
PART IV

The Copy and Materiality

Philipp W. Stockhammer

The Dawn of the Copy in the Bronze Age

Abstract Contemporary everyday life is dominated by industrially reproduced serial objects that we perceive as easily replaceable in case of damage or loss. We are used to seriality, i.e. the existence of what we perceive as identical copies of a certain kind of object. Seen from a long-term perspective, humans have not been able to create visually identical copies in large numbers for the most part of their existence. Seriality only became possible to a larger extent with the invention of the bronze casting technique in the Near East in the early third millennium BCE, from where the technique was introduced to Central Europe in the late third millennium BCE. In my contribution to this volume, I want to elucidate the changes in the perception of the material world that were connected with the new technical possibility of casting large numbers of visually identical objects with casting moulds. I will demonstrate how the ability to produce almost identical copies resulted in the creation of new practices with objects and new ideas about the meaning and potential of objects in the world: the possibility to possess several identical weapons became the hallmark of the Early Bronze Age hero and groups of seemingly identical objects in the form of hoards were considered the most appropriate offering to the gods.

Keywords Early Bronze Age, technology, casting, copy, seriality

Is the notion of the copy really relevant for prehistoric archaeologists like me? At first sight, the question seems to be a rhetorical one.¹ However, if you take a look at the topics that are generally discussed in prehistoric archaeology, the ideas and motivations that may lie behind the presence of copies in the prehistoric archaeological record have not received too much attention so far.² This lack of knowledge raises two obvious questions: how is the idea of the copy understood in prehistoric archaeology, and how relevant is the answer for us?

In the following pages, I will first discuss the particular role of the copy in prehistoric archaeology and compare it with other nomenclatures used to describe this phenomenon. This will include addressing the question of which characteristics are necessary for something to be described as a copy at all. In the second part, I will discuss secondary practices in Early Bronze Age Central Europe and shed light on the transformative power of new reproduction techniques, as well as the perception of serial objects that were produced with the help of these techniques.

The copy in prehistoric archaeology

One of the most basic archaeological methods is to identify objects that seem to be identical, or at least very similar, from a visual perspective. This is the major starting point for all further analysis. Our search for similar objects is governed by the wish to define types. A type is defined as a class of objects that possess at least two features in common; we regularly try to group together objects that are as similar as possible.³ However, even if we are able to collect a certain number of almost identical objects, we do not use the term “copy” for them, but call them “objects of the same type.”⁴ This is due to the fact that speaking of a copy necessitates, as a first step, the definition of an original and, secondly, a diachronic approach. With respect to the definition of an original, we are faced with the problem of

1 This contribution is part of my postdoctoral research at the Cluster of Excellence “Asia and Europe in a Global Context” financed by the Deutsche Forschungsgemeinschaft at Heidelberg University. I would like to thank Brigitte Röder, Joseph Maran, Christian Horn, Tibor Soroceanu, Bernhard Hänsel, Carola Metzner-Nebelsick, and Harald Meller for their stimulating discussions and critiques.

2 A most notable exception is Tim Flohr Sørensen’s (2012) comprehensive ontological study of the so-called copy of foreign objects in the Scandinavian Early Bronze Age. The notion of the skeuomorph has been extensively discussed by Carl Knappett (2002) and Catherine J. Frieman (2010; Frieman 2012; Frieman 2013). The otherwise lack of conceptualization of the “copy” and related terms in prehistoric archaeology stands in contrast to the vivid discussions on this topic in classical archaeology, where the presence of Roman marble statues as copies of lost Greek bronze statues has resulted in the necessity to conceptualize “copy” and “original” since the beginning of the discipline (e.g. Bieber 1977; Ridgway 1985; Junker and Stähli 2008; Settis and Anguissola 2015).

3 Rouse 1960, 316; Eggert 2001, 133–134; Stockhammer 2004, 17–20.

4 Cf. Sørensen 2012, 45.

identifying prototypes within the class of objects of the same type. Considering the diachronic perspective, we are often lost from a methodological point of view: archaeological time only progresses when things change:⁵ our archaeological clock only ticks forward when objects change in style throughout time. For archaeologists, the identicalness (or at least similarity) of objects indicates their contemporaneity.⁶ This particular concept of time in archaeology basically impedes the identification of chronological difference between original and copy, especially if we define the latter as a “practice of the secondary,”⁷ or the practice of reproducing something that has been there before in attempts to reach at least some similarity with the original. Thus the dialogue between a copy and typological dating methods has the potential for contradiction. When may we, therefore, speak of a copy in prehistoric archaeology? For designating an object as a copy, two prerequisites have to be fulfilled:

