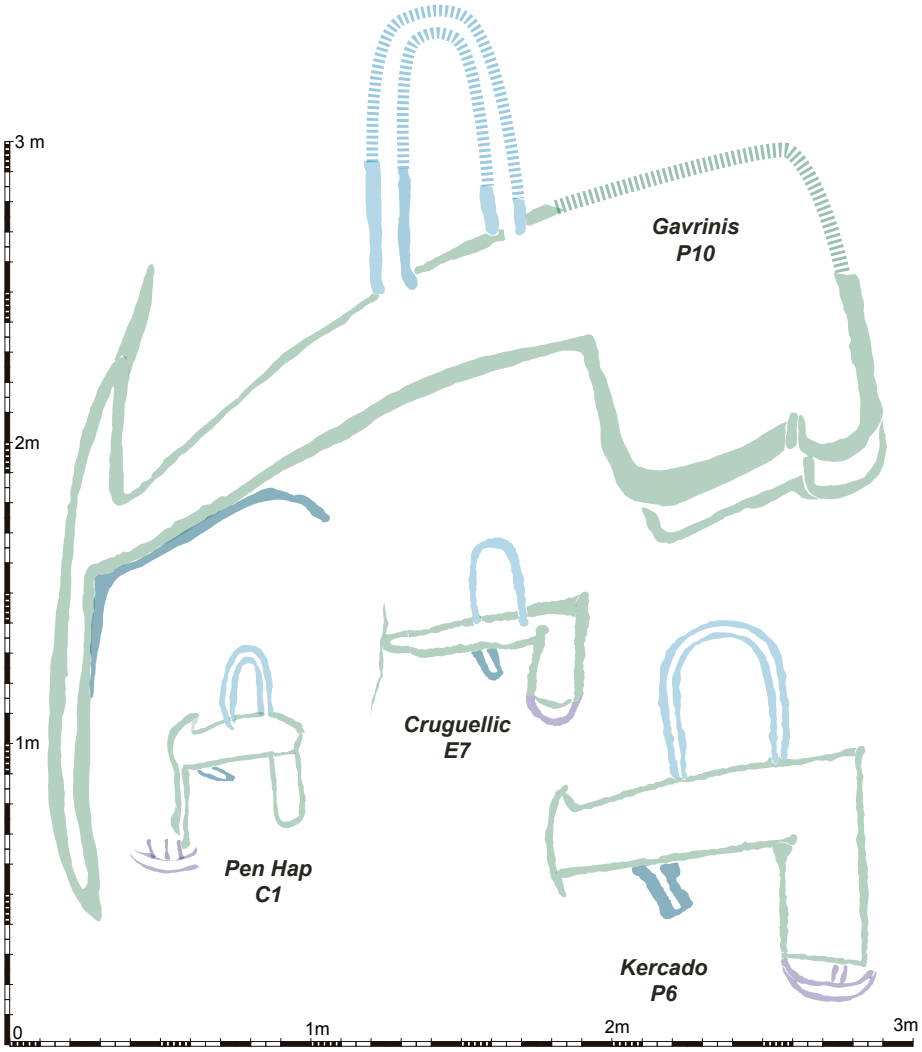

Fig. 3. Some engraved designs of sperm whales in Morbihan, with their 'loop' at the top (the blow), comparable to that shown on the 'sleeved axehead' design.

contexts in the north of France, is different from the normal hoards of axeheads and other items that were deposited in the passage tombs of Brittany, Normandy and Poitou-Charentes.

It was because there seemed to us to be a functional relationship between barrows and engraved standing stones (albeit a theoretical relationship, back in 1996) that we undertook exploratory prospection work at this monument and discovered the engravings (Boujot et al., 2000). In contrast to the signs engraved on the vertical walls of the cist, those on the damaged capstone were left out of our survey as they could not be interpreted.

The recent study undertaken at Runesto focused on decrypting the designs on the capstone (Cassen et al., 2021). Starting with photogrammetric 3D modelling, a total geometry of the stone was produced before undertaking a precise description of the monolith (Fig. 2). Then the ICEO recording of the capstone's lower face – the surface with the engravings – was superimposed on a corpus of 120 images, virtually lit at progressive azimut-

hal angles of 0° to 345°, and at an inclination varying between 0° and 25°. The resulting image goes far beyond that recorded in 1996 and revolutionises our perception of the design. In effect, it reveals the presence of the rare 'sleeved axehead' motif, sufficiently distinctive as to be immediately recognisable. The greatest surprise was to come, however, from the unexpected presence of 'straps' extending from one end of the design.

If we assume that the capstone had once stood upright, then the orientation of the design (if one assumes that it had matched that of the Tevenn orthostat) leaves little undecorated space below for the stone to have been set into the ground – at least to modern eyes. We know, however, that quite a few standing stones in the west of France had not been set deeply into the ground, and the very flat, stable base of the Runesto slab, around 1m wide, could have allowed the stone to stand upright by the force of its own gravity, like several others in the region.

The typology and the nature of the polished axeheads found in the tomb can be revised, thanks to the work of *Projet JADE*. One large axehead is made of Alpine rock, and the other – also of a remarkable size – is of fibrolite from Finistère, sawn from a block. The chisel that accompanied them is of flint from an unknown source (Pétrequin et al., 2012; Cassen et al., 2012; Pailler, 2012). This assemblage is thus unusual within the tombs of northern France, although it is not of the same quality as the famous assemblages of Alpine and fibrolite artefacts found in the classic Carnac tombs (Mané er Hroëck, Tumiac and Mont Saint-Michel). The grave goods from Runesto are more reminiscent of those found in the notable but less extraordinary long monuments such as Mané Hui (Carnac) and Er Grah (Locmariaquer). In any case, the Runesto assemblage does not resemble the grave goods that are normally found in passage tombs. Consequently, it seems most likely that Runesto was built during the second half of the 5th millennium.

THE STANDING STONE OF GAVRINIS

Orthostat L11 in the passage tomb of Gavrinis (Larmor-Baden, Morbihan) is located at the junction between the passage and the funerary chamber. It is engraved on both faces – the side facing the passage and the side facing the chamber (Fig. 4). A trial excavation of the back of the stone (i.e. the side abutting the cairn), undertaken as part of the work necessary to the modern restoration of the monument, revealed that a third face had been engraved. The motif consists of two long radiating arcs extending from a curvilinear base, below which are 13 splaying lines and, extending beyond these, a subtrapezoidal figure flanked by two circles – in other words, the famous 'sleeved axehead' (Le Roux, 1982; Le Roux, 1985b; Le Roux, 1992). The design is mostly executed in relief, rather than being made with narrow lines. One notes the presence of sunken 'cupmark'-like features, symmetrically arranged at the angular corners of the 'axehead' and surrounded by a kind of

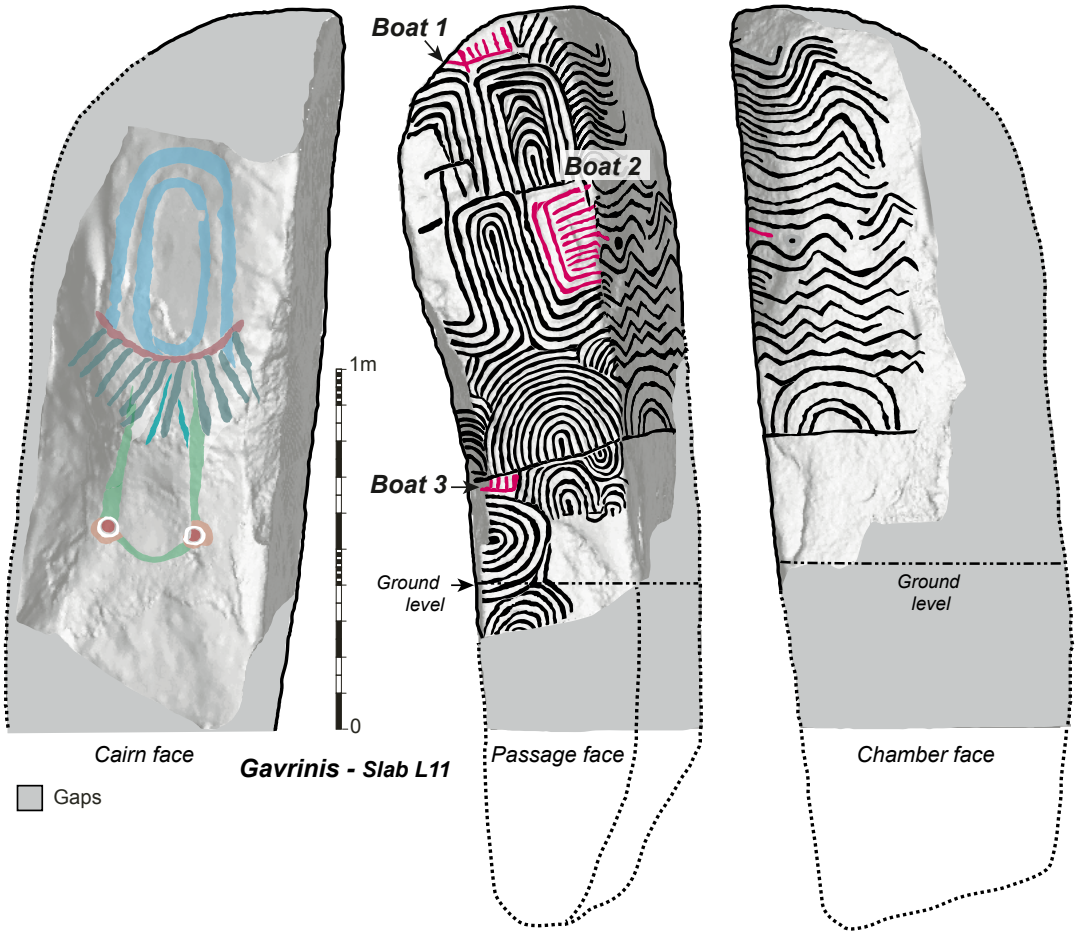

Fig. 4. The three engraved faces of orthostat L11 in Gavrinis passage tomb (Larmor-Baden, Morbihan): the 'sleeved axehead' on the hidden side; enclosed in concentric signs, three boats with crew on the side facing the passage.

circular, raised 'crown'. The resulting effect is disconcerting, because it leaves the viewer wondering what is really significant: the circle in relief, or the circular hollow that it surrounds? Doubtless it is not a case of 'one or the other', since the efficacy of the representation must have played on this confusion or on this visual 'hook'.

Without describing the ensemble of signs on the two 'wall' faces of the stone, let us underline the presence of the 'boat with crew' motifs which are hard to make out, discreet, and overshadowed by the surrounding motifs (Fig. 4). One is at the top of the composition, sailing along an imaginary line, and with a probable rudder; another is at the bottom, its top bounded by a horizontal line with multiple concentric arcs above it. A third is located around the centre, but is shown vertically, along the crest of the stone, where a dominant person stands in the midst of a crew of eight people. The figure of this dominant person starts on the adjacent side of the stone. As we shall see, this maritime environment is no stranger to a hidden figure...

The orthostat L11 is once more, and very clearly, a re-used stone – re-used when the passage tomb was built around 4000 cal BC (Cassen et al., 2014). The engraving of the 'sleeved axehead' was, incidentally, retained during the Neolithic, during the preparatory slab-dressing work undertaken on the future orthostat; but its positioning in the structure of the tomb suggests that it had lost its meaning somewhat, in the minds of the tomb-builders: they abandoned, or were otherwise disinterested in the motif. Thus, in order to research the 'origin' of this orthostat, we have to look at least as early as the second half of the 5th millennium.

Let us remember that the capstone that abuts L11 has a sperm whale design on its upper surface (Fig. 3), and that this had come from a standing stone forming part of the alignment that included the Grand Menhir at Locmariaquer, well dated to c. 4500 cal BC (Le Roux, 1984; Cassen et al., 2009).

THE ORTHOSTAT OF PEN HAP

At the end of a 65 m-long barrow containing several 'little tombs' (Mahé, 1825, p. 108), the passage tomb of Men Houzigianet, known as Pen Hap, is one of the best-known and most commonly illustrated monuments from the Morbihan – probably due to the perfect fit between its current physiognomy and Épinal's image of the iconic Breton dolmen. The capstone of the chamber is impressive, resting horizontally on its orthostats that seem smaller than they really are, due to their being embedded within the mass of the mound.

It is monolith C1 (Fig. 2), and its engravings on two sides (internal and external), that has attracted the attention of observers, notably members of the Lukis family who first recorded the designs (but did not publish the results) between 1854 and 1869. The drawings published by L. Davy de Cussé, in his 1865–1966 inventory, may be the result of work undertaken during the preceding years. Whatever was the case, no accurate interpretation accompanied any of these drawings. For the external side of C1, it was necessary to await the arrival of the concept of the 'axe-plough' at the beginning of the 20th century (Le Rouzic & Keller, 1910) before a relationship became established in the scientific community between that term and that figure. Clearly our own modern perspective is far removed from that agrarian image, and to us it seems that the best interpretation of the design, within its broader context, is as a whale (specifically, a sperm whale: Cassen & Vaquero, 2000). We shall return later to the recognition of an axe on the internal face of this orthostat.

This passage tomb has produced few archaeological finds. We only have the plan of the structure in order to evaluate its architectural type, as a passage tomb with a short passage and a quadrangular chamber, characteristic of the beginning of the 4th millennium BC. While the design on the side of orthostat C1 facing the chamber is that of the 'sleeved axehead', the

design on the opposite face – with the 'axe-plough' – must have been partly obscured by the cairn, even if one envisages that the cairn was low, not reaching as high as to cover the capstones. The predominant interpretation is that this is a re-used older standing stone, integrated secondarily into the tomb (L'Helgouac'h, 1997).

To summarise: at all these sites, from Finistère to Morbihan – and despite the paucity of dating evidence – all elements point towards the 'sleeved axehead' as being invented and used around the same time as the major motifs known from the standing stones in the region (sperm whale, bird, hafted axehead, throwing-stick, etc.), that is, the 5th millennium BC.

THE HISTORICAL INTERPRETATION OF THE MOTIF

The excavation of the barrow of Tevenn at Conquet (Finistère), and the description of the engraving on a standing stone set into its end, is no doubt responsible for the popularity of the motif. The same image and the same name were to be repeated many times without any serious discussion: 'a dagger in its sheath' (du Plessix, 1918, p. 6) or, again, 'sleeved axehead' (Le Goffic, 2009). G. du Plessix offered, by way of comparison, images of bronze daggers with their hilts, along with halberds and axes, taken from a work by A. de Mortillet, and of an anthropomorphic stele from Italy that included a metal dagger, from a publication by J. Déchelette. However, it was A. de Mortillet who was the first to suggest, in Brittany, the idea of an 'axehead in its sleeve' when discussing the similar design found in the passage tomb of Pen Hap (Mortillet, 1894, p. 273). E. Patte agreed wholeheartedly with this interpretation and 'easily recognised this weapon on the standing stone of Penhap' (Patte, 1921, p. 187), adding that the representation was of a metal weapon. St-J. Péquart and Z. Le Rouzic went on to repeat the use of the term without contesting it (Péquart et al., 1927). G. de Closmadeuc limited his description to naming the sign as 'axe-shaped' ('asciforme' in French) – as opposed to 'celt-shaped' ('celtiforme') – even though it seemed to him that it could be the representation of some kind of instrument, or of a hafted axehead (Closmadeuc, 1873). In a radical departure from the aforementioned interpretations, R. Minot saw the Pen Hap design as being a 'circular idol in a double arch with a necklace, its eyes accentuated' (Minot, 1964, p. 89, translated to English by the authors). For E. Shee Twohig, the Tevenn 'dagger' seemed hard to make out at first sight, with its excrescences on the sides. She argued that, by contrast, if the design was anthropomorphic, these lateral features could thus be 'eyes' (Shee Twohig, 1981, p. 189), thereby reprising the earlier interpretation by R. Minot without however mentioning that researcher. But, finally, the 'dagger' hypothesis seemed the most satisfactory. With the excavation and restoration of Gavrinis, the case was

re-opened, thanks to the discovery of a new motif on the back of the L11 orthostat there. At Gavrinis, as at Pen Hap, *'the most plausible interpretation seems to be the representation of a polished stone axehead in its hafting sleeve'* (Le Roux, 1985a, p. 30, translated to English by the authors; Le Roux, 1998, p. 32; Le Roux, 2010, p. 20; Gouézin, 2015, p. 105). The parental relationship with the sperm whale design was recognised since the engraving of the Pen Hap type, visible on the front of the stone, is considered to be a contraction of the 'axe-plough' design engraved on the back (L'Helgouac'h, 1997, p. 113). So, finally, there was agreement that the design was a *'large axehead, perhaps a prestige item, held in some sort of sleeve (perhaps intended to be an ostentatious feature)'* (Laporte & Le Roux, 2004, p. 105, translated to English by the authors).

FROM GRAPHIC UNITS TO THE SEMIOTIC ASSEMBLAGE

To our eyes, the 'sleeved axehead', whether as a genuine object or as a concept, is as scarcely credible as was the 'axe-plough' (e.g. Cassen, 2005, p. 330; Cassen & Grimaud, 2017). Its interpretation, which was in need of better images of the five known engravings (at Tevenn, Cruguellic, Runesto, Gavrinis and Pen Hap), can now be constructed on a more solid empirical basis. Let us return to the graphic unit that constituted the origin of our intuition.

In effect, the 'sleeved axehead' shares with the 'axe-plough' the same geometrical line that is easily recognised: a sort of long double arc at the top of the motif (which can be regarded as a double line, if one counts the individual hollows that define it, or as a single line, if the arc that stands in relief was the intended design). If the observer accepts the interpretation of the 'axe-plough' design as a whale (Cassen & Vaquero, 2000), and if this elongated 'buckle' is actually the representation of the spray that emerges from a whale's blow-hole, then the same sign engraved at the top of the 'sleeved axe' must represent the same kind of thing: a jet of gas or liquid, which spurts out in a fountain (Figs. 2–3).

Two possibilities thus present themselves for developing the interpretation of the 'sleeved axehead':

- either it is a representation of a whale, but depicted from a different point of view, or according to a different graphical and symbolic set of conventions;

- or it represents another thing, and by 'thing' we are playing on the word *la cosa*, being the word used in Galicia (Shee Twohig, 1981; Rodriguez Casal, 1992) to denote a Neolithic engraved sign which we think also depicts a whale. Let us say it is a 'being' that has, within its vital energy, this ability to gush out a gas or a liquid.

It is the latter interpretation that we are adopting, since the first would seem to be too redundant: why present two representations of the same animal? The two images do need to be kept separate, for the good reason that the cetacean/sperm whale and 'sleeved axehead' designs have been found in association with each other in the same findspot or the same stone in two cases (i.e. 40% of the *corpus*). At Pen Hap they appear on opposing faces of the same orthostat, while at Cruguellic, they appear on the only two decorated orthostats inside the passage tomb, placed beside each other in the centre of the tomb.

As regards the other stones with the 'sleeved axehead' design, all we can say about the Tevenn standing stone is that its other face had been engraved, but sadly the surface is too worn for anyone to make out the shape of the design today. As for the Runesto slab, the fact that the surface is missing from a large area to the left of and above the design makes it impossible for us to know whether there had been any further motifs; there is enough space for a large motif. The structural opposition that can be seen at Pen Hap and Cruguellic can thus be confirmed when we build on our new discoveries.

Finally, the 'sleeved axehead' shares with the sperm whale design a fundamental trait, which is its size in relation to the stone and in comparison with other juxtaposed signs. The sperm whale is always, in the Morbihan, shown at a size that is larger than the animals and objects that serve to bring to life, along with the sperm whale design, a symbolic scene. Indeed, at Pen Hap and Cruguellic, the sperm whales and 'sleeved axeheads' are of identical size. Thus, we must consider whether this enigmatic motif has a similar semiotic 'force' to that of the famous 'axe-plough'.

We therefore need to seek out a being that 'spouts' like a whale, and that was regarded by Neolithic people as being an equivalent creature to a whale.

There is just one animal that fulfils these prerequisites, and that is the cephalopod (from the Greek *Képhalê*, meaning 'head' and *podes*, meaning 'feet': that is to say 'feet-at-the-head'), and more specifically the giant squid, which is the favourite prey of the sperm whale. (In Europe, it is called *Architeuthis dux,* from the ancient Greek *teuthis/τευθίς*, meaning 'calamary' or 'cuttlefish' and the Latin *dux*, 'leader'). Support for this interpretation comes from the images of the engravings at Pen Hap and Runesto which show splaying lines that resemble the squid's arms and tentacles; the Gavrinis engraving also has this feature, but shown in a different anatomical position.

Let us review the inventory of graphical elements that constitute the motif, bearing in mind that these elements – like the ones we developed in our interpretation of the 'axe-plough' – are displayed in an anatomical whole that allows us to identify the subject, the wild animal.

THE JET (OF GAS OR WATER)

The 'buckle' is easily recognisable on all the motifs that constitute the *corpus* of 'sleeved axeheads' (Fig. 2). These two long, concentric lines, rounded at the top, are in other respects identical to the ones shown extending from the back of the sperm whale. In our argument, they consequently represent a rush of air or a jet of liquid, and while from a distance it is not easy to distinguish between gas and liquid being sprayed out from a whale's blowhole, in the case of cephalopods, they clearly eject water when they enter the air.

Even though the actions differ, the effects are similar. Whales come to the surface to refill their lungs with air through a natural process of breathing out then breathing in; cephalopods spurt out seawater with a siphon in order to propel themselves along (or upwards). This phenomenon is well known among those who hunt octopus, cuttlefish and squid, and one can find on the Internet various impressive video clips showing the power and scope of these water jets (see for example the Giant Humboldt Squid caught in the Strait of Juan de Fuca, near Vancouver Island: fishn2gthr4ever, Link at the end of the bibliographical references). This is a similar phenomenon to that of the ejection of the famous ink (composed of melanine, mixed with mucus), which makes the animal hard to see while it hides itself (the ink also contains enzymes that hinder the sense of smell of the aggressor: Soufi-Kechaou, 2011).

The most spectacular examples of these jets have already been recorded in literature and reported in the press. In 1875, not far from Boffin Island, close to the coast of Connemara, in the west of Ireland, the capture of a giant squid was the occasion of a report by the Royal Irish Constabulary, which stated: '[...] *the prey was partly subdued and the curragh was able to follow the monster easily. That which remained of the ten large arms flailed around in the air and the water in the most dangerous manner, but in vain. The trunk of the mutilated beast was floating by the side of the dinghy, occupying the full length of the vessel; at its end,* it emitted successive jets of a liquid [our emphasis] *which darkened the sea for several fathoms all around'* (Heuvelmans, 1958, p. 351, translated to English by the authors).

In 1923, the New Caledonian daily newspaper La France Australe mentioned several sightings near to Freycinet island, reporting on large jets of water emanating from several huge animals; these had first been thought to be porpoises. One of them *'frequently emitted a jet of smoke'* and *'At times it projected its two long tentacles above the surface, and sometimes it ejected*

water or water vapour [...]' (cited by Heuvelmans, 1965, translated to English by the authors). This set of characteristics, which clearly demonstrates the difficulties of describing the phenomenon, allows us to identify the animal as a giant squid.

Very few illustrators have been able to draw the animal at this precise moment, because the brief sight of a jet is rarely visible, or is only seen when the animal is captured, and it is necessary to be present to produce a detailed portrayal. Images have only really entered the public sphere since the development of the portable phone has enabled this instantaneous process to be captured. One can, however, cite a representation of a giant squid in the book of Hans Egede (a Danish missionary, 1686–1758), published in 1788, which shows one of these great animals 'blowing' on the surface of the Sea of Norway (Fig. 5).

This expulsion is accounted for by the manner in which cephalopods swim, by means of expanding their mantle, thereby filling it with water, and, with a brutal contraction of their whole body, propelling themselves along by the siphon of water that is contained in the cavity. As the siphon is orientated in the same direction as the arms, the direction of movement is backwards. Once arrived at its destination, the animal relaxes, opens the edge

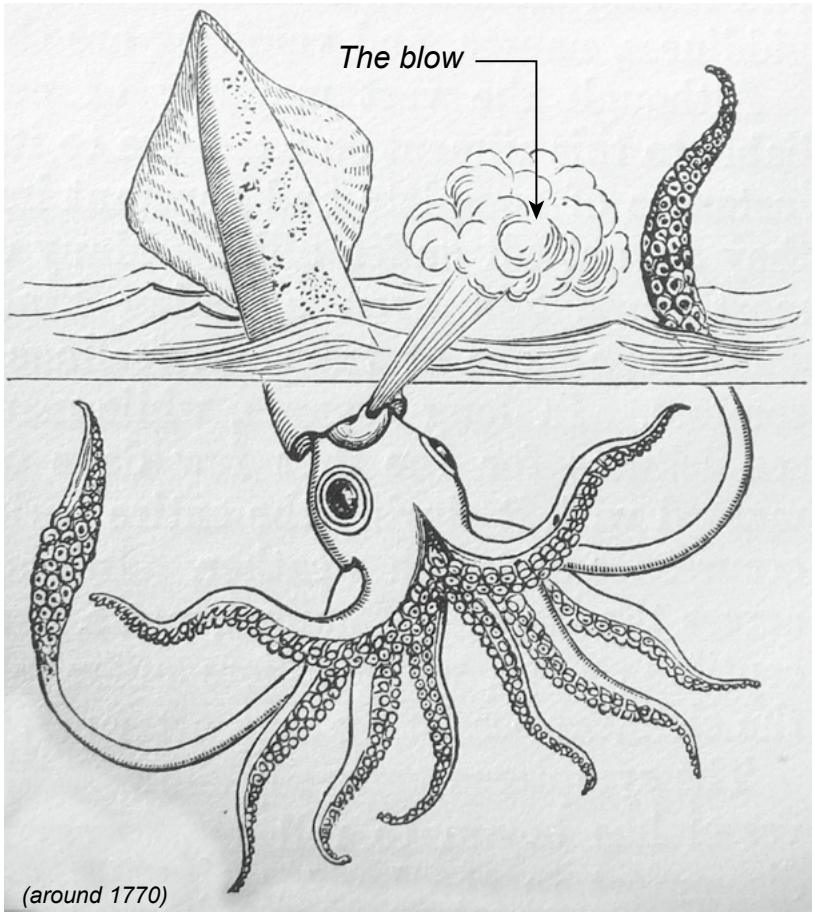

Fig. 5. Image of a giant squid blowing on the surface in the Norwegian Sea.

of its funnel so that it is engulfed anew with water, and expels the water once more using its siphon. This suite of rhythmic contractions makes it go backwards jerkily, by virtue of it being a true system of jet propulsion (Anderson & Grosenbaugh, 2005).

Thus, it is this liquid 'breath' that the Neolithic engraver wanted to signify, shown projecting upwards towards the top of the representation of the 'sleeved axehead'.

THE HEAD AND THE EYES

The head and the eyes are evidently indissociable, but while the eyes cannot help but attract attention by their astonishing presence, the head – in accordance with the definition of this class of cephalopods – seems to the casual observer to disappear into the body.

It is once more interesting to return to ancient accounts to understand how people construct their descriptions of a rare animal. In his *Historia de gentibus septentrionalibus* written in 1555, Olaus Magnus, when discussing *'horrible monsters that are found off the coast of Norway'* (book XXI, chapter 5, cited by B. Heuvelmans in 1958 in a French translation of 1561, translated to English by the authors), reports large cephalopods as having *'a square head, full of spikes on every side, and long horns that resemble the roots of a tree that have just been pulled up; it is 10 or 12 coudées* [6 to 7 m] *long. Their colour is black; they have mighty eyes'*. The description of the head shape as being rectangular, contrary to the anatomical reality, recalls the way in which it is depicted on the engraving from Runesto. As we shall see, it is the monster as described by Olaus Magnus that was subsequently to be depicted as the *Kraken*.

Even more than the head, it was the eyes that exercised this kind of fascination over all the witnesses, without fail – and this is also the case with modern illustrators (Fig. 6). Thus, on the coast of the Netherlands, when a 'marine monster' was pulled from the sea at the end of 1661, between Schevelingen and Catwick, it was its eyes that were the centre of attention: *'Between the mouth and the star* [sic] *can be found the eyes which, when the fish was alive, had an appearance so frightening that they struck fear into the beholder'* (Heuvelmans, 1958, p. 230, translated to English by the authors).

During the 19th century, the relative rarity of encounters perpetuated this idea about people being dumbstruck by the petrifying gaze of the animal. The British writer F. Bullen, who embarked on a whaling ship in 1875, returns to this familiar sentiment in a famous tale, The Cruise of the 'Cachalot': *'The eyes were very remarkable from their size and blackness, which, contrasted with the livid whiteness of the head, made their appearance all the more striking. They were, at least, a foot in diameter, and, seen under such conditions, looked decidedly eerie and hobgoblin-like'* (Bullen, 1898, p. 144). Its eyes are indeed extraordinary. But we now need to separate the two

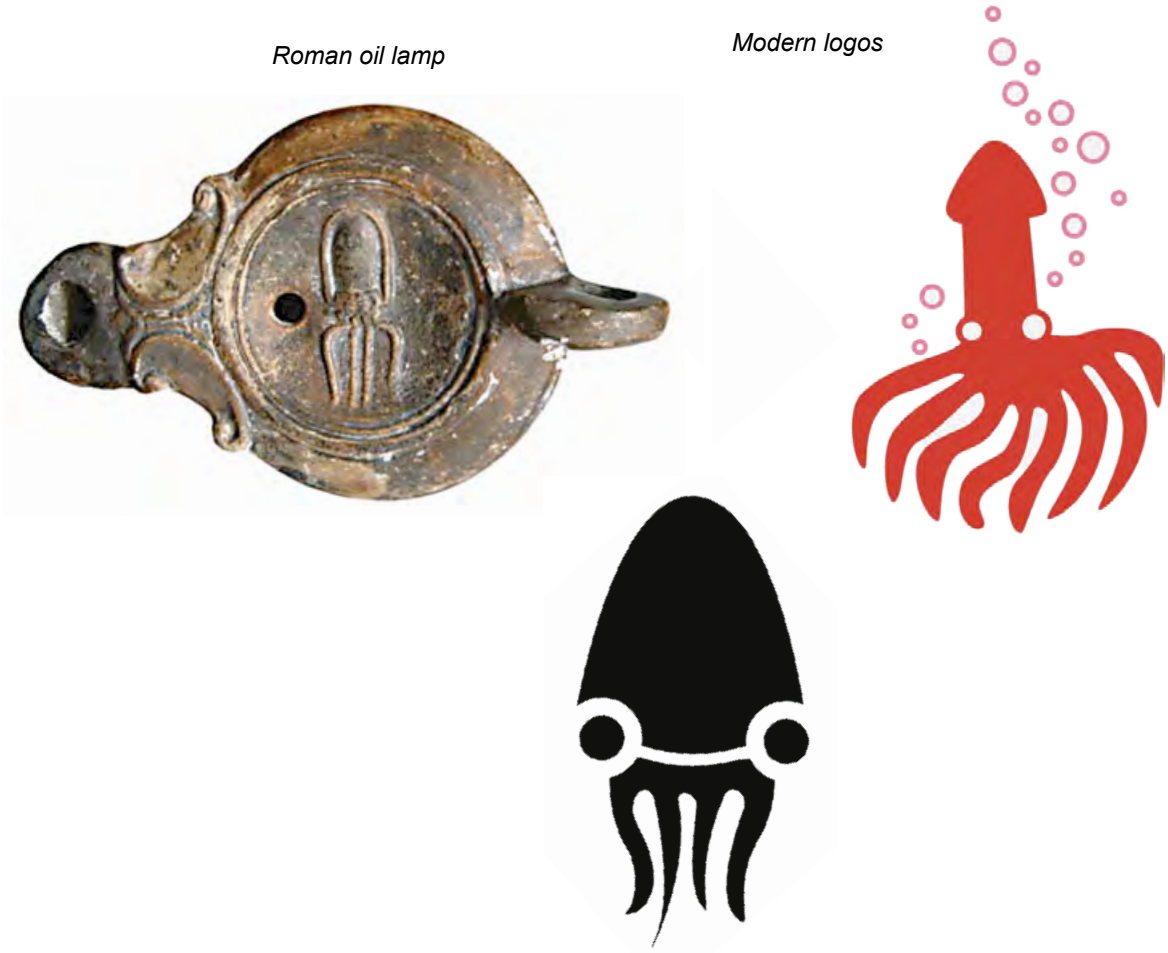

Fig. 6. Roman oil lamp (1st century; Knickerbocker Collection); two logos with a squid model.

orders in the class of cephalopods. In effect, creatures belonging to the octopoda order (including octopuses) do not possess such large organs of vision as to attract much attention from humans; the eyes are relatively small and have eyelids that allow them to be closed. It is the decapoda order creatures (cuttlefish and squids) which are singled out by their unusually large eyes, notably the giant squids which possess the largest eyes of any animal: 27 cm in diameter (for the eyeball), and with pupils 9 cm in diameter (Nilsson et al., 2012; Rosa et al., 2017). Thus, the lateral circular bosses, located at the base of the jet on the engravings of Pen Hap, Cruguellic and Tevenn, at the mid-point of the body at Runesto and at its end at Gavrinis, signify the protruberant eyes of a cephalopod.

THE ARMS AND THE TENTACLES

The necessary distinction that has to be made between creatures belonging to the octopoda and decapoda orders also applies to the question of arms and tentacles:

- Octopuses possess eight arms ('octopodes' being Greek for 'those with eight feet'), so named because they are used not only as a means of locomotion but also have a prehensile function. All the arms are the same length and are covered with suckers. The body is bag-shaped and possesses no internal skeletal structure.

- The squid and the cuttlefish, members of the decapoda order (decapodes, 'those with ten feet'), also possess eight arms, but they also have two tentacles (also known as 'whips'). The tentacles are longer and more spindly than the arms, and they only have suckers at their flat, spatulate ends (as opposed to the arms, which have suckers along their whole length). On the cuttlefish, the two tentacles are retractable, and when at rest they are sheathed. The animal can roll them out suddenly, like whips, to catch a prey.

- In the scientific literature, the term 'arm' is used to refer to the eight 'sessile arms' (i.e. arms that are directly attached, without a peduncle), while 'tentacle' is reserved for the two 'pedunculated arms'. One can add that these anatomical differences relate to the very different biotopes occupied by these different orders of animal. The octopus mostly lives on the seabed, being a bottom-dwelling (benthic), animal, and is always on the lookout for its prey. The squid, in contrast, moves around in the water, being an open-sea (pelagic) swimmer.

What, then, do these observations bring to bear on our understanding of the Neolithic representations in question?

- No arms figure on the Tevenn specimen, nor are there any on the Cruguellic engraving, although here the breaking-off of the lower part of the motif prevents us from being categorical on this point.

- By contrast, 13 arms are shown on the Runesto specimen, with two possible additional arms in the middle and at the bottom of this set.

- Eleven arms can be made out at Gavrinis, with an additional two at the centre; the latter extend down further than the others (by an additional 3 cm, with the others averaging 8 cm long).

- The representation at Pen Hap has 20 arms, of which two are longer than the others, joining them at the centre of the body.

We have to admit that none of these numbers of arms corresponds to those actually present on either octopoda or decapoda. Nevertheless, it could be argued that these totals go far beyond the eight possessed by an octopus, thereby demonstrating that it was a squid or a cuttlefish that was represented by such a proliferation of limbs. Moreover, the presence of two con-

vergent lines, which are longer than their neighbouring lines, on the specimen of Pen Hap and also on the Gavrinis example, could effectively be representing the two tentacles possessed by decapoda – an anatomical feature that is always visible on a dead specimen of the animal.

BEHOLDING THE GIANT SQUID: BEACHINGS, FISHING, AND SPERM WHALES

From writing about the dead animal – whose situation allows us to examine it, to look at its relaxed organs and to comprehend the creature – let us turn to the living animal and the various different opportunities that are afforded to witness it, both now and in the past (Roper et al., 2015).

Beachings are rarely documented in the history of spottings since the animal is most often, and universally, recycled as bait for fishing. In Europe, an Icelandic chronicle (the *Annals of Björn Jónson of Skardsa*) for 1639 contains the earliest detailed account of a beaching of what was indubitably a giant squid, on the northern coast of the island (Heuvelmans, 1958, p. 228).

Today, not far from Brittany lie the Galician and Asturian coasts in Spain, from where many accounts and reports of beachings have come (Guerra et al., 2011; Guerra et al., 2004). The beasts are up to 5 to 10 m in length and weigh over 200 kg, and they attract visitors from far and wide, to such an extent that a museum was created in 2010 – the Centro del Calamar Gigante de Luarca, Asturias (Giant Squid Centre, Luarca, Asturias) – and is due to re-open over the summer of 2021, as a way of informing and entertaining a public that is fond of these encounters with fabulous beasts. There is nothing similar to that Centre in Brittany, where such beachings tend not to make it into local gazettes; the shallower sea around the Breton coast are not conducive to the arrival of giant squids, or to their hunting by sperm whales. Nevertheless, fishers can encounter them, although they do not always report their sightings. For an account of a viewing of a live giant squid – and one that does not portray the animal as a marvel – we must go back to 1802, in the South Pacific, around Tasmania, where one was encountered during a French expedition. F. Peron, who joined the team as a naturalist, reported: *'This day* [9th January 1802]*, we spotted, among material floating in the sea, not far from our ship, an enormous example of the Sepiidae, probably from the genus Architeuthis, the size of a barrel; it moved noisily among the waves, its long arms spreading over their surface, moving about as though they were enormous reptiles* [...] *Without doubt it is to an animal of this species that Dom Pernetty confidently attributed dimensions that are truly prodigious and a weight so great that it could overcome a boat by clasping its arms along the ropes, toppling and sinking it* [...] *A childish tale, no doubt, and a revolting exaggeration, but one which finds its source in the appearance of several monstrous animals of this type'* (cited by Heuvelmans, 1958, p. 284, translated to English by the authors).

At the same time, in effect, one encounter was to make a permanent impression on the public, influencing Jules Verne in his famous *Twenty Thousand Leagues Under the Sea* (1869). The naturalist P. Denys de Montfort, in his Histoire naturelle des mollusques (Natural History of Molluscs), published in 1802, faithfully recounted certain encounters between voyagers and giant squids around Africa, and he uncritically accepted the illustration of one such event painted on an ex-voto in a chapel at Saint-Malo in Brittany. The text deserves to be reproduced here: *'We have seen, in the chapel of Saint Thomas – a saint whom the sailors of this country invoke at times of extreme danger – an ex-voto or tableau showing the imminent danger of destruction faced by a boat of this port, inundated off the coast of Angola* [...] *all of a sudden, in fair weather and in full daylight, a monster of the deep, of an enormous size, rose up from the waves, causing them to froth over a large area, and passed over the deck of the boat, attaching itself to the cabin and took over the wheel and the masts, right up to their summits, using its long and terrifying arms* [...] *the monster made the boat lean over until it was nearly on its side, and going down into the abyss* [...] *With mighty swings of the axe and with the blades of their sabres, the sailors were finally able to chop off the arms of this horrible creature* [...] *and with the vessel no longer dragged onto its side nor being in imminent danger of being sunk, it regained its equilibrium* [...]' (Denys de Montfort, 1802, p. 271, translated to English by the authors). The scientific community cast a sceptical eye on such reported dimensions, and the resolution of the zoological problem was to be held back by this account.

However, each new spotting served to confirm the existence of an animal that had hitherto been unknown or poorly known. There were accounts from the 1850s in Denmark; then another in 1861, of a sighting between Tenerife and Madeira in 1861. The detailed account of that sighting by Lieutenant F. M. Bouyer, commander the of the French despatch steamer *Alecton* – *'I recognised the giant octopus, whose contested existence had seemed to be relegated to the domain of fables'* (Bouyer, 1867, p. 21, translated to English by the authors) – was accredited by the consul of France, and it served to change the opinion of the Academy of Sciences in Paris. Finally, in 1873, numerous successive beachings in Newfoundland permitted people to examine and measure the creatures. But there was still resistance to accepting the existence of this creature, and notably concerning the paternity of the genus (*Architeuthis*) which the Danish naturalist J. J. Steenstrup introduced in 1856: this was received in incredulous silence. Then, suddenly, everybody wished to ensure a little immortality: in 1874, S. Kent tried to impose the term *Megaloteuthis* to describe the squids of Newfoundland (Heuvelmans, 1958, p. 333), while others proposed *Megateuthis* – a term that resonates with our Armorican megaliths...

Whalers had already been aware of the existence of these improbable animals for centuries, having encountered them while hunting for sperm whales. In 1804, B. de Lacépède confirmed their existence while investiga-

ting the alimentary system of these whales; in particular he pointed out the presence of squid beaks in the whale intestines, some of a considerable size (Lacépède, 1804, p. 385). Sailors found the remains of these giant molluscs when butchering and emptying out whale carcasses. When they speared a whale, the agony of the animal gave rise to terrible vomiting, and brought to the surface of the sea gigantic tentacles, visible to all.

Writers who joined whaling ships were to witness these squids, either in the form of regurgitated meals or as remains in the entrails of sperm whales. It was as a result of this that news of their existence diffused out to the public. The first such writer was Herman Melville, author of the glorious book *Moby Dick*, who dedicated a whole chapter to the terrible giant squid: *'So rarely is it beheld, that though one and all of them declare it to be the largest animated thing in the ocean, yet very few of them have any but the most vague ideas concerning its true nature and form notwithstanding, they believe it to furnish to the sperm whale his only food* [...] *At times, when closely pursued, he will disgorge what are supposed to be the detached arms of the squid; some of them thus exhibited exceeding twenty and thirty feet in length'* (Melville, 1851, p. 310).

It was these remains of meals that provided information on the size of the squids that nobody had yet seen as living creatures. Before 1985 – when full protection was granted to the sperm whale by the International Whaling Commission – it was possible to see, on butchery sites in the Azores, 'mouths' of squids weighing 200 kg and exceeding 10 m in length (Joubin, 1895). The earliest illustrations of such creatures date to the 1970s (Fig. 7), but it was not until 2009 that the first undersea photographs were taken, close to the Ogasawara islands (Japan). These provided a glimpse of a meal eaten by a female sperm whale, accompanied by her offspring; she was tearing to bits a squid that measured around 9 m.

The battles between sperm whales and giant squids (the latter belonging to the most widespread genus *Architeuthis*, or to the genus *Mesonychoteuthis*, the 'colossal squid' of the Australian ocean) had long sparked the imagination, not least of the sailors who witnessed them on the surface of the sea, with the toothed jaws of the whale intertwined with the cephalopod's tentacles, held on by their suckers (Fig. 8). Let us remind ourselves that the sperm whale was adapted to this kind of hunt, its lower jaw being armed with ivory teeth some 10 cm long and its upper jaw having sockets into which the teeth meshed. Three sperm whale teeth were deposited with a human body in one of the cells of the Neolithic passage tomb of la Planche à Puare on l'île-d'Yeu (Vendée), a tomb with a typically Armorican plan, and a rare example of where bones have been preserved in the acidic environment of the metamorphic geology, thanks to the presence of marine sand in the tomb (Baudouin, 1907; Cassen & Vaquero, 2000).

To sum up: in Europe, the giant squid remained a fabulous animal for a long time, because it was so hard to spot. The crews of sail boats had the

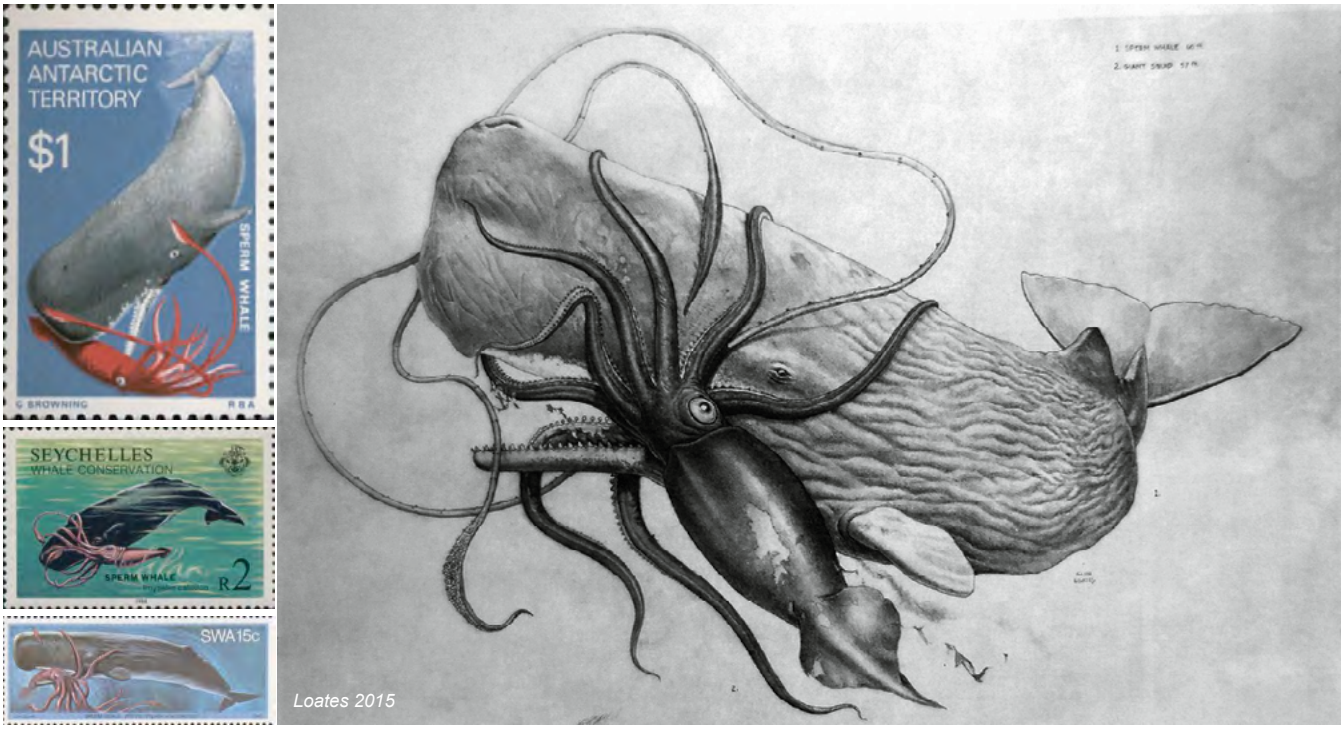

Fig. 7. Stamps (Australia 1973, Seychelles 1984, Namibia 1980) showing the fight between sperm whales and giant squids. Artist's representation illustrating this confrontation.

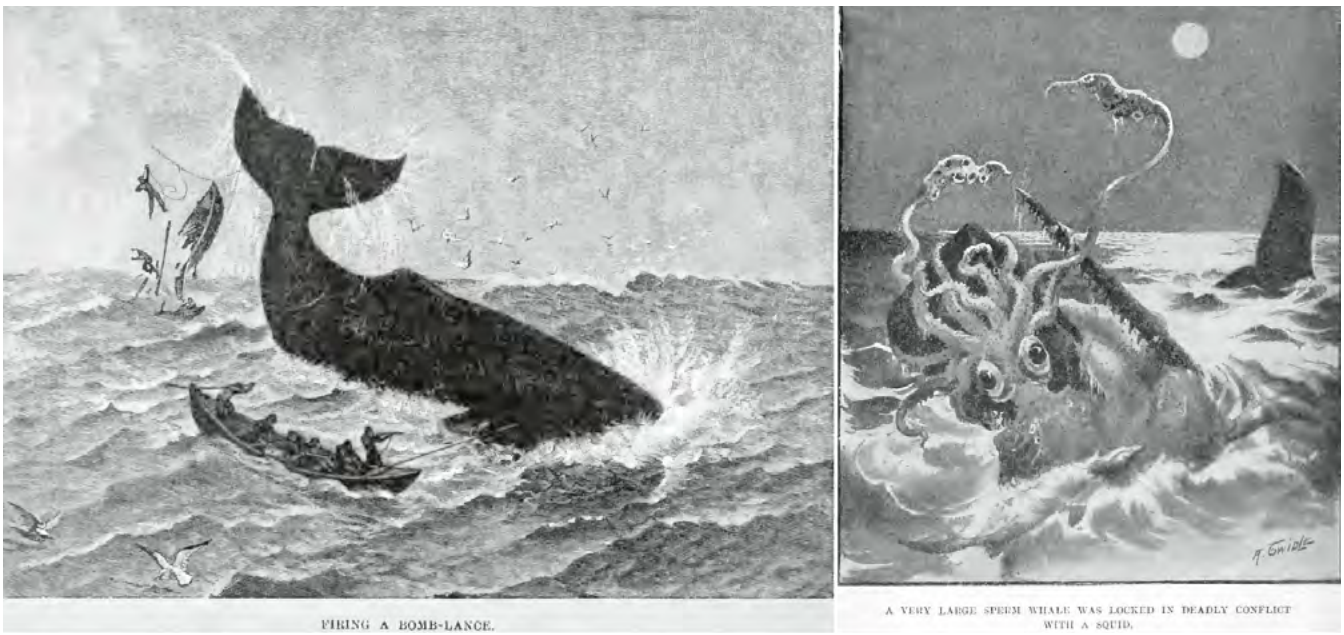

Fig. 8. Images taken from F.T. Bullen's book *The Cruise of the 'Cachalot'. Round the World after Sperm Whales* (1898). On the left, the sperm whale hunt; on the right, the confrontation between a sperm whale and a giant squid *('A very large sperm whale was locked in deadly conflict with a squid')*.

opportunity and the time to observe these molluscs, either on the surface of the sea as they were dying, or in the jaws of a sperm whale, its principal predator. Fortunately, a few officers and writers were able to report on these remarkable sightings. Beachings also gave rise to reports, although in Brittany there are no such reports in the recent past; it is only along the North Sea coast that reports go back to medieval times. Today, the coast of north-west Iberia is progressively enriching our understanding of the ecology of an animal that remains poorly understood.

THE MYTHICAL ANIMAL

Thus, the contours of the 'true' animal are becoming increasingly better known, and the foundations of our hypothesis appear to be growing firmer. We would like to discuss the traditional ways in which these creatures were depicted – often in an idealised form – to see how individuals or social groups conceptualised them. Octopuses and squids play a prominent role in non-historical tales of imaginary events, and they are often portrayed as beings that symbolise physical forces or else metaphysical or social generalities. Sadly, lack of space precludes a review of two versions of these allegorical expressions of an abstract idea rendered in graphic form: the myth of Scylla and that of the Kraken, two mythical representations of the giant squid.[1]

Let us stay, then, with the interpretations of megalithic designs that have been made by our archaeological colleagues since the beginning of the 20th century because here, too, we can see in play a kind of origin myth. Traditionally, origin myths underpin people's ritual actions and, more generally they inform the courses of action and thought processes by which people make sense of the world (Ricœur, 1960). Despite our own desire to undertake a scientific study, we as archaeologists are not immune from wanting to understand better our place in the world...

It was in 1905 that C. Keller presented his idea: *'I believe I have found the significance of an engraved, sunken design on the third upright on the left, at the point of inflection of the angled passage tomb at Lufang (in Crach commune). This design, of a type named 'shield-shaped' by Dr de Closmadeuc, would seem to be a representation of an octopus (octopus vulgaris), a marine animal that is figured on numerous objects of various kinds (standard weights, pots, metal plaques, engraved stones and coins) that have come from excavations in Greece and in the Greek islands over the last 30 years* [...] *one is led to believe that the three angled passage tombs of the Morbihan where one finds this design or others of the same type must have been constructed during the Metal Ages, and decorated according to the design of an object, probably a vase, imported from Greece'* (Keller, 1905, p. 239, translated to English by the authors).

1 The reader is referred here to the forthcoming volume presenting a corpus of the engraved signs at Gavrinis.

Louis Siret latched onto this marine creature image and proceeded to generalise its application across the iconographic repertoire of the Morbihan. His inventory of 'signs derived from octopuses, personifying the ocean' (Siret, 1913, pl. A) described the quadrangular figure at the base of orthostat 6 at Mané Lud (Locmariaquer) as 'the long arm of a squid', and claimed to see the same figure in the crook signs and the 'U'-sign on the small standing stone at Mané er Hroëck, in the same commune. The sites that demonstrated this marine creature imagery par excellence were of course Luffang with its octopus (Fig. 9) and les Pierres Plates (Fig. 10).

Annoyed by this evident mixing-up of signs that were poorly illustrated, and by an over-generalisation of an idea, J. Déchelette quickly critiqued both the image and the hypothesis: *'M. Siret has sought to explain this particularity, but in doing so he has presented an interpretation that is unacceptable, in his desire to assimilate the said idols to the Mycenaean octopus. Above the eyes of the supposed octopus, he claims to see the four pairs of arms of that marine animal'* and *'in reality, what we have here is a representation of a tattooed or painted design on a body'* (Déchelette, 1908, pp. 597, 611, translated to English by the authors). For Déchelette, only a form of facial decoration could account for all the observed details.

Déchelette's standing was such that the scientific community abandoned Siret's interpretation. G.-H. Luquet went on to demolish Keller's proposition by his insistence that the designs were representations of human figures (Luquet, 1910). But the friends of C. Keller, Z. Le Rouzic and St-J. Péquart, took exception to this. Péquart et al.'s *Corpus des signes gravés* re-stated Keller's interpretation, slightly modified: *'The engraving commonly called 'the Lufang octopus' would seem to us, despite claims to the contrary by several archaeologists, the representation of a cephalopod'* (Péquart et al., 1927, p. 23, translated to English by the authors). Their discussion of the location of the tombs in question offered a coherent theory: *'The fact that all the angled passage tombs are found on or near the sea naturally suggests to us the hypothesis that the builders of these monuments belonged to maritime societies, descended from a clan whose totem was originally the marine creature whose stylised image we see depicted on the stones'* (ibid., p. 30, translated to English by the authors). To these tombs dating to the final Neolithic, Z. Le Rouzic proceeded to add Gavrinis and the design that he discovered on its capstone P2: *'This figure is placed exactly above the axis of the gallery, as if surveying its entrance. This design is undeniably one of the forms of stylisation of the Octopus, a fertile and fecund goddess, emerging from the water and guarding and protecting the tombs'* (Le Rouzic, 1935, p. 130, translated to English by the authors). Our own recording of this design has identified flying birds and nested throwing sticks (Fig. 11), but no 'sleeved axehead'.

Henri Breuil was another commentator who contradicted Keller's proposition: *'Exceptionally, a motif the same as that at Lufang had been considered – through some kind of Oriental mirage – as an image of the Octopus;*

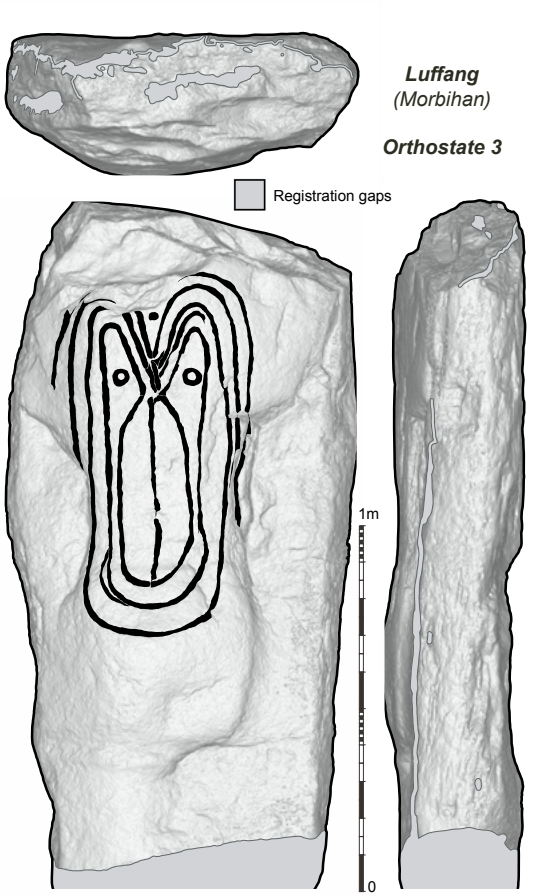

Fig. 9. Orthostat 3 from the Luffang angled passage tomb (Crac'h, Morbihan) and the engraving interpreted as an octopus or cephalopod by C. Keller (1905), L. Siret (1912), St-J. and Z. Le Rouzic (1927).

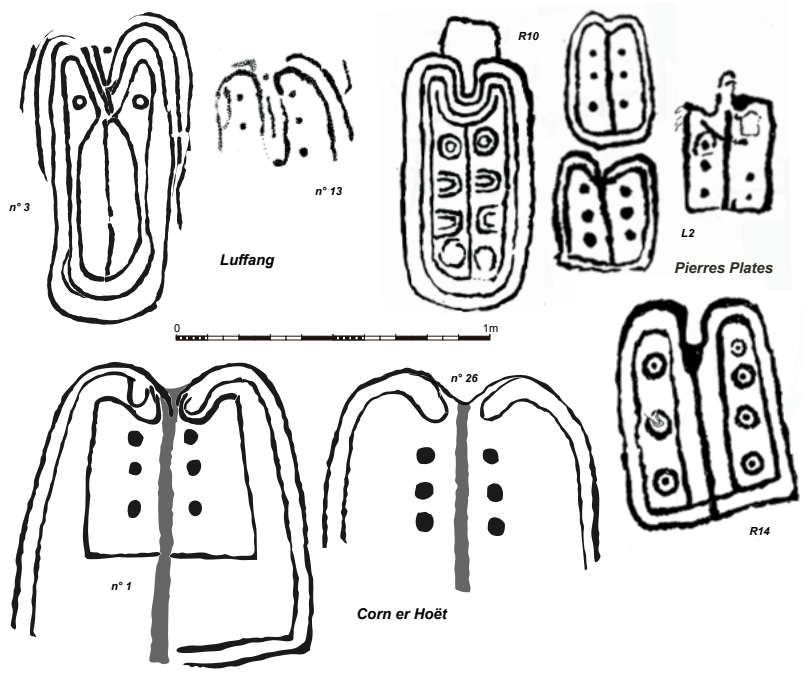

Fig. 10. The 'octopus' on orthostat 3 of Luffang (Crac'h, Morbihan), compared to the slabs in the tomb itself and in other tombs in the region.

but it is necessary to return to the ensemble of these designs, which incontestably show a signification of a human, despite its conventional [sic] *character'* (Breuil, 1936, p. 294, translated to English by the authors). Elizabeth Shee Twohig admitted, à propos slab L13 at Luffang, *'a very strong impression of anthropomorphism'* (Shee Twohig, 1981, p. 181). The final refutation of Keller's interpretation of the motif was by Jean L'Helgouac'h: *'It is not surprising that such and such specific characteristics could be interpreted in that way, without taking into account the ensemble of elements of this art. One thinks here of the 'octopus' of Luffang* [...] *where the characteristics of a cephalopod have been accentuated by the commentator; this figuration possesses exactly the same characteristics as all the others, from Goërem, from Bono or from Pierres Plates'* (L'Helgouac'h, 1998, p. 364, translated to English by the authors). To L'Helgouac'h, all these motifs are none other than the representation of an anthropomorphic 'idol', of which the only unclear element is the sex (L'Helgouac'h, 1998, p. 268). It is thus this last term, 'idol', which won the vote and is still used today.

Despite the successive ins and outs of the archaeological research that has been undertaken on the so-called cephalopod in these tombs that are characteristic of the end of the Neolithic, we must bear in mind that that interpretation persists and remains very popular with the public. It appears in tourist leaflets and booklets, in archaeological guides, in journal articles, on postcards, and on the Internet – where a Google search for 'poulpe de Luffang' ('the Luffang octopus') throws up 8790 entries, as opposed to just 1390 entries for 'l'idole de Luffang' ('the Luffang idol') (Google search on 1st June 2021). All these media perpetuate this belief, probably because it is an attractive image, supposedly portraying an always enigmatic animal, found in a context that is ontologically mysterious – the context of 'megalithism'. Mysterious and not problematic, since a problem is something that one encounters, which bars the route; it is a complete entity facing me. In contrast, a mystery is something in which I find myself engaged, and whose essence is such that it does not appear as a whole thing before me (Marcel, 1935).

MARVELLOUS CONCLUSIONS

Historians and philosophers of science have often said that we are not capable of describing an unknown animal without dealing with it bit by bit, and appropriating these bits to a creature that we already know. In the absence of any points of comparison with our personal worlds, one sees in the creatures of the ocean counterparts of terrestrial creatures: spiders,

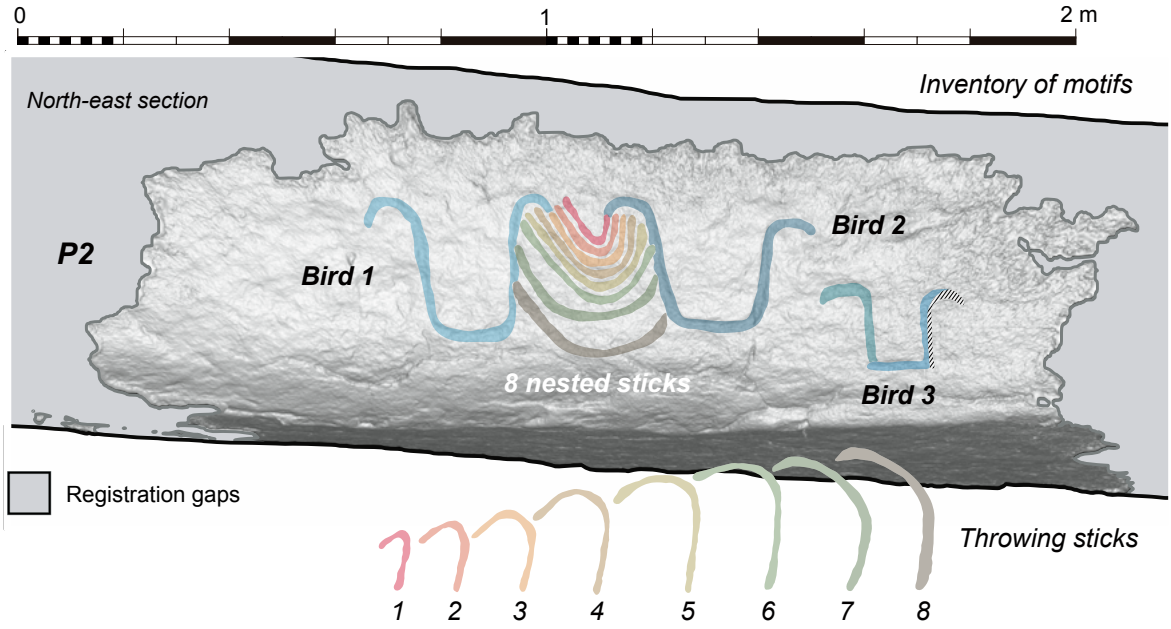

Fig. 11. The P2 roof slab in Gavrinis passage tomb (Morbihan). Three birds and eight throwing sticks, which Z. Le Rouzic interpreted as an octopus in 1935.

hares, calves, pigs, dogs, wolves, bears, horses, men and women...: *'this method, by definition, produces a heterogeneous monster'* (Heuvelmans, 1958, p. 33, translated to English by the authors). The same is probably true of our attempts to identify an unknown graphic representation from the distant past. The 'sleeved axe' forms part of this vocabulary. That term has gained legitimacy partly from its having resulted from a widespread pareidolia (i.e. a kind of optical illusion, a tendency to see forms or patterns in seemingly random marks – and here to take an ambiguous visual stimulus and attribute to it a clear and identifiable object), and partly because it conjures up an uncontested object, representing the Neolithic par excellence: the polished axehead, emblematic of an agricultural way of life and of an epoch. In just the same way the term 'axe-plough' reflected the assumed agricultural status of all these useful and practical signs – domestic animals and tools. However, what is truly astonishing, in its strange and extraordinary character, is that during the first third of the 20th century, people should see one kind of cephalopod (i.e. the octopus) in the motif called 'the shield', engraved on several stelae and on the walls of several tombs dating to the end of the Neolithic, whereas we, today, are identifying an 'other' cephalopod – the giant squid – on earlier stones, and among another famous assemblage of signs that are considered, by modern researchers, to depict an axehead in its sleeve. And while the early 20th century interpretative current was a minority view (C. Keller, Z. Le Rouzic, M. Péquart), how is it that marine animals that are as hidden away and as rarely sighted as octopuses, cuttlefish and squids came to appear on the symbolic scene as reconstruc-

ted by archaeologists? To the extent that we now find it impossible to see squids or octopuses in these figures that are so specific, dating between 3500 and 3000 cal BC – the 'shield', 'buckle', 'divinity' figures (L'Helgouac'h, 1993; a 'human face' as the ultimate evolution of this interpretation, cf. Laporte & Le Roux, 2004, p. 113) – we remain intrigued and perplexed, unable to explain the phenomenon.

Let us consider that, in explaining how we substitute one form for another in an image, we are dealing with a spontaneous kind of subconscious deliberate mistake. According to Sigmund Freud (2015), such subconscious deliberate mistakes are 'psychic acts' that fulfil an unconscious desire in the observer. Likewise, a slip of the tongue can be a conflict between the conscious intention to say the right thing and an unconscious urge to say the contrary. It constitutes a hidden admission. It is not a case of a simple distraction or an act of chance; a slip of the tongue reveals a precise, repressed feeling or opinion – the object of internal resistance which, as with all repressed urges, waits for the right moment to express itself openly (Saint-Jacques, 1963). In the same way, in literature, a form of words that interrupts the discursive flow signals the arrival of a different way of expressing ideas, emanating from a different discourse, parallel to that which is in the process of being enunciated (Fenoglio, 2003). In our discipline of archaeology, we can use the concept of a subconscious deliberate mistake to explain the tension between a conscious desire to see one thing in a design, and another, unconscious, urge which makes that person see another thing in that design, despite their better judgement. We have already evoked this phenomenon in our discussion of the interpretation of the famous Neolithic 'mother goddess' in the Morbihan – a phallic sign, in our opinion – where the vocabulary and the kind of words employed to describe the design by those who see a mother goddess are paradoxically virile and masculine (Cassen, 2000, p. 657).

Whatever the case may be, we stand by our own structural coherence in our interpretation of the so-called 'sleeved axehead' design, in contradistinction to the incoherence of earlier interpretations of this motif, emphasising the following elements of the design:

- the so-called 'buckle', an elongated design at the top of the motif: identical to that seen on the sperm whale design, this must signify a cause and/or an effect that is similar;

- the exaggerated circular lateral protuberances, which constitute a strong element of the graphic assemblage: we regard these as eyes, as did R. Minot, who, in 1964, was the first person to recognise this feature as eyes;

- the divergent lines, placed on just one side of the motif. This is unique within the Armorican repertoire, and it makes no sense unless it is inter-

preted alongside the aforementioned two features. It could be seen as a fringe adorning an object, or as arms or feet, or fur or hair, on a being; we see it as arms and tentacles.

These three correlated elements of the composition signify the cephalopod – one that ejects water and ink, one that watches with its large eyes, one which touches and grabs with its arms and tentacles. And since the motif at Pen Hap and at Gavrinis has two limbs that are longer than the others, the presence of these two tentacles identifies the creature as the giant squid rather than the octopus – the decapod, not the octopod. Indeed, it is only the giant squid that is the favourite prey of the sperm whale, comparable to it in size and in the depth of water in which it swims, unlike the octopus with its small eyes, lurking in the rocks of the shore. Here is the coherence of this non-conformist portrait; here are the images of the two gigantic 'blowers', the sperm whale and the giant squid.

ACKNOWLEDGEMENTS

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BIBLIOGRAPHY

Anderson, E. J., & Grosenbaugh, M. A. (2005). Jet flow in steadily swimming adult squid. *The Journal of Experimental Biology, 208*, 1125–1146. https://doi.org/10.1242/jeb.01507

Baudouin, M. (1907). Découverte de dents de cachalot dans un dolmen de l'Ile d'Yeu (Vendée). *Bulletin de la Société préhistorique française, 4*(2), 120–122. https://doi.org/10.3406/bspf.1907.11525

Boujot, C., & Cassen, S. (1992). Le Développement des premières architectures funéraires monumentales en France occidentale. In C.-T. Le Roux (Ed.), *Paysans et Bâtisseurs. L'émergence du Néolithique atlantique et les origines du Mégalithisme. Actes du XVII^e^ colloque interrégional sur le Néolithique, Vannes 1990* (pp. 195–211). Association pour la diffusion des recherches archéalogiques dans l'ouest de la France.

Boujot, C., Cassen, S., & Defaix, J. (2000). La pierre décorée du caveau et les gravures régionales nouvellement découvertes. In S. Cassen, C. Boujot, J. Vaquero (Eds.), *Eléments d'architecture (Exploration d'un tertre funéraire à Lannec er Gadouer, Erdeven, Morbihan. Constructions et reconstructions dans le Néolithique morbihannais. Propositions pour une lecture symbolique)* (pp. 279–298). Association des publications chauvinoises.

Bouyer, F. (1867). *La Guyane française: notes et souvenirs d'un voyage exécuté en 1862–1863*. Hachette & Cie.

Breuil, H. (1936). La figure humaine dans la décoration des chambres mégalithiques du Morbihan. *Comptes rendus des séances de l'Académie des Inscriptions et Belles-Lettres, 80*(4), 292–299.

Bullen, F. T. (1898). *The Cruise of the 'Cachalot'. Round the World after Sperm Whales* (reprint 1906). D. Appleton and Company.

Cassen, S. (2000). La Forme d'une déesse. In S. Cassen, C. Boujot, J. Vaquero (Eds.), Éléments d'architecture (Exploration d'un tertre funéraire à *Lannec er Gadouer, Erdeven, Morbihan. Constructions et reconstructions dans le Néolithique morbihannais. Propositions pour une lecture symbolique*) (pp. 657–681). Association des publications chauvinoises.

Cassen, S. (2005). Pigeon-vole! Re-connaissance d'une gravure armoricaine du Ve millénaire. *Bulletin Société Préhistorique Française, 102*(2), 299–334. https://doi.org/10.3406/bspf.2005.13110

Cassen, S., & François, P. (2009). Classements et diagnoses de la production céramique à la Table des Marchands. In S. Cassen (Ed.), *Autour de la Table. Explorations archéologiques et discours savants sur des architectures néolithiques à Locmariaquer, Morbihan (Table des Marchands et Grand Menhir)* (pp. 491–567). Laboratoire de recherches archéologiques, CNRS, Université de Nantes.

Cassen, S., & Grimaud, V. (2017). La stèle de Tevenn, dite de Kermorvan (Le Conquet, Finistère). *Bulletin de la Société Archéologique du Finistère, 145*, 17–28.

Cassen, S., & Grimaud, V. (2020). Nouvelles gravures néolithiques dans la tombe à couloir de Cruguellic (Ploemeur, Morbihan). *Bulletin Société d'Archéologie et d'Histoire du Pays de Lorient, 40*, 53–71.

Cassen, S., & Vaquero Lastres, J. (2000). La Forme d'une chose. In S. Cassen, C. Boujot, J. Vaquero (Eds.), *Eléments d'architecture (Exploration d'un tertre funéraire à Lannec er Gadouer,Erdeven, Morbihan. Constructions et reconstructions dans le Néolithique morbihannais. Propositions pour une lecture symbolique)* (pp. 611–656). Association des publications chauvinoises.

Cassen, S., Boujot, C., Dominguez Bella, S., Guiavarc'h, M., Le Pennec, C., Prieto Martinez, M. P., Querré, G., Santrot, M. H., & Vigier, E. (2012). Dépôts bretons, tumulus carnacéens et circulations à longue distance. In P. Pétrequin, S. Cassen, M. Errera, L. Klassen, A. Sheridan & A. M. Pétrequin (Eds.), *Jade. Grandes haches alpines du Néolithique européen. Ve et IVe millénaires av. J.-C.* (pp. 918–994). Presses Universitaires de Franche-Comté; Centre de Recherche Archéologique de la Vallée de l'Ain.

Cassen, S., Boujot, C., Grimaud, V., Celo, O., Chaigneau, C., Obeltz, C., & Vigier, E. (2021). *Carnac. Récit pour un imagier*. Laboratoire de recherche Archéologie et Architecture, Université de Nantes.

Cassen, S., Grimaud, V., Lescop, L., Marcoux, N., Oberlin, C., & Querré, G. (2014). The first radiocarbon dates for the construction and use of the interior of the monument at Gavrinis (Larmor-Baden, France). *PAST, The Newsletter of the Prehistoric Society, 77*, 1–4.

Cassen, S., Grimaud, V., & Paitier, H. (2018). Les monolithes gravés dans la tombe à couloir néolithique du Mané er Groez à Kercado (Carnac, Morbihan). *Gallia Préhistoire, 58*, 87–138. https://doi.org/10.4000/galliap.795

Cassen, S., Lanos, P., Dufresne, P., Oberlin, C., Delqué-Kolic, E., & Le Goffic, M. (2009). Datations sur site (Table des Marchands, alignement du Grand Menhir, Er Grah) et modélisation chronologique du Néolithique morbihannais. In S. Cassen (Ed.), *Autour de la Table. Explorations archéologiques et discours savants sur des architectures néolithiques à Locmariaquer, Morbihan (Table des Marchands et Grand Menhir)* (pp. 737–768). Laboratoire de recherches archéologiques, CNRS, Université de Nantes.

Du Chatellier, P. (1903). La pointe de Kermorvan, en Ploumoguer, ses monuments, pierres à cupules. *Bulletin Société Archéologique du Finistère, 30*, 90–128.

De Closmadeuc, G. (1873). *Sculptures lapidaires et signes gravés des dolmens dans le Morbihan.* Imprimerie de Lamarzelle.

Davy de Cussé, L. (1865–1866). *Recueil des signes sculptés sur les monuments mégalithiques du Morbihan relevés et réduits au pantographe* (2nd ed.). Imprimerie J. Galles.

Déchelette, J. (1908). *Manuel d'Archéologie préhistorique et celtique: Vol. 1. Archéologie préhistorique*. Librairie Alphonse Picard et fils.

Denys de Montfort, P. (1802). Histoire naturelle, générale et particulière des mollusques: animaux sans vertèbres et a sang blanc. In G. L. Leclerc de Buffon (Ed.), *Histoire naturelle, générale et particulière* (new ed. by C. S. Sonnini, Vol. LIII–LV). Imprimerie F. Dufart. https://doi.org/10.5962/bhl.title.51804

Devoir, A. (1917). Note sur la stèle gravée du Téven de Kermorvan (commune de Ploumoguer, Finistère). *Bulletin Société Archéologique du Finistère, 44*, 1–7.

Egede, P. (1788). *Efterretninger om Grønland, uddragne af en Journal holden fra 1721 til 1788*. Kongelige Baisenhuses Bogtrykkerie af Hans Christopher Schrøder.

Fenoglio, I. (2003). Graphie manquée, lapsus écrit: un acte d'énonciation attesté. *Langage et Société, 103*, 57–77. https://doi.org/10.3917/ls.103.0057

Freud, S. (2015). *Introduction à la psychanalyse* (S. Jankélévitch, Transl.). Éditions Payot & Rivages. (Original work 1917)

Gouézin, P. (2015). L'intégration des pierres dressées à l'air libre dans les espaces sépulcraux de l'ouest de la France: le département du Morbihan. In P. Bueno Ramírez & R. Barroso (Eds.), *ARPI 03 extra 2015. Homenaje a Rodrigo de Balbín Behrmann* (pp. 96–110). Edición Área de Prehistoria, Universidad de Alcalá

Guerra, A., González, A. F., Dawe, E. G., & Rocha, F. (2004). Records of giant squid in the north-eastern Atlantic, and two records of male *Architeuthis* sp. off the Iberian Peninsula. *Journal of the Marine Biological Association of United Kingdom, 84*, 427–431. https://doi.org/10.1017/S0025315404009397h

Guerra, Á., González, Á., Pascual, S., & Dawe, E. (2011). The giant squid *Architeuthis*: An emblematic invertebrate that can represent concern for the conservation of marine biodiversity. *Biological Conservation, 144*(7), 1989–1997. https://doi.org/10.1016/j.biocon.2011.04.021

Heuvelmans, B. (1958). *Dans le sillage des monstres marins: Vol. 1. Le Kraken et le poulpe colossal*. Librairie Plon.

Heuvelmans, B. (1965). *Le Grand Serpent-de-Mer. Histoire des bêtes ignorées de la mer. Le problème zoologique et sa solution.* Librairie Plon.

Keller, C. (1905). Le poulpe de l'allée couverte du Lufang (Morbihan). *Revue mensuelle de l'École d'anthropologie de Paris, 15*, 239–244.

Lacépède, B. G. E. de la Ville (1804). *Histoire naturelle des cétacés*. Plassan.

de La Poix de Fréminville C. P. [called Chevalier de Fréminville] (1832). *Antiquités de la Bretagne. Monuments du Finistère*. Lefournier et Deperiers.

Laporte, L., & Le Roux, C.-T. (2004). *Bâtisseurs du Néolithique. Mégalithismes de la France de l'Ouest*. La maison des roches.

Le Goffic, M. (2009). L'art gravé a l'air libre durant la prehistoire et la protohistoire en Bretagne (France). In R. Balbín Behrmann, P. Bueno Ramirez, R. González Antón & C. Arco Aguilar (Eds.), *Grabados rupestres de la fachada atlántica europea y africana. Rock Carvings of the European and African Atlantic Façade* (pp. 27–44). BAR Publishing. https://doi.org/10.30861/9781407306193

Le Roux, C.-T. (1975). Bretagne. *Gallia Préhistoire, 18*(2), 511–539.

Le Roux, C.-T. (1977). Bretagne. *Gallia Préhistoire, 20*(2), 407–432.

Le Roux, C.-T. (1978). Le mobilier du dolmen de Cruguellic en Ploemeur (Morbihan). *Bulletin de la Société préhistorique française, 75*(9), 281–285.

Le Roux, C.-T. (1982). Nouvelles gravu res à Gavrinis, Larmor-Baden (Morbihan). *Bulletin de la Société préhistorique française, 79*(3), 89–96. https://doi.org/10.3406/bspf.1982.5367

Le Roux, C.-T. (1984). À Propos des fouilles de Gavrinis (Morbihan). Nouvelles données sur l'art mégalithique armoricain. *Bulletin Société Préhistorique Française, 1*(8), 240–245.

Le Roux, C.-T. (1985a). *Gavrinis et les îles du Morbihan. Les mégalithes du golfe*. Ministère de la Culture.

Le Roux, C.-T. (1985b). New excavations at Gavrinis. *Antiquity, 59*(227), 183–187. https://doi.org/10.1017/S0003598X00057240

Le Roux, C.-T. (1992). The Art of Gavrinis presented in its Amorican context and in comparison with Ireland. *Journal of the Royal Society of Antiquaries of Ireland, 122*, 79–108.

Le Roux, C.-T. (1998). L'art de Gavrinis. *Dossiers d'Archéologie, 230*, 28–35.

Le Roux, C.-T. (2010). *Gavrinis*. Éd. J. P. Gisserot.

Le Rouzic, Z. (1935). Carnac. (Restaurations faites dans la région). Nouvelles découvertes dans le dolmen de Gavrinis. (Commune de Larmor-Baden). *Bulletin Société Préhistorique Française, 2*, 128–131. https://doi.org/10.3406/bspf.1935.6279

Le Rouzic, Z., & Keller, C. (1910). *Locmariaquer. La Table des Marchand. Ses signes sculptés et ceux de la pierre gravée du dolmen de Mané-er-H'roëk*. Èt. A. Barbier.

L'Helgouac'h, J. (1965). *Les Sépultures mégalithiques en Armorique (dolmens à couloir et allées couvertes)*. Laboratoire d'Anthropologie Préhistorique de la Faculté des Sciences de Rennes.

L'Helgouac'h, J. (1993). Du schématisme au réalisme dans la figuration anthropomorphe du mégalithisme armoricain. In J. Briard & A. Duval (Eds.), *Les représentations humaines du néolithiques* à l'âge du fer. Actes du 115e *Congrès National des Sociétés Savantes. Avignon 1990* (pp. 9–19). Éd. CTHS.

L'Helgouac'h, J. (1997). De la lumière aux ténèbres. In J. L'Helgouac'h, C.-T. Le Roux & J. Lecornec (Eds.), *Art et symboles du Mégalithisme européen. Actes du 2*ème *Colloque International sur l'Art Mégalithique, Nantes, juin 1995* (pp. 107–124). Association pour la diffusion des recherches archéologiques dans l'ouest de la France.