First, we must be able to define a class of objects on the basis of common stylistic features and identify their place of production. The latter is often based on the scientific analysis of the object’s constituents and the geographical origins of the different sources of raw materials used therein, e.g. copper ores or clay deposits. Second, a copy would be quite similar visually, but slightly different stylistically, and found outside the region of production. Moreover, this object must be made of the same type of material, but from a different ore or clay deposit than that of the core region of production, e.g. Aegean-style pottery found on Cyprus or in the Levant, where it was made by using local clay deposits.⁸ If this is not the case, we cannot identify differences in its constituent materials. We would, then, call it an imported object rather than a local copy. It is also possible that the copy is made out of a completely different material, e.g. using flint instead of copper. It follows from this epistemological definition that we need both similarity and subtle differences to designate something as a copy.⁹ This distinctiveness or alterity is commonly based on the materiality of an object and/or its place of production. The more common understanding of “copy” today—as a slavish and possibly precise reproduction of an original—is not helpful for prehistoric archaeology, as we are unable to identify such kinds of copies in our material record. Therefore, the differentiation of “original” and “copy” poses an enormous problem for prehistoric archaeology, because objects that look identical were, in our view, produced at the same time and we are not able to introduce a diachronic perspective in this case. All identical objects of the past are either

5 Kubler 1982, 47; Eggert 2001, 146–149; Sommer 2014, 42–45.

6 Cf. also Kubler 1982, who is aware of the problem of seriality and the associated lack of what he calls a “prime object” with regard to the measurement of time on the basis of material culture.

7 Fehrmann et al. 2004; Bartsch, Becker, and Schreiter 2010.

8 D’Agata et al. 2005; Mommsen, D’Agata, and Yasur-Landau 2009; Mountjoy 2011.

9 Sørensen 2012, 48.

all originals and none of them is a copy or they are all copies and none of them is an original. Both perspectives are justifiable in our search for the original (see also Rune Graulund's contribution to this volume) and will be addressed in the sections that follow:

Assumption 1: All prehistoric objects are originals and none are copies

All objects from the past—even if a large number of similar or identical objects exist from a particular space and time—are perceived as being authentic and original by the modern-day spectator. Over time, these objects become “originalized”—irrespective of whether they were perceived as originals or copies by past human actors. It is the act of excavating that endorses an object with authenticity (similar to the political act of endorsing copies with originality as discussed by Jens Schröter in this volume). If the same object would have been dug up by grave robbers and sold on the market, it would need a specialist to determine its authenticity. If we are identifying prehistoric objects as originals, we accept that they are copies and originals at the same time and thus dissolve these categories from an etic perspective.

Assumption 2: All identical prehistoric objects are copies, none of them is an original

One can also easily argue for the opposite point of view, namely that all serial (in my case, prehistoric) objects are copies in the sense of serial products of which none is original.¹⁰ At least since the Early Bronze Age, sometimes hundreds—and often thousands—of seemingly identical objects that would definitely be identified as copies if they were made in the present day were produced throughout human (pre-)history, throughout the world. These objects were most likely understood as copies and their production seen as an act of copying by the prehistoric producer. Following Sørensen, serial products of the Bronze Age “have no *origin* and no *originals*. Instead, they only have a *beginning* and that beginning is characterised by repetition” (italics by Sørensen).¹¹ From an emic point of view, these objects are all copies—if we suppose that the differentiation of “copy” and “original” has always existed everywhere.

In my view, the use of the terms “copy” and “original” to explain past phenomena must be approached with utmost caution, and coupled with the insight that these categories may not have existed in the particular space and time under study. Nevertheless, we should determine if any hints point toward the act of copying as associated with a particular function and meaning in the prehistoric context.

10 Cf. Baudrillard (1981) 1994.

11 Sørensen 2012, 57.

Another interesting phenomenon is the production of a number of very similar, sometimes almost identical, objects on the basis of a model or casting mould.¹² This is the usual case for cast metal objects—mostly bronzes—but sometimes also for figurines or vessels made out of clay. The necessary models or moulds cannot be termed an original, as they are not copied as such but just used to produce a series of almost identical objects, which you may call copies without an original. They are all originals and copies at the same time—like the prints produced with the same printing plate by an artist. They are a series and at the same time the basis for our definition of a type. Tim Flohr Sørensen speaks of “‘seriality’ in the production of bronzes ... by which is meant a series of independent actions that produce individual artefacts on the basis of existing artefacts that serve as models, prototypes or sources of inspiration.”¹³ In my view, the ability to produce a large number of seemingly identical objects is a particular and most important practice of the secondary.