L'Helgouac'h, J. (1998). Les grandes transformations du IIIe millénaire. In P.-R. Giot, J. L'Helgouac'h & J.-L. Monnier (Eds.), *Préhistoire de la Bretagne* (pp. 345–428). Éditions Ouest France Université.

L'Helgouac'h, J., Le Gouestre, D., & Poulain, H. (1989). Le monument mégalithique transepté de La Joselière (ou du Pissot), au Clion-sur-Mer (Loire-Atlantique). *Revue archéologique de l'ouest, 6*, 31–50. https://doi.org/10.3406/rao.1989.932

Luquet, G.-H. (1910). Sur la signification des pétroglyphes des mégalithes bretons. *Revue de l'École d'Anthropologie de Paris, 20*, 224–253.

Magnus, O. (1555). *Historia de gentibus Septentrionalibus*. Imp. Libraire, G. M. Viotti.

Mahé, C. (1825). *Essai sur les Antiquités du département du Morbihan*. Imprimerie Galles.

Marcel, G. (1935). Être et avoir (Journal métaphysique 1928–1933). Éditions Montaigne.

Melville, H. (1851). *Moby-Dick; or: The Whale*. Harper & Brothers, R. Bentley.

Minot, R. S. (1964). Sur les Gravures mégalithiques du Morbihan. *Bulletin Société Polymatique du Morbihan,* 89–98.

de Mortillet, A. (1894). Les figures sculptées sur les monuments mégalithiques de France. *Revue Mensuelle de l'École d'Anthropologie de Paris, 4*, 273–307.

Nilsson, D.-E, Warrant, E., Johnsen, S., Hanlon, R., & Shashar, N. (2012). A Unique Advantage for Giant Eyes in Giant Squid. *Current Biology, 22*(8), 683–688. https://doi.org/10.1016/j.cub.2012.02.031

Pailler, Y. (2007). *Des Dernières industries à trapèzes à l'affirmation du Néolithique en Bretagne occidentale (5500–3500 av. J.-C.)*. BAR Publishing. https://doi.org/10.30861/9781407300825

Pailler, Y. (2012). L'exploitation des fibrolites en Bretagne et ses liens avec les productions alpines. In P. Pétrequin, S. Cassen, M. Errera, L. Klassen, A. Sheridan, & A. M. Pétrequin (Eds.). *Jade. Grandes haches alpines du Néolithique européen. Ve et IVe millénaires av. J.-C.* (pp. 1168–1193). Presses Universitaires de Franche-Comté; Centre de Recherche Archéologique de la Vallée de l'Ain.

Patte, E. (1921). Gravure du dolmen de Penhap (Morbihan) représentant un poignard. *Revue anthropologique, 31*, 185–187.

Péquart, M., Péquart, St-J., & Le Rouzic, Z. (1927). *Corpus des signes gravés des monuments mégalithiques du Morbihan.* Éd. A. Picard.

Pétrequin, P., Cassen, S, Gauthier, E., Klassen, L., Pailler Y., & Sheridan A. (2012). Typologie, chronologie et répartition des grandes haches alpines en Europe occidentale. In P. Pétrequin, S. Cassen, M. Errera, L. Klassen, A. Sheridan & A. M. Pétrequin (Eds.), *Jade. Grandes haches alpines du Néolithique européen. V^e et IV^e millénaires av. J.-C.* (pp. 574–727). Presses Universitaires de Franche-Comté; Centre de Recherche Archéologique de la Vallée de l'Ain.

du Plessix, G. (1918). Découverte d'une pierre gravée dans les landes de Kermorvan. *Bulletin de la Société Archéologique de Nantes, 58*, 3–11.

Ricœur, P. (1960). *Finitude et culpabilité. Vol. II, La Symbolique du mal*. Éd. Aubier-Montaigne.

Rodríguez Casal, A. A. (1992). Éléments symbolico-funeraires dans le Mégalithisme galicien. In C.-T. Le Roux (Ed.), *Paysans et Bâtisseurs. L'émergence du Néolithique atlantique et les origines du Mégalithisme. Actes du XVII^e colloque interrégional sur le Néolithique, Vannes 1990* (pp. 213–222). Association pour la diffusion des recherches archéalogiques dans l'ouest de la France.

Roper, C. F. E., Judkins, H., Voss, N. A., Shea, E., Dawe, E., Ingrao, D., Rothman, P. L., & Roper, I. H. (2015). A compilation of recent records of the giant squid, *Architeuthis dux* (Steenstrup, 1857) (Cephalopoda) from the Western North Atlantic Ocean, Newfoundland to the Gulf of Mexico. *American Malacological Society, 33*(1), 78–88. https://doi.org/10.4003/006.033.0116

Rosa, R., Lopes, V. M., Guerreiro, M., Bolstad, K., & Xavier, J. C. (2017). Biology and ecology of the world's largest invertebrate, the colossal squid (*Mesonychoteuthis hamiltoni*): a short review. *Polar Biology, 40*, 1871–1883. https://doi.org/10.1007/s00300-017-2104-5

Shee Twohig, E. (1981). *The Megalithic Art of western Europe*. Clarendon Press.

Siret, L. (1913). Étude comparative des signes symboliques représentés sur les monuments ou objets des temps protohistoriques. In W. Deonna (Eds.), *Congrès international d'anthropologie et d'archéologie préhistoriques. Compte-rendu de la XIV^e session. Genève 1912* (pp. 1–8). Imprimerie Albert Kündig.

Soufi-Kechaou, E. (2011). *Bioréacteur enzymatique couplé à l'ultrafiltration pour la valorisation des co-produits issus des industries de la pêche. Application à la seiche Sepia officinalis*. [Doctoral dissertation]. Université de Nantes, Discipline Sciences Biologiques – Génie des Procédés.

URL Link
fishn2gthr4ever. (2009, September 19). *Juan de Fuca Strait, between Vancouver Island (Canada) and the Olympic Peninsula (USA)* [Video]. YouTube. www.youtube.com/watch?v=QH-fzVxCY2g

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After completing a Master's degree in Precolombian Anthropology in Bogotá, Colombia, and another in Social Anthropology at Berkeley, USA, in 1986 Serge Cassen obtained his PhD in Anthropology, Ethnology and Prehistory at the University of Paris-Sorbonne under G. Bailloud, its topic being the Neolithic societies of the 4th millennium BC between the Loire and the Gironde. He joined CNRS in 1991 and has focused on studying the funerary and symbolic monuments in the west of France, and in particular the engraved representations and objects of social value.

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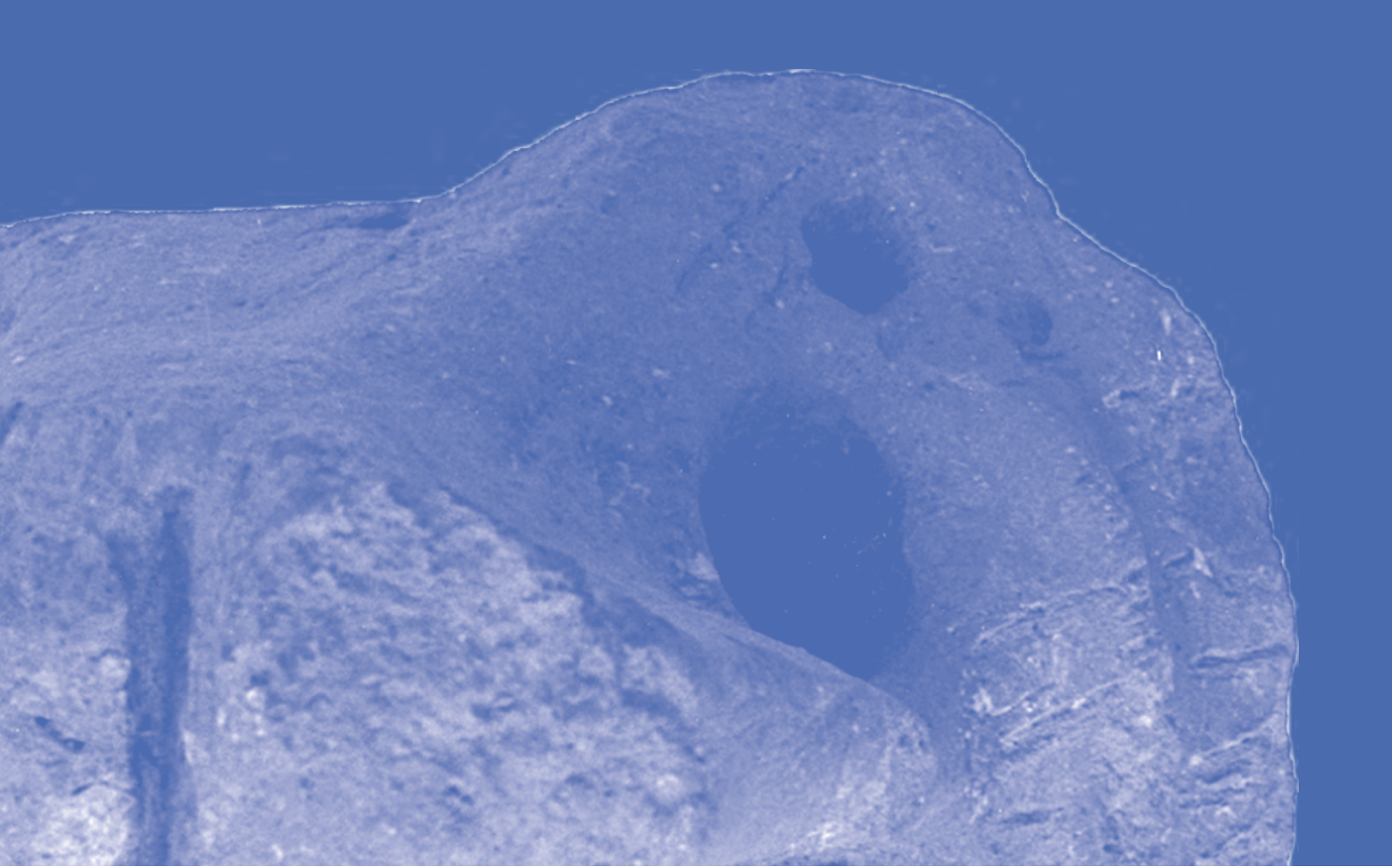
After completing a Master's degree in Architecture at the École Nationale Supérieure d'Architecture, Nantes, Valentin Grimaud obtained his PhD in Archaeology at the University of Nantes in 2015. The subject was the re-investigation of a well-known archaeological site – the passage tomb of Gavrinis (Larmor-Baden, Morbihan) – using an array of information obtained since the discovery of the monument and applying techniques of 3D recording, focusing in particular on the megalithic art. He has been a post-doctoral researcher at the University of Nantes since 2016 on S. Cassen's project *Corpus of Neolithic engraved signs*.



Neolithic clay head from Vassilika (Thermi).

ORIGINALS AND COPIES:

FROM IMITATION TO MINIATURIZATION (NEOLITHIC PERIOD TO EARLY BRONZE AGE)

Christina Marangou

In A. Ballmer & D. Neumann (Eds.), *Imitations, Simulations, Mock-ups and Illusions: Special Variants and Interpretations in Material Culture. Case Studies from Prehistoric Europe.* Propylaeum. https://doi.org/10.11588/propylaeum.1445.c20613

Recreating physical things in diverse materials or/and in altered sizes involves a transposition process, conceivably entailing divergent functions of the copies, be they *sensu stricto* practical or fictional, or a combination of both. If the real or imaginary functionality of a reproduction diverged from that of its prototype, it is to be debated whether a convenient morphology was intentionally selected and imitated because of its concrete advantages, fortuitously referring to real or fantasy images, or if a theme was depicted because of its symbolic potential, although the resulting morphological characteristics were consecutively exploited for practical purposes, different or not from those of the original, or even if a blend of initial symbolic and utilitarian qualities was pursued in the same recreated and transformed object. Besides different materials used in imitations, the choice of scales, varying from the diminutive to the monumental is obviously significant. Small-size reproductions might sometimes even be further subdivided in clusters of different sizes, possibly implying varying uses and/or symbolic functions and roles of the copies. This essay endeavours to examine the social significance of Neolithic and Early Bronze Age examples, mainly from Northern Greece and the neighbouring areas, in archaeological contexts insinuating human–thing relations.

Neolithic; Early Bronze Age; imitation; miniaturization; materiality; symbolism

INTRODUCTION

Besides tangible remains of real beings and things, a second, mirrored reality on a reduced scale was represented in prehistory. Neolithic and Early Bronze Age three-dimensional *eidolia* (Greek ειδώλιο = small image) depict their human creators, as well as their animate and inanimate environment – animals, structures and artefacts. Most figurines and models from Northern Greece and the neighbouring areas do recall reality, including possibly missing originals, non-identifiable prototypes being an exception. However, if miniatures provide indications of the reconstruction of real life, they may not necessarily constitute its accurate reflection. Images are both the product of imitation and the materialization of thought, referring to the social environment in which they were used, but also to a world beyond the tangible, the realm of symbols.

In fact, during the mental process of transferring a prototype to its image, the original features may have remained unchanged or not: unreal details may have been added, others removed and means of abstraction or exaggeration may have been applied. Imitations are an expression of different transfers and semiotics, while their symbolic values could be connected to the originals and/or to their miniature copies. The copies' (known or guessed) significance, use and function may also have been different from that of the prototypes. Therefore, it is to be debated which parts of the copies are real and which imaginary, which originate in the makers' or users' mental creation, and which in images and concepts of the collective memory of the community. Obviously, many questions remain open.

Copies being artefacts, a concrete functionality is combined with symbolic charge, whereas a prototype's morphology (beyond schematisation and naturalism) may be at least partially connected to practical advantages. Means for gripping and handling or the intended place in the real, human space may influence the appearance of imitations. Besides, the distinction between the *sensu stricto* 'utilitarian' and the 'symbolic' is a modern concept: for example, based on their form, both real-size and miniature vases, boats, or houses constitute 'containers' with a specific volume and content. Similarly, zoomorphic and anthropomorphic vessels or tools that constitute complete figurative representations (not just decorative patterns) are not only vessels or tools, but also autonomous copies of beings. Furthermore, different raw materials may be used and the conversion from an original to its copy following diverse modes of 'transfer' may take place at more than one scale depending on the possible concrete uses, not necessarily depending on the restrictions the raw material may have posed.

In short, recreating physical things in altered sizes and/or in diverse materials involves a transposition process, conceivably entailing various functions of the images, concrete and/or fictional, combined in the same artefact. A brief overview of selected indicative examples allows us to show their possible social significance in contexts insinuating human–thing relations, in the real as well as in the miniature world.

IMITATED ORIGINALS AND MINIATURIZATION

Significantly, the choice of subjects that are imitated is period-specific. In the Neolithic, humans, animals, various types of buildings, house equipment, fixed, e.g. ovens or 'platforms/benches', or mobile, e.g. furniture or 'screens' (Elster & Nikolaidou, 2003, pp. 432–435 on stools; Marangou, 2019, pp. 132–142 on furniture, pp. 142–149 on ovens), boats of different morphologies, probably referring to various raw materials and types of real watercrafts (Marangou, 1991a; Marangou, 2001a; Marangou, 2001c), more rarely tools (Crnobrnja et al., 2009; Crnobrnja, 2011) and other implements (musical instruments? Todorova et al., 1983; Todorova, 2003), as well as vases (their identification depending on published information concerning 'normal' sized pottery) are imitated in miniature size, most often in clay. Miniature boats, stools and vases appear since the Early Neolithic and houses at least from the Middle Neolithic onwards. Indistinguishable compositions of heterogeneous elements are attested early, such as a seated human bearing an infant, whereas in the Late Neolithic, domestic interiors may be modelled together with household equipment, such as ovens and benches (Gallis, 1985; Renfrew et al., 1986, fig. 8.20a, pl. XL, nos. 1a–d, pl. XCV, no. 4; Elster & Nikolaidou, 2003, pp. 438–439, pls. 11.26, 11.27e; Alram-Stern, 2022), sometimes even with humans (Popudnja: Gusev, 1995; Lazarocivi & Lazarovici, 2010b, figs. 37, 38). Animals are loaded with vases, which could have had a combined practical function, e.g. as lamps (Marangou & Stern, 2009). However, clay houses, ovens, furniture, vases, tools, implements and human figurines were also modelled separately: movement and modification of their layout and/or contents would have been possible, they could have been flexibly placed on particular surface areas, inside a vessel or a building model and even arranged to seemingly interact with each other.

Clay was the preferred material, although stone, as well as bone and shell, particularly for pendants, was occasionally used for miniatures. Towards the end of the Neolithic, clay was sometimes combined with stone (*acrolithic* figurines: Papathanasopoulos, 1996, figs. 216, 217). Not only the represented subjects, but also the contexts, when known, are mainly domestic, even in the case of watercraft models. Funerary contexts are rare and are attested in particular in the case of bone, stone or shell examples (see below).

In contrast to the Neolithic, in the Early Bronze Age miniature vessels, structures, buildings, artefacts and anthropomorphic or zoomorphic figurines are not combined. Rare exceptions are known. There is a preference for either human or animal figurines. Very few miniatures of furniture

are known. They occur permanently combined with anthropomorphic figurines, such as marble compositions of humans sitting on seats, sometimes holding an object (e.g. a musical instrument). Possibly, the occupation or specialisation of the depicted person was intended to be emphasized (Marangou, 1992, p. 170). While in the Final Neolithic stone is combined with clay to create anthropomorphic *acrolithic* figurines, and figurines from stone as well as from bone are also attested at the same time, in the Early Bronze Age, besides some clay examples, stone and bone are the preferred materials in the manufacture of anthropomorphic figurines. Their making required specialised craftsmanship (see below). At the same time, the number of miniature vases increases, particularly in the Northeastern Aegean, where they outnumber other miniature categories (Marangou, 1994). They more often imitate vessel types associated with individual consumption than types connected with storage, transport and, in general, collective use. The total number of the latter collective use subcategories approximately equals the number of miniatures of types for individual use (Marangou, 1992, p. 168; Marangou, 1994). Miniature stone or clay tools (clay ones being relatively rare in the Neolithic) are now well represented (Marangou, 1991b; Marangou, 1992, p. 170). At this stage, a newly introduced raw material, namely metal, was used as well for tools, manufactured by specialists. Anthropomorphic figurines as well as micrographic vases and tools may have had funerary associations in selected tombs (see below).

The interior space of houses and buildings does not seem to have been of interest in the Early Bronze Age, since house models seem to have been exceptional. They might have rather served as clay vessels in the shape of houses (e.g. Sampson & Fotiadi 2008, p. 221, fig. 22.6). Ships rather than boats are represented in miniature in the Early Bronze Age: developed composite dugouts, i.e. long, asymmetrical rowing vessels, such as on engraved two-dimensional representations from the Cyclades (Doumas, 1965; Basch, 1987, p. 80), as well as models from the Acropolis of Athens (Basch, 2017, fig. 7.1), Crete (ibid., p. 85), and Thermi in Lesbos (Marangou 1996b) are attested. Their originals would have been sea-worthy. Simpler vessels are very rare in this period and may have served other purposes (e.g. Troy: Marangou, 2001c). In fact, the Final Neolithic rock art of Strophilas on the island of Andros (Televantou, 2018) may be more indicative of the asymmetrically shaped, developed dugouts of the Early Bronze Age, than of the Neolithic watercraft types. Most Neolithic models seem to correspond to originals mainly used in inland waters. The Early Bronze Age miniatures not only reflect the degree of technical expertise and specialisation, but also the general interest in sea voyages.

SCALES AND CONCRETE USES: MATERIALITY

In miniaturization, the copy's size is not only related to the prototype's dimensions, but also depends on the reduction scale. Reproductions may sometimes even be subdivided in clusters of size, implying varying concrete uses and roles of the copies: there are miniaturized miniatures ('micro-miniatures': Marangou, 1992, p. 185; Marangou, 2019, p. 172), which do not necessarily show evidence of having been used as pendants. In the Neolithic, small anthropomorphic figurines could have been intended to be put inside a house model or a vase: together with larger examples, they possibly depicted younger individuals (Gallis, 1985; Gallis, 2022; Alram-Stern, 2022). In any case, they may coexist with figurines of 'standard' miniature size (Fig. 1a) (e.g. in Prodromos, Dikili Tash and Dhimitra: Marangou, 1997b; Marangou, 2000; Marangou, 2013; Marangou, 2019). Zoomorphic figurines, mainly referring to domestic animals (Toufexis, 2003) may also come in different sizes (Fig. 1b), and diverse reduction scales may be attested for a specific set of micrographic vessels (Fig. 2a–b). At the same time, the sizes of miniature vases for individual or collective use (Fig. 2c) may not vary significantly, despite the different dimensions of their originals (Marangou, 2019, p. 174, note 516).

Fig. 1a. Late Neolithic clay female figurines of different sizes from Dikili Tash.

Fig. 1b. Late Neolithic clay animal figurines of different sizes from Dikili Tash.

Fig. 2. Late Neolithic clay micrographic vases of Dikili Tash. a–b: Various dimensions of miniatures of the same original; c: Closed type miniatures with dimensions comparable to those of vessel types for individual use.

In the Neolithic, the approximate maximum dimensions for clay miniatures range between 6 and 12 cm, 12 and 20 cm, and 2 and 6 cm for humans, but also up to almost 1 m and even more. Animal figurines reach maximum dimensions of 10–20 cm and 4–6 cm, yet much larger ones are also attested. Micrographic vessels generally measure 3–8 cm and 1–3 cm. Micrographic furniture shows maximum dimensions of 5–10 cm and 3–4 cm. Houses measure from 10 to 50 cm, and boats from 6 to 25 cm (Marangou, 2013). In some cases, so-called 'half-seated' anthropomorphic figurines are equipped with proportionate chairs (Todorova et al., 1983, p. 91).

Fig. 3. Large, clay head from Vassilika (surface find) (front and side view).

Furthermore, large anthropomorphic – but not only – busts have been found inside real-life buildings, while some rare fragmentary heads, some with hybrid features (Marangou & Grammenos, 2005; Marangou, 2010) are attested as chance finds. Such fragmentary three-dimensional terracotta heads may have originally belonged to large, even almost life-size statues (Fig. 3) (see also Galović, 1959; Marinescu-Bîlcu, 1981). At Opovo, human or animal (bovine?) clay heads would have been fixed on a stand (Tringham et al., 1985), and large figures of pigs were found at Achilleio and Anza (Chapman, 1981; Gimbutas, 1976; Gimbutas, 1984; Gimbutas, 1989; see also the fragment from Dhimitra: Marangou, 1997b, p. 238, pl. 70a–b). This could also be the case for some fragments of relatively large terracotta legs or heads (e.g. from Ftelia in Mykonos: Sampson & Mastrogiannopoulou, 2017, figs. 4.8–4.10; from the Late Neolithic Sarakinos cave: Sampson & Mastrogiannopoulou, 2018, pp. 264–265), unless they would have belonged to anthropomorphic vessels.

Non-autonomous, large, anthropomorphic, zoomorphic or hybrid figures from clay could also be connected to architectural elements (e.g. to interior walls or on roofs), or be integral parts of domestic structures, such as ovens. Besides real *bucrania*, possibly integrating additional elements

Fig. 4. Clay micrographic 'screen' with relief and incised decoration from Late Neolithic Dhimitra.

made of clay, clay animal heads with bovine horns are also attested (Kormadin: Jovanović & Glisić, 1960; Dikili Tash: Treuil & Darcque, 1998), in some cases decorating the rooftop of houses (Petrovic, 1990; Toufexis, 2003, fig. 29.3). Anthropomorphic relief decoration is known in 'special' buildings ('temples': Lazarovici & Lazarovici, 2010a; Lazarovici & Lazarovici, 2010b; in Dolnoslav: Raduncheva, 1991; Promachon-Topolnica: Koukouli-Chrysanthaki et al., 2007). On some models of buildings, such representations are replicated, for instance cylindrical anthropomorphic elements on the roof, or bucrania reliefs above the entrance or on inner walls have been evidenced (Lazarovici & Lazarovici, 2010b; Marijanović, 2015). Such figurative decorations could indicate the special status of a unique (?), imposing (possibly common) building.

It has been suggested that statuettes with perforated shoulders or head may have been attached to walls with wooden dowels (Burdo et al., 2013, p. 105). On the other hand, real buildings may also have contained decorated moveable elements, as is suggested by miniatures, such as the so-called 'altar models' (Gimbutas, 1989, p. 72, fig. 112 from Ovčarovo) and possibly the Dhimitra micrographic 'screen' decorated with a *bucranium* in relief (Fig. 4) (Marangou, 1996a; Marangou, 1997b, p. 251), including moveable screens/partitions from non-preserved, possibly organic material (Marangou, 2020, p. 39). As can be guessed not only from their varying dimensions, but also from

Fig. 5a. Late Neolithic clay open house model from Sitagroi.

other features, the practical use of Neolithic closed and open building models must have been different, regardless of whether they were exact copies. The 'open' house models, in particular in the Late Neolithic, such as those from Thessaly and Eastern Macedonia, have maximum dimension of c. 20 cm (Fig. 5a) (Gallis, 1985; Renfrew et al., 1986, fig. 8.20a, pl. XL no. 1, pl. XCV no. 4; Toufexis, 1996, p. 329, no. 266; Toufexis, 2022; Elster & Nikolaidou, 2003, pp. 438–439; Trenner, 2010, p. 135, no. 11, p. 153; Alram-Stern, 2022). They feature a floor surrounded by very low walls and are unroofed, with the interior visible. The focus is obviously on the interior layout of the house and the domestic equipment, i.e. oven and 'platform', and sometimes also on the occupants – in some cases moveable (Plateia Magoula Zarkou: Gallis, 1985; Gallis, 2022; Alram-Stern, 2022), in others fixed (Popudnia: Gusev, 1995). In the case of Plateia Magoula Zarkou it has been suggested that the anthropomorphic figurines of different sizes and types inside the house model may have represented a family of three generations (Gallis, 1985; Gallis, 2022; Alram-Stern, 2022), or an extended family of the same household, including people connected to them by their activities (Alram-Stern, 2022, p. 480). The ensembles could also represent practices with an

Fig. 5b. Late Neolithic clay miniature house roof from Dhimitra.

entire 'household' involving residents, visitors and ritual participants (as well as ancestors according to Burdo et al., 2013, p. 113). It should be noted that the two four-legged anthropomorphic figurines included in the house model, both considered as male, do not show any obvious sex characteristics and therefore possibly contradict the interpretation of a family featuring a man and a woman as parents. Combinations of female and apparently asexual figurines, with at least one of them smaller than the majority, have also been found in smaller or larger sets, on a platform or inside vases (Marangou, 2009) (see below). Therefore, the Plateia Magoula Zarkou ensemble might reflect a comparable situation with larger and smaller females and/or asexuals, in the restricted space of an open house model.

Although there is evidence of autonomous, small roofs from Late Neolithic contexts (Fig. 5b) (initial maximum dimension up to 10–12 cm, e.g. at Dhimitra: Marangou, 1996a, fig. 5; cf. Trenner, 2010, p. 174, no. 96; see also Marangou, 1992, pl. 3, nos. 9–10; Raczky & Anders, 1999), they do not seem to correspond to the known open house models, which are usually larger and have low walls, so that a roof could not be placed onto them. A 'transitional type' of two-piece house model has been proposed by P. Raczky and A. Anders (1999): independent removable roofs would presumably have covered the house models, though allowed occasional access to the interior. However, no such complete example is known. The independent terracotta roofs size corresponds to a subcategory of the small, closed, roofed house

model (usually up to 10–12 cm in size), mainly attributed to the Middle Neolithic in Thessaly and central Greece (Theocharis, 2000, pp. 180–181; Marangou, 1992, p. 442, pl. 3, nos. 9–10; Gallis, 1996, p. 64; Toufexis, 2022). Access to the interior of these roofed, closed models might have been difficult or even impossible in some cases, even if there are holes in the roof, such as an *opaion*, possibly with a corresponding opening in the floor (Skafida, 1996, p. 327, nos. 262–263; proposed reconstruction in Trenner, 2010, p. 178, pl. IIb), or in the walls (windows/doors?) (Toufexis, 1996, p. 328, nos. 264–265; Toufexis, 2022; Trenner, 2010, p. 164, no. 76). It has been suggested that some of the small models could represent granaries (Toufexis, 1996; Burdo et al., 2013, p. 103). Furthermore, in cases of similar shapes, it may be difficult to clearly distinguish an oven from a house model (Marangou, 2019, p. 148, with further references).

There are also large building models focussing on their exterior, sometimes without floors, and even 'two-storey' ones (Gallis, 1996, p. 64, fig. 17; MN: Toufexis, 1996, p. 328, no. 264; Toufexis, 2022; Burdo et al., 2013, p. 99, fig. 5.4; Hodroyianni-Metoki, 2017, p. 27, fig. 2). The maximum dimension of the floorless models reaches 40–50 cm. It has been suggested (by Trenner, 2010, p. 153 no. 42, p. 258 no. 62) for the Late or Final Neolithic models from Kodjadermen and Cascioarele (Popov, 1918, p. 134, fig. 136; Dumitrescu, 1968), which include 3 or 4 roofs and openings in the walls, as well as generally for models with more than one roof and a common infrastructure, that they would not represent houses, but rather a whole settlement (Gheorghiu, 2009, pp. 115–116; Trenner, 2010, p. 158, no. 62, p. 165, no. 80). Interestingly, concrete, specific use of such large-scale models is attested. The Sultana model (Gumelnita) has seventeen openings of 4.5 to 5 cm in diameter in the walls and the roof. Eleven golden objects and limestone beads were found among its fragments, which appear to have originally been kept inside the model (Hansen et al., 2012, pp. 93–94, figs. 4–5). A combined, both practical and symbolic use must be assumed, in which the miniature building would have covered, perhaps also 'protected' valuable objects. A similar combined purpose may be suggested for a large anthropomorphic vase from Vidra, found close to anthropomorphic and animal figurines and a gold ornament, thought to have been 'worn' by the vase (Rosetti, 1938; see also Marangou, 1996a, with further references).

Neolithic boat models are attested from inland wetland sites (Fig. 6) (Marangou, 1991a; Marangou, 2001a; Marangou, 2001c), apparently representing different types of watercrafts and providing us with valuable information on technological progress, everyday activities and movement on water (see Höckmann, 1996), but also implying the prehistoric natural environment. Although generally preserved incompletely, they seem to have had an original maximum dimension of 6–25/28 cm in length (in most cases 10–25 cm), a width of 2.5–14 cm and a depth/height of 2–7.2 cm, with a length/width ratio of 2:3.4 or even 2:5.8. The real vessels would have been

Fig. 6. Neolithic clay miniature of watercraft from Tsangli (Thessaly).

symmetrical or asymmetrical, with an ellipsoidal or almost quadrangular section, with oval or trapezoidal edges, sometimes horizontally perforated, with straight or upwards tapered sides (Fig. 6) (Marangou, 1991a; Marangou, 2001a; Marangou, 2001c; on an experimental, double-ended, paddled papyrus boat see Tzalas, 1995). Although the size of watercraft models is comparable to that of open house models, until now, they have been found empty of other miniature objects.

In the Early Bronze Age, zoomorphic figurines are mostly made of clay, small-sized and standing stably. In contrast, anthropomorphic figurines measure from a few centimetres to almost monumental sizes (Marangou, 1997a); they are usually found isolated. Bone (Marangou 1997a) and stone (Thermi I–II: Marangou, 1997a; Filaniotou, 2019) are often used, raw materials which impose size restrictions. However, a similar morphology of flat and unstably standing figures was apparently aimed at, not only of stone (Thermi I–II), but even of clay (Thermi III–V) (Figs. 7a–b) (Marangou, 1992; Marangou, 1997a). At the same time, sherd figurines occur as well. The typically required focus on the frontal view ('frontality') is also evidenced on the back side of bone figurines, which is usually unworked (Fig. 8). It has also been suggested that natural stones with distinct shapes, which in some cases may have undergone some slight reworking, could constitute 'pebble figurines' (Filaniotou, 2019, pp. 147–148).

It is difficult to distinguish between a (large) stone figurine and a stela: both are characterised by their frontality, large size and relative instability (Marangou, 1997a; Marangou, 2013). *Stelae* being hardly worked on the reverse, they would have been looked at from one direction, similarly to small stone or bone examples, which could possibly be suspended. Originally, stelae or figures could have been leant against a wall or stuck into the ground, the figures also deposited in Cycladic tombs. Their bulkiness and the fact that they were mostly found in isolation shows that they were very probably not designed to be 'active', i.e. did not need to move in

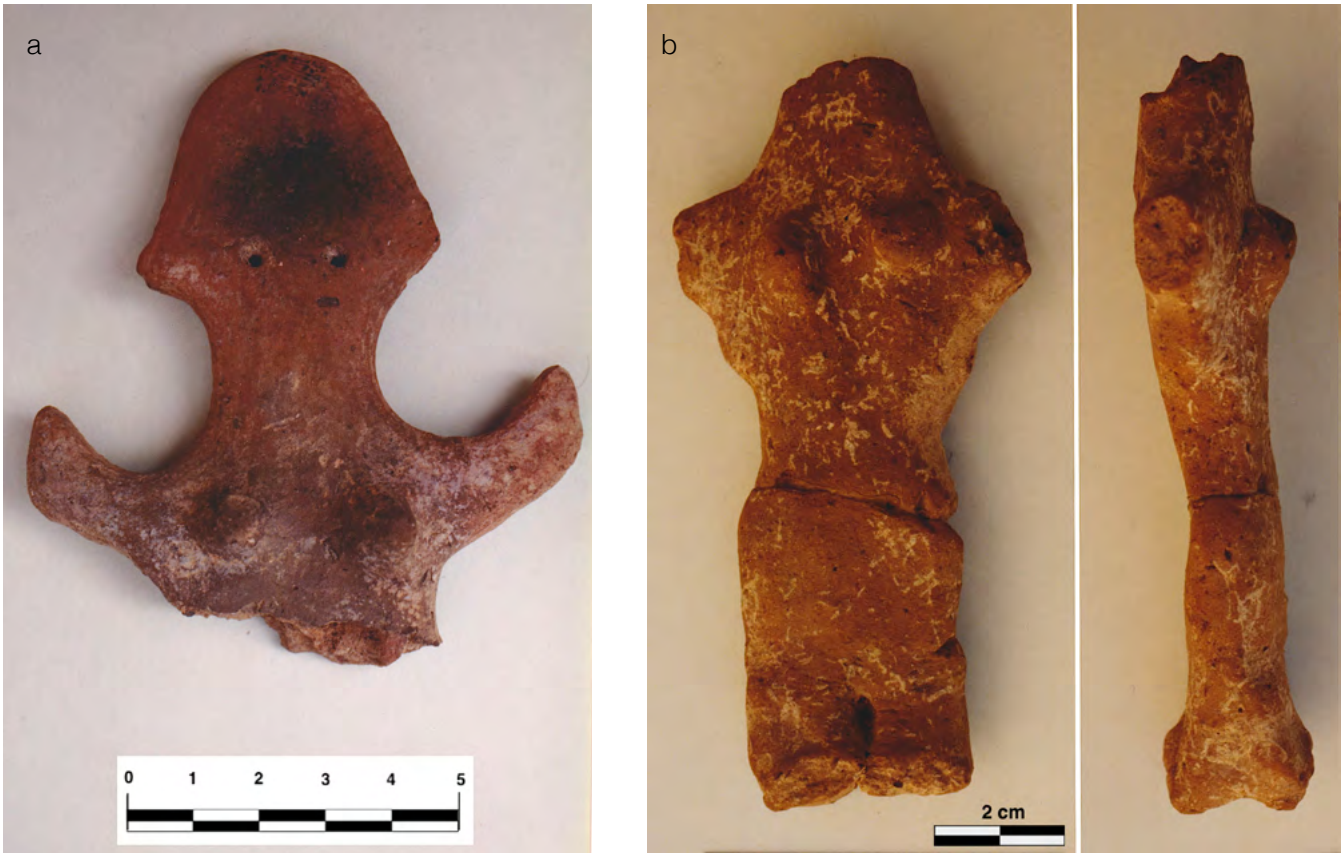


Fig. 7a–b. a: Early Bronze Age clay anthropomorphic head and torso of fragmentary figurine from Thermi (Lesbos); b: Early Bronze Age clay anthropomorphic figurine body (head missing) from Thermi (Lesbos) (front and side view).

Fig. 8. Early Bronze Age bone anthropomorphic figurines/spatulae from Poliochni (front and back view).

space or 'interact' with other figurative representations.

Long, rowed ship models of the Early Bronze Age show proportions of c. 1:12 width/length (Fig. 9) (Thermi: Marangou, 1996b). Clay and metal ship models are frequently attested in Crete and the Cyclades, where they were mainly found in funerary and rarely in domestic contexts (Wedde, 2000, pp. 307–308, figs. 101–108). Ships are also represented in two dimensions on stone engravings ('sanctuary' of Korphi t'Aroniou: Doumas, 1965) and as linear, mostly incised representations on several clay 'frying pans' and other pottery sherds, mainly from Cycladic burials (Wedde, 2000, pp. 313–315, figs. 401–422).

A detailed study by L. Basch based on the comparison between the Neolithic Tsangli model (Fig. 5) (Marangou, 1991a), a Final Neolithic (?) (Basch, 2017, figs. 7.3–7.6) and an Early Bronze Age (?) (Basch, 2017, fig. 7.1) model from the Acropolis of Athens, as well as the Early Bronze Age Cycladic types may show the transition from simpler Neolithic watercrafts to more complex Early Bronze Age vessels. Whereas the earlier watercrafts seem to have been mainly used for inland (exceptionally maritime, see below) navigation, the later examples would have required specialised shipbuilders and maritime navigators.

In the Early Bronze Age, micrographic tools were much more common, particularly the ones made of metal, yet it is difficult to distinguish small dimensioned operational metal tools from 'miniature' ones which did not serve their original purpose. Very small tools may have been used for fine work (Marangou, 1991b; Marangou, 2001b). The artefacts considered 'miniatures' by their discoverers are much smaller than ordinary metal tools belonging to the same or a similar type. Compared to the originals, they are produced in a size ratio of 2:3 to 2:5 (Marangou, 1991b).

Fig. 9. Early Bronze Age clay ship model from Thermi (Lesbos).

MAKERS AND MANUFACTURE

Besides the diversity in size, differences in production processes, a variety of manufacturers, both experts and apprentices, must be assumed in the Neolithic. Some clay miniatures had been modelled and fired with skill, even richly decorated by connoisseurs, while others, sometimes – not always – of smaller size, had been made in a clumsy manner, apparently by non-experts. Poorly made, unsuccessfully executed examples of standard types and well-modelled pieces of workmanship, carefully decorated with complex patterns, possibly imposed by 'rules', are attested on the same site (Dikili Tash: Marangou, 2019, pp. 92, 122, 141, 173). Relatively large anthropomorphic figurines bore incisions (Fig. 10a) (Marangou, 1997b, p. 234; Marangou, 2019, p. 91), which served as auxiliary markings for the application of plastic details, such as arms. Whereas larger ones may also be poorly fired, smaller ones could be meticulously decorated either by an expert (Marangou, 2019, p. 92, pl. 81, no. M 1219) or by an inexperienced maker (Fig. 10b) (Marangou, 2019, p. 92, pl. 78, nos. M 196, M 219, pl. F): independently of their size, some figures are made clumsily, others rather expertly. Indeed, it did not necessarily have to be the very small figurines that were made by novices.

Fig. 10a. Late Neolithic clay female figurine with incisions-guides for the application of arms, from Dhimitra (front and side view).

Fig. 10b. Late Neolithic clay decorated figurines from Dikili Tash, showing an expert (left) and a 'novice' (right) maker.

As already mentioned, small, undecorated anthropomorphic figurines were found together with larger, decorated ones and miniature house equipment inside vases or house models. Such ensembles could not have been toys made by children (see Moses, 2015, contesting the interpretation of Catahöyük figurines as toys). This hypothesis seems also highly improbable in the exceptional case of the very poorly made micrographic vases found burnt in incineration tombs of adults (Soufli: Gallis, 1982). Rather, they may have been especially made for instant use in the funerary context.

In Late Neolithic Dikili Tash, among animal figurines of two different types and sizes, the larger, two-headed, heavy ones are roughly made of porous clay containing impurities, even pebbles, while the smaller ones are made of finer clay, show more details and are better fired (as in Fig. 1b). There is however one small example of an unfinished or failed figurine (Marangou, 2019, p. 122).

Fig. 11. Early Bronze Age roughly-made clay micrographic vases from Poliochni.

Learning craft skills can begin early in life, by formal or informal instruction, by observation and imitation, guided by more experienced makers (Sofaer, 2015). Fingerprints of a child up to 10 years of age were found on two micrographic vases and a zoomorphic figurine of the Vinča culture: the well-polished zoomorphic body bearing fingerprints of a child on its backbone suggests that both an adult and a child, an expert and a novice, had worked on the same miniature (Balj, 2017). Rather than just child's play, domestic apprenticeship seems a probable interpretation. However, connoisseurs and apprentices seem to have worked in few Neolithic houses.

There is no conclusive evidence of varying degrees of skill in Early Bronze Age bone figurines, although 'child work' is attested on clay miniature vases (Fig. 11) (Marangou, 1994). With regard to stone artefacts, several Cycladic figurines, including an unfinished one, were found in a Skarkos building. They were associated with residues of marble-processing waste and various tools and pigments, indicating a specific space of specialized manufacture (Marthari, 2017). However, the specialised manufacturers of the figurines did not necessarily have to correspond to the individuals who 'used' them: at Troy, a sherd figurine was found in a stone carver's workshop and a stone one in a deer antler workshop, while at Poliochni (Green Period) a bone figurine was found together with several stone axes (Marangou, 1997a; Marangou, 2001b; Marangou, 2013). Working stone and bone required specialised technological knowledge, which may be evidenced in particular by the miniature metal tools (Marangou, 1991b). The discovery of such micrographic metal tools in a few children's tombs opens interesting interpretative directions (Marangou, 1991b) (see below).

COPIES IN THE WORLD OF THE ORIGINALS: SYMBOLISM

Precise information of the primary archaeological contexts of the Neolithic figurines and models is not very common. Neolithic clay figurines and models are mostly found in domestic, rather than in funerary contexts, and seem to have been related to daily activities. Micrographic, closed vases, sometimes containing seeds or carbonized wood, thus 'functional' in a sense, as well as anthropomorphic figurines were connected to food preparation and storage, or to whorls and weaving equipment, i.e. to work areas that are considered 'female' (Marangou, 2001b; Marangou, 2020). Decorated micrographic vases and figurines were found with jewellery (Marangou, 2001b). A relationship between anthropomorphic figurines and textiles is also indicated by specific imprints on clay bodies of some *acrolithic* examples (Marangou, 2020, figs. 10a–c). Hence, the miniatures' domestic reference hints at everyday matters, while they could also be associated to ritual/magic concerns. The connection of miniatures to ovens/hearths and places related to fire in houses or yards in general is attested in several cases. This suggests that miniatures were associated either to a family or household, or to a group of households sharing a common oven or heating structure (Marangou, 2001b; Nikolaidou, 2003).

Composite works, such as permanently seated human adults with infants, double-headed animals, or open house models with modelled together platforms, ovens and even anthropomorphic figurines, could represent performative scenes, imaginary or real, which were conceived as an entity and presented in a fixed setting (Marangou, 2018a). There are also syntheses in sets or 'scenes', their distinctly modelled associated movable elements being occasionally grouped together and combined. The well-known 'cult scene' from Ovčarovo IX, consisting of 26 miniature objects, anthropomorphic 'half-seated', mainly female figurines, miniature vessels, furniture and possibly musical instruments and elements of interior screens/partitions (?), was found inside a building, underneath the fragmented remains of a large, unfired clay model of a building, covering an area of c. 50 x 50 cm (Todorova et al., 1983, p. 91; Todorova, 2003, pp. 287, 323, fig. 16A). The latter was probably a building model without a floor of similar dimensions: it could originally have covered all the miniatures (see above).

Groups of figurines, mainly female half-seated ones, together with miniature furniture and other modelled items, placed on a bench, on the floor, by the oven, could have been connected to large house models (e.g.

Ovčarovo), although not necessarily. They could not represent a family, but rather a larger social group (the larger figurines perhaps representing adults, and the smaller, younger individuals), perhaps from a whole settlement (Marangou, 1996a). This also applies to the large group of 46 asexual, or possibly male figurines, found in front of an oven at the site of Stubline. The figurines stand, holding 11 preserved tools (Crnobrja et al., 2009; Crnobrja, 2011). A possible concurrence of oven models and anthropomorphic, half-seated figurines of proportionate dimensions may also be evidenced at Dikili Tash (Marangou, 2019, p. 149). Separately modelled anthropomorphic figures and furniture miniatures were deliberately associated; there is also evidence of the simultaneous manufacture of a seat and an autonomous figurine: at Kodzadermen, a miniature seat's backrest has even left imprints on an anthropomorphic figurine's back when the material was still soft (Popov, 1918, p. 138, fig. 143; Gaul, 1948, p. 134, pl. LXIII, no. 1).

Besides models of furnished and inhabited house interiors or of their elements, occasionally flocks of miniature domestic animals are found (Marangou, 1996a). An exceptional example is known from the site of Ovčarovo, House 10, where in front of a real oven a miniature flock was found in the vicinity of (not inside) a house model (Todorova, 1982; Trenner, 2010, p. 153, no. 43). It is feasible that real animals were kept in residential buildings or in courtyards (Marangou, 1992, p. 224; Marangou, 1996a). Although both main categories of zoomorphic figurines (including a small, perforated one) from Dikili Tash are standing stably (as in Fig. 1b), their obvious difference in size and treatment could imply that they were used differently. Whereas the smaller ones may be movable and/or occur in groups, the larger and heavy ones appear rather isolated and static.

As suggested by models of special structures ('altars': Hansen et al., 2011, p. 94, figs. 73–74), real screens/partitions may have been used in interior spaces. Sets and scenes of miniatures may have been covered by a house model or kept inside a vase, yet the 'concealment' of 'cult scenes' could also have happened by perishable means, including possible textile or wicker hanging fixtures (see Marangou, 2020), in particular if the miniatures' display was only occasional (Marangou, 1996a; see also prints of textiles on real size clay items: Marangou, 2020, with further references). Such real partitions could be decorated with a *bucranium*, as is for instance indicated by the clay miniature 'screen' from Dhimitra (Fig. 4).

Surprisingly, boat models were also found close to an oven, same as figurines and micrographic vases (Marangou, 1996b; 2001a, with further references). This means that a domestic environment may constitute the context even of micrographic watercrafts. It is therefore possible that miniatures did not necessarily or were not supposed to depict their prototypes in real domestic interiors, but that they could also have rather constituted their symbolic representations connected to the domestic sphere (Marangou, 2018b).

At the end of their life cycle, the miniatures seem to have been broken since only separate fragments are usually found (see Chapman, 2000 on fragmentation, and Biehl, 2003 on 'ritual destruction'). However, in the Late Neolithic Sarakinos cave, a large concentration of figurines was deposited in an area near the entrance, while at the same time numerous other figurines were found on the different floors, together with complete deer antlers, suggesting ritualized depositional behaviour (Sampson & Mastrogiannopoulou, 2018). Interestingly, in the Late Neolithic Lion's Cave (Attica), clay figurines were found grouped together, while stone specimens seem to have been intentionally placed in isolation under stone constructions of activity areas. Both categories were associated with other artefacts (Karali et al. 2018, p. 280).

Miniatures rarely occur in funerary contexts, though examples made of valuable materials (gold) have been found in rich burials containing 'precious' goods (Varna cemetery: Fol & Lichardus, 1988). On the other hand, used miniature bowls or 'feeding bottles' were included in some children's and women's (mothers?) tombs (Marangou, 1992, p. 229; Marangou, 2001b), and poorly made miniature vases were found in adult tombs (see above).

It seems as if in the domestic interiors of the Neolithic, presumably symbolic objects and everyday (female) activities were tightly linked, in both the tangible and the imaginary sphere (Marangou, 2001b; Marangou, 2013). The role of (special?) women in the ritual domain may have been important (Marangou, 2020). However, miniatures are not found in every house and hence might not have constituted an inherent element of every household or social group (Marangou, 1996a).

The general characteristic of Early Bronze Age miniatures consists of diverse contexts and the absence of interrelations. Different concrete uses of iconographic categories seem probable: humans, animals, vases and tools do not occur as combined ensembles, but rather they are found individually, in some cases also in small groups of the same theme category. In fact, when (rarely) attested on the same site, anthropomorphic and zoomorphic figurines are not found in the same house, at least never in the same room (Marangou, 1997a). Clay zoomorphic figurines, or micrographic closed vases, sometimes containing seeds, and exceptionally anthropomorphic figurines are found in contexts related to food storage, mainly in Southern Greece (Marangou, 2001b). Their deliberate separation also manifests in the fact that zoomorphic figurines are found in *bothroi* filled with common household waste, organic residues, tools, while anthropomorphic figurines are found in *bothroi* containing jewellery and pigments, ochre and azurite (Marangou, 1997a). The latter correlation can also be observed in Early Cycladic tombs.

Anthropomorphic figurines are found mostly isolated. They are found in few houses, only exceptionally may they occur in groups or related to ovens (Marangou, 1997a; on Skarkos see Marthari, 2017). More often, they

are found in open areas of settlements (Marthari, 2017), as well as in streets, in particular outside houses containing figurines (Thermi: Marangou, 1997a). They are also associated with funerary or ritual contexts. In fact, anthropomorphic figurines are found, both whole and fragmented, in some Cycladic graves that do not appear to be associated with figurine manufacturers. This corresponds to the fact that figurines of different raw materials are attested in spaces of manufacturers working on other materials, as mentioned earlier. Ritual deposition of marble figurines, all deliberately broken, has been proposed by D. E. Wilson (2017). The relevant specimens were found as foundation deposits of houses, in addition to their discovery as offerings in burial or sanctuary contexts. Ritual treatment of anthropomorphic figurines is also attested from finds in walls or under house floors in the Northeastern Aegean (Hüryilmaz, 1999).

In contrast to large Neolithic figures related to houses/buildings, either at the entrance, or fixed on walls or placed near ovens, Early Bronze Age anthropomorphic *stelae* are found embedded in settlement enclosures or fortifications, sometimes even near the entrance (Thermi, Troy: Marangou, 2001b, with further references), including in secondary use (Skala Soteros: Koukouli-Chrysanthaki, 1987, p. 391). These contexts suggest the objects' involvement in collective rituals, including as foundation offerings. Large figures and *stelae* usually refer to open, non-built, public spaces, crossroads and streets (Troy, Thermi: Marangou, 1997a). Stone slabs with cavities on paved roads (Poliochni: Marangou, 2001b) might indicate collective game or rituals. Unlike the Neolithic figurines which were designed to be viewed from all sides, Early Bronze Age anthropomorphic figurines – flat, plank-like, standard size ones or larger examples similar to *stelae* – do not stand stably. In particular large examples, appropriate for open public spaces, were leaned against a wall, embedded in it, or anchored into the ground. They could be seen from a distance by passers-by or assembled groups and could have functioned as signals of a specific location or area. *Baetyls* which may have represented animate beings are rarely found. They were originally placed in open, uncovered spaces, such as for instance in a yard at Eutresis (Marangou, 1992, p. 233 with references) or in a paved court at Poliochni (Cultraro, 1997).

As mentioned above, already in the Final Neolithic, symbolic objects and representations are often found near the entrance or on the enclosures of coastal settlements, perhaps for the 'protection' of the inhabitants or to 'demonstrate power': the two-dimensional ship representations at Strophilas are mainly carved in public areas, such as in front of the settlement enclosure, most of them placed opposite of the entrance, perhaps marking the access to the settlement, while numerous other ships are depicted on the exterior façade of the enclosure (Televantou, 2018, p. 391). In Final Neolithic funerary contexts, such as at Kefalas (Kea: Coleman, 1977), the anthropomorphic figurines are attested in a central area of both sectors of

the cemetery, where they were placed outside of graves, including near the earliest grave. The cemetery is located at the base of the cape, and the area in which the figurines were placed is near the access to the settlement of Kefalas. As has also been suggested by C. Broodbank (2000), anthropomorphic figurines are found in domestic contexts of the Late Neolithic, whereas in the Final Neolithic they seem to have been preferably placed in cemeteries, outside the graves. In the Early Bronze Age, anthropomorphic figurines were deposited inside the graves.

In the Early Bronze Age, models of the artificial environment do not contradict the context of figurines: they are rarely associated with the domestic sphere, but rather indicate their involvement in exterior public activities and collective, as well as funerary practices. Certain thematic categories are also connected to specialized tasks and possibly clusters of population (Marangou, 2018b). Two-dimensional representations of seacrafts may also have funerary associations, such as the incised examples on the Syros 'frying-pans' (Broodbank, 1989; Wedde, 2000), but are also attested in outdoor, public spaces (Doumas, 1965, p. 53, fig. 7, pl. 37a). An Early Bronze Age ship model (Fig. 9) has been found in a street in Thermi, in front of most important houses which contained figurines (Marangou, 1996b). Yet, ship models were also found in Cycladic tombs. Such funerary associations with seaworthy vessels might imply the dead's related specialized activity or a similar connection.

In the Early Bronze Age, micrographic stone and clay axes are numerous, while miniature metal tools also occur on sites with evidence of metallurgical activities. Micrographic vases, in particular vases related to liquids (jugs, bowls and 'feeding bottles'), are not only attested in houses, but also in public outdoor spaces and in areas around wells (Marangou, 1991b; Marangou, 2001b), as well as in graves of (usually not too young) children. Some miniature 'feeding bottles' have also been found in tombs of women (mothers?), and stone miniature vases containing pigments in adult tombs (Marangou, 2001b, with further references).

Children could have been assigned outdoor tasks, such as herding and tending animals, or helping with water procurement. In select Early Bronze Age tombs of children who had died after the age of first dentition, micrographic clay, open vases and, more rarely, micrographic copper or lead tools were found, in cemeteries where some adults had also received a differentiated treatment in death (Devnja: see references in Marangou, 1991b). While the functionality of these miniature tools cannot be excluded, significantly the children's graves did not contain anthropomorphic figurines, or 'dolls'. On the other hand, sometimes female figurines and whorls had been given to deceased pre-adolescent or adolescent girls, in the Final Neolithic (Gimbutas, 1989, p. 199, fig. 312). Children may have become efficient and productive community members after reaching a certain age, a life stage, having entered or achieved apprenticeship or completed initiation

(including initiation to a craft), without excluding external 'work' activities (Marangou, 1991b; Marangou, 2001b). At least some children can also be associated to symbolic practices.

Therefore, the symbolic charge and concrete use of Early Bronze Age miniatures is different from the Neolithic ones: the choice of the depicted themes, their associations and combinations change. The symbolism and contexts of the miniature objects point to a collective rather than household/family-connection. Furthermore, we observe a shift towards their involvement in communal practices as well as public gatherings in outdoor spaces, but also towards their use in the funerary sphere, as observed in some burials. Finally, the miniatures, in particular in regard to certain thematic categories, imply a connection with specialised activities.

CONCLUSIONS

The prehistoric miniatures under discussion did not necessarily have the same concrete function, even when referring to the same prototype. Taking into consideration the factors of the miniatures' practical usability vs. unusability, flexible combinability vs. fixed composition, moveability vs. permanently or temporarily fixed placement, they were part of a system. On the one hand, they could form individual entities, or on the other hand change their components and *mise-en-scène.*

Flexible combinations among Neolithic clay miniatures were possible since they were usually stable and more or less proportionate in size. They are normally connected to domestic contexts associated to 'female activities', including in limited spaces called 'functional', such as inside house models or other containers, including exposed on real-life benches, or by an oven or on the floor. House models could have covered both miniature 'scenes' and valuable objects. Rare large building models with more than one roof on top of the same base might also represent clusters of houses, kin groups, or clans. Groups of miniatures were found in a few houses or close to some ovens, including in yards. However, it is unknown if they referred to just one family, or rather to a small group of households, a social group, or special persons from the whole settlement. In any case, domestic apprenticeship and manufacture by some families, households or individuals seems probable. On the other hand, large, immovable figures were fixed on architectural elements in or outside particular, 'special' (common?) buildings.

The 'interacting' (in practical reality) of different Neolithic micrographic categories could only be seen when entering buildings and probably not constantly. Only a few persons might have been aware of the hidden miniatures in storage pits or vessels. Possible 'ritual specialists' would have known the required combination of the mobile and/or fixed miniatures, the

respective narrative scenario as well as its performative re-enactment (Marangou, 2020). Large, immovable figures were sometimes connected to particular closed spaces, to which access was possibly restricted to special individuals or groups. The miniatures and their meanings seem in accordance with everyday concerns, i.e. the household, livestock, subsistence, survival and probably with the transmission of collective beliefs and narratives.

In the Early Bronze Age, bone, stone, metal and clay were used for anthropomorphic figurines. Zoomorphic figurines were mostly manufactured in clay. Miniature vases from clay increased, and micrographic tools, now including metal ones, became much more frequent. Miniature furniture or houses were rather exceptional. Whereas anthropomorphic figurines, mostly of stone, were used in funerary and rarely in domestic-ritual contexts, a turn towards the public sphere and specialization, if not individuality, is suggested. Micrographic human beings do not seem to have interacted with other miniatures. Large anthropomorphic figures or *stelae* as well as ship representations were exposed in open areas. A few closed micrographic vases and zoomorphic figurines were connected to storage. On the other hand, miniature open vases were possibly related to children in open areas. In some cases, they were found together with miniature metal tools in children's graves, probably indicating young individuals of a distinguished social group, or of a gender or specific biological stage, hinting at an acquired special skill, a specialized craft or an expertise.

In conclusion to this overview, the choice of themes and transfer processes was intentional and connected to both practical functions and symbolic meanings – domestic or public, profane, ritual or funerary, related or unrelated to a specific individual, family, group, gender, age or specialization. If miniatures reflect either a Neolithic dwelling filled with household gear and operated by a particular family, some households, a social group, a particular gender, or ritual specialists, or Early Bronze Age public, communal activities of guilds or groups or individuals of special, including ritual, status or expertise, we still have to bear in mind that the words are lost and that the understanding of prehistoric symbols can never be absolutely objective, nor conclusive: narration, ritual, apprenticeship and even play could have resulted in similar miniature representations, referring to a 'looking-glass world'.

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BIBLIOGRAPHY

Alram-Stern, E. (2022). Figurines, House Model and Ritual Vessels. In E. Alram-Stern, K. Gallis & G. Toufexis (Eds.), *Platia Magoula Zarkou. The Neolithic Period. Environment, Stratigraphy and Architecture, Chronology, Tools, Figurines and Ornaments* (pp. 453–567). Austrian Academy of Sciences Press. https://doi.org/10.1553/978OEAW90363

Balj, L. (2017). Children's fingerprints on the Vinča culture findings. *Glasnik, Journal of the Serbian Archaeological Society,* 33, 149–173.

Basch, L. (1987). *Le Musée imaginaire de la marine antique.* Institut hellénique pour la préservation de la tradition nautique.

Basch, L. (2017). Two Athenian Ship Models of the Third Millenium B.C. In F. M. Hocker & C. A. Ward (Eds.), *The philosophy of shipbuilding. Conceptual Approaches to the study of wooden ships* (pp. 103–111). Texas A & M University Press.

Biehl, P. F. (2003). *Studien zum Symbolgut des Neolithikums und der Kupferzeit in Südosteuropa.* Dr. Rudolf Habelt GmbH.

Broodbank, C. (1989). The longboat and Society in the Cyclades in the Keros-Syros Culture. *American Journal of Archaeology*, 93, 319–337. https://doi.org/10.2307/505584

Broodbank, C. (2000). *An Island Archaeology of the Early Cyclades.* Cambridge University Press.

Burdo, N., Videiko, M., Chapman, J., & Gaydarska, B. (2013). Houses in the Archaeology of the Tripillia-Cucuteni Groups. In D. Hofmann & J. Smyth (Eds.), *Tracking the Neolihthic House in Europe. Sedentism, Architecture and Practice* (pp. 95–115). Springer. https://doi.org/10.1007/978-1-4614-5289-8_5

Chapman, J. (1981). *The Vinča culture of South-East Europe. Studies in Chronology, Economy and Society.* BAR Publishing.

Chapman, J. (2000). *Fragmentation in Archaeology. People, Places and Broken Objects in the Prehistory of South Eastern Europe.* Routledge.

Coleman, J. E. (1977). *Kephala. A Late Neolithic settlement and cemetery. Keos Vol. 1. American School of Classical Studies* at Athens.

Crnobrnja, A. N. (2011). Arrangement of Vinča culture figurines: a study of social structure and organization. *Documenta Praehistorica,* 38, 131–147. https://doi.org/10.4312/dp.38.11

Crnobrnja, A., Simić, Z., & Janković, M. (2009). Late Vinča culture settlement at Crkvine in Stubline. Household organization and urbanization in the Late Vinča culture period. *Starinar, 49,* 9–25.

Cultraro, M. (1997). *The stone baetyl and the pit: glimpses into a North Aegean Bronze Age ritual* [Abstract conference contribution]. European Association of Archaeologists, Third Annual Meeting, Ravenna, Session I.11B. Abstracts, 111.

Doumas, C. (1965). Κορφή τ' Αρωνιού. *Archaiologikon Deltion,* 20, 41–64.

Dumitrescu, H. (1968). Un modèle de sanctuaire découvert dans la station énéolithique de Cascioarele. *Dacia, N. S.* 12, 381–394.

Elster, E. S., & Nikolaidou, M. (2003). Paralipomena and other plastic forms. In E. S. Elster & C. Renfrew (Eds.), *Prehistoric Sitagroi: Excavations in Northeastern Greece, 1968–1970: Vol. 2. The final report* (pp. 421–442). Cotsen Institute of Archaeology Press at UCLA. https://doi.org/10.2307/j.ctvhhhftq.14

Filaniotou, O. (2019). Early Bronze Age schematic figurines from Thermi on Lesbos. In M. Marthari, C. Renfrew & M. J. Boyd (Eds.), *Beyond the Cyclades. Early Cycladic sculpture in context from mainland Greece, the North and the East Aegean* (pp. 142–151). Oxbow Books. https://doi.org/10.2307/j.ctv138ws9f.24

Fol, A., & Lichardus, J. (Eds.). (1988). *Macht, Herrschaft und Gold. Das Gräberfeld von Varna (Bulgarien) und die Anfänge einer neuen europäischen Zivilisation.* Moderne Galerie des Saarland-Museums.

Gallis, K. (1982). *Καύσεις νεκρών από τη νεολιθική εποχή στη Θεσσαλία*. Ταμείο Αρχαιολογικών πόρων και Απαλλοτριώσεων.

Gallis, K. (1985). A Late Neolithic foundation offering from Thessaly. *Antiquity, 59*(225), 20–24, pls. XIV–XVI. https://doi.org/10.1017/S0003598X00056532

Gallis, K. (1996). Κεντρική και Δυτική Θεσσαλία. In G. A. Papathanasopoulos (Ed.), *Neolithic Culture in Greece* [Exhibition catalogue] (pp. 61–66). Nicholas P. Goulandris Foundation; Museum of Cycladic Art.

Gallis, K. (2022). Introduction: Chronicle of Excavations and Research 1974–1990. In Alram- E. Stern, K. Gallis & G. Toufexis (Eds.), *Platia Magoula Zarkou. The Neolithic Period. Environment, Stratigraphy and Architecture, Chronology, Tools, Figurines and Ornaments* (pp. 19–34). Austrian Academy of Sciences. https://doi.org/10.1553/978OEAW90363

Galović, R. (1959). *Predionica, neolitsko naselje kod Pristina.* Muzej Kosova I Metohije.

Gaul, J. H. (1948). *The Neolithic Period in Bulgaria. Early food producing cultures in Eastern Europe.* Peabody Museum of Harvard University.

Gheorghiu, D. (2009). The symbolic construction and representation of the dwelt space in the Lower Danube Chalcolithic (6th Millenium BC). In F. Djindjian & L. Oosterbeek (Eds.), *Symbolic Spaces in Prehistoric Art. Territories, travels and site locations* (pp. 113–117). Archaeopress; BAR Publishing. https://doi.org/10.30861/9781407305332

Gimbutas, M. (1976). *Neolithic Macedonia, as reflected by excavations at Anza, Southeast Yougoslavia.* Institute of Archaeology, University of California.

Gimbutas, M. (1984). T*he goddesses and Gods of Old Europe 6500–3500 BC. Myths and cult images.* Thames and Hudson.

Gimbutas, M. (1989). *The Language of the Goddess. Unearthing the hidden symbols of western civilization.* Thames and Hudson.

Gusev, S. A. (1995). Hausmodelle der Tripolje-Kultur. *Prähistorische Zeitschrift,* 70(2), 175–189.

Hansen, S., Toderaş, M., Reingruber, A., Nowacki, D., Nørgaard, H., Spânu, D., & Wunderlich, J. (2011). Die kupferzeitliche Siedlung Pietrele an der Unteren Donau. Bericht über die Ausgrabungen und geomorphologischen Untersuchungen im Sommer 2010. *Eurasia Antiqua,* 17, 45–120.

Hansen, S., Toderaş, M., & Wunderlich, J. (2012). Pietrele, Măgura Gorgana: *Eine kupferzeitliche Siedlung an der Unteren Donau. In W. Raeck & D. Steuernagel (Eds.), Das Gebaute und das Gedachte. Siedlungsform, Architektur und Gesellschaft in prähistorischen und antiken Kulturen* (pp. 85–97, pls. 2–10). Dr. Rudolf Habelt GmbH.

Höckmann, O. (1996). Schiffahrt in der Steinzeit. In M. Porumb (Ed.), *Omaggio a Dinu Adameşteanu* (pp. 25–60). Clusium.

Hondroyianni-Metoki, A. (2017). Η ειδωλοπλαστική στην περιοχή Κοζάνης. In Π. Αδάμ-Βελένη, Η. Ζωγράφου, Α. Κουκουβού, Ου. Πάλλη & Ε. Στεφανή (Eds.), Ειδώλιο. Ένας μικρόκοσμος από πηλό (pp. 25–27). Archaeological Museum.

Hüryilmaz, H. (1999). Eine Gruppe frühbronzezeitlicher Menschfigurinen aus Yenibademli Höyük auf Gökçeada (Imbros). *Studia Troica,* 9, 475–488.

Jovanović, B., & Glisić, J. (1960). Eneolitsko naselje na Kormadinu. *Starinar*, N. S. 11, 113–142.

Karali, L., Mavridis, F., & Lambropoulos, D. (2018). Lion's Cave, Hymettus Mountain, Attica: Figurines, structures and material culture associations. In S. Dietz, F. Mavridis, Ž. Tankosić & T. Takaoğlu (Eds.), *Communities in Transition. The Circum-Aegean Area During the 5th and 4th Millennia BC* (pp. 269–282). Oxbow Books. https://doi.org/10.2307/j.ctvh1dtp5.33

Koukouli-Chrysantaki, H. (1987). Οικισμός της Πρώιμης Εποχής Χαλκού στη Σκάλα Σωτήρος Θάσου. *ΑΕΜΘ*, *1,* 391–406.

Koukouli-Chrysanthaki, C., Todorova, H., Aslanis, I., Vajsov, I., & Valla, M. (2007). Promachon-Topolnica. A Greek-Bulgarian Archaeological Project. In H. Todorova, M. Stefanovich & G. Ivanov (Eds.), *The Struma/Strymon River Valley in Prehistory. Proceedings of the International Symposium Strymon Praehistoricus. Kjustendil-Blagoevgrad (Bulgaria) and Serres-Amphipolis (Greece), 27.09.–01.10.2004* (pp. 43–78). Gerda Henkel Stiftung.

Lazarovici, G., & Lazarovici, C.-M. (2010a). Neo-Eneolithic cult constructions in Southeastern Europe: Building techniques and space management – a brief overview. In D. Gheorghiu (Ed.), *Neolithic and Chalcolithic Archaeology in Eurasia: Building Techniques and Spatial Organization* (pp. 119–127). BAR Publishing. https://doi.org/10.30861/9781407305738

Lazarovici, G., & Lazarovici, C.-M. (2010b). 'Sacred house' and her importance for the reconstruction of the architecture, inner arrangements and the spiritual life. *Prehistoric Studies, Budapest,* 2–19.

Marangou, C. (1991a). Maquettes d'embarcations: Les débuts. In R. Laffineur & L. Basch (Eds.), *Thalassa. Thalassa. L'Egée préhistorique et la mer. Actes de la 3ème Rencontre égéenne Internationale de l'Université de Liège, Station de recherches sous-marines et océanographiques (StaReSO), Calvi, Corse (23–25 avril 1990)* (pp. 21–42, pls. II–IX). Université de Liège.

Marangou, C. (1991b). Social differentiation in the Early Bronze Age: Miniature Metal Tools and Child Burials. *Journal of Mediterranean Studies,* 1(2), 211–225.

Marangou, C. (1992). ΕΙΔΩΛΙΑ. *Figurines et miniatures du Néolithique Récent et du Bronze Ancien en Grèce.* BAR Publishing. https://doi.org/10.30861/9780860547297

Marangou, C. (1994). Μικρογραφικά αγγεία της Πολιόχνης. In Συνέδριο Δημάρχων του Αιγαίου Μύρινα, Λήμνος (Eds.), *Λήμνος Φιλτάτη, Πρακτικά του 1ου Συνεδρίου Δημάρχων του Αιγαίου, Μύρινα Λήμνου 1992* (pp. 47–64).

Marangou, C. (1996a). Assembling, Displaying, and Dissembling Neolithic and Eneolithic Figurines and Models. *Journal of European Archaeology,* 4, 177–202. https://doi.org/10.1179/096576696800688169

Marangou, C. (1996b). From Middle Neolithic to Early Bronze Age: consideration of early boat models. In H. Tzalas (Ed.), *Tropis IV. 4th International Symposium on Ship Construction in Antiquity. Athens 1991. Proceedings* (pp. 277–293). Hellenic Institute for the Preservation of Nautical Tradition.

Marangou, C. (1997a). Anthropomorphic and zoomorphic figurines of the Early Bronze Age in the North Aegean. In C. Doumas & V. La Rosa (Eds.), *Poliochni e l'Antica Età des Bronzo nell'Egeo Settentrionale* (pp. 649–665). Scuola Archeologica Italiana di Atene; University of Athens.

Marangou, C. (1997b). Neolithic Micrography: Miniature modelling at Dimitra. In D. Grammenos (Ed.), *Neolithiki Makedonia* (pp. 227–265). Tameio Archaiologikon Poron kai Apallotrioseon.

Marangou, C. (2000). Neolithic figurines from Northern Greece. In S. Hiller & V. Nikolov (Eds.), Karanovo: Vol. 3. *Beiträge zum Neolithikum in Südosteuropa* (pp. 229–244). Phoibos Verlag.

Marangou, C. (2001a). Neolithic watercraft: Evidence from Northern Greek wetlands. In B. A. Purdy (Ed.), *Enduring Records. The Environmental and Cultural Heritage of Wetlands* (pp. 191–205). Oxbow Books.

Marangou, C. (2001b). Sacred or secular places and the ambiguous evidence of prehistoric rituals. In P. F. Biehl, F. Bertemes & H. Meller (Eds.), *The Archaeology of Cult and Religion* (pp. 139–160). Archaeolingua.

Marangou, C. (2001c). Neolithic craft: evidence about boat types and uses. In Y. *Bassiakos,* E. Aloupi & Y. Facorellis (Eds.), *Archaeometry Issues in Greek Prehistory and Antiquity* (pp. 737–751). Hellenic Society of Archaeometry; Society of Messenian Archaeological Studies.

Marangou, C. (2009). Gendered/sexed and sexless beings in prehistory: readings of the invisible gender. In K. Kopaka (Ed.), *Fylo. Engendering prehistoric 'stratigraphies' in the Aegean and the Mediterranean* (pp. 81–95, pls. XI–XIV). Université de Liège, Histoire de l'art et archéologie de la Grèce antique; University of Texas at Austin, Program in Aegean Scripts and Prehistory.

Marangou, C. (2010). Dissentions: Magnitude, Usability and the Oddness of Neolithic Figures. In D. Gheorghiu & A. Cyphers (Eds.), *Anthropomorphic and Zoomorphic Miniature Figures in Eurasia, Africa and Meso-America. Morphology, materiality, technology, function and context* (pp. 17–24). Archaeopress; BAR Publishing. https://doi.org/10.30861/9781407306797

Marangou, C. (2013). Ειδωλοπλαστική (Νεολιθική εποχή-Πρώϊμη Χαλκοκρατία). In Δ. Γραμμένος (Ed.), *Μελέτες για την Προϊστορική Μακεδονία, Προ-ιστορήματα* (pp. 1–39). Makedonika.

Marangou, C. (2018a). Illustrating performance: Realism versus pretence in Neolithic Iconography. In S. Țurcanu & C.-E. Ursu (Eds.), *Materiality and Identity in Pre- and Protohistoric Europe. Homage to Cornelia-Magda Lazarovici* (pp. 193–215). Karl A. Romstorfer Publishing House.

Marangou, C. (2018b). Beyond and around humans – *eidolia* of others: miniatures from the natural and artificial environment (Neolithic period–Early Bronze Age). In Archaeological Museum of Thessaloniki (Ed.), *Figurines in northern Greece from Prehistory until Roman times. Abstracts. International Scientific Symposium. 11–13.10.2018* [Abstract conference contribution] (pp. 27–28). Archaeological Museum of Thessaloniki. [Paper submitted for publication]

Marangou, C. (2019). Les figurines et les maquettes du Néolithique Moyen au Bronze Récent. In R. Treuil (Ed.), *Dikili Tash. Village préhistorique de Macédoine Orientale. I. Fouilles de Jean Deshayes (1961–1975): Vol. 3* (pp. 57–176, pls. 59–91, F–G). Ecole française d'Athènes. https://doi.org/10.4000/books.efa.5532

Marangou, C. (2020). Neolithic anthropomorphic figurines: clothing, dress and costume. *Revue de l'Archéologie du Vêtement et du Costume, 1,* 27–56.

Marangou, C., & Grammenos, D. (2005). 'Monumentality', functionality, animality: On an unusual prehistoric clay head from central Macedonia, Greece, and its implications. *The Annual of the British School at Athens, 100,* 1–40. https://doi.org/10.1017/S0068245400021134

Marangou, C., & Stern, B. (2009). Neolithic zoomorphic vessels from Eastern Macedonia, Greece: *Issues of Function. Archaeometry, 51*(3), 397–412. https://doi.org/10.1111/j.1475-4754.2008.00405.x

Marijanović, B. (2015). Minijatura iz Smilčića. A miniature from Smilčić. *Archaeologia Adriatica, 9*(1), 21–37. https://doi.org/10.15291/archeo.1181

Marinescu-Bîlcu, S. (1981). *Tîrpesti. From Prehistory to History in Eastern Romania.* BAR Publishing. https://doi.org/10.30861/9780860541257

Marthari, M. (2017). Cycladic figurines in settlements: the case of the major EC II settlement at Skarkos on Ios. In M. Marthari, C. Renfrew, & M. J. Boyd (Eds.), *Early Cycladic Sculpture in Context* (pp. 119–164). Oxbow Books.

Moses, S. K. (2015). From playthings to sacred objects? Household enculturation rituals, figurines, and plastering activities at Neolithic Çatalhöyük, Turkey. In G. Coşkunsu (Ed.), *The Archaeology of Childhood. Interdisciplinary Perspectives on an Archaeological Enigma* (pp. 205–216). State University of New York Press.

Nikolaidou, M. (2003). Miniatures and models. In E. S. Elster & C. Renfrew (Eds.), *Prehistoric Sitagroi: Excavations in Northeast Greece, 1968–1970: Vol. 2.* The Final Report (pp. 431–442). Cotsen Institute of Archaeology Press at UCLA. https://doi.org/10.2307/j.ctvhhhftq.14

Papathanasopoulos, G. A. (Ed.). (1996). *Neolithic Culture in Greece* [Exhibition catalogue]. Nicholas P. Goulandris Foundation; Museum of Cycladic Art.

Petrovic, J. (1990). Researches of Gomolava. In M. Höneisen (Ed.), *Die ersten Bauern. Pfahlbaufunde Europas. Forschungsberichte zur Ausstellung im Schweizerischen Landesmuseum Zürich und zum Erlebnispark: Vol. 2. Einführung, Balkan und angrenzende Regionen der Schweiz* (pp. 99–109). Schweizerisches Landesmuseum Zürich.

Popov, R. (1918). Kodza-Dermenskata Mogyla pri gr. Shumen. *Bulletin de la Société Archéologique Bulgare, 6,* 73–155, pl. IV–VI.

Raczky, P., & Anders, A. (1999). Late Neolithic house and oven models from the Tisza region: Problems of interpretation. *Ősrégészeti Levelek,* 1(1), 63–66.

Raduncheva, A. (1991). Kurzer vorläufiger Bericht über die Ausgrabungen in Dolnoslav. In Lichardus, J. (Ed.), *Die Kupferzeit als historische Epoche. Symposium Saarbrücken und Otzenhausen 6.–13.11.1988: Vol. 1* (pp. 107–110). Dr. Rudolf Habelt GmbH.

Renfrew, C., Gimbutas, M., & Elster, E. S. (Eds.) (1986). *Excavations at Sitagroi. A Prehistoric Village in Northeast Greece: Vol. 1.* Institute of Archaeology, University of California.

Rosetti, D. V. (1938). Steinkupferzeitliche Plastik aus einem Wohnhügel bei Bukarest. *Jahrbuch für prähistorische und ethnographische Kunst, 12,* 29–50.

Sampson, A., & Fotiadi, P. (2008). Early Cycladic II–III Finds from Rivari, Melos. In N. Brodie, J. Doole, G. Gavalas & C. Renfrew (Eds.), *Horizon Ορίζων. A colloquium on the prehistory of the Cyclades* (pp. 217–223). McDonald Institute for Archaeological Research.

Sampson, A., & Mastrogiannopoulou, V. (2017). Figurines from the Late Neolithic settlement of Ftelia, Mykonos. In M. Marthari, C. Renfrew, & M. J. Boyd, *Early Cycladic Sculpture in Context* (pp. 30–38). Oxbow Books.

Sampson, A., & Mastrogiannopoulou, V. (2018). Late Neolithic traditions: evidence from Sarakinos cave. In S. Dietz, F. Mavridis, Ž. Tankosić & T. Takaoğlu (Eds.), *Communities in Transition. The Circum-Aegean Area During the 5th and 4th Millennia BC* (pp. 260–268). Oxbow Books. https://doi.org/10.2307/j.ctvh1dtp5.32

Skafida, E. (1996). Nos. 298–309, 311, 324, 326–327, 336, 338–339. In G. A. Papathanassopoulos (Ed.), *Neolithic Culture in Greece*. Nicholas P. Goulandris Foundation; Museum of Cycladic Art.

Sofaer, J. (2015). Bodies and encounters. Seeing invisible children in archaeology. In G. Coskunsu (Ed.), *The Archaeology of Childhood. Interdisciplinary Perspectives on an Archaeological Enigma* (pp. 73–89). State University of New York Press.

Televantou, C. A. (2018). Strofilas, Andros: New perspectives on the Neolithic Aegean. In S. Dietz, F. Mavridis, Ž. Tankosić & T. Takaoğlu (Eds.), *Communities in Transition. The Circum-Aegean Area During the 5th and 4th Millennia BC* (pp. 389–396). Oxbow Books. https://doi.org/10.2307/j.ctvh1dtp5.47

Theocharis, D. P. (2000). Νεολιθικός πολιτισμός. Σύντομη επισκόπηση της Νεολιθικής στον ελλαδικό χώρο (4th ed.). Μορφωτικό Ίδρυμα Εθνικής Τραπέζης (Original work 1980).

Todorova, H. (1982). *Kupferzeitliche Siedlungen in Nordostbulgarien*. Verlag C. H. Beck.

Todorova, H. (2003). Prehistory of Bulgaria. In D. V. Grammenos (Ed.), *Recent Research in the Prehistory of the Balkans* (pp. 257–328). Archaeological Institute of Northern Greece; Archaeological Receipts Fund.

Todorova, H., Vasilev, V., Ianusevic, Z., Kovaceva, M., & Valev, P. (1983). *Ovčarovo*.Editions de l'Académie Bulgare des Sciences.