Technology and copying in the Early Bronze Age

Having elaborated on the notion of the type, the copy, and the series, I would now like to discuss the transformative power of the practices of the secondary in prehistory or, more precisely, in the Central European Early Bronze Age, which dates to ca. 2200–1700 BCE.¹⁴

The invention and spread of bronze casting technology, i.e. the casting of an alloy of copper and tin, was one of the most important steps in the development of the human ability to technically reproduce objects. This technology was invented in the Near East in the third millennium BCE and spread from there to Central Europe in the late third and early second millennia BCE. In the following section, I focus on the beginning of the Bronze Age in Central Europe, i.e. the time when this new technology was appropriated by different local actors—albeit with very different velocity and intensity.¹⁵

Bronze technology was the first technology devised by man that allowed the serial reproduction of almost visually identical objects in large numbers. This had not been possible with stone, clay, or wood, as the individual surface structure of each of these materials revealed the uniqueness of

12 I am completely aware that even objects which were cast with one and the same mold can differ due to shrinking processes and forging that happen after casting (Sørensen 2012, 47). Therefore, the attributes of sameness and difference depend very much on the eye of the individual beholder. In order to shed light on past perceptions of sameness and difference, I start with my own perception as a heuristic basis and check its possible compliance with past perceptions in my analysis of archaeological contexts—being aware of the potential vicious circle in my argument.

13 Sørensen 2012, 47.

14 Stockhammer et al. 2015a; Stockhammer et al. 2015b.

15 Kienlin 2006a; Kienlin 2008.

an object to the naked eye. Copper was cast earlier than bronze, but was softer, harder to handle, and not suitable for producing large numbers of visually identical objects. Bronze was easier to cast, harder, and more durable, such that—with the help of casting moulds—it was possible to create many objects that were almost indistinguishable from one another.

The beginning of the Bronze Age produced a phenomenon of particular interest: the sudden and dramatic increase of the practice of depositing objects in the ground, i.e. the deposition of hoards. Hoarding practices already existed during the preceding Neolithic period,¹⁶ but the quantity of Early Bronze Age depositions exceeded all previous hoarding practices by far.¹⁷ The character and number of such depositions and the recurrent selection of bogs as places of deposition suggest a ritual motivation behind these practices—or at least for a large part of the Early Bronze Age hoards.¹⁸ This practice of deposition seems to be closely connected with the introduction of novel bronze technology and requires an explanation.

This evidence leads us to reflect on the perception and appropriation of novel technologies in general and of bronze technology in particular. Science and technology studies (STS) as well as the sociology of technology have extensively demonstrated the constructedness of technology that integrates technical and social aspects. In this regard, I understand “technique” as, first, all artefacts that are necessary for its realization, second, all products that are produced with its help and, third, all knowledge with regard to the development and application of the technique.¹⁹ Knowledge that is transmitted in the framework of the appropriation of a new technology comprises technical and social components that are intrinsically linked with each other and cannot be differentiated.²⁰ A crucial factor for successful appropriation is therefore the possibility to translate foreign knowledge into one’s own world.²¹ This depends on the compatibility of the world view of the local actor who aims to appropriate the technology with the world views that are transmitted with the technology. STS and Sociology of Technology have analysed many cases of the delayed appropriation or rejection of a particular technology by particular actors or groups of actors.²²

16 Görmer 2005.

17 von Brunn 1959; Stein 1976; Lorenz 2010.

18 Religious motivations for at least a large part of the Early Bronze Age hoards are also assumed by e.g. Stein 1976, 9–30; Menke 1978/79, 209–210; Krause 1998, 172; Krause 2003, 205–206; Hansen 2013. Kienlin 2006b and others have emphasized that other motivations for depositing objects into the ground might also have played a role.

19 Valti 1995, 6; Braun-Thürmann 2005, 27.

20 Pinch and Bijker 1984; Bijker 1994; Bijker 2001; Heinrich 2001, 1008–1009; Rammert 2007, 51.

21 Latour 1986; Bachmann-Medick 2009.

22 E.g. for medicine, Stern 1927; for shipping, Gilfillan 1935; for the QERTY keyboard, Rogers 1983, 9–10; for planes, Geels 2005; for the Xerox copier, Suchmann 2005.

These insights from STS and the sociology of technology are further affirmed by the work of the social anthropologist Mary Helms. In her study “Ulysses’ sail: An ethnographic odyssey of power, knowledge, and geographical distance,” she demonstrates that traditional societies perceive knowledge and objects from distant lands as something supernatural, mythical, and powerful.²³ This is due to the fact that the distant lands where these objects and this knowledge originate are also perceived as mythical, powerful, and potentially dangerous. In order to be able to integrate these objects and this knowledge, and to make use of them, they first have to be managed and tamed.

To conclude, based on insights from STS, sociology, and social anthropology, it is clear that the novel bronze technology must have been associated with comparable reservations when it spread over Eurasia. This calls for a revision of the still vivid, but much outdated narrative in archaeological research that assumes a linear development from the Stone Age to the Bronze Age and considers technological progress and the spread of technological innovations as inevitable processes. This linear and evolutionist perception of historical developments in large parts of archaeological research has led to downplaying all evidence that seems to contradict the general notion of historic progress and does not pay attention to the complex process of the transfer