Toufexis, G. (1996). Ομοιώματα σπιτιών. In G. A. Papathanasopoulos (Ed.), *Neolithic Culture in Greece* [Exhibition catalogue] (pp. 161–162, 329). Nicholas P. Goulandris Foundation; Museum of Cycladic Art.

Toufexis, G. (2003). Animals in the Neolithic art of Thessaly. In E. Kotjabopoulou, Y. Hamilakis, P. Halstead, C. Gamble, & P. Elefanti (Eds.), *Zooarchaeology in Greece, recent advances* (pp. 263–271). The British School at Athens.

Toufexis, G. (2022). Νεολιθικά ομοιώματα σπιτιών του Διαχρονικού Μουσείου Λάρισας. In N. Merousis, M. Nikolaidou & L. Stefani (Eds.), *Μυρρίνη. Μελέτες Αιγαιακής Προϊστορίας. Τιμητικός τόμος για την Αικατερίνη Παπαευθυμίου-Παπανθίμου* (pp. 199–215). Archaeological Museum of Thessaloniki.

Trenner, J. (2010). *Untersuchungen zu den sogenannten Hausmodellen des Neolithikums und Chalkolithikums in Südosteuropa*. Dr. Rudolf Habelt GmbH.

Treuil, R., & Darcque, P. (1998). Un 'bucrâne' néolithique at Dikili Tash (Macédoine orientale): parallèles et perspecctives d'interprétation. *Bulletin de Correspondance Hellénique, 122*(1), 1–25. https://doi.org/10.3406/bch.1998.7164

Tringham, R., Brukner, B., & Voytek, B. 1985). The Opovo Project: a study of socioeconomic change in the Balkan Neolithic. *Journal of Field Archaeology, 12*(4), 425–444. https://doi.org/10.2307/529968

Tzalas, H. (1995). On the obsidian trail. With a papyrus craft in the Cyclades. In H. Tzalas (Ed.), *Tropis III. 3d International Symposium on Ship Construction in Antiquity Athens 1991. Proceedings* (pp. 441–469). Hellenic Institute for the Preservation of Nautical Tradition.

Wedde, M. (2000). *Towards a Hermeneutics of Aegean Bronze Age Ship Imagery*. Bibliopolis.

Wilson, D. E. (2017). The Cycladic marble figurines from EBII Ayia Irini, Kea: evidence for ritual deposition in domestic contexts. In M. Marthari, C. Renfrew & M. J. Boyd (Eds.), *Early Cycladic Sculpture in Context* (pp. 94–102). Oxbow Books.

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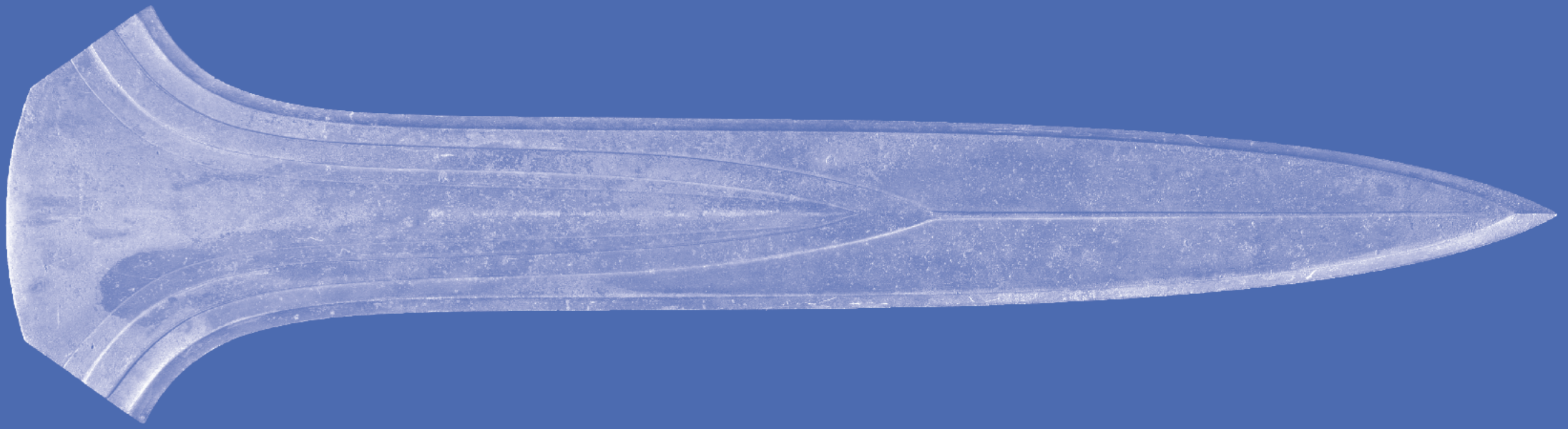

The Ommerschans sword or dirk.

SIZE MATTERS:

THE OMMERSCHANS HOARD AND SOME THOUGHTS ON THE AGGRANDIZED DIRKS OF THE PLOUGRESCANT-OMMERSCHANS TYPE

Luc Amkreutz

David Fontijn

In A. Ballmer & D. Neumann (Eds.), Imitations, Simulations, Mock-ups and Illusions: Special Variants and Interpretations in Material Culture. Case Studies from Prehistoric Europe. Propylaeum. https://doi.org/10.11588/propylaeum.1445.c20614

In 1896, a farm labourer found a spectacular Bronze Age hoard in the peatlands north of Ommen (Overijssel, the Netherlands). The hoard consisted of small tools of bronze and stone and one giant bronze dirk or sword. The objects remained in private possession of the landowner and despite an earlier publication, were only acquired by the National Museum of Antiquities at auction in 2017 and are currently studied. Meanwhile it is known that the sword is part of a rare group of aggrandized Bronze Age dirks or swords of the Plougrescant-Ommerschans type – objects that were simply too large, heavy and unwieldy to use, but that represent the epitome of craftsmanship at the time. Because of their larger-than-life size they can be interpreted as distinctly symbolic objects. Also, we know they were deposited in wet contexts. This makes them ideally suited to cast an important light on Bronze Age practices with distinctly ritual and social connotations.

Bronze Age; Ommerschans; aggrandized; sword; dirk; deposition; ritual.

INTRODUCTION

On 5 July 2017, at around 2 p.m. the hammer falls at Christie's in London. Lot 144, the Ommerschans hoard, 121 years after its discovery finally comes into public possession.

The hoard with the stunning and perfectly preserved sword (Fig. 1), is one of the most enigmatic finds in Dutch prehistory and perhaps the most stunning object of the somewhat meagre (in terms of 'bling') Dutch Bronze Age. Its loss and covert existence in private possession has been termed 'The tragedy of Ommerschans' (Fontijn, 2001, p. 277). Why is it that an object of peculiar proportions and with an appealing design and symmetry still speaks to our imagination, captures attention and sparks discussion? These are perhaps not directly academic questions, but they are at the core of what is at stake here, why aspects of size, symmetry, craft and design invoke an idea of purpose and stir emotion, in the 21st century, but even more meaningfully in the Bronze Age.

For the Ommerschans sword part of the answer lies in the fact that it belongs to an exclusive group of only six swords or daggers of this aggrandized type, two of which were found in the Netherlands, two in France and two in the UK. In a period where mass-production of similar objects becomes part of everyday life, this rarity in combination with the larger-than-life execution is meaningful. Yet at the same time, the members of this group are also very much alike creating the idea of a connected group or family. The Ommerschans sword in particular may throw more light on the meaning of this group of objects at is the only 'member' that was actually documented as part of a hoard. The various aspects of this hoard, the characteristics of the objects and the ways these connect with similar or comparative finds is part of a recent study and synthesis (Amkreutz & Fontijn, 2024). In this contribution we will describe the Ommerschans hoard and the other members of the group and briefly discuss the potential implications of these enigmatic giant dirks.

Fig. 1a–b. Front and back of the Ommerschans sword or dirk. The sword measures 68.3 cm in length.

Fig. 2. The Ommerschans hoard as it was preserved shortly after its discovery. Note the small bronze and stone objects that have been nailed on the wooden plank.

DISCOVERY

A newspaper clipping from the *Provinciale Overijsselsche en Zwolsche Courant* of 12 May 1896 reports the discovery of a copper sword near the Ommerschans, north of Ommen in the province of Overijssel. Because there was no date on the sword or the 'ornaments, flints, etc.' found with it, it was not known whether the piece was related to this 17th century fortification. The sword was found by the 21-year-old forester or farmer Geert Remmelts, who was cutting heather to make brooms, or (illegally) cutting peat. He had to hand over the documents to his employer, an industrialist and large landowner, who placed them in the care of his forester and gamekeeper. This man, Alexander Seemann, nailed the sword and other finds to a birch plank, to be hung like a trophy on the wall of the forester's house on the Junne estate (Fig. 2).

On May 24, 1927, curator and director of the National Museum of Antiquities J. H. Holwerda, together with the mayor, visited some sites in the municipality and the forester. Holwerda directly writes a note on the find speaking of an 'extraordinarily important bronze object' and documents that it was said to have been positioned on some wooden posts under a layer of peat, together with other finds. He also immediately contacts the family to see whether it is possible to acquire the find. This is to no avail and he is only offered the opportunity to study the hoard, which takes place in the summer of 1927. At the National Museum of Antiquities, Holwerda has a plaster copy made of the sword and photographs of all the finds. For the next 90 years these would be the most important documents as the hoard traveled with the owners to Germany. Except for a publication in 1961 based on drawings made by a visiting student (Butler & Bakker, 1961) no archaeologist ever studied or saw the finds again and all efforts for acquisition were fruitless.

Change came with the 2016 exhibition on Swords ('Cutting Edge Past'), the National Museum of Antiquities hosted in 2016. One of the elements of the exhibition was a shrine-like display bringing together all of the meanwhile six swords of this type that, because of their similarity, were probably all made in a brief period in the same place. Unfortunately, the family could not agree on a loan and the plaster copy was used, but it did lead to their decision to bring the finds to auction. With the aid of national funding bodies such as the *Vereniging Rembrandt* and the *Mondriaanstichting* the museum succeeded in acquiring the hoard, finally making it available to the general public and scientific investigation (see Amkreutz & Fontijn, 2018, pp. 2–3).

THE OMMERSCHANS HOARD AND ITS PLACE OF DISCOVERY

The bronze 'sabre' Geert Remmelts discovered in 1896 was in fact a sword, or rather an aggrandized version of a dirk (see below) dating to the Middle Bronze Age. The Ommerschans dirk measures 68.3 cm and weighs almost 3 kg. It is clearly too large and heavy for use and there are no rivets or other means of attachment present on the trapezoidal, slightly rounded hilt. The pointed ogival blade is demarcated by a flattened, angular rib, accompanied by an engraved line running to the tip and forming a dagger-like motif. From the tip of the motif a rounded centre rib runs to the actual point of the blade. The blade shows no signs of any use and no obvious casting roughness of seams and is almost perfectly preserved.

Only after the sword was studied anew since its acquisition by the museum, we observed a row of small markings on the outer beveled edge on either and both sides of the sword, running up to halfway from the hilt. Furthermore, there are distinct patches and zones in the patination on one side of the sword. These may relate to the other objects in the hoard that presumably lay on top of the blade (Bakker, 2004; Butler & Bakker, 1961). Clearly the sword is a magnificent object requiring in depth know-how of bronze casting and displaying a high degree of craftsmanship. Costly, both in terms of material used as well as time and energy. This makes it stand out all the more from the other finds that were discovered with it (Fig. 3). These consist of a range of bronze objects including chisels, needles, fragments of what may have been a file, scrap metal, a piece of re-used decorated bracelet and a Sicilian razor of Pantalica type (e.g. Butler & Bakker, 1961, pp. 197–201; Fontijn, 2001, pp. 265–266). Additionally, there is a set of stone objects consisting of two highly polished flint pieces, an amphibolite-like miniature adze or chisel and two coarse-grained facetted grinding stones. An original 1927 photograph documents a bronze wire spiral and another piece of flint that are meanwhile lost.

The meaning of the combination of these finds is tantalizing. On the one hand a pristine symbolic object of European importance, on the other hand a group of at first glance insignificant bronze and stone objects. As a hoard, this combination is unique. Nevertheless, while some of the bronze objects may be classified as scrap metal, most appear to be part of something like a specialized toolkit. This toolkit also comprised the series of potential polishing stones. In any case their co-occurrence seems to be distinct and meaningful.

Fig. 3. The fifteen bronze and stone objects found with, and probably on top of, the Ommerschans dirk. The upper right object is possibly a razor measuring 13.8 x 3.7 cm.

The hoard was found in a former raised bog north of Ommen. According to the newspaper clipping and oral accounts (e.g. Bakker, 2004) the hoard was discovered slightly beneath the surface and the smaller objects were possibly arranged on top of the sword (which might explain some of the patterns in the patination). The hoard itself was supposedly placed on a platform of birchwood posts (ibid.; Butler & Bakker, 1961, p. 193). Both the accounts, the newspaper clipping, and the overall characteristics of the patination argue in favour of the objects being found together. The position of the find is remarkable as well. It was situated in an extensive raised bog area and positioned along what may have been a north-south corridor for transport and interaction between the area of the Vecht and the more densely settled area of the Drenthe moraine plateau further north (e.g. Bakker, 2004; Butler & Bakker, 1961, p. 193). Recent studies (including Van Beek, 2012; Van Beek & Groenewoudt, 2013) have also pointed out the existence of rather long-term and intensive habitation along the banks of the Vecht river. The Ommerschans site may thus have been situated strategically in the middle as a sort of stepping stone in that corridor. This becomes even more enigmatic as it appears the area was distinctly low-lying and flanked to the east by a higher sand ridge (Bakker, 2004, p. 86). Recent research (Bakels, 2024) suggests that the peat formation may have been a distinctive factor in relation to the moment of deposition in this shifting and changing landscape.

MEETING THE FAMILY

As indicated above, the Ommerschans sword is not a unique find. In total we now know of five other comparable swords or dirks found in the Netherlands, France and the United Kingdom (Fig. 4). We will now briefly introduce these (Amkreutz & Fontijn, 2017; Amkreutz & Fontijn, 2018)

The other sword that lends its name to the group is the Plougrescant dirk, which was found near Plougrescant in Brittany. It was first described by the renowned French archaeologist Gabriel de Mortillet in 1881, who immediately recognized that he was not dealing with a functional weapon but with a ritual object: *'une simulacre, un objet rituel'*. Unfortunately, little is known about the find circumstances, which is comparable to the other French sword, the one from Beaune in Burgundy. This one was acquired by Reverend William Greenwell (1820–1914). What is noteworthy is that the hilt is of a different shape.

Recent metallurgical analysis demonstrated it was a modern addition (Needham, 1990). The idea is that the object was only partially preserved and completed using a Kimberley dagger, also present in the Greenwell collection, as an example. The Kimberley dagger type appears to be typologically related to the swords (see below). Later on, the sword was obtained by the banker John Pierpont Morgan who donated his collection to the British Museum in 1908.

Moving across the channel, two other family members have been found in Norfolk. The largest (by 2 cm) is the one from Oxborough. It was found in 1988 when a hiker tripped over the protruding hilt of this sword in a forest (Needham, 1990). In the Bronze Age the object was deposited in a peaty area with the tip pushed down in the soft ground. Recently another sword surfaced in Norfolk, the 'Rudham dirk', was ploughed up by a farmer from his field and for years used as a doorstop for the barn. In 2014, it was recognized for what it was and purchased by the Norwich Castle Museum and Art Gallery. Remarkably the sword was bent and folded in the Bronze Ages.

The other Dutch find is the Jutphaas sword, which was found in 1946 or 1947 near Jutphaas (province of Utrecht) by a dredger extending a harbour into an old stream channel of the Rhine (Butler & Sarfatij, 1970/1971). It hung on a boy's bedroom for years before being recognized as a prehistoric sword and was acquired by the National Museum of Antiquities in 2005. This sword is a lot shorter compared to the other five (42 cm) but is still like the others an unusable weapon. In execution and design it is on all fronts a reduced copy of the others, which, at least visually, matches all proportions. Hence, the bronze smith in charge knew about these pieces and tried to match exactly that shape and proportion.

Fig. 4. The group of Plougrescant-Ommerschans swords. From left to right: Oxborough (Norfolk, England), Collection British Museum; Plougrescant (Brittany, France), Musée d'Archéologie Nationale, Saint-Germain-en-Laye; Rudham (Norfolk, England), Collection Norwich Castle Museum and Art Gallery; Jutphaas (Utrecht, the Netherlands), Collection Rijksmuseum van Oudheden; Beaune (Burgundy, France), Collection British Museum; Ommerschans plaster copy (Overijssel, the Netherlands), Collection Rijksmuseum van Oudheden.

When overviewing this group, or family of swords what stands out is that in 200 years of 'documented' archaeological research, six is an extremely low number. In particular for the Bronze Age, when we for the first time see the serial production in large numbers of axes, jewellery and weapons such as swords in their hundreds if not thousands, the rarity of the Plougrescant-Ommerschans swords is striking. At the same time, they probably were highly recognizable and this is further substantiated by the fact that they are almost identical in appearance, regarding shape, proportions and execution meaning we can certainly speak of a strongly related family. It may be stated that while based on small differences in size and execution we can rule out that the same moulds were used, the visual similarity must have been a strong point of attention. Our recent research (Amkreutz & Fontijn, 2024) also suggests that the swords were probably not made by one craftsperson. Rather, it is more likely that several smiths, possibly on both sides of the North Sea, tried to make a sword that looked exactly like the others. Particularly if we consider the detailed similarities between the small Jutphaas version and the big ones, this is an impressive feature in itself. This, added to its impressive distribution over Northwest Europa (there are some 800 km between the find spot of Ommerschans and Plougrescant) makes clear that to Bronze Age communities their meaning as rare and valuable social symbols must have been almost self-evident.

SOME THOUGHTS ON AGGRANDIZED SWORDS

Throughout the earlier part of the Bronze Age, it becomes obvious that magnification was one way to make a statement on the significance of valuables (Fontijn, 2020; Hansen, 2001). Magnification is potentially a powerful way to do so, because it brings to mind a particular object one considers relevant. Enlarging it – to absurd size (in the sense that it makes it practically useless) – can be a way of stating that its relevance was of an 'other-worldly' nature (cf. Fontijn, 2020). Another way to achieve this is by using a rare, unusual material for an object (like silver or gold for what is actually a tool or a weapon). A third approach can be to make the object 'other-worldly' by making it in virtuoso quality (cf. Kuijpers, 2018). Our research so far suggests that in the case of Ommerschans and the other giant swords, all three strategies applied. The object is so enlarged that it is no longer functional (it is not only too large, it is also too heavy: Ommerschans weighs 3 kg!). Scientific analysis also points out that the sword of Ommerschans, as well as others in the group has a tin ratio that is too high for a functional object (Theunissen & Van Os, 2024). Finally, for all swords, but especially for Ommerschans and Jutphaas, the skill to craft it is impressive, even for modern standards.

For these reasons, we think it likely that a sword such as that of Ommerschans was created as an 'other-worldly-object' – an ultimate valuable that could represent a community's most inalienable possession. Godelier (1999), in an anthropological treatise on inalienable objects, claims to have recognized such ultimate objects in many societies. As very rare and very precious things, they are often regarded as objects that stand at the heart of a society's identity. They refer to normal objects that look like them, but which are useable and circulate in some numbers (ibid.; see also Fontijn, 2001; Fontijn, 2020). We assume object such as Ommerschans were at the top of a ranked system of valuables (Fontijn & Amkreutz, 2018).

Ending the life of such an extraordinary object by having it sunk down in a watery landscape may seem odd to us. Yet, this is what happened and provides the sole reason we can still see the object today. From a Bronze Age perspective, we think depositing it in the landscape was not an odd ending at all – rather it was the prescribed, appropriate ending. The majority of Bronze Age metalwork we know today (tens of thousands across Europe), survived the ages precisely because of this. Apparently, from a Bronze Age perspective, this was the best way to render their special nature (see Fontijn, 2020, for a much more extensive discussion). Yet – among the thousands of objects deposited in the Netherlands alone, the Ommerschans hoard still stands out. It was located in a transitory zone – at a cross-road

or connection between lands of what were presumable different social groups. Also, the objects it was associated with are unique in kind and many of them (such as the Pantalica razor) are not known from any adjacent region (as already suggested by Butler & Bakker, 1961).

CONCLUSION AND FUTURE PROSPECTS

The Ommerschans hoard which was acquired by the National Museum of Antiquities in 2017 is proving to be one of the most interesting and enigmatic finds of the Dutch Bronze Age. The hoard is of importance as its context is largely known and of the rare group of only six swords of this type it is the only one with accompanying objects. These hold the key, or at least a key for understanding its importance, regional appreciation and particular reason for deposition. The true value however lies in the study of the group as a family. Its individual members are widespread markers of Bronze Age networks and they should be interpreted in the light of the connections they represent, both in space and time. In order to further unravel these questions, the Ommerschans hoard has recently been researched. This involves a detailed analysis of the site and the find, including novel non-destructive techniques such as neutron-tomography and gamma spectrography. Additionally, the other known swords have been reanalyzed by a number of colleagues. The combined results are presented in an edited volume (Amkreutz & Fontijn, 2024).

ACKNOWLEDGEMENTS

This essay is based on our study of the hoard after the museum acquired it, and recently corroborated by a number of scientific studies. These are fully published in Amkreutz & Fontijn (Eds.) 2024. We are grateful to our colleagues Bakels, Theunissen and Van Os for allowing us to briefly mention some of their preliminary results.

BIBLIOGRAPHY

Amkreutz, L., & Fontijn, D. (2017). Het zwaard van Ommerschans: een stuk van buitengewoon belang. *Archeologie in Nederland,* 1(5), 46–51.

Amkreutz, L., & Fontijn, D. (2018). Bringing it all back home. The Ommerschans hoard returns to the Netherlands after almost a century. *PAST, the Newsletter of the Prehistoric Society, 88,* 1–3.

Amkreutz, L., & Fontijn, D. (Eds.). (2024). *Larger than Life. The Ommerschans hoard and the role of giant swords in the European Bronze Age (1500–1100 BC).* Sidestone Press.

Bakels, C. (2024). The dirk from Ommerschans: reconstruction of the place of deposition. In: L. Amkreutz & D. Fontijn (Eds.). *Larger than Life. The Ommerschans hoard and the role of giant swords in the European Bronze Age (1500–1100 BC).* Sidestone Press.

Bakker, J. A. (2004). *Kanttekeningen bij mijn publicaties en enige andere zaken.* Self-published.

Butler, J. J., & Bakker, J. A. (1961). A forgotten Middle Bronze Age hoard with a Sicilian razor from Ommerschans (Overijssel). *Helinium,* 1, 193–210.

Butler, J. J., & Sarfatij, H. (1970/1971). Another bronze ceremonial sword by the Plougrescant-Ommerschans smith. *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek, 20–21,* 301–309.

Fontijn, D. R. (2020). *Economies of destruction. How the systematic destruction of valuables created value in Bronze Age Europe (2300–500 BC).* Routledge.

Fontijn, D. R. (2001). Rethinking ceremonial dirks of the Plougrescant-Ommerschans type. Some thoughts on the structure of metalwork exchange. In W. H. Metz, B. L. van Beek & H. Steegstra (Eds.), *Patina. Essays presented to Jay Jordan Butler on the occasion of his 80th birthday* (pp. 263–280). Metz, van Beek & Steegstra.

Fontijn, D. R., & Amkreutz, L. (2018). Het verzonken zwaard van Ommerschans. In L. Heerma van Voss, M. 't Hart, K. Davids, K. Fatah-Black, L. Lucassen & J. Touwen (Eds.). *Wereldgeschiedenis van Nederland* (pp. 39–43). Ambo/Anthos uitgevers.

Godelier, M. (1999). *The Enigma of the Gift.* Polity Press.

Hansen, S. (2001). 'Überaustattungen' in Gräbern und Horten der Frühbronzezeit. In J. Müller (ed.). *Vom Endneolithikum zur Frühbronzezeit: Muster sozialen Wandels?* (pp. 151–174). Dr. Rudolf Habelt GmbH.

Kuijpers, M. H. G. (2018). *An Archaeology of Skill. Metalworking Skill and Material Specialization in Early Bronze Age Central Europe.* Routledge.

Needham, S. (1990). Middle Bronze Age ceremonial weapons: new finds from Oxborough, Norfolk and Essex / Kent [with a contribution from D. Hook]. *The Antiquaries Journal, 70*(2), 239–252. https://doi.org/10.1017/S0003581500070785

Theunissen, L., & van Os, B. (2024). A comparative metallurgical analysis of the six dirks of the Plougrescant-Ommerschans type. In: L. Amkreutz & D. Fontijn (Eds.). *Larger than Life. The Ommerschans hoard and the role of giant swords in the European Bronze Age* (1500–1100 BC). Sidestone Press.

Van Beek, R., & Groenewoudt, B. (2013). An Odyssey along the river Vecht in the Dutch-German border area. A regional analysis of Roman-period sites in Germania Magna. *Germania,* 89, 157–190.

Van Beek, R. (2012). Van Giffen langs de Overijsselse Vecht. Onderzoek naar een vergeten tumuliveld met brandheuvels in Hoogengraven. In H. M. van der Velde, N. L. Jaspers, E. Drenth & H. Schulte Lubberink (Eds.), *Van graven in de prehistorie en dingen die voorbij gaan. Studies aangeboden aan Eric Lohof bij zijn pensionering in de archeologie* (pp. 211–227). Sidestone Press.

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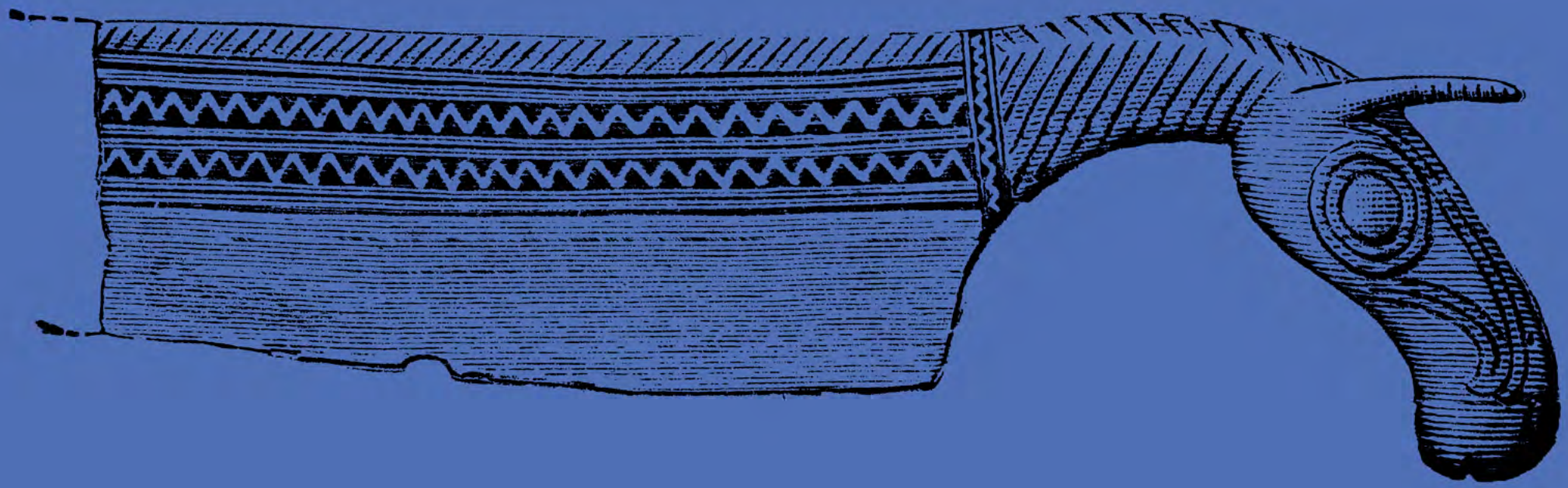

Razor, Nordic period II, c. 1400 BC, from Valsta, Närke, Sweden.

RAZORS,

BRONZE AGE TRANSFORMATIONS, LONG DISTANCE EXCHANGE AND GUEST-FRIENDSHIP

Flemming Kaul

Karin Margarita Frei

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This study examines the single-edged razor with a horse-head handle, a distinctive object of the Nordic Bronze Age culture closely associated with males. These razors, which evolved in form and decoration, likely originated in the Eastern Mediterranean, reaching their Nordic finalization and widespread use around 1450 BC. Despite changes in appearance and symbolism, the razor's role as a practical tool remained consistent as it spread swiftly northward. Evidence of Bronze Age long-distance exchange suggests the paths of travelers who carried both the razor and related cultural ideas. The ancient Greek concept of *xenia*, or guest-friendship, offers insight into the social mechanisms that may have facilitated such exchanges. As a moral and religious obligation to provide hospitality, *xenia* could explain how trade and contact routes remained open, even during times of conflict. This model thus illuminates how fashion, ideas, and practices could spread widely, enabled by bonds fostering both material and cultural exchange across vast distances.

Bronze Age; razors; daggers; exchange of ideas; guest-friendship.

INTRODUCTION

Researchers into prehistoric archaeology have since long been able to identify evidence of long distance exchange of ideas, as expressed in form and decoration of objects of material culture. Stylistic features of the Middle Bronze Age such as spiral ornaments seemingly demonstrate influences from the Mediterranean into the Nordic Bronze Age culture, even though the exact 'back-up' by related imported objects in many cases seems missing. The ideas related to decorative art and many types of objects did not fly on the wings of imaginative birds, but in the mind of travelers, who in a period of dramatic changes of exchange patterns and increased mobility, brought ideas back to their homeland (the North). As the prominent Danish archaeologist, Sophus Müller wrote in 1921: *'Elements of decorative art, and in particular the spiral patterns, were brought here in connection with travels for the sake of the amber trade and through personal connections'* (Müller, 1921, p. 8; translated to English by F. Kaul).

Such foreign elements were re-interpreted in a creative process of transformation. Parts of that process may have taken place elsewhere, as already hinted at by Müller, somewhere in between the primary sources of inspiration and the areas where the new types turned up. However, cultural and economic conditions should be existent in order to receive impact and refashion the knowledge of certain object types into 'new or changed types' – being swiftly spread over larger areas in re-translated shape. Such a 'hotspot zone' was the southern Scandinavia area, with excellent farmland conditions and not the least the valuable Nordic/Baltic amber that was collected along the shores of South Scandinavia (Vandkilde, 2014), and which has been found in the Mediterranean area and even beyond, in Syria and Mesopotamia (Mukherjee et al., 2008; Bunnefeld & Martin, 2020), and Egypt (Hood, 1993; Bongianni et al., 2001; Varberg et al., 2019).

THE SINGLE-EDGED RAZOR, FROM EGYPT TO NORTH NORWAY VIA CRETE

The introduction of the single-edged razor into South Scandinavia in the decades before 1400 BC was due to influences stemming from the Eastern Mediterranean (Kaul, 2013a; Kaul, 2015; Kaul, 2018a) (Fig. 1). Even though the razor as such represents a common European Bronze Age phenomenon, the shape of the Nordic razors differs markedly from almost all other Middle Bronze Age razors: The Nordic razors are one edged and asymmetrical, whereas all other razors are two-edged and symmetrical (Jockenhövel, 1971; Jockenhövel, 1980). There is one exception from this, where we find the same design, namely in the Aegean/Minoan area. The Aegean one-edged razor appeared at the transition between the Late Helladic/Late Mycenean II and III A. It continued without many changes until and including Late Helladic/Late Mycenean III C. Before that the Aegean razor was two-edged and symmetrical, and with a leaf-shaped blade (Weber, 1996).

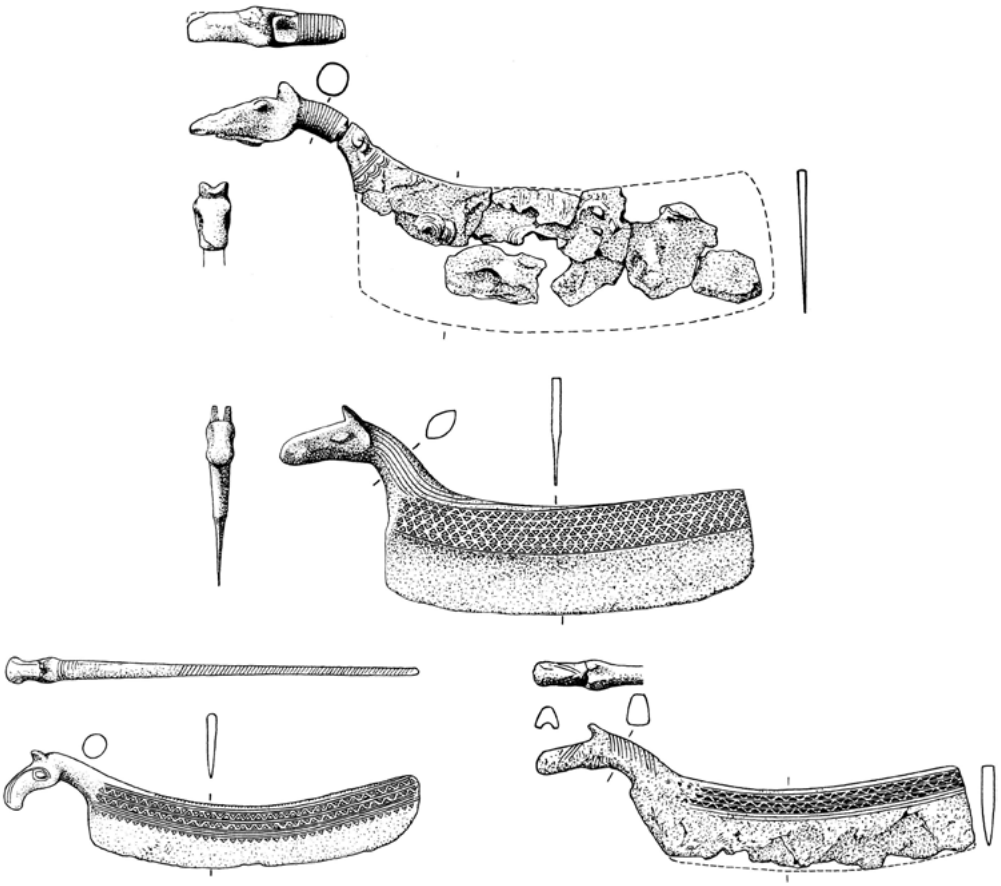

Fig. 1. Razors with horse headed handle, Nordic period II, c. 1400 BC. Ubby, Darup, Karlstrup and Petersdal, all Zealand, Denmark. Length: 9.0–10.8 cm.

THE CRETAN DICTE CAVE EVIDENCE

Whereas the handle with its horse's head is fully cast on the Nordic razors, the handle of the Aegean razors is flanged and with holes for rivets (Fig. 2). Since being partially of organic material (wood, horn, ivory), it has not been possible to determine the full shape of the handle of the Minoan and Mycenaean one-edged razors. However, votive objects found in the Dicte Cave at Psychron, Crete, throw light on this matter. Some votive razors were cut out of thin sheet bronze. On these votive representations of Minoan razors, the full shape of the handle is present. In some cases, the handle is in the shape of an animal's head, and in one case, it forms a stylized horse's head (Boardman, 1961; Weber, 1996). Not just the overall design of the early one-edged razors but also the shape of the horse headed handles thus show striking resemblance between the Aegean and Southern Scandinavia (Kaul, 2013a; Kaul, 2015) (Fig. 3).

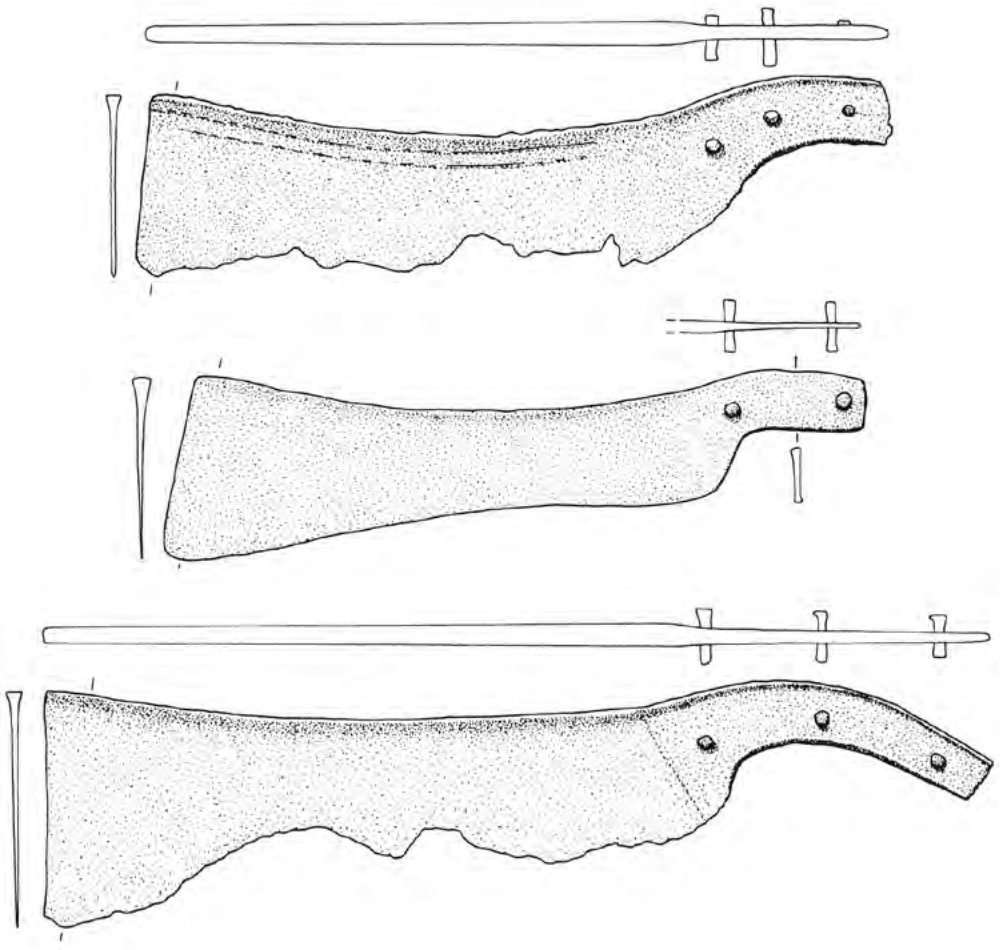

Fig. 2. Razors, Late Helladic/Late Minoan III A, from Zapher Papoura and Epano Gypsades, Knossos, Crete, and Prosymna, Argolis, Greece. Length: 17.5–23.6 cm.

Fig. 3. Votive razor with handle in the shape of a horse's head, from the Dicte Cave, Psychron, Crete, Greece. Length: 8.6 cm. Upper, the full razor; lower, handle detail of the same razor.

In Crete, it is fascinating to follow the physically alteration and transformation of the Minoan razors from functional razors following the warrior in his grave, for instance in the Zapher Papoura cemetery at Knossos (Evans, 1905; Weber, 1996), into practically unusable thin sheet objects recreated into a sort of 'symbolic currency' of votive objects substitutes. These changes from social 'warrior appearance' into a religious votive context are further emphasized by the sanctity of the Dicte Cave itself, one of the most holy places in the ancient Greek world, as recorded by a number of classical authors, some seemingly regarded the cave as the birth place of Zeus, others that the infant Zeus was hidden and nurtured here in order to avoid him being swallowed by his father, Chronos (Boardman, 1961) (Fig. 4).

At the bottom of the cave, there is a pool out of which rises a forest of stalactites. Most of the bronze votive objects, including knifes, razors, tweezers, pins, chisels, some totally unusable, as the razors, and double axes were found in crevices in the stalactite pillars (Hogarth, 1900). The main period of the bronze votives includes Middle Mycenean (MM) III to LM III, but there are also later depositions (Boardman, 1961; Weber, 1996).

Fig. 4. View from the mouth of the Dicte Cave over the fertile Lasithi Plain, Central Crete, Greece.

Some objects found in the depth of the Dicte Cave (also some later than Bronze Age) should be recognized as imported objects, including a bronze statuette of Amen-Ra and a Syrio-Phoenician ivory figurine and a Late Bronze Age Central European Urnfield dagger (Boardman, 1961). Such pieces could in broader terms be understood as exotic imports. However, when bearing in mind the paramount sanctity of the Dicte Cave, a more specific explanation should be considered: that such objects were brought to the site by travellers, guests visiting the cave together with their hosts. As sort of guest-friendship approval in admiration of the sacred place, these objects were deposited here.

PESCHIERA DAGGERS, MAKING CONNECTIONS

When considering Bronze Age network and routes of interaction, one particular type should be highlighted, the Peschiera dagger, named after find spots at Peschiera at the South end of Lago di Garda, with large amounts of Bronze Age and Early Iron Age depositions, including amber. The Peschiera daggers are flange hilted daggers; production began at around 1300 BC or a little bit later, thus representing a time a later than the dissemination of the razors in question. There are a number of types of these daggers, with different Central European distributions. Here, the Peschiera daggers of R. Peroni's group A (Peroni, 1956; Bouzek, 1985), including 'tipo Pertosa' and 'tipo Cascina' (Peroni, 1994) should be taken into consideration. These are flanged hilted daggers with rather narrow and parallel running flanges of the hilt. The blade is relatively narrow, with the edges running almost parallel. Many of the daggers of this shape come from the area south of the Lago di Garda and from Peschiera, where the Mincio River runs out of Lago di Garda, including finds from Castellaro Lagusello, Imboccatura del Mincio and Bacino Marina in Peschiera (Fig. 5). Some daggers have been found in southern Italy, including Scoglio del Tonno at Tarent, and Sicily. Four Peschiera daggers, belonging to this type (Group A), were found in the Dicte Cave at Psychron on Crete (Boardman, 1961). A similar dagger comes from

Fig. 5. A Peschiera dagger from Bacino Marina, Peschiera del Garda, Veneto, Italy. Length: 21.3 cm.

a burial at the Zapher Papoura cemetery at Knossos, without further grave goods. These Peschiera daggers from Crete and a dagger from the Aegean island of Naxos north of Crete are very similar to the daggers from North Italy, in particular those from Castellaro Lagusello and Bacina Marina. The daggers found in Greece may have been produced at Peschiera/the Mantua region south of Lago di Garda, and the dagger from Scoglio del Tonno could represent a step on the route. At Peschiera, at the south end of Lago di Garda, where the Alps meet the Po Valley, two network systems could have met, and travellers from the North could meet travellers from the South, some might have continued their journey.

When from Peschiera looking north, a dagger of R. Peroni's group A has been found in a burial at Peiting, Schöngau, Oberbayern (Sprockhoff, 1936). By means of a Rixheim sword, this burial should be dated to around 1300 BC or a bit later. In Denmark, an example of a Peschiera dagger closely related to R. Peroni's group A has been found in a burial at Brundby Mark on the island of Samsø (Randsborg, 1970).

EGYPTIAN RAZORS AND THE TRANSFORMATION PROCESS INTO 'GREEK' RAZORS

The path of the single edged razor brings us to ancient Egypt, where shaving traditions had deep roots going back to at least Early Dynastic time (Petrie, 1917, p. 49). For the ancient Egyptians, shaggy beards and overall hairiness indicated bodily negligence and uncleanliness. The face, the neck, limbs, armpits, chest and pubic regions were regularly shaved (Davies,1982, p. 189). Men and women wore their natural hair close-cropped, attiring themselves with wigs on public occasions (and the ceremonial beard for the Pharaohs). The wigs would have been expensive and were probable restricted to the nobility (McCreesh et al., 2011). Generally, men were clean shaven, facial stubble being allowed only in special circumstances such as at times of mourning. Professional barbers played an important role in Egyptian society, called *chaku*. They were attached to the permanent staff of the royal and noble households, of temples, and seemingly to the army (Davies, 1982).

It has been suggested that the Minoan/Mycenaean one-edged razor, considering its outline, could have derived from an 18th dynasty type of razor (Evans, 1905; Weber, 1996). It is tempting to compare the outline of the blade of the so-called rotating razor of Egypt with the blade of the Minoan/Mycenaean one-edged razors (Kaul, 2018b). During the New Kingdom

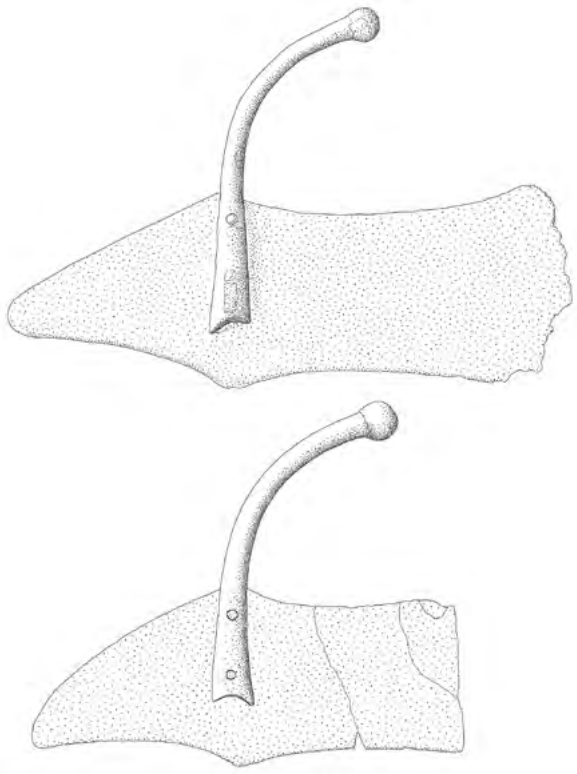

Fig. 6. Egyptian razors, 'rotating razors'. Upper without find provenance, lower allegedly from Abydos. Originally the lower razor should have had a longer blade, the primary cutting edge at its end now missing, and a new edge has been created. Upper razor: c. 16 cm, originally the two razors should have had approximately the same length. Both seem to have an extra cutting edge along the blade at the opposite side of the handle. The Petrie Museum of Egyptian Archaeology, London, and the National Museum of Denmark, Copenhagen.

the so-called rotating razor turned up (Petrie, 1917; Davies, 1982). A long, broad bronze blade ends in a relatively narrow cutting edge. From the middle of the blade a handle fastened by rivets projects at a right angle (Fig. 6). By making a rotating movement, the short edge could be used in swift cutting movements, cutting upwards and downwards, or differently sideward, alternatively. This seems to be an excellent tool for the skilled barber – especially when realizing that these alternatively up-and-down cuts or slashes are most easily employed by another person than the one being shaved. We may be dealing with a practical tool, not necessarily closely related to the person being shaved. In a couple of cases these razors had another sharp cutting edge, apart from the one at the end of the blade, in these cases along the side of the blade (*The Petrie Museum of Egyptian Archaeology,* London inv. nos. UC 40550; 40545; 40538). The extra edge does not alter the concept of this razor being for professional use, but it seems easy to use this edge by the person himself without involving a barber. This observation could be of interest when considering the possible transfer of a similar razor shape to Crete and Greece. Apart from a zigzag-like pattern on the handle and one short hieroglyphic inscription, these razors are not decorated.

When removing the peculiar handle projecting from the blade at a right angle, then we are close to the shape of the Minoan/Mycenaean razor, especially when considering that some of the Egyptian razors in question did have a supplementary cutting edge along its longer side (Kaul, 2018b). Furthermore, the handle of the Minoan/Mycenaean razor was placed at the end of the razor, making it easier for a man to shave himself, instead of having a second person, a barber doing the job. In this process, the context of the razor seems to have changed from a professional 'barbershop' item to a more personal thing, often found in warrior's graves.

Another Egyptian type of razor should be included, since it carries decoration. Like the rotating razor this razor has a narrow cutting edge at the one end of the blade, but with a handle with plastic figural decoration at the opposite end. There is no handle projecting at a right angle at the middle of the blade. Because of its small size and delicacy, it has been suggested that it was a woman's razor (Davies, 1982, p. 190). It could also be argued that the decorated handle indicates that we are dealing with a personal belonging, and for more individual use. Among the handles we could mention one with a plastic rendering of a hippopotamus, the goddess Taweret (The Petrie Museum of Egyptian Archaeology, inv. no. UC 40665) and one with an ape plucking palm-nuts over a lotus decoration (ibid., inv. no. UC 30135) (Fig. 7). In such cases the decoration should not be considered merely as decoration without meaning, but as iconography with an underlying religious significance.

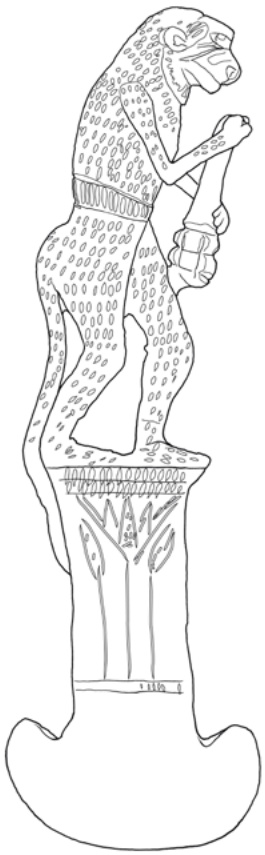

Fig. 7. Egyptian razor with a handle in the shape of a plastic rendering of an ape. 18th Dynasty. Height: 9.4 cm. The Petrie Museum of Egyptian Archaeology, London.

A piece of toilet equipment belonging to the 18th Dynasty (c. 1550–1292 BC) in some cases carries a handle in the shape of could be a horse in flying gallop, here a representation of a royal horse, because of the plumes on its head (Petrie, 1917; Davies, 1982, p. 190; Freed, 1982, p. 195). Probably it is the horses of the chariots that are represented, and the military connection seems clear, these implements seemingly belonging to members of the highest military ranks. The meaning of such horse representations was not a religious one, since the horse in Ancient Egypt as such did not became related to the religious sphere. The horse (with chariot) became a symbol of the military capacity of Egypt, a social symbol of power. A small razor blade and a pin for curling hair (wig) were inserted into the horse shaped holder. Thus, this piece toilet equipment can be seen both as a practical piece for body care ready at hand in the field, before battle, and a sort of military distinction.

In a creative process, at a time when contacts between Egypt and Crete were close, just before 1450 BC, a hybridization of these razor types could have taken place: the Aegean-Minoan one-edged razor was created by an amalgamation of shape and meaning of these three different types: 1: the overall shape from the 'rotating razor', a practical barber shop item without decoration; 2: the small, narrow razor, carrying iconographic decoration; 3: the toilet/razor equipment with horse decoration, the horse decoration not related to the religious sphere, but to the social military sphere, probably being a personal item of a high ranked officer.

The new razor type spread swiftly, and it is not possible to detect any differences in the development on Crete, on the Greek islands or on mainland Greece. Perhaps these razors were introduced at certain centres of production such as at Knossos. No Egyptian razors have been found in the Aegean area, and *vice versa* (Weber, 1996, p. 39–40). Ideas and influences can 'travel' without the occurrence of detectable import material.

The relation to the warrior remains, since many of these razors are found in warrior's grave with weapons. In some cases, the horse headed handled can be detected (Dicte Cave, Crete). However, in this transformation process the meaning of the horse may have changed from being of military significance into being of religious significance (Kaul, 2018b).

Considering renderings of horses it may seem difficult to find religious aspects represented. The Mycenaean vase paintings for instance show representational processional scenes or hunting scenes with horses. However, when a procession including horses pulling a wagon where solar discs seem to be involved, then the horse might have gained a higher divine status. This could be the interpretation of scenes depicted on a Late Minoic III *Larnax* from Episkopi, Crete (Davaras, 1976, p. 176–177), but it is quite possible that we are not dealing with a procession in the world of the living, but with rendering of the dead going in his horse drawn chariot to the afterworld (Mellink, 1991, p. 301). During the last Minoan periods, 1300–1200 BC, the-

re seem to a growing interest for the horse as a divine animal (Kaul, 2018b). Later, in the Geometric period, many bronze votive horse figurines deposited at major Greek sanctuaries, as well as horse representations surrounded by solar symbols on the funeral pottery yield evidence of the horse's religious significance.

THE NORDIC RAZOR

When the next spatial leap of the one-edged razor took place – this time a gigantic geographical leap – the religious character of the horse representation increased considerably. The introduction of the single edged horse headed razor into South Scandinavia took place in the decades before 1400 BC, thus shortly after the appearance of this type in the eastern Mediterranean (for absolute chronological considerations see Kaul, 2013a; Kaul, 2015; Kaul, 2018b with further references). The introduction of the razor, reflecting an idea of the shaven warrior, should not be regarded as an isolated phenomenon, but as part of a larger picture of south-north social interaction. It should be considered as component of an 'aristocratic package', reflecting a new chiefly elite culture (Kristiansen & Larsson 2005). At the same time elements such as the folding stool, bronze drinking vessels and the horse-drawn chariot were introduced or chosen in the North, all to be considered as ruling symbols. These features, together with the razors, indicate the acceptance of parts of a Minoan/Mycenaean lifestyle (Kaul, 2013a; Kaul 2018a).

Even though the basic shape was the same, some changes appeared when the ideas of the one-edged razor somehow were carried from the South to the North, the ideas probably being mediated at some places *en route*. The handle of the Aegean razor was flange hilted, and with holes for rivets holding the 'full handle' made of organic material, such as wood, bone or ivory, secured by the flanges and rivets (Weber, 1996). The handle of the Nordic razor was fully cast together with the blade. The horse heads of the handle are finely executed, small pieces of art and craftmanship. A few of the early Nordic razors carry a spiral handle, a feature, which is also seen among the votive razors of the Dicte Cave. Finally, the size of the razors became smaller. Generally, the length of the Nordic razor is about the half of the Aegean razor.

When the single-edged razor was introduced in the North, it swiftly spread and became accepted over larger parts of northernmost Germany and southern Scandinavia as a sort of fashion or ideal. Carrying the horse's head, the razor should be regarded as one of the most important bearers of iconography, the horse referring to the sun horse as demonstrated by the Chariot of the Sun from Trundholm Bog, Zealand, Denmark: the horse being the divine sun-horse securing the transport of the sun over the heavens at daytime and through the underworld at night (Kaul, 1998; Kaul, 2004).

In a burial cairn at Valsta, Närke, Central Sweden, at Stockholm, a typical example of a Nordic period II razor has been found (Fig. 8) (Montelius, 1917, no. 927; Oldeberg, 1974). Together with a razor from a burial cairn at Todness in North Trøndelag, Norway (Rygh, 1906; Kaul, 2013b; Kaul & Rønne, 2013), it demonstrates the quick dissemination of the razor before 1300 BC, even reaching the northern border zone of the Nordic Bronze Age culture.

The northernmost of all razors with the handle in the shape of a horse's head, though from Nordic Bronze Age period III (1300–1100 BC), was found in a stone cist inside a cairn, at the farm of Skjeggesnes, Nordland, Norway (Fig. 9) (Binns, 1985; Rønne, 2011; Kaul, 2013b, Kaul & Rønne, 2013). The cairn is part of a larger cemetery of cairns. Due to the mild climate (the Golf Stream), here less than 100 km's South of the Arctic Circle, the fields are well suited for growing barley, but grass for hay harvest is preferred today (Fig. 10).

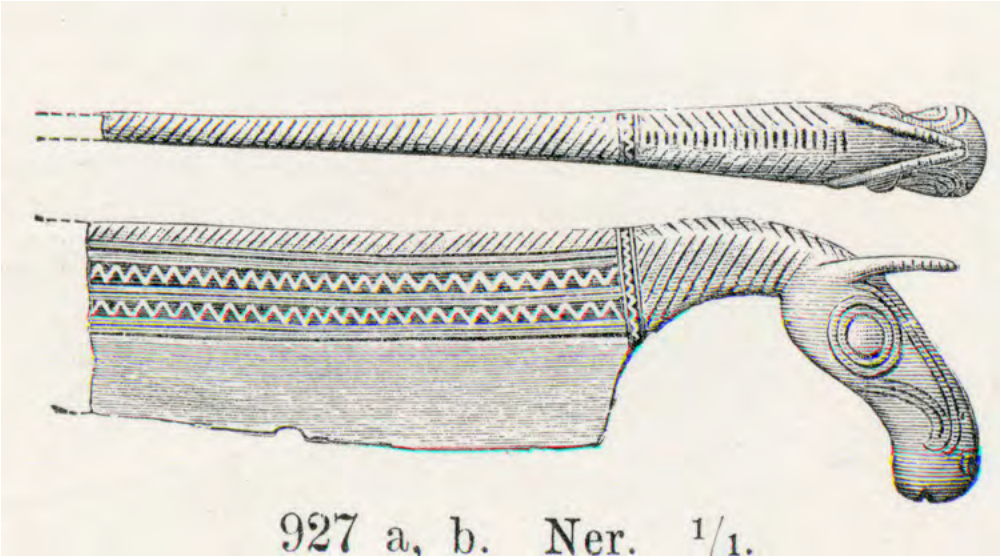

Fig. 8. Razor, Nordic period II, c. 1400 BC, from Valsta, Närke, Sweden. Preserved length: c. 5.0 cm.

Fig. 9. The northernmost razor of all razors with horse headed handle, Nordic period III, 1300–1100 BC, Skjeggesnes, Helgeland, Nordland, Norway. Length: c. 8.0 cm.

Fig. 10. Skjeggesnes, Helgeland, Nordland, Norway. View over the landscape seen from the cairn cemetery, where the northernmost razor was found.

A PATH OF TRANSFER AND TRANSLATION OF DESIGN FROM EGYPT TO CLOSE TO THE ARCTIC CIRCLE

Above we have followed the long way of the single-edged, asymmetrical razor, from 18th Dynasty Egypt to Bronze Age Scandinavia. Even though the razors in all cases had a practical function, changes in values can be observed. Probably, there was not any deeper meaning behind the so-called rotating razor of Egypt, except being an instrument for the generally accepted hair fashion. It was well suited for a professional barber. On other types of razors religious motifs turn up, here probably on those for more personal use. Also, motifs of a more secular kind, with horse representations, probably of the chariot horse, are found.

When the horse's head appears on at least some one-edged razors of the Aegean – then it was probably its social meaning related to the warrior that was transferred. When considering the context of the horse in the Late Minoan/Helladic period, then the horse seems to have had an increasing association to the religious sphere, the horse probably being related to a great female goddess, Athena-like. Perhaps the religious aspects of the horse were being embedded soon after the introduction of the one-edged razor.

Soon after the emergence of the one-edged razor in the Aegean the idea of this razor travelled through Europe, to South Scandinavia/northernmost Germany where it became more popular than in the Mediterranean. Even though the association with the warrior and ideals as to the shaven warrior were transferred, the religious connotations up in the North became apparent. The meaning of the horse head may have changed at the dissemination of the razor, since the horse and the horse head in the North should be considered as a representation of the divine sun-horse being the most prominent helper of the sun (Kaul, 1998). The religious message of the razors became even clearer when a complex miniature iconography exploded over the surfaces in the Nordic Late Bronze Age (Kaul, 1998; Kaul, 2004; Stig Sørensen & Appleby, 2018; Kaul, 2018b).

The introduction of the razor, reflecting the idea of the shaven warrior, should not be regarded as an isolated phenomenon, but as part of a larger picture of south-north social interaction. It should be considered as component of an 'aristocratic package', reflecting a new chiefly elite culture (Kristiansen & Larsson, 2005), and it should be underlined that the context of the razors, both in the Mediterranean Minoan-Mycenaean room and in

Southern Scandinavia, is often that of warrior's graves. At the same time elements such as the folding stool, bronze drinking vessels and the horse-drawn chariot were introduced or chosen in the North, all to be considered as ruling symbols. These features, together with the razors, indicate the acceptance of parts of a Minoan/Mycenaean lifestyle (Kaul, 2013a; Kaul, 2018b).

EXCHANGE NETWORKS

Such ideas related to the dissemination and re-interpretation of certain elements of material culture did not travel by themselves but were related to the development of long-distance exchange networks. Between 1600 and 1300 BC considerable and increasing amounts of metal came into circulation. The Mitterberg mines in Austria and the North Italian Trentino extraction sites reached industrial proportions. At a time just before and during the Nordic period II, marked changes appeared in the patterns of exchange and mobility. The dominant sources of copper for South Scandinavia became the Italian Alps, in the Trentino region north-east of the Lago di Garda, even though the Slovakian ore mountains, and Mitterberg, Austria, were still of importance (Ling et al., 2014; Bunnefeld, 2016; Ling et al., 2019; Reiter et al., 2019; Nørgaard et al., 2021). In Nordic Bronze Age period II, British copper is no longer detectable in the dataset. This takeover coincided with the establishment of the 'full grown NBA', and these changes coincide with burial mounds by the thousands and a unifying metalwork style that branded the upper echelons of men and women in distinct, yet shared ways. This tie-up with western riverine and land-based routes now connected the Nordic Bronze Age region with the South German/Central European Tumulus culture and the first transalpine amber routes (Nørgaard et al., 2021). There are many examples of close contacts between the Tumulus culture region and the North, some objects being 'imported', other being reshaped in decoration patterns and craftmanship, here just mentioning the octagonal hilted swords and the Nordic reshaping of South German multiple neck-rings into the characteristic Nordic neck collar (Kristansen & Larsson, 2005; Bunnefeld & Schwenzer, 2011; Nørgaard, 2011; Bunnefeld, 2016).

Abundant finds of Nordic/Baltic amber in the rich burials of the South German Tumulus region, as well as the opening for amber reaching areas of the Mediterranean south of the Alps at about 1700 BC, mark an increasing 'globalization' taking place in the European Bronze Age societies, where Nordic/Baltic amber has turned up in Greece, for instance in the shaft graves of Mycenae (Harding & Hughes Brock, 1974; Czebreszuk, 2013). Even beyond the Mediterranean Nordic/Baltic amber has been found, in Syria and Mesopotamia (Mukherjee et al., 2008; Bunnefeld & Martin, 2020),

and Egypt (Hood, 1993; Bongianni et al., 2001; Varberg et al., 2019). The extreme long-distance exchange of commodities seems to culminate just before and around 1400 BC, as documented by numerous glass beads of Mesopotamian and Egyptian glass found in burials in Denmark and North Germany, also following the 'amber routes' through Europe (Angelini et al., 2003; Mukherjee et al., 2008; Nicolis, 2010; Bellintani, 2010; Bellintani, 2014; Vandkilde, 2014; Varberg et al., 2015; Varberg et al., 2016; Kaul & Varberg, 2017; Varberg et al., 2019; Nørgaard et al., 2021). There were of course many amber routes along the many rivers of Europe, along the Elbe and Rhine River systems in the west and along Oder and Wistula in the east, as already noted early in the research history (Montelius, 1906). The different routes of exchange can also be seen by the glass bead evidence (Varberg et al., 2019).

The observed changes in exchange patterns seems to coincide with changes in mobility patterns of single individuals as demonstrated by a larger strontium isotope study on human bone and teeth from Danish burials (Frei et al., 2019). Seen on the background of evidence from the Neolithic, the recent results show a tendency for more individuals related to distant areas. The turning point seems to be around 1600 BC. Among these individuals with a background outside the Danish area are famous female oak coffin burials of Egtved and Skrydstrup Jutland (Frei et al., 2015; Frei et al., 2017). It should be noted that some individuals had still a local background, such as the woman from Ølby, also buried in an oak coffin, covered by a large burial mound (Reiter et al., 2019; Frei et al., 2019).

Even though the changing exchange patterns to a certain degree can be understood in geographical terms, it may be difficult to understand these changes in social terms: how was the opening of the world possible? When dealing with the Nordic Bronze Age razors in particular, it seems difficult to understand how specific traits and their re-interpretation were possible, when no finds in between the Eastern Mediterranean and the North yield bridging evidence. Since direct contact systems between the Minoan/Mycenean seems unfeasible, even though the dissemination of ideas appears to have been swift, some middle stations or 'hot spots' should be considered. Hot spots, where travelers met and ideas as well as commodity were exchanged. Considering the importance of the copper ores of Trentino, Italy, north-east of Lago di Garda, it would not be totally unattainable that areas at this very lake, perhaps at Peschiera, where many palafitte villages has yielded Nordic/Baltic amber, could be such a hot spot of social and cultural interaction, where 'the North' and the South', at certain guest-friendship occasions could meet. The Peschiera daggers themselves perhaps testify the connections in both directions.

For understanding the social mechanisms that would have made such connections and meetings possible, the ancient Greek concept of *xenia*, guest friendship, should be included as an elucidatory model.

XENIA, GUEST-FRIENDSHIP

The ancient Greek concept of guest-friendship, *xenia*, may give us an idea of those social mechanisms that would make such voyages practically feasible (Kaul, 2017; Kaul, 2018a). *Xenia* was a concept of hospitality and friendship of individuals of non-related groups – city-states, ethnic groups – distinctly separated from the notions of friendship relations between members of the individual's own society, kinship and family. Xenia was generally seen as a moral and religious obligation of hospitality securing food and accommodation to travellers – *xenia* ensured that a traveller would not be turned away from any house. *Xenia* was instituted by the gods, Zeus being the protector of the traveller, and those who did not obey the rules of guest friendship would call down divine wrath. Even a humble traveller could be a god in disguise, testing the host (Felher et al., 1998; Herman, 2002). The word *xenia* can be traced back to linear B inscriptions from Knossos and Pylos in the form *ke-se-nu-wo or ke-se-nu-wi-ja*, probably with the same elements of meaning (foreigner, guest) as in classical Greek (Hiltbrunner, 2005; Garcia, 2017).

In more specific terms, *xenia* was an institution of mutual guest-friendship relations of individual partners, including rituals of gift exchange. *Xenia* could promote the exchange of goods and services, even though the transactions were supposed to be in a non-mercantile spirit. There was always an insider-outsider dichotomy with respect to the partners' own social units. *Xenia* relationships could exist between members of Greek cities, between Greeks and non-Greeks, such as Persians, Lydians, Egyptians, Phoenicians and Romans, and between non-Greeks. Thus, there is no reason to believe that *xenia* should be regarded as an essentially Greek institution. The more formal guest-host relationships could also include friends of the partner. A friend of Socrates, Crito, has made this suggestion to Socrates: *'If you wish to go to Thessaly, I have there xenoi who will make much of you and protect you, so that no one in Thessaly shall annoy you'* (after Herman, 2002, pp. 10–12). Escort through foreign land could also be provided by means of xenia connections (Herman, 2002, p. 119).

The *xenia* bond did not expire with the death of the partners themselves but outlived them and were passed on to their descendants, apparently in the male line. Even in death *xenia* seems to have been of importance, since it could be the duty of a guest-friend to look after the earthly remains of a dead partner and celebrating his memory (Herman, 2002). The great importance of *xenia* relationships, even for generations, is demonstrated by an episode described in the *Iliad*. Two heroes, Diomedes and Glaukas, were about to engage in fierce combat when they suddenly realized that their grandfathers were bond by *Xenia*. Diomedes, pleasantly surprised at the revelation, drove his spear into the earth and spoke to his former rival in a friendly tone: *'Therefore I am your friend and host in the heart of Argos; you are mine in Lykia, when I come to your country. Let us avoid each other's spears,*

even in close fighting. There are plenty of Trojans and famed companions in the battle for me to kill [...] *But let us exchange our armour [equipment, weapons], so that these others may know how to be guests and friends from the days of our fathers'* (*Iliad* 6.224, after Herman 2002, p. 1).

It is important to note that the bonds between Diomedes and Glaukas are personal and related to ties between their grandfathers. Their revealed connections of guest-friendship were more important than where they served as soldiers. Thus, such bonds should not be described as chiefly alliances, even though there may have been occasions of more politically toned *xenia* bonds, for instance between a leader and a whole foreign people (*Odyssey* 9.18, after Herman, 2002). In certain cases, *xenia* should not be seen as something in conflict with marriage alliances between noble families, 'political' marriages being an outcome of already established *xenia* bonds (Hiltbrunner, 2005).

At first glance, the behaviour of the two heroes, Diomedes and Glaukas, might seem to be disloyal. On the other hand, the text demonstrates that their conduct was regarded as being morally appropriate, the ideas of the God-given guests-friendship for a time overruling the decided progress of battle. Anyway, there were other warriors to kill for the two guest-friends. In a Bronze Age society, even in Northern Europe, such personal guest-friend connections – in this case of formerly opposed heroes – could indeed be very practical. At times of war and hostilities between the chiefdoms, such more personal guest-friendships relations would ensure that the routes of exchange would remain open, not being disrupted. Or, after a conflict, the connection networks would be easily re-opened not being weakened and destabilized by the effects of hatred and revenge, the *xenia* bonds enhancing friendly connections.

This episode of the *Iliad* reveals what may be understood as a Bronze Age situation. Here, the hero could see the guest-friendship as his own private obligation. Such notions of the guest-friendship of the heroic, Homeric age were in conflict with the notions of loyalty to the Greek City state. Two competing moral systems were involved, one archaic and pre-political, another steaming from the ideas of the *polis* structure. There are many references, where army leaders or political leaders seemingly were forced to abandon their *xenia* friendships in order to uphold their loyalty to their state and people (Herman, 2002). When armies of hoplite structure met under firm command, there was a limited room left for personal guest-friendship discussions on the battlefield. Nevertheless, discussions related to the conflicting obligations as to the objective of the army command, versus the *xenia* bonds, still occurred, creating virtually rebellious situations.

When initializing such a friendship, feasting, declaration and gift exchange were indispensable for its validity. The gifts could include drinking gear (Felher et al., 1998). When referring to relations with royals or leaders, gifts of value not only served as marks of prestige for the owner, but also as proofs of being under the king's protection (Herman, 2002).

The patterns of social relationship of *xenia* outlined above, including the exchange of gifts – is not peculiar to the ancient Greek world. Institutions displaying similar features have – naturally – been observed in many other societies (Service, 1971; Morris, 1986; Mauss, 1993; Felher et al., 1998; Hiltbrunner, 2005). Instead of finding a model framework among societies far away in time and space from the European Bronze Age, it would seem more straightforward to utilize the contextually closer evidence of *xenia* to gain an impression of the organization of long-distance connections and exchange. We should not forget that Nordic amber did reach Mycenae, and that the episode from the *Iliad* discloses the ideal behavior of Homeric heroes.

Thus, the God-given obligations of the guest-friendship of *xenia* can provide us with an elucidatory model for Bronze Age communication. Even though the notions of guest-friendship can give us a better understanding of the social mechanisms lying behind the networks of exchange, we have only vague ideas as to how the journeys and transport of valuable commodities were organized.

There were no hotels or guesthouses in our modern sense (Felher et al., 1998) and in principle, any farm on the routes could be a place of guest-friendship. Perhaps there were places where guest-friendship was employed on a larger scale, where many friends related to a wealthy and famed host were well treated, and where people from different regions could meet, establishing further *xenia* connections. It is tempting to consider certain (lightly defended) middle Bronze Age villages in the Alps, such as Sotciastel, Albanbühel and Ganglegg (Tecchiati, 1998; Steiner, 2007; Tecchiati, 2011) in Südtirol/ Alto Adige, and Padnal, Graubünden, Schweiz (Rageth, 1986) as places were guest-friends – travelers belonging to the highest echelons of the Bronze Age societies – could meet. Also, a number of palafitte villages in the area of Lago di Garda should be included (Kaul, 2018a).

The *xenia*-like bonds would make possible not only the exchange of goods over long distances, but also of gift exchange, including valuable drinking (feasting) gear. Furthermore, close bonds between '*xenoi*' living far away from each other could provide us with an explanatory model of how ideas could spread over long distances.

The introduction of the single-edged razor in the North, and the idea of the appearance of the shaven warrior, could easily be understood as an outcome of meetings of guest-friends. At such occasions when guest-friends came close to each other, an atmosphere could be created well suited for imitating distant habits. Furthermore, the curious distribution of the octagonal hilted swords could excellently be understood within the contextual framework of the *xenia* concept. The occurrence of foreign swords, such as the octagonal hilted swords in South Scandinavia and their replica might in some cases reflect the exchange of weapons as an act of sealing the guest friendship.

CONCLUSION

The spread and the distribution of the single edged razor and its appearance in the North, provides an excellent example of the complexity of the transfer of ideas (Fig. 11). Many questions arise when we simply do not reject our observations as 'coincidences'. How can we connect the Mediterranean with the North when similar object types are absent in-between? – Where can we find those places where *xenia* interaction made transfer and translation of ideas possible? Candidates for such places could be in the Po valley, at Lago di Garda, and close to the Alp passes, and in the areas just north of the Alps; though many other sites following the palimpsest of different lines of exchange are to be considered as well. We do not necessarily speak of direct contacts, but of possible 'middle-stations' where *xenia* was observed. Here, dialogues and exchange of ideas at the crossroads took place when feasting and drinking practices according to the ancient rules of *xenia* were respected.

The diffusion of the razor and the ideas behind just prior to 1400 BC should not be seen as part of a wave that overwhelmed the passive receivers in the North. Terms like 'influence' or 'diffusion' do not seem sufficiently explanatory. We could perhaps talk about active 'diffusion', where leading members of the societies having knowledge of the world of the South – probably after long journeys – deliberately picked up certain elements that could be used in self-promotion in a dynamic time of change. We could speak of inventive reinterpretations or creative processes of iconographic translations. This happened at a time, when the world opened, early steps of globalization processes.

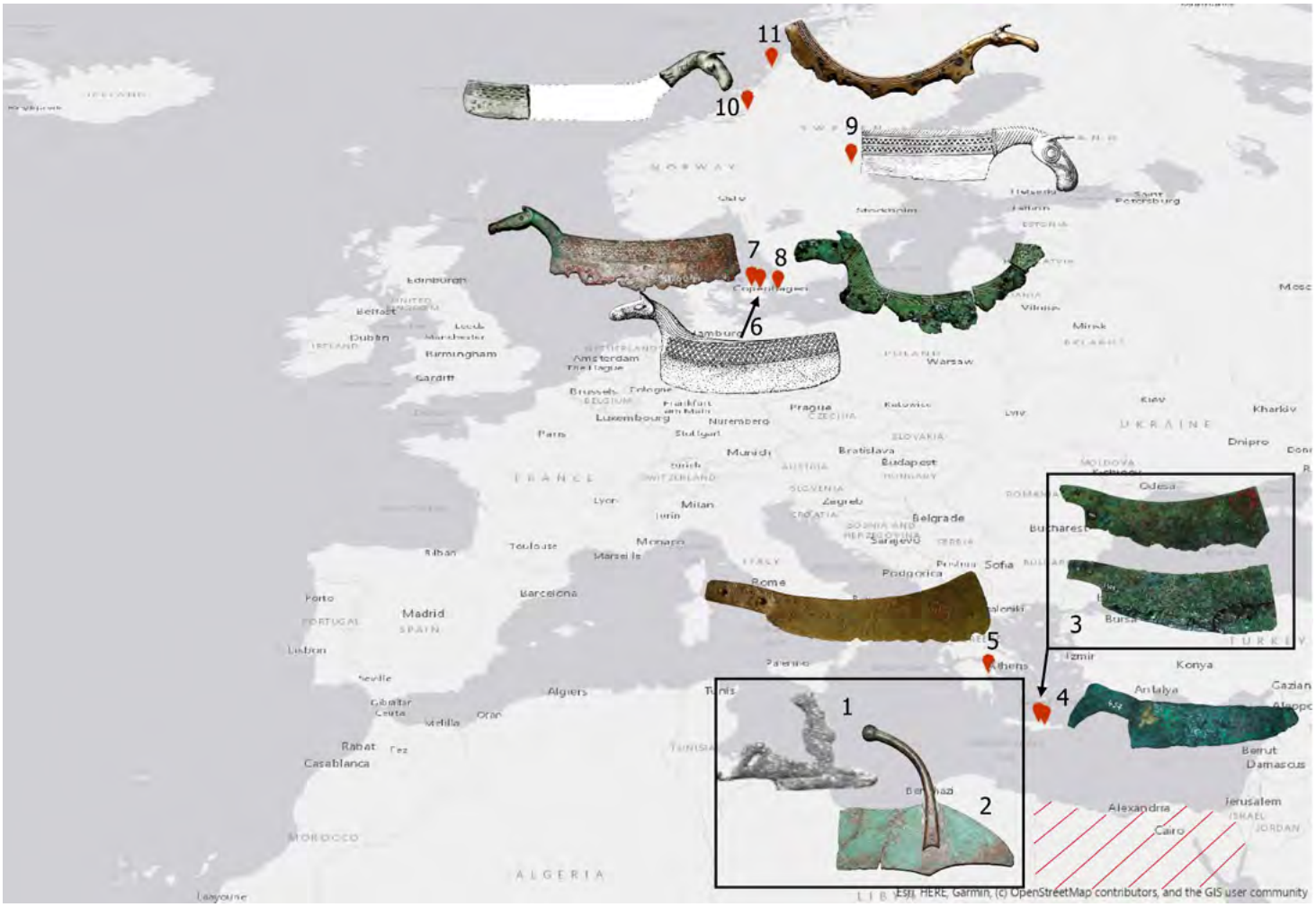

Fig. 11. Map locating examples of the Bronze Age razors. 1: Toilet equipment, with razor, the handle in the shape of a horse, Egypt; 2: Rotating razor, Egypt; 3: Single-edged razors, Zapher Papoura at Knossos, Crete, Greece; 4: Votive single edged razor with horse headed handle. Dicte Cave, Crete, Greece; 5: Single edged razor, burial at Nafplion/Tiryns, Greece. 6: Darup, Zealand, Denmark; 7: Kastrup, Zealand, Denmark; 8: Skivarp, Scania, South Sweden; 9: Valsta, Närke, Central Sweden; 10: Todness at Steinkjer, North Trøndelag, Norway; 11: Skjeggesnes, Nordland, North Norway.

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BIBLIOGRAPHY

Aner, E., & Kersten, K. (1973). *Die Funde der älteren Bronzezeit des nordischen Kreises in Dänemark, Schleswig-Holstein und Niedersachsen: Vol. 1. Frederiksborg und Københavns Amt.* Karl Wachholtz Verlag.

Aner, E., & Kersten, K. (1976). *Die Funde der älteren Bronzezeit des nordischen Kreises in Dänemark, Schleswig-Holstein und Niedersachsen: Vol. 2. Holbæk, Sorø und Præstø Amter.* Karl Wachholtz Verlag.

Angelini, I., Artioli, G., & Bellintani, P. (2003). Progretto 'Ambre e materiali vetrosi protostorici della Valle dell'Adige nel quadro delle coeve attestazioni dell'Italia del nord'. Primi risultate sulle ambre. *Preistoria Alpina,* 39, 227–241.

Bellintani, P. (2010). Ambra, una materia prima del nord (ma non solo). In F. Radina & G. Recchia (Eds.), *Ambra per Agamemnone. Indigeni e Micenei tra Adriatico, Ionio ed Egeo* (pp. 141–146). Mario Adda Editore.

Bellintani, P. (2014). Baltic amber, alpine cupper and glass beads from the Po plain. Amber trade at the time of Campestrin and Frattesina. *Padusa,* 50, 111–139. https://doi.org/10.1400/240159

Binns, K. S. (1985). De første tegn til jordbruk. In K. Pettersen & B. Wik (Eds.), Helgeland Historie: Vol. 1. *Helgeland Historielag* (pp. 148–171). Helgeland Historielag.

Boardman, J. (1961). *The Cretan Collection in Oxford.* Oxford University Press.

Bouzek, J. (1985). *The Aegean, Anatolia and Europe: Cultural interrelations in the second Millenium B.C.* Paul Åströms Förlag; Academia.

Bunnefeld, J. H. (2016). *Älterbronzezeitliche Vollgriffschwerter in Dänemark und Schleswig-Holstein. Studien zu Form, Verzierung, Technik und Funktion.* Akademie der Wissenschaften und der Literatur; Wachholtz Verlag.

Bunnefeld, J. H., & Martin, L. (2020). Von der Ostsee nach Assur – zum Bernsteinaustausch im frühen 2. Jt. v. Chr. In H. Meller & M. Schefzik (Eds.), *Die Welt der Himmelscheibe von Nebra – Neue Horizonte* (pp. 160–163). Theiss.

Bunnefeld, J.-H., & Schwenzer, S. (2011). Traditionen, Innovationen, und Technologietransfer – zur Herstellungstechnik und Funktion älterbronzezeitlicher Schwerter in Niedersachsen. *Praehistorische Zeitschrift,* 86, 2011, 207–253. https://doi.org/10.1515/pz.2011.012

Bongianni, A., Croce, M. S., & Accomozzo, L. (Eds.). (2001). *The Illustrated Guide to the Egyptian Museum in Cairo.* The American University in Cairo Press.

Czebreszuk, J. (2013). Mysterious Raw Material from the Far North: Amber in Mycenaean Culture. In S. Bergerbrant & S. Sabatini (Eds.), *Counterpoint: Essays in Archaeology and Heritage Studies in Honour of Professor Kristian Kristiansen* (pp. 557–563). Archaeopress; BAR Publishing. https://doi.org/10.30861/9781407311265

Davaras, C. (1976). *Guide to Cretan Antiquities.* Eptalofos S.A.

Davies, W. V. (1982). Razors. In R. E. Freed (Ed.), *Egypt's Golden Age: The Art of Living in the New Kingdom 1558–1085 B.C.* (pp. 189–190). Museum of Fine Arts Boston.

Evans, A. (1905). The Prehistoric Tombs of Knossos. 1 The Cemetery of Sapher Papoura. 2: The Royal tombs of Isopata. *Archaeologia* 59(2), 391–562. https://doi.org/10.11588/diglit.7525

Felher, H., Wiesehöfer, B. W., & Wagner-Hassel, B. W.-H. (1998). Gastfreundschaft. In H. Cancik & H. Schneider (Eds.),

Der neue Pauly. Enzyklopädie der Antike: Vol. 4. Epo-Gro (pp. 793–798). Verlag J. B. Metzler.

Freed, R. E. (1982). Toilette implement in the shape of a horse. In R. E. Freed (Ed.), *Egypt's Golden Age: The Art of Living in the New Kingdom 1558-1085 B.C.* (p. 195). Museum of Fine Arts Boston.

Frei, K. M., Bergerbrant, S., Sjögren, K-G., Jørkov, M. L., Lynnerup, N., Harvig, L., & Kristiansen, K. (2019). Mapping human mobility during the third and second millennia BC in present-day Denmark. *PLoS ONE,* 14(8), Article e0219850. https://doi.org/10.1371/journal.pone.0219850

Frei, K. M., Mannering, U., Kristiansen, K., Allentoft, M. E., Wilson, A., Skals, I., Tridico, S., Nosch, M.-L., Willerslev, E., Clarke, L., & Frei, R. (2015). Tracing the dynamic life story of a Bronze Age Female. *Scientific Reports,* 5, Article 10431, 1–7. https://doi.org/10.1038/srep10431

Frei, K. M., Villa, C., Jørkov, M. L., Allentoft, M. E., Kaul, F., Ethelberg, P., Reiter, S. S., Wilson, A. S., Taube, M., Olsen, J., Lynnerup, N.,Willerslev, E., Kristiansen, K., & Frei, R. (2017), A matter of months: High precision migration chronology of a Bronze Age female. PLoS ONE, 12(6), Article e0178834. https://doi.org/10.1371/journal.pone.0178834

Garcia, C. V. (2017). Mycenaean Terms with Stem /XENWOS/: 'Foreigner, Guest, Host'. In M.-L. Nosch, & H. Landenius Enegren (Eds.), *Aegean Scripts. Proceedings of the 14th International Colloquium on Mycenaean Studies, Copenhagen, 2-5 September 2015: Vol. 1* (pp. 417–427). Istituto di Studi sul Mediterraneo Antico.

Harding, A. F., & Hughes-Brock, H. (1974). Amber in the Mycenaean world. *Annual of the British School at Athens, 69,* 145–172. https://doi.org/10.1017/S0068245400005505

Herman, G. (2002). *Ritualized Friendship and the Greek City.* Cambridge University Press.

Hiltbrunner, O. (2005). *Gastfreundschaft in der Antike und im frühen Christentum.* Wissenschaftliche Buchgesellschaft.

Hogarth, D. G. (1900). The Dictaean Cave. *The Annual of the British School at Athens, 4,* 94–116. https://doi.org/10.1017/S0068245400001945

Hood, S. (1993). Amber in Egypt. In C. W. Beck & J. Bouzek (Eds.), *Amber in Archaeology. Proceedings of the Second International Conference on Amber in Archaeology Liblice 1990* (pp. 230–235). Institute of Archaeology, Czech Academy of Sciences.

Jockenhövel, A. (1971). *Die Rasiermesser in Mitteleuropa.* Prähistorische Bronzefunde, Subdiv. 8, Vol. 1. Verlag C. H. Beck.

Jockenhövel, A. (1980). *Die Rasiermesser in Westeuropa.* Prähistorische Bronzefunde, Subdiv. 8, Vol. 3. Verlag C. H. Beck.

Kaul, F. (1998). *Ships on Bronzes. A Study in Bronze Age Religion and Iconography.* The National Museum of Denmark.

Kaul, F. (2004). *Bronzealderens religion. Studier af den nordiske bronzealders ikonografi.* Det Kongelige Nordiske Oldskriftselskab.

Kaul, F. (2013a). The Nordic razor and the Mycenaean lifestyle. *Antiquity,* 87, 461–472. https://doi.org/10.1017/S0003598X00049061

Kaul, F. (2013b). The One-edged razor – northernmost and southernmost. In D. L. Mahler (Ed.), *The Border of Farming. Shetland and Scandinavia. Neolithic and Bronze Age Farming. Papers from the symposium in Copenhagen September 19th to the 21st 2012* (pp. 156–176). The National Museum of Denmark.

Kaul, F. (2015). Aegean Influences in the Nordic Bronze Age. The Evidence of the Razors. In P. Suchowska-Ducke, S. S. Reiter & H. Vandkilde (Eds.), *Forging Identities. The Mobility of Culture in Bronze Age Europe. Report from a Marie Curie Project 2009–2012 with Concluding Conference at*

Aarhus University, Moesgaard 2012: Vol. 2 (pp. 85–93). BAR Publishing. https://doi.org/10.30861/9781407314402

Kaul, F. (2017). The *Xenia* Concept of Guest-friendship – Providing an Elucidatory Model for Bronze Age Communication. In: P. Skoglund, J. Ling & U. Bertilsson (Eds.), *North Meets South. Theoretical Aspects on the Northern and Southern Rock art Traditions in Scandinavia* (pp. 172–198). Swedish Rock Art Series, Vol. 3. Oxbow Books. https://doi.org/10.2307/j.ctvh1dpgg.11

Kaul, F. (2018a). Middle Bronze Age Long Distance Exchange. Early Glass, Amber and Guest-Frienship, *Xenia*. In B. Nessel, D. Neumann & M. Bartelheim (Eds.), *Bronzezeitlicher Transport, Akteure, Mittel und Wege* (pp. 189–211). Tübingen University Press. http://dx.doi.org/10.15496/publikation-26722

Kaul, F. (2018b). The One-edged Razor: A Vivid Medium of Creativity and Meaning. In L. B. Jørgensen, J. Sofaer & M. L. Stig Sørensen (Eds.), *Creativity in the Bronze Age. Understanding, Innovation in Pottery, Textile and Metalwork Production* (pp. 161–176). Cambridge University Press. https://doi.org/10.1017/9781108344357

Kaul, F., & Rønne, P. (2013). Bronzes, farms and rock art. The agrarian expansion of North Norway. *Adoranten,* 2013, 25–56.

Kaul, F., & Varberg, J. (2017), Danish beads of Egyptian and Mesopotamian glass in context, and the amber connection. In S. Bergerbrant & A. Wessman (Eds.), *New Perspectives on the Bronze Age. Proceedings of the 13th Nordic Bronze Age Symposium held in Gothenburg 9th to 13th June 2015* (pp. 375–386). Archaeopress.

Kristiansen, K., & Larsson, T. B. (2005). *The rise of Bronze Age society. Travels, Transmissions and Transformations.* Cambridge University Press.

Ling, J., Hjärtnar-Holdar, E., Grandin, L., Stos-Gale, Z., Kristiansen, K., Melheim, A. L., Artioli, G., Angelini, I., Krause, R., & Canovaro, C. (2019). Moving metals IV: Swords, metal sources and trade networks in Bronze Age Europe. *Journal of Archaeologicl Science: Reports,* 26, Article 101837. https://doi.org/10.1016/j.jasrep.2019.05.002

Ling, J., Stos-Gale, Z., Grandin, L., Billström, K., Hjärtner-Holdar, E., & Persson, P.-O. (2014). Moving Metals II: Provenancing Scandinavian Bronze Age artefacts by lead isotope and elemental analyses. *Journal of Archaeological Science,* 41, 106–132. https://doi.org/10.1016/j.jas.2013.07.018

Mauss, M. (1993). *The Gift. The form and reason for exchange in archaic societies.* Routledge.

McCreesh, N. C., Gize, A. P., & David, A. R. J. (2011). Ancient Egyptian hair gel: new insight into ancient Egyptian mummification procedures through chemical analysis. *Journal of Archaeological Science, 38*(12), 3432–3434. https://doi.org/10.1016/j.jas.2011.08.004

Mellink, M. (1991). The Origin and Iconography of the Late Minoan Painted Larnax. *Hesperia,* 60, 285–307. https://doi.org/10.2307/148065

Montelius, O. (1906). *Kulturgeschichte Schwedens von den ältesten Zeiten bis zum elften Jahrhundert nach Christus.* Verlag von E. A. Seemann.

Montelius, O. (1917). *Minnen från vår forntid.* P. A. Nordstedt och Söners Förlag (Reprint ARKEO-Förlaget, Gamleby).

Morris, I. (1986). Gift and Commodity in Archaic Greece. *Man, N. S., 21*(1), 1–17. https://doi.org/10.2307/2802643

Mukherjee, A. J., Rossberger, E., James, M. A., Pfälzner, P., Higgitt, C. L., White, R., Peggie, D. A., Azar, D., & Evershed, R. P. (2008). The Qatna lion: scientific confirmation of Baltic amber in late Bronze Age Syria. *Antiquity,* 82, 49–59. https://doi.org/10.1017/S0003598X00096435

Müller, S. (1921). *Oldtidens Kunst i Danmark: Vol. 2. Bronzealderens Kunst i Danmark.* C. A. Reitzel.

Nicolis, F. (2010). The role of the central-eastern Alps in connecting Mediterranean and central European elites during the Bronze Age. In H. Meller & F. Bertemes (Eds.), *Der Griff nach den Sternen. Wie Europas Eliten zu Macht und Reichtum kamen. Internationales Symposium in Halle (Saale) 16.–21. Februar 2005* (pp. 253–259). Landesamt für Denkmalpflege und Archäologie in Sachsen-Anhalt; Landesmuseum für Vorgeschichte.

Nørgaard, H. W. (2011). *Die Halskragen der Bronzezeit im nördlichen Mitteleuropa und Südskandinavien.* Dr. Rudolf Habelt Verlag.

Nørgaard, H. W, Pernicka, E., & Vandkilde, H. (2021). Shifting networks and mixing metals: Changing metal trade routes to Scandinavia correlate with Neolithic and Bronze Age transformations. *PLoS ONE 16*(6), Article e0252376. https://doi.org/10.1371/journal.pone.0252376

Oldeberg, A. (1974). *Die ältere Metallzeit in Schweden.* Kungl. Vitterhets Historie och Antikvitets Akademien.

Peroni, R. (1956). Zur Gruppierung mitteleuropäischer Griffzungendolche der späten Bronzezeit. *Badische Fundberichte, 20,* 69–92. https://doi.org/10.11588/diglit.43787.11

Peroni, V. B. (1994). *I pugnali nell'Italia Continentale.* Prähistorische Bronzefunde, Subdiv. 6, Vol. 1. Franz Steiner Verlag.

Petrie, W. M. F. (1917). *Tools and Weapons. Illustrated by the Egyptian collection in University College, London, and 2000 outlines from other sources.* British School of Archaeology in Egypt, University College; Constable & Co. Ltd.; Bernard Quaritch.

Rageth, J. (1986). Die wichtigsten Resultate der Ausgrabungen in der bronzezeitlichen Siedlung auf dem Padnal bei Savognin (Oberhalbstein GR). *Jahrbuch der Schweizerischen Gesellschaft für Ur- und Frühgeschichte, 69,* 63–103. https://doi.org/10.5169/seals-116989

Randsborg, K. (1970). Zwei Peschiera-Dolche aus Südskandinavien. *Acta Archaeologica, 41,* 1970, 191–195.

Reiter, S. S., Frei, K. M., Wrobel Nørgaard, H., & Kaul, F. (2019). The Ølby Woman: A Comprehensive Provenance Investigation of an Elite Nordic Bronze Age Oak-Coffin Burial. *Danish Journal of Archaeology, 8,* 1–22. https://doi.org/10.7146/dja.v8i0.114995

Rygh, K. (1906). Videnskabsselskabets oldsagssamling. Tilvækst i 1906 af sager, ældre end reformationen. *Det kgl. norske videnskabers selskabs skrifter, 5,* 1–32.

Rønne, P. (2011). Highlights from the Northernmost Bronze Age societies in Norway. In: D. L. Mahler & C. Andersen (Eds.), *Farming on the edge: Cultural Landscapes of the North. Short papers from the network meeting in Lerwick, Shetland September 7th–10th 2010* (pp. 58–69). The National Museum of Denmark.

Service, E. R. (1971). *Primitive Social Organization.* Random House.

Sprockhoff, E. (1936). Ein Peschieradolch aus Niedersachsen. *Germania, 20*(3), 1936, 166–170. https://doi.org/10.11588/ger.1936.41662

Steiner, H. (2007). *Die befestigte Siedlung am Ganglegg im Vinschgau – Südtirol. Ergebnisse der Ausgrabungen 1997-2001 (Bronze/Urnenfelderzeit) und naturwissenschaftliche Beiträge.* TEMI Editrice.

Stig Sørensen, M. L., & Appleby, G. (2018). To decorate a Nordic Bronze Age razor. A design challenge. In L. B. Jørgensen, J. Sofaer & M. L. Stig Sørensen (Eds.), *Creativity in the Bronze Age. Understanding, Innovation in Pottery, Textile and Metalwork Production* (pp. 191–205). Cambridge University Press. https://doi.org/10.1017/9781108344357

Tecchiati, U. (1998). *Sotciastel. Un abitato fortificato dell'età del bronzo in Val Badia.* Istitut Cultural Ladin 'Micurà de Rü'; Soprintendenza ai Beni Culturali di Bolzano.

Tecchiati, U. (2011). Albanbühel Bolzano (Italia). In A. Piccoli, & R. Laffranchini (Eds.), *Enigma. Un antico processo di interazione europea: le Tavolette Enigmatiche. An ancient European interaction: the Enigmatic Tablets* (pp. 94–98). Museo archeologico dell'Alto Mantovano.

Vandkilde, H. (2014). Breakthrough of the Nordic Bronze Age: Transcultural Warriorhood and a Carpathian Crossroad in the Sixteenth Century BC. *European Journal of Archaeology, 17*(4), 602–633. https://doi.org/10.1179/1461957114Y.0000000064

Varberg, J., Gratuze, B., & Kaul, F. (2015). Between Egypt, Mesopotamia and Scandinavia: Late Bronze Age glass beads found in Denmark. *Journal of Archaeological Science, 64*, 168–181. http://dx.doi.org/10.1016%2Fj.jas.2014.11.036

Varberg, J., Gratuze, B., Kaul, F., Haslund Hansen, A., Rotea, M., & Wittenberger, M. (2016). Mesopotamian glass from Late Bronze Age Egypt, Romania, Germany and Denmark. *Journal of Archaeological Science, 74*, 184–194. https://doi.org/10.1016/j.jas.2016.04.010

Varberg, J., Kaul, F., & Gratuze, B. (2019). Bronze Age Glass and Amber. Evidence of Bronze Age long distance exchange. *Adoranten,* 2019, 5–29.

Weber, C. (1996). *Die Rasiermesser in Südosteuropa,* Prähistorische Bronzefunde, Subdiv. 8, Vol. 5. Franz Steiner Verlag.

LIST OF ILLUSTRATIONS

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A hoard of Armorican socketed axes from Riec-sur-Belon, Quimper, Finistère, France.

USELESS OBJECTS FROM ANOTHER TIME:

EARLY IRON AGE BRONZE SOCKETED AXE HOARDS IN NORTHWESTERN FRANCE

Gadea Cabanillas de la Torre

José Gomez de Soto

In A. Ballmer & D. Neumann (Eds.), *Imitations, Simulations, Mock-ups and Illusions: Special Variants and Interpretations in Material Culture. Case Studies from Prehistoric Europe.* Propylaeum. https://doi.org/10.11588/propylaeum.1445.c20616

Early Iron Age bronze socketed axes of the 'Armorican' type are inspired by the Late Bronze Age socketed axes and have previously been confused with them. However, they do not conform to Late Bronze Age standards but are skeuomorphic objects. Huge quantities of those axes have been discovered in Brittany and Normandy, where they were traditionally attributed to end of the Late Bronze Age (Ha B2–B3) and thought to have persisted throughout the Early Iron Age. However, a critical review of alleged Late Bronze Age hoards containing those axes proves this idea wrong. Their contexts date to the Ha D phase, perhaps as early as Ha C. Both objects and contexts differ from their Late Bronze Age parallels and hint at new concepts of metal use and circulation. The deposition of Armorican socketed axes contrasts with Late Bronze Age hoarding practices and must be understood against a broader Western European context of transition. Hoards were frequent during the Late Bronze Age, (nearly) disappeared during the Ha C phase, and became more frequent again during the Ha D phase. It is argued that the Early Iron Age, the bronze socketed axes' 'uselessness' is a key aspect to the understanding of how their social role differs from that of Late Bronze Age examples, but also of how new standards were established during a period of change. Often considered as evidence of continuity, they might also inform us about how traditional objects and practices were reused in new scial contexts.

Carp's Tongue sword phase; Early Iron Age; Hallstatt D (Ha D); Armorican type socketed axes; hoards; depositions

INTRODUCTION

Hoards containing Armorican socketed axes represent a specific phenomenon located mainly in Brittany but also in Normandy, the French department of Loire-Atlantique as well as the Channel Islands. Some small hoards – and a few doubtful isolated finds – are known in Britain (Schmidt & Burgess, 1981, p. 148; O'Connor, 1980, p. 235; 2007, p. 68, pp. 75–76; Boughton, 2015, p. 137). Despite the strong contrast between Carp's Tongue sword hoards and Armorican axe assemblages, both were traditionally – and sometimes still are – considered as contemporary since the relevant objects were believed to date mostly to the very last phase of the Bronze Age. Subsequently, it has been clearly established that the hoards were buried during the recent phase of the Early Iron Age (Ha D phase). At first glance, the persistence of the hoarding tradition focusing on bronze axes might give a false impression of continuity, interpreted as an archaic practice (Milcent, 2017a, p. 82). Although this observation might support the idea of an extended Late Bronze Age period in northwestern France, with the Early Iron Age starting only around 650 BC (Marcigny & Talon, 2009, p. 386, Fig. 1; Marcigny et al., 2017, Fig. 6), today, in the light of new discoveries and approaches, this previous framework must be drastically revised. Consequently, we have chosen to study how bronze axe hoarding practices differed and mirrored each other during those two phases, to understand their social significance in an Atlantic Early Iron Age.

A LONG-LASTING CONFUSION: A LONG ATLANTIC LATE BRONZE AGE IN NORTHWESTERN FRANCE?

The earliest socketed axes in Western Europe first appeared in the British Isles during the Middle Bronze Age (Hawkes, 1955; Schmidt & Burgess, 1981, p. 172; Eogan, 2000, p. 19). In France, they appeared in large quantities during the Atlantic Late Bronze Age 3. Many of them are found in hoards from the Carp's Tongue sword phase, spreading from Atlantic France, the Picardie region to western central France, to Britain and Ireland. A substantial number belong to the Plainseau type (Fig. 1, No. 1). Like other axe types, some come from the British Isles, and were either imported or copied (Fig. 1, No. 2). They are characterized by ornamental vertical ribs on their flat parts (Burgess, 2012). The socketed axes of the Plainseau type could most likely be considered prototypes for the Armorican socketed axes (Fig. 1, No. 3–8), as their socket and the mouth tend to have a quadrangular cross-section, while their collar remains circular, or at least sub-circular. In Britain, however, other socketed axe types with a quadrangular cross-section could be related to the Armorican axes (Schmidt & Burgess, 1981). Recent discoveries, a critical re-examination of former finds and new research methods for the study of ancient metallurgy lead us to reject the premise according to which Armorican socketed type axes would date mainly to the end of the Bronze Age. Even though it was preceded by a lengthy debate, their attribution to the Early Iron Age is now comprehensively established.

The originality of Armorican socketed axes, compared to other similar axes, was acknowledged from the 19th century onward, but controversies regarding their chronology soon arose. In their work *Le Musée préhistorique*, G. and A. de Mortillet dated these axes to the Iron Age, considering them as the expression of a persisting archaic tradition, practiced by a community which favoured bronze at a time when iron metallurgy was fully mastered (de Mortillet & de Mortillet, 1881, pl. XCIII). In the Bronze Age volume of his *Manuel d'Archéologie préhistorique, celtique et gallo-romaine*, a key work long time referred to in France, J. Déchelette dated these axes to his so-called Bronze IV phase, corresponding to our Late Bronze Age (Déchelette, 1910, p. 253, pl. IV). From the 1960s on, Armorican socketed axes have been subjected to specific synthetic studies, mainly by J. Briard (1965) and later by J. Rivallain (1971). The first of these two studies, which laid the foundations for the continental Atlantic Bronze Age typochronology, formulated the idea that these axes must mainly be associated with the Late

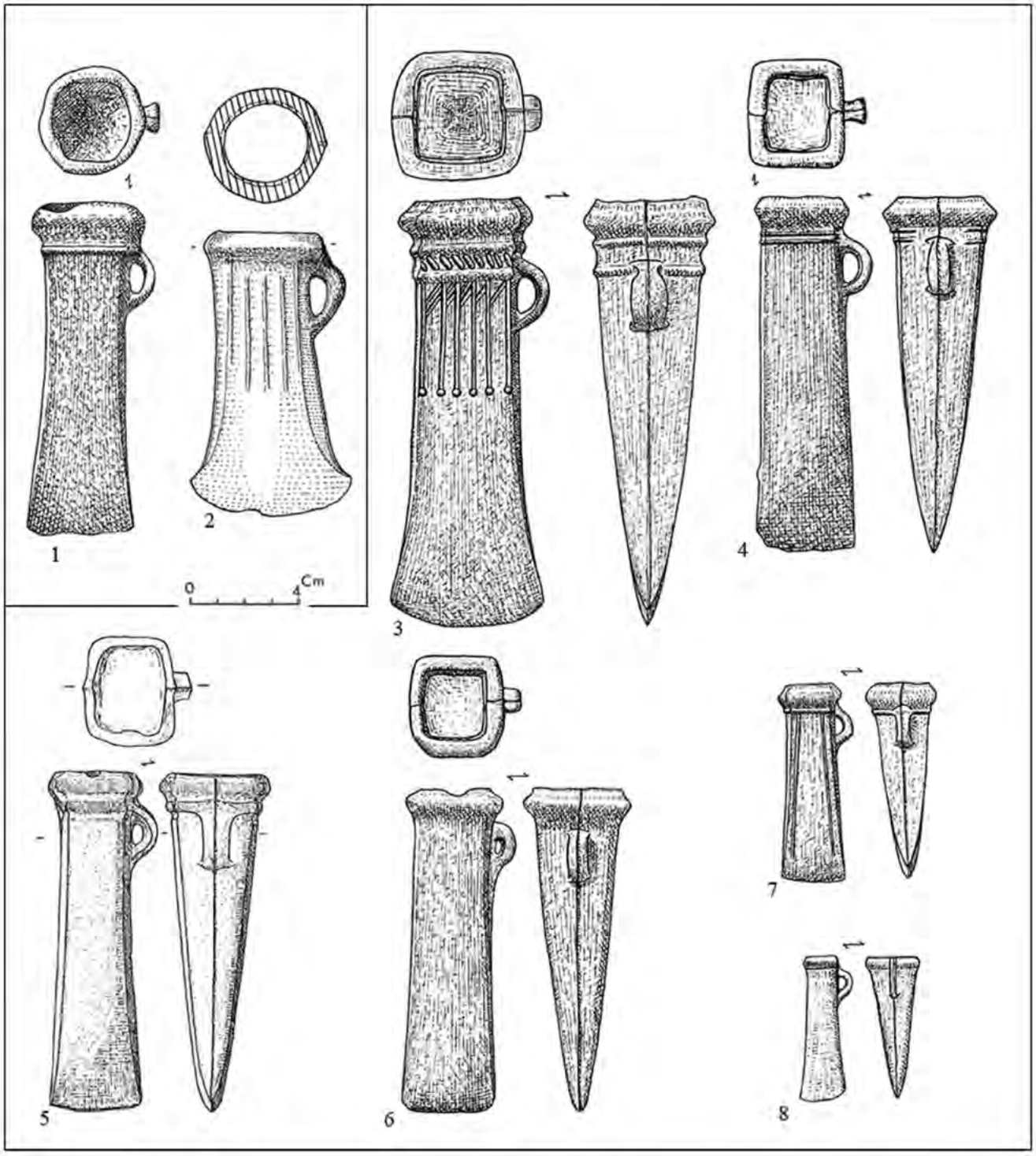

Fig. 1. The Carp's Tongue sword phase (Bronze Final IIIb/Ha B2–B3 phase); 1: Type Plainseau; 2: British type; 3–8: Armorican socketed axes; 3: Type Brandivy; 4: Type Dahouet; 5: Type Tréhou; 6: Type Plurien; 7: Type Couville; 8: Type Maure.

Bronze Age Carp's Tongue sword phase and then persisted during the Early Iron Age. Later, J. Briard noticed the complete absence of such axes in the Late Bronze Age hoards recently discovered in Brittany, which clearly supported his first hypothesis (Briard, 1991, p. 136), but then was revised again later (Briard, 2001). Unfortunately, this latter statement remained practically unnoticed for a long time (i.e. Rivallain, 2012). Only Briard's passing put an end to his ambitious project of a European synthesis on the subject.

A critical examination of hoards from the Carp's Tongue sword phase supposedly containing socketed axes of the Armorican type, discovered in Brittany, Normandy or on the Channel Islands, shows that none of them is reliable: they are connected to poorly documented ancient discoveries or mixed collections, and even the mere existence of some of them is doubtful (for more details, see Gomez de Soto, 2015)! It must be pointed out that none of the early discovered and well documented hoards from the Carp's Tongue sword period (e.g. Vénat, Longeville, Prairie de Mauves, Petit Vilatte, or Déville-lès-Rouen) has ever yielded any socketed axe of the Armorican type, and neither have the ones which were more recently found in Brittany (e.g. Gouesnac'h: Fily, 2009), Normandy (i.e. Auvers: Germond et al., 1988 and other unpublished recent discoveries) and western central France (e.g. Challans: Verney, 1990; Meschers: Gachina & Gomez de Soto, 2008; Triou: Pautreau et al., 1983). This had already been highlighted by J. Briard regarding the discoveries made in Brittany between the 1970s and the 1990s (Briard, 1991; 2001). As early as in 1965, Briard had noticed that Armorican socketed axes were sometimes associated with personal adornment items from the Early Iron Age, for instance in the hoards from Plonéis, Finistère (Fig. 2, No. 1–2) and Loudéac, Côtes-d'Armor (Fig. 2, No. 5), and that the carinated pottery vessels containing the hoards from Roudouallec in Kerhon, Morbihan, and Mahalon in Bogoudonou, Finistère, had specific shapes imitating Early Iron Age bronze *situlae* (Briard, 1965, p. 244).

Some recent discoveries which were accompanied by comprehensible documentation of the archaeological contexts confirm the Ha D dating, namely:

- *Kergariou in Quimper, Finistère*: at the bottom of a typical Early Iron Age semi-subterranean storage structure, several intact axes, fragments of axes and various bronze artefacts – among others fragments of an armlet and of a small-knobbed bracelet – were assembled in a pit and its immediate surroundings. The pit's filling yielded further artefacts from the Ha D phase, such as pottery sherds and a fragment of a decorated lignite bracelet (Menez et al., 2005; Menez & Gomez de Soto, 2018).

- Hoards from *la Forgerais in Ruffigné, Loire-Atlantique* (Fig. 2, No. 3), *Trelly, Manche and Locoal-Mendon, Morbihan*: axes associated with personal adornment items from the Ha D1 phase (Philippe, 1992; L'Helgouach, 1999; Verney, 1999; Aranda et al., 2013; Gomez de Soto, 2015, p. 125).

- Two recently discovered hoards contain Early Iron Age socketed axes of the Llyn Fawr horizon, or copies of the Armorican type: in *Hengoat, Côtes-d'Armor,* a broken axe close to type Sompting (Gomez de Soto, 2015, p. 127); at *La Touche ès Pritiaux in Saint-Glen, Côtes-d'Armor,* a small axe belonging to the Couville type, with linear decoration (Cabanillas de la Torre et al., 2016, no. 21) comparable to so-called linear-faceted type axes (O'Connor, 1980, pp. 231–233, 2007; Needham et al., 1997), now subdivided into the types of East Rudham, Portland or linear-decorated axes (Roberts et al., 2015, p. 373; Boughton, 2015, pp. 13–128);

- In a hoard found near *Quimper* (Fig. 2, No. 4), the axes were associated with fragments of two bracelets, one with round terminals (Giot, 1954). Parallels with similar armlets from Aquitania and Normandy confirm their dating at the very end of the Early Iron Age. This small assemblage seems to be the most recent of all datable hoards.

The persistence of the practice of hoarding on the Atlantic coast, especially in northwestern France where bronze axes continued to be produced in large quantities and buried in the ground, has led to a poor definition of the Early Iron Age in this area. Armorican socketed axes are one of the main sources that have only recently made it possible to distinguish the period from the Late Bronze Age, challenging the traditional idea of northwestern France being a marginal region lagging behind the developments of the western Hallstatt area (Milcent, 2017a, pp. 79–82). However, if closely looked at, hoards containing Armorican socketed axes in fact represent a completely novel standard which is clearly embedded in Early Iron Age practices and responds to newly emerging social needs.

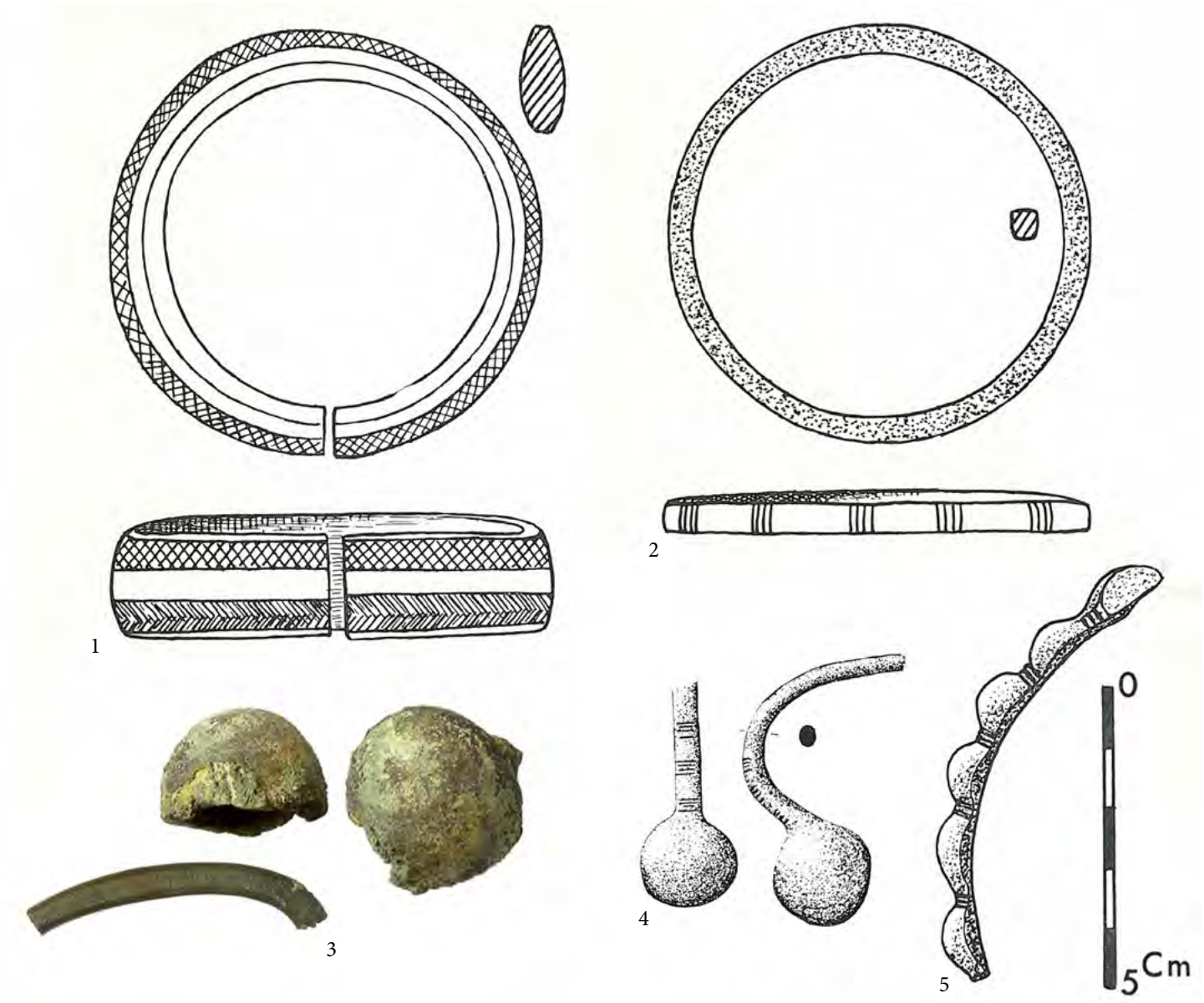

Fig. 2. Ha D ornaments from hoards of Armorican type socketed axes. 1–2: Coatjou-Glas in Plonéis, Finistère; 3: la Forgerais in Ruffigné, Loire-Atlantique; 4: around Quimper; 5: Saint-Bagan in Loudéac, Côtes-d'Armor (scale refers to 3 and 4).

THE PARADOX OF THE ATLANTIC EARLY IRON AGE

OBSOLETE OBJECTS

From a typological point of view, the Armorican socketed axes derive from Late Bronze Age Plainseau and Llyn Fawr models, following a well-established tradition. There is no need to detail their typology any further here, as it was described by J. Briard (1965), supplemented by J. Rivallain (1971), refined by J. Briard and G. Verron (1976) and recently by É. Tribouillard (2018). Armorican socketed axes belonging to Tréhou, Dahouet and Plurien types differ from earlier Plainseau type-items: their socket has a quadrangular cross-section with sharp angles, a more clearly defined square mouth, and a rectangular or trapezoidal general contour. Axes of the Couville and Maure types appear to be miniature versions of these. The Chailloué type, however, has an oval-shaped opening. Armorican axes thus form a distinctively regional set of types with some local variants, as opposed to the more widespread Plainseau models. The vertical rib decoration on imported or locally copied 'Armorican' socketed axes found in the British Isles from the Late Bronze Age on, can also be found on a great number of Armorican socketed axes found in northwestern France. Their size can be roughly compared to their Late Bronze Age counterparts, but they contain less metal and tend therefore to be lighter.

In fact, socketed axes of the Armorican and the Plainseau type are completely different objects. 'Armorican' items – except for the very rare large and solid Brandivy type – are made of a heavily leaded bronze alloy, while objects of the Pleucadec type are almost completely made of lead as has been thoroughly established through more than 30 years of metal analyses (Aranda et al., 2013). The chemical compositions of the artefacts from the Late Bronze Age IIIb period on the one hand, and of the 'Armorican' socketed axes on the other (both coming from the same geographical region), have been proven to be mutually exclusive (Aranda et al., 2013). This finding not only shows that hoards from the Carp's Tongue sword period and hoards with Armorican items refer to different raw materials, but also that they had distinct physical properties. When observed in detail, it appears that Early Iron Age axes did not undergo the same production process as their earlier counterparts: they are in fact as-cast, i.e. unfinished objects. The casting seams resulting from the use of two-part moulds are clearly visible on most items. The objects were neither reworked, polished nor sharpened after casting, and could not have been hafted as the clay remains of the casting process were not even removed from the inside of the sockets (Fig. 3).

Fig. 3. As-cast Armorican socketed axe from Saint-Glen, Côtes-d'Armor.

On the other hand, the regional Late Bronze Age socketed axes were used as actual tools or weapons, as proven by means of traceology and experimental studies (Roberts & Ottaway, 2003). Although on a more European scale, Late Bronze Age objects and assemblages could have complex biographies (Dietrich, 2014) and went through specific manipulations before being deposited, they were sometimes buried as-cast or new (Fontijn, 2002, pp. 30–33), in northwestern France, they were all thought and made to be functional objects. In contrast, Early Iron Age 'Armorican' items were designed to be completely inefficient from a practical point of view, and hence lacked that 'dual role' of bronze axes in both daily use and deposition (Fontijn, 2002, p. 258). Due to their material properties, their size and/or specific features, they could not be used otherwise than for deposition, despite looking similar to earlier, 'real' axes. This aspect seems to be their most important feature: they did not represent the mere metal masses, like Late Bronze Age scraps or ingots, but rather they were shaped and sometimes decorated to resemble a distinctive functional object.

THE ASSEMBLAGES AND THEIR CONTEXTS

At the end of the Atlantic Late Bronze Age (Bronze Final IIIb/Ha B2–B3 phase), hoards from the Carp's Tongue sword phase contained various types of artefacts, in new or used condition, intact or deliberately broken or otherwise damaged, as well as a great number of other unfinished or miscast objects, often together with copper ingots, casting refuse and bronze scrap. Miniatures or other objects not designed for practical use are almost completely absent from northwestern France during this period. Variety

seems to be one of the main features of regional Late Bronze Age hoards, following specific patterns regarding the selection of object categories, the object fragmentation, and their deposition in remote places.

On the contrary, socketed axes of Armorican type are mostly found assembled in large hoards, mostly containing only this one specific, mass-produced object category (Fig. 4). They were deposited intact, apparently immediately after being crafted. Plant remains at the bottom of the pottery receptables in which they were deposited, for instance in Saint-Glen (Côtes-d'Armor) or Agneaux (Manche), might indicate that they were meant to be preserved as such (Cabanillas de la Torre, 2016, pp. 25–26; Marcigny et al., 2000, pp. 14–15; Marcigny, 2012, Fig. 9). Some of these hoards are huge and comprise several hundred very similar axes, in some cases forming sets, even tied together in bundles (Cabanillas de la Torre et al., 2016, pp. 23–24; Rivallain, 2012, p. 146). The dimension of some hoards supports the idea of the deposition not only taking place shortly after the production of the objects, but also near their place of manufacture – as opposed to many Bronze Age items that circulated before being buried (Fontijn, 2002, pp. 30–33). Hence, in the case under discussion, deposition seems to happen at an *early stage* of the objects' potential 'lifespan', which represents a fully new conception of hoarding as compared to the European Bronze Age and indicates that social needs and practices through storing metal were evolving. A considerable number of axes remained buried in the ground, meaning that they were not retrieved which leads to the assumption that they were deposited with a permanent objective. Their social role remains difficult to grasp, yet treating them as an innovation can shed light on the changes that led to this completely new practice of deposition, as well as to its end.

Fig. 4. A hoard of Armorican socketed axes: Riec-sur-Belon, Quimper.

A NEW SKEUOMORPHIC STANDARD IN TIMES OF CHANGE

ARMORICAN AXES AS PART OF NEW EARLY IRON AGE FEATURES IN BRITTANY AND NORMANDY

Armorican axe hoards show a shift from depositing actual objects to hoarding simulacra of objects. This development is often interpreted as the invention of currency (Milcent, 2017b). The specific properties of the objects under discussion indicates that the act of collecting and burying would have had a different meaning compared to Bronze Age practices. Although the weight of the relevant axes was not standardised, their skeuomorphic nature makes them suitable for a kind of commodity money (Briard, 1987; Briard & Rivallain, 1987), but also for a votive offering. Being extremely similar, at least for Early Iron Age conditions, they may have been considered as equivalents (Kujpers & Popa, 2021). Armorican axes were rarely buried in wet places (Tribouillard, 2016, p. 78, appendix), though generally knowledge about their find contexts is rare. We know of at least two cases in which they were hidden in places where they could be found and recovered (Menez, 2005, pp. 15–27; Cabanillas de la Torre, 2020, pp. 31–34), at least partially, as for ritual reasons a part might have been deliberately left behind *pars pro toto* (Fontijn, 2002, p. 254). Regardless of whether we consider that they were meant to remain underground or to further circulate, at the time, lavish hoards of Early Iron Age axes represented a novelty in northwestern France. They even created a new standard, as both the objects themselves and assemblages followed clear patterns (Rivallain, 2012; Tribouillard, 2016).

It is no wonder that the earliest form of the standardised, practically useless objects began being excessively produced during the Ha D phase. Major economic and technological changes began to take place and a new relationship with bronze emerged. Unlike in other Atlantic regions, no iron equivalent of the Armorican socketed axe is known from northwestern France, and more generally, no such functional axes are known from the transitional period between bronze to iron metallurgy. Yet, early iron smelting and distribution is well attested in northwestern France during the 7th to 5th centuries BC, suggesting that some tools were probably being made of the new metal. In Brittany, several charcoaled remains from iron smelting slags have yielded radiocarbon dates ranging between the 8th and the 5th

century cal BC, namely from Saint-Pierre de Plesguen, Les Renardières, Paimpont, Les Plaintes (Vivet, 2007, p. 67) and Châteaulin, Penn ar Roz (Nicolas, 2013). From the 6th century BC onwards, iron objects appear in both graves and settlements in Normandy and Brittany and at least seven iron *Spitzbarren* (bipyramidal bars) are known from the area, dating from the Ha D–Lt A phases (Berranger et al., 2017, pp. 310–312, Fig. 5).

The skeuomorphism of bronze axes of the Ha D phase makes much more sense if we consider that, in western Europe, as iron gradually took its place within a 'functional' sphere for manufacturing tools, bronze was mostly used for 'symbolic' objects, personal adornment items, such as torcs, fibulae, armlets and anklets, and also found in imported fine ware. Armorican axes materialize this shift of bronze to a symbolic sphere, where the objects needed to comply with visual standards, regardless of their practical attributes. It is therefore difficult to decide whether Armorican axes were commodity money representing wealth, 'specialized ingot-axes' (Fontijn, 2002, p. 257) or offerings to the gods: the most useful inference we can make at this point is that the axes probably functioned within a social sphere where they could be multi-functional, and where they probably served more as a communication medium than as exchange goods.

Keeping valuables underground was also a clearly important concern in the Ha D settlements in Brittany and Normandy, where large semi-subterranean storage structures commonly described as 'cellars' started being established during the 7th or 6th century BC (Bossard, 2020). Whether this architecture was due to practical reasons like safety issues, or ideological standards, or both, cannot be determined. The site of Quimper, Kergariou (Finistère, Brittany) seems to represent a link between both concepts: remains of a hoard of Armorican socketed axes were found in one of the site's cellars, probably buried in a pit under its floor before abandoning the settlement (Menez, 2005, pp. 15–20). At Saint-Glen, La Touche ès Pritiaux (Côtes-d'Armor, Brittany), a hoard and empty ceramic containers of six further ones were hidden near the postholes of a roundhouse, in a spot opposite of both entrances where they could hardly have been noted unless their location was known (Fig. 5) (Cabanillas de la Torre, 2020, pp. 33–34).

To sum up, neither Armorican socketed axes themselves nor the practice of hoarding them support the idea of continuity between the Late Bronze Age and the Early Iron Age in northwestern France (Milcent, 2017a, pp. 78–83). Rather, they seem to reveal a new era of bronze deposition within a different social and material context. In fact, they can be considered as a typical Early Iron Age phenomenon, since the latest of the relevant hoards date to the transition to the La Tène period, which in both Brittany and Normandy is accompanied with a whole set of changes in the settlement layout and architecture, in funerary practices as well as in material culture (Menez & Lorho, 2013; Lepaumier & Delrieu, 2010, pp. 147–154; Cherel et al., 2018, p. 325; Lepaumier et al., 2018).

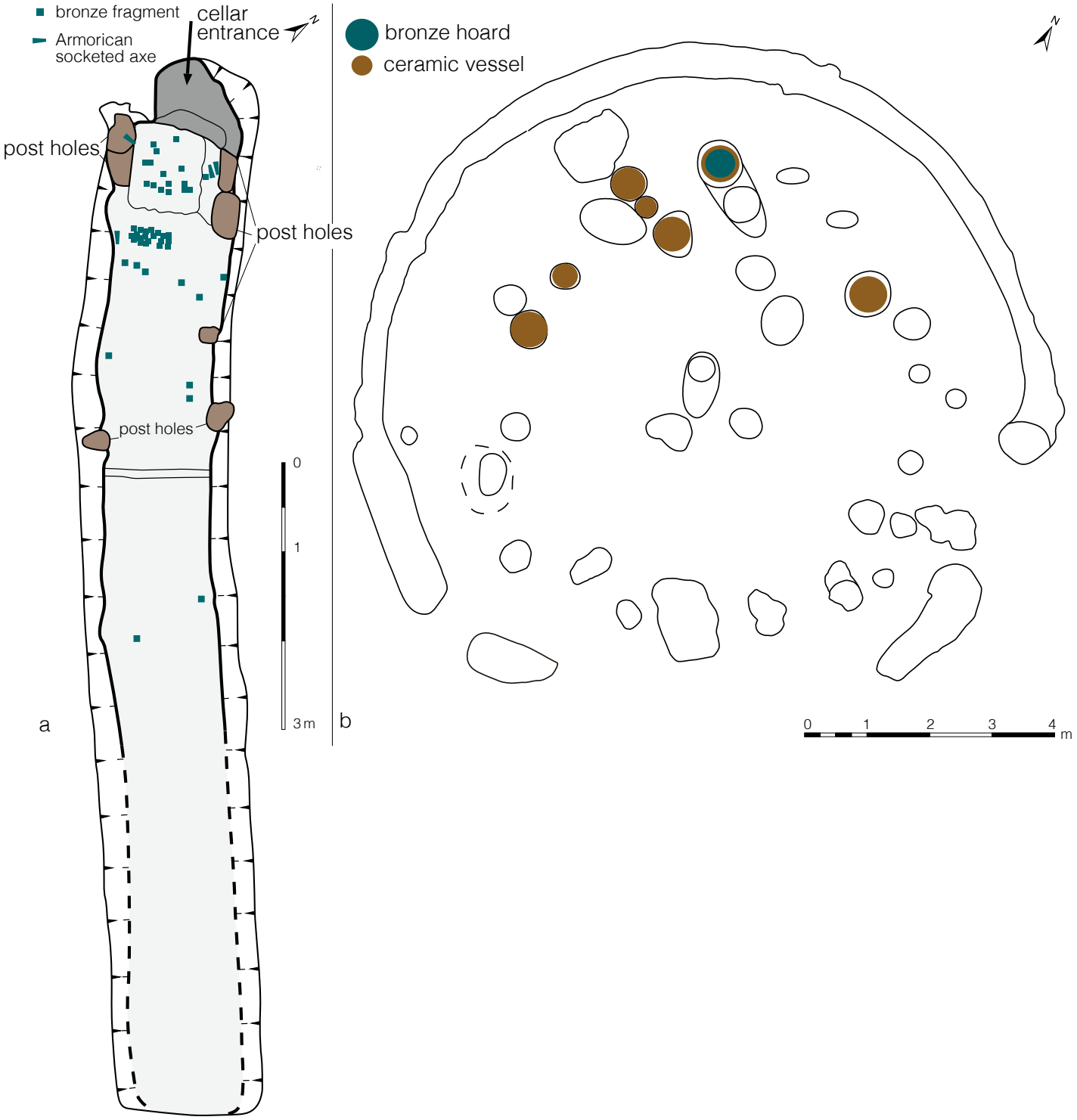

Fig. 5. Two hoards of Armorican socketed axes in context. a: A pit within a semi-subterranean cellar, Quimper, Kergariou; b: Within a roundhouse, Saint-Glen, La Touche ès Pritiaux.

FURTHER UNUSABLE EARLY IRON AGE SOCKETED AXES IN FRANCE AND BEYOND

A substantial number of Armorican socketed axes is stored in museums and private collections. J. Briard (1965, pp. 275–276) noticed that mainly during the 19th century the contents of many hoards were widely dispersed due to the antiquities trade. Sometimes they were sold with a fake origin to please collectors who desired local discoveries; many are now presented as local finds because when collections were offered to museums their (unknown) provenance was automatically assumed to be the collector's home region. The inventories show that the provenances of almost all conserved axes outside of the Armorica or Normandy do not have a confirmed origin or have a doubtful one (e.g. Belgium: E. Warmenbol, 2013; 2017; British Isles: Eogan, 2000, pp. 193–194; P. Schmidt and C. Burgess, 1981, pp. 248–249; eastern and south-eastern Europe: Dietrich, 2011). The same applies to France, wherever critical regional inventories were established. However, some authentic information can be notices in some cases (e.g. Artanne or Beauregard-Vendon, Puy-de-Dôme: Milcent, 2004, pp. 563, 565, pl. 100).

In addition, different regional unusable socket axes are known from Brittany and Normandy, and beyond. A series of bronze miniature socketed axes from the isle of Ouessant probably dates to the Early Iron Age (Roussot-Larroque & Le Bihan, 2004). In southern France, some miniature axes are known from Launacian hoards (Fig. 6, No. 1–4) (Guilaine et al., 2017, pp. 48–49; Guilaine et al., 2022, pp. 103–105).

In central France, very small, socketed axes are attested in the Ha D1–D2 hoard from Tavers in Loiret (Fig. 6, No. 6) (Milcent et al., 2015). Another very small, socketed axe, maybe from a hoard, was recently discovered in the French department of Aube (Fig. 6, No. 7) (unpublished). In Belgium, the Netherlands and the adjacent part of Germany, socketed axes of the Geistingen type were produced during the Early Iron Age (Fig. 6, No. 10) (Butler & Steegstra, 2001–2002, pp. 303–309; Fontijn, 2002, p. 160; Kibbert, 1984, pp. 60–61; Warmenbol, 2013). They are also completely unfit as tools: contrary to Armorican axes, the copper alloys of Geistingen axes contain only a small amount of lead (c. 2%) but important amounts of arsenic and antimony (Posma et al., 2005). At le Puiset, in the French department of Eure-et-Loire, a hoard containing 48 socketed axes was found together with an ingot fragment (Douard, 2012). Those axes are slightly different from the Tréhou type and resemble the Geistingen type (Fig. 6, No. 9). They are described as being similar to the 241 axes from the unpublished hoard of la Sente de Brouâtre in Poivilliers in the same department (Douard, 2012). Like the types of Tréhou and Geistingen, they are dated to the Ha D phase.

South of the English Channel and the North Sea rare linear faceted axes – imports or copies – are known: from Belgium, we know one from a Ha D1 barrow in the Court-Saint-Étienne necropolis (Mariën, 1958, Fig. 19)

as well as further single finds (Herpeux & Warmenbol, 2017). A linear faceted axe has been found in the Wijchen wagon-grave in the Netherlands (Pare, 1992, pl. 6, A8). A single find is known from Rethel, Ardennes department, France (Fig. 6, No. 8) (Lambot, 1980, Fig. 33). The emergence of skeuomorphic objects such as bronze axes during the Early Iron Age in most of Western Europe suggests that although those objects looked similar to Late Bronze Age equivalents, they must have played a role in the social change that characterized the Hallstatt period.

Fig. 6. Socketed axes from the Ha D phase. 1–4: Small unusable axes from Launacian hoards; 1, 4: Saint-Saturnin, Hérault; 2: Murviel-les-Béziers, Hérault; 3: Agde, Hérault; 5: Armorican axe from a Launacian context, Fontvielle, Bouches-du-Rhône; 6: Tavers hoard, Loiret; 7: 'Aube'; 8: Rethel, Ardennes; 9: As-cast axe from Le Puiset, Eure-et-Loire; 10: Type Geistingen axe, Caberg, Limburg, Netherlands.

WHY PRODUCE ANCIENT AXES?

First, imitating a functional object without providing it with the necessary features to function was a deliberate, meaningful choice compared, for example, to Launacian hoards containing personal adornments, which show closer resemblance to later Iron Age torc depositions. It is very delicate to suggest a single explanation for this practice, amongst other reasons because axes served a whole range of purposes in northwestern European communities, from the Neolithic to the Middle Ages, and the case of skeuomorphic objects adds an additional layer of complexity to the issue. The material value was not their only purpose: rather, they were recognisable artefacts, deliberately cast in a familiar shape. Since the Bronze Age, the shape of those 'ingot-axes' must have been meaningful in the metal circulation (Fontijn, 2002, p. 251). It has furthermore been argued that their key role in every day agricultural and domestic tasks might have turned them into a tool connected to land claims (Fontijn, 2002, pp. 248–250). This would be consistent with the recent phase of the Early Iron Age in Brittany, where landowning families were starting to settle permanently on land for centuries (Menez & Lorho, 2013, pp. 182–190). The 6th century BC represents, more generally, a period of increase in the number of farmsteads, and a dramatic change in storage capacities (Le Gall, 2017, pp. 161–261; Riquier et al., 2018, pp. 288–296; Jahier & Besnard-Vauterin, 2013, pp. 154–155). As weapons, they could also have epitomized power relations, which would explain the symbolic significance of the object, i.e. the representation of its function and not its real function.

More importantly, Early Iron Age communities might have consciously reproduced objects similar to 'old' Late Bronze Age ones, although not completely identical. If those Early Iron Age axe hoards have been confused with Late Bronze Age ones for such a long time, maybe this could have been part of their original purpose. Some southern British communities collected and deposited older, Bronze Age objects, including axes, until the Late Iron Age and even the Roman period, suggesting that they consciously perceived them as heritage (Farley, 2011, p. 39; Stead, 1998, p. 113; Hingley, 2009, pp. 145–149). It has been argued that those objects played a special role in linking the people to their past, or rather to their idea of the past – probably as another world (Hingley, 2009, p. 157). Similarly, copying ancient things might have meant creating 'fake antiquities', and collecting them for either exchange or hoarding purposes an attempt to renew or reenact a long-standing tradition in a different social setting. In societies in which the past could be considered both as a source of prestige and as a world parallel to the present, such behaviour might have been a powerful means of legitimation, maybe the kind of legitimation required to settle and own the land. In a context of change, providing objects with this meaning – maybe even when used as commodity money or as ingots – might have been

useful to assert some kind of identity or power. Though in this case, producing functional objects would not have been necessary: they only needed to look like the originals, and to function *symbolically* as such. This explanation of the skeuomorphic aspect of Armorican socketed axes is an attempt to consider their resemblance to Late Bronze Age types and is obviously compatible with other economic or votive interpretations of Early Iron Age depositional practices, as the relevant contexts were probably interconnected.

CONCLUDING REMARKS

Armorican socketed axes were useless objects made of a seemingly outdated material, kept underground in huge quantities during the Early Iron Age. While they appear to have been cast for the purpose to be deposited, we know very little about why they were valuable enough to be preserved. Obviously, their real function within a social and symbolic framework remains elusive. Although we are as yet far from understanding their social significance, their Armorican socketed axes' attribution to the Early Iron Age is a key finding and milestone in the interpretation of the phenomenon against a wider material background. A critical examination of hoards from the Carp's Tongue sword phase presumably containing Armorican type socketed axes clearly shows that the latter are absent during the Late Bronze Age (Gomez de Soto, 2015; Verron, 2018). This type of axe did not appear before the Early Iron Age.

At the same time, we know that bronze tools and weapons were still produced during the first phase of the Early Iron Age, some of them showing no clear typological changes, others evolving naturally, as seen in the hoards from the Llyn Fawr horizon in the British Isles (O'Connor, 2007), or in Germany with the Ha C2 hoards from Scharlachkopf in Bingen, Kr. Mainz-Bingen in Rhineland-Palatinate (Kibbert, 1984, p. 129, pl. 100) or the one from Wattenheim/Alsenborn, Kr. Kaiserslautern, Saarland (Kolling, 1968, pl. 54–55; Kibbert, 1984, pl. 98–99). In Gaul, some socketed axe shapes of the Armorican type can be found during this period, like those from the Fossé-Creusette hoard in Verberie, Oise department (Blanchet, 2001). The Sompting type axes from the British Llyn Fawr horizon may also represent another intermediate type (O'Connor, 2007; Milcent, 2012, p. 165). Moreover, new research comparing the metallic compositions of objects from depositions from the Carp's Tongue sword phase and from those containing Armorican type socketed axes demonstrate significant differences (Aranda et al., 2013).

The deposition of Armorican socketed axes is a unique phenomenon, but it perfectly fits into more general Early Iron Age trends. It corresponds

to the dynamic of hoards in modern-day France: quite numerous during the Bronze Final III/Ha B2–B3 phase, they disappear (or become very rare in many areas) during the Ha C phase, to return again in the Ha D phase (Gomez de Soto, 2015; Milcent et al., 2015). Assemblages of personal adornment items from central France and the Parisian Basin (i.e. Saint-Pierre-Eynac in Haute-Loire: Millotte, 1972; Milcent, 2004, p. 541; Périgny-la-Rose in Aube: Piette, 1989, pp. 235–236) or from the Launacian complex in Languedoc are contemporary to Armorican types socketed axes hoards and probably show similar changes in relation to bronze. However, Early Iron Age communities from Brittany and Normandy expressed this new link in a very specific way, namely by excessively producing objects with an old appearance. We believe that this deliberate choice was a meaningful attempt to create a connection with their past during a period when change required legitimation.

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BIBLIOGRAPHY

Aranda, B., Le Carlier de Veslud, C., Marcigny, C., & Le Bannier, J.-C. (2013). Le dépôt de haches à douille de type armoricain du Hallstatt D1–D2 de Trelly (Manche). Interprétations à partir des analyses chimiques élémentaires. *Bulletin de la Société préhistorique française, 110*(1), 105–119.

Berranger, M., Zaour, N., Leroy, M., Bauvais, S., Cabboi, L., Dunikowski, C., & Fluzin, P. (2017). Organisation des productions sidérurgiques en Gaule (VII^{e}–I^{er} s. a. C.): de la réduction du métal à l'élaboration des demi-produits. In S. Marion, S. Deffressigne, J. Kaurin & G. Bataille (Eds.), *Production et proto-industrialisation aux âges du Fer* (pp. 301–334). Ausonius.

Blanchet, J.-C. (2001). Nouveaux dépôts de la transition Âge du Bronze / Âge du Fer dans le contexte de la moyenne vallée de l'Oise. In C.-T. Le Roux (Ed.), *Du monde des chasseurs à celui des métallurgistes. Hommage scientifique à la mémoire de Jean L'Helgouac'h et mélanges offerts à Jacques Briard* (pp. 171–180). Association pour la diffusion des recherches archéologiques dans l'ouest de la France.

Bossard, S. (2020). *Les souterrains gaulois en Bretagne et Normandie occidentale: architectures de stockage enterrées, VI–I^{er} siècle av. J.-C.* Presses universitaires de Rennes.

Boughton, D. (2015). *The Early Iron Age socketed axes in Britain* [Unpublished dissertation]. University of Central Lancashire.

Briard, J. (1965). *Les dépôts bretons et l'Âge du Bronze atlantique*. Becdelièvre.

Briard, J. (1987). Dépôts de bronze, haches à douille, pré-monnaie et fausse monnaie. In J. Boiusquet & P. Nasrter (Ed.), *Mélanges offerts au Docteur J.-B. Colbert de Beaulieu* (pp. 133–143). Le Léopard d'Or.

Briard, J. (1991). Le groupe de l'épée en langue de carpe en Armorique: une révision. In C. Chevillot & A. Coffyn (Ed.), *L'âge du Bronze atlantique, ses faciès de l'Écosse à l'Andalousie et leurs relations avec le Bronze continental et la Méditerranée, Actes du Ier colloque du Parc archéologique de Beynac, 1990* (pp. 125–144). Association des Musées du Sarladais.

Briard, J. (2001). Les haches à douille de type armoricain. In J. Briard, J. Gomez de Soto, P.-Y. Milcent & J.-P. Pautreau, Les recherches sur l'âge du Bronze en Poitou-Charentes, Centre, Pays de Loire, Bretagne et Basse Normandie. *Documents d'Archéologie méridionale, 24*, 261–262. https://doi.org/10.4000/dam.1001

Briard, J., & Rivallain, J. (1987). De l'échange à la paléomonnaie en protohistoire européenne occidentale. In L. Baeck (Ed.), *La monnaie dans tous ses états!* (pp. 5–51). Université Lumière Lyon 2.

Briard, J., & Verron, G. (1976). *Typologie des objets de l'Âge du Bronze en France: Vol. IV. Haches (2) Herminettes.* Société préhistorique française.

Burgess, C. (2012). South Welsh socketed axes and other Carp's Tongue conundrums. In W. J. Britnell & R. J. Silvester (Ed.), *Reflections on the Past. Essays in honour of Frances Lynch* (pp. 237–253). Cambrian Archaeological Association.

Butler, J. J., & Steegstra, J. (2001–2002). Bronze Age Metal and Amber in the Netherlands. Catalogue of the socketed axes. *Paleohistoria, 43–44*, 263–319.

Cabanillas de la Torre, G. (2019). *La Touche ès Pritiaux à Saint-Glen (22): le site du premier âge du Fer* [Excavation

report]. Service régional de l'archéologie de Bretagne.

Cabanillas de la Torre, G. (2020). *Le site du premier âge du Fer de La Touche ès Pritiaux à Saint-Glen (22)* [Excavation report]. Service régional de l'archéologie de Bretagne.

Cabanillas de la Torre, G., Gomez de Soto, J., Boulestin, B., & Fargeot, D. (2016). *Le dépôt de haches à douille de type armoricain du premier âge du Fer de la Touche es Pritiaux à Saint-Glen (Côtes-d'Armor)* [Excavation report]. Service régional de l'archéologie de Bretagne.

Cherel, A.-F., Lierville, O., Menez, Y., Villard-Le Tiec, A., Jean, S., & Lorho, T. (2018). Les céramiques gauloises en Bretagne: évolution des formes et des décors entre le VI^{e} et le I^{er} siècle avant notre ère. In Y. Menez (Ed.), *Céramiques gauloises d'Armorique: Les dessiner, les caractériser, les dater* (pp. 253–356). Presses Universitaires de Rennes.

Coffyn, A., Gomez de Soto, J., & Mohen J.-P. (1981). *L'apogée du Bronze atlantique. Le dépôt de Vénat.* Picard.

Déchelette, J. (1910). *Manuel d'Archéologie préhistorique, celtique et gallo-romaine: Vol. II, 1ère partie. Âge du Bronze.* Librairie Alphonse Picard et fils.

Dietrich, O. (2011). Armorikanische Fremdlinge in Ost- und Südosteuropa? Quellenkritische Bemerkungen zur Verbreitung von Tüllenbeilen des armorikanischen Typs. In D. Măgureanu, D. Măndescu & S. Matei (Ed.), *Archaeology: making of and practice. Studies in honor of Mircea Babeş at his 70th anniversary* (pp. 123–138). Ordessos.

Dietrich, O. (2014). Learning from 'scrap' about Late Bronze Age hoarding practices. A biographical approach to individual acts of dedication in large metal hoards. *Journal of European Archaeology, 17*(3), 468–486. https://doi.org/10.1179/1461957114Y.0000000061

Douard, M., & Payraud, N., 2012. *Le Puiset (Centre–Eure-et-Loir), lieu-dit 'Les Boisselets'. Découverte d'un dépôt de haches à douille armoricaines* [Report]. Service de l'archéologie, Conseil général d'Eure-et-Loir.

Eogan, G. (2000). *The Socketed Bronze Axes in Ireland.* F. Steiner Verlag.

Farley, J. (2011). The deposition of miniature weaponry in Iron Age Lincolnshire. *Pallas. Revue d'études antiques, 86*, 97–121. https://doi.org/10.4000/pallas.2108

Fily, M. (2009). Les dépôts de la fin de l'Âge du bronze final de Kergaradec à Gouesnac'h (Finistère): note préliminaire sur une découverte récente de l'horizon métallique de l'épée en langue de carpe. *Bulletin de la Société préhistorique française, 106*(1), 95–107. https://doi.org/10.3406/bspf.2009.13831

Fontijn, D. R. (2002). *Sacrificial landscapes. Cultural biographies of persons, objects and 'natural' places in the Bronze Age of southern Netherlands, c. 2300–600 BC.* Faculty of Archaeology Leiden.

Gachina, J., Gomez de Soto, J., Bourhis, J.-R., & Véber, C. (2008). Un dépôt de la fin de l'Âge du bronze à Meschers (Charente-Maritime). Remarques sur les bracelets et *tintinnabula* du type de Vaudrevange en France de l'Ouest. *Bulletin de la Société préhistorique française, 105*(1), 159–185. https://doi.org/10.3406/bspf.2008.13709

Germond, G., Gomez de Soto, J., Verron, G., & Bourhis, J.-R. (1988). Nouvelles recherches sur le dépôt d'Auvers, Manche (Bronze final III). *Bulletin de la Société préhistorique française, 85*(1), 15–31. https://doi.org/10.3406/bspf.1988.9316

Guilaine, J., Carozza, L., Garcia, D., Gasco, J., Janin, Th., Mille, B. (2017). *Launac et le Launacien. Dépôts de bronzes protohistoriques du sud de la Gaule.* Presses universitaires de la Méditerranée.

Giot, P.-R. (1954). Quelques découvertes finistériennes de l'Âge du Bronze récent. *Bulletin de la Société archéologique du Finistère, 80*, 55–61.

Gomez de Soto, J. (2015). Les haches à douilles de type armoricain: une production strictement de l'âge du Fer. Critique des sources documentaires afférant à leur chronologie. *Bulletin de la Société préhistorique française, 112*(1), 117–136.

Guilaine, J., Garcia, D., Gascó, J., with coll. Answar, N., Briois, F., & Carozza, L. (2022). *Rochelongue (Agde, Hérault). Lingots et bronzes protohistoriques par centaines dans la mer.* Presses universitaires de la Méditerranée.

Hawkes, C. F. C. (1955). *Inventaria Archeologica. Great Britain. 1st Set GB. 1–8: Grave Groups and Hoards of the British Bronze Age.* Garraway Limited.

Herpeux, T., & Warmenbol, E. (2017). A socketed axe found in the Sonian Forest (Zoniënwoud, Tervuren, prov. Brabant, Belgium). *Lunula, 25*, 65–68.

Hingley, R. (2009). Esoteric knowledge? Ancient bronze artefacts from Iron Age contexts. *Proceedings of the Prehistoric Society, 75*, 143–165. https://doi.org/10.1017/S0079497X00000335

Jahier, I., & Besnard-Vauterin, C.-C. (2013). La Basse-Normandie. In F. Malrain, G. Blancquaert & T. Lorho (Eds.), *L'habitat rural du Second Âge du Fer. Rythmes de création et d'abandon au nord de la Loire* (pp. 147–168). INRAP; CNRS Éditions.

Kibbert, K. (1984). *Die Äxte und Beile im mittleren Westdeutschland, II.* Prähistorische Bronzefunde, Subdiv. 9, Vol. 13. Verlag C. H. Beck.

Kuijpers, M. H. G., & Popa, C. N. (2021). The origins of money: Calculation of similarity indexes demonstrates the earliest development of commodity money in prehistoric Central Europe. *PLoS ONE 16*(1), Article e0240462. https://doi.org/10.1371/journal.pone.0240462

Kolling, A. (1968). *Späte Bronzezeit an Saar und Mosel.* Dr. Rudolf Habelt Verlag.

Lambot, B. (1980). L'Age du Bronze dans le département des Ardennes. *Bulletin de la Société archéologique champenoise, 73*(2), 23–48.

Le Gall, J. (2017). *Morbihan, Inzinzac-Lochrist, Kermat III. Un grand domaine agricole des VIe–IVe siècles avant notre ère* [Excavation report]. Inrap GO, Cesson-Sévigné.

Lepaumier, H., & Delrieu, F. (2010). L'âge du Fer en Basse-Normandie (–800 à –52 av. J.-C.). Bilan de la recherche 1984–2004. In Direction régionale des Affaires culturelles Basse-Normandie, Service régional de l'archéologie (Eds.), *Bilan de la recherche archéologique en Basse-Normandie 1984–2010: Vol. 1. Du Paléolithique à la fin de l'âge du Fer* (pp. 143–168). Ministère de la Culture et de la Communication direction des patrimoines sous-direction de l'archéologie.

Lepaumier, H., Jahier, I., & Giraud, P. (2018). La céramique des VIe–IVe siècles avant notre ère dans le département du Calvados: quelques premières attributions typo-chronologiques. In Y. Menez (Ed.), *Céramiques gauloises d'Armorique: les dessiner, les caractériser, les dater* (pp. 181–208). Presses Universitaires de Rennes.

L'Helgouach, J. (1999). Fragment du dépôt de haches à douille de Ruffigné (Loire-Atlantique). In M.-H. Santrot, J. Santrot & J.-C. Meuret (Eds.), *Nos ancêtres les Gaulois aux marges de l'Armorique* (pp. 18–19). Musée Dobrée.

Marcigny, C. (2012). Lieux funéraires, paysages et territoires de l'âge du Bronze en Normandie. In D. Bérenger, J. Bourgeois, M. Talon & S. Wirth (Eds.), *Gräberlandschaften der Bronzezeit. Paysages funéraires de l'âge du Bronze. Internationales Kolloquium zur Bronzezeit, Herne, 15.–18. Oktober 2008* (pp. 595–617). Verlag Philipp von Zabern.

Marcigny, C., & Talon, M. (2009). Sur les rives de la Manche: Qu'en est-il du passage de l'Age du Bronze à l'Age du fer à partir des découvertes récentes? In M. Roulière-Lambert, A. Daubigney, P. Milcent, M. Talon & J. Vital (Eds.), *De l'âge du Bronze à l'âge du Fer en France et en Europe occidentale (Xe–VIIe siècle Av. J.-C.). La moyenne vallée du Rhône aux âges du Fer. Actes du XXXe colloque de l'AFEAF, co-organisé avec l'APRAB à Saint-Romain-En-Gal, 26–28 mai 2006* (pp. 358–404). Artehis Éditions. https://doi.org/10.4000/books.artehis.18066

Marcigny, C., Bourgeois, J., & Talon, M. (2017). Rythmes et contours de la géographie culturelle sur le littoral de la Manche entre le IIIe et le début du Ier millénaire. In A. Lehoërff & M. Talon (Eds.), *Movement, exchange and Identity in Europe in the 2nd and 1st Millenia BC: Beyond Frontiers* (pp. 63–78). Oxbow Books.

Marcigny, C., Verney, A., Ghesquière, E., & Giazzon, D. (2000). Dépôts de haches à douille à Agneaux (Manches). *Archéopages, 2*, 14–15.

Mariën, M.-E. (1958). *Trouvailles du Champ d'Urnes et des Tombelles hallstattiennes de Court-Saint-Étienne.* Musées royaux d'Art et d'Histoire.

Menez, Y., & Gomez de Soto, J. (2018). L'habitat et le 'dépôt' de bronze de Kergariou à Quimper (Finistère). Un nouvel apport pour la révision de la datation des haches à douille de type armoricain: une production, non du Bronze final, mais strictement de l'âge du Fer. In S. Boulud-Gazo & M. Mélin (Eds.), *Contribution à l'archéologie de l'âge du Bronze dans les espaces atlantiques et Manche-Mer du Nord, 1, Actes de la table ronde de Rouen (2005)* (pp. 321–327). Association pour la promotion des recherches sur l'âge du bronze.

Menez, Y., & Lorho, T. (2013). La Bretagne. In F. Malrain, G. Blancquaert & T. Lorho (Eds.), *L'habitat rural du Second âge du Fer. Rythmes de création et d'abandon au nord de la Loire* (pp. 169–191). INRAP; CNRS Éditions.

Menez, Y., Gomez de Soto, J., & Dupré, M. (2005). *Quimper – Finistère. L'habitat de l'âge du Fer de Kergariou* [Excavation report]. Service régional de l'archéologie de Bretagne.

Milcent, P.-Y. (2004). *Le premier âge du Fer en France centrale.* Société préhistorique française.

Milcent, P.-Y. (2012). *Le temps des élites en Gaule atlantique. Chronologie des mobiliers et rythmes de constitution des dépôts métalliques dans le contexte européen (XIIIe–VIIe s. av. J.-C.).* Presses Universitaires de Rennes.

Milcent, P.-Y. (2017a). The Atlantic Early Iron Age in Gaul. In A. Lehoërff & M. Talon (Eds.), *Movement, exchange and Identity in Europe in the 2nd and 1st Millenia BC: Beyond Frontiers* (pp. 79–98). Oxbow Books.

Milcent, P.-Y. (2017b). Valeurs d'usage et d'échange. La dimension prémonétaire des dépôts en Gaule atlantique du XIIIe au Ve s. av. J.-C. *Bulletin de la Société préhistorique française, 114*(4), 711–737. https://doi.org/10.3406/bspf.2017.14829

Milcent, P.-Y., Cribellier, C., & Tramon, A. (2015). Le dépôt bimétallique du VIe s. av. J.-C. de Tavers (Loiret). Présentation liminaire. *Gallia, 72*(2), 1–10. https://doi.org/10.4000/gallia.655

Millotte, J.-P. (1972). La cachette de la Mouleyre à Saint-Pierre-Eynac (Haute-Loire), les tumulus de Chavéria et (Jura) et les débuts du premier âge du Fer en France. In *Congrès préhistorique de France. Compte rendu de la XIXe session. Auvergne. 6–14 juillet 1969* (pp. 293–301). Société préhistorique française.

De Mortillet, G., & de Mortillet, A. (1881). *Musée préhistorique.* Reinwald.

Needham, S., Ramsey, C. B., Coombs, D., Cartwright, C., & Woodward, A. (1997). An independent chronology for British Bronze Age metalwork: the results of the Oxford radiocarbon accelerator pro-

gramme. *British Archaeological Journal, 154*, 55–107. https://doi.org/10.1080/00665983.1997.11078784

Nicolas, E. (2013). *CHÂTEAULIN (29). Penn ar Roz: un site d'activité métallurgique protohistorique et antique* [Excavation report]. Inrap GO, Cesson-Sévigné.

O'Connor, B. (1980). *Cross-Channel Relations in the Later Bronze Age. Relations between Britain, North-Eastern France and the Lower Countries during the Later Bronze Age and the Early Iron Age, with particular reference to the metalwork*. BAR Publishing. https://doi.org/10.30861/9780860541059

O'Connor, B. (2007). Llyn Fawr metalwork in Britain: a review. In C. Haselgrove & R. Poper (Ed.), *The Earlier Iron Age in Britain and the near Continent* (pp. 64–79). Oxbow Books.

Pare, C. F. E. (1992). *Wagons and Wagons-Graves of the Early Iron Age in Central Europe*. Oxford University Committee for archaeology.

Pautreau, J.-P., Gendron, C., & Bourhis, J. R. (1983). *L'Âge du Bronze en Deux-Sèvres (2500-800 avant J.-C.). La cachette de Triou*. Niort Museum.

Philippe, A. (1992). *Le dépôt de haches à douille armoricaines de La Forgerais, en Ruffigné (L.-A.), étude descriptive et comparative* [Master dissertation]. University Nantes.

Piette, J. (1989). Le premier âge du fer dans l'Aube. Découvertes inédites ou peu connues. In Champagne-Ardenne. Direction régionale des affaires culturelles (Eds.), *Pré- et Protohistoire de l'Aube* (pp. 229–241). Association Régionale pour la Protection et l'Etude du Patrimoine Préhistorique.

Posma, H., Fontijn, D., Schillebeeckx, P., Perego, R. C., & Butler, J. J. (2005). Neutron Resonance Capture Analysis Axes. *Lunula, 13*, 41–46. https://dx.doi.org/10.1393/ncc/i2006-10036-8

Riquier, V., Maitay, C., Leroy-Langelin, E., & Maguer, P. (2018). Maisons et dépendances dans le nord et l'ouest de la France. Du premier âge du Fer au début de La Tène. In A. Villard-Le Tiec, Y. Menez & P. Maguer (Eds.), *Architectures de l'âge du Fer en Europe occidentale et centrale Actes du 40e colloque international de l'AFEAF, Rennes, du 4 au 7 mai 2016* (pp. 277–305). Presses universitaires de Rennes.

Rivallain, J. (1971). *Contribution à l'Etude du Bronze Final en Armorique. Elaboration d'une méthode appliquée aux dépôts de haches à douille armoricaines* [Doctoral dissertation]. University of Rennes.

Rivallain, J. (2012). *Les haches à douille armoricaines revisitées. Apports des travaux et des études de la deuxième moitié du XXe siècle en Bretagne*. Centre régional d'Archéologie d'Alet.

Roberts, B., & Ottaway, B. (2003). The Use and Significance of Socketed Axes during the Late Bronze Age. *European Journal of Archaeology, 6*(2), 119–140. https://doi.org/10.1179/eja.2003.6.2.119

Roberts, B. W., Boughton, D., Dinwiddy, M., Doschi, N., Fitzpatrick, A. P., Hook, D., Meeks, N., Mongiatti, A., Woodward, A., & Woodward, P. J. (2015). Collapsing commodities or lavish offerings? Understanding massive metalwork deposition at Landon Matravers, Dorset during the Bronze Age-Iron Age transition. *Oxford Journal of Archaeology, 34*(4), 365–395. https://doi.org/10.1111/ojoa.12064

Roussot-Larroque, J., & Le Bihan, J.-P. (2004). Objets singuliers ou objets sacrifiés de l'extrême fin de l'âge du Bronze ou de la transition Bronze-Fer à Mez-Notariou (île d'Ouessant, Finistère, Bretagne). *Bulletin de l'Association française pour l'étude de l'âge du Bronze, 1*, 10–14.

Schmidt, P. K., & Burgess, C. (1981). *The Axes of Scotland and Northern England*. Prähistorische Bronzefunde, Subdiv. 9, Vol. 7. Verlag C. H. Beck.

Stead, I. M. (1998). *The Salisbury hoard.* Tempus Publishing.

Tribouillard, É. (2016). *Les haches à douille de type armoricain dans l'Ouest de la France* [Master dissertation]. Université de Paris 1 Panthéon-Sorbonne.

Tribouillard, É. (2018). Analyse spatiale et régionalisation des productions de haches à douille des types armoricains. *Revue archéologique de l'Ouest, 35*, 159–172. https://doi.org/10.4000/rao.5206

Verney, A. (1990). Le dépôt de Challans (Vendée). *Bulletin de la Société préhistorique française, 87*(10–12), 396–417. https://doi.org/10.3406/bspf.1990.9923

Verney, A. (1999). Dépôt de Trelly (Manche). In M.-H. Santrot, J. Santrot & J.-C. Meuret (Eds.), *Nos ancêtres les Gaulois aux marges de l'Armorique* (p. 20). Musée Dobrée.

Verron, G. (2018). La datation des haches à douille de type armoricain et leur fonction pré-monétaire au Premier âge du Fer. In S. Boulud-Gazo & M. Mélin (Eds.), *Contributions à l'archéologie de l'âge du Bronze dans les espaces atlantiques et Manche-Mer du Nord* (pp. 329–335). Association pour la promotion des recherches sur l'âge du bronze.

Vivet, J.-B. (2007). La production du fer protohistorique en haute Bretagne d'après les résultats des prospections, des fouilles d'ateliers et des analyses archéométriques. In Milcent, P. Y., *L'économie du fer protohistorique: de la production à la consommation du métal. XXVIII^e colloque de l'AFEAF Toulouse, 20–23 mai 2004* (pp. 63–84). Ausonius.

Warmenbol, E. (2013). La hache à douille 'de Nismes' (Viroinal, province de Namur, Belgique). Quelques réflexions autour des haches armoricaines avec une provenance belge. *Archéo-Situla, 32–33*, 3–8.

Warmenbol, E. (2017). Les haches à douille des types Couville et Maure d'Arlon à Wetterren et, pourquoi pas, Zelzate. Nouvelles réflexions autour des haches armoricaines avec une prov enance belge. In J.-M. Doyen & V. Geneviève (Eds.), *Hekátê triformis. Mélanges de numismatique et d'archéologie en mémoire de Marc Bar* (pp. 79–102). Cercle d'Etudes numismatiques.

Note:
All bibliographical references labelled as excavation reports are available at http://bibliotheque-numerique-sra-bretagne.huma-num.fr

LIST OF ILLUSTRATIONS

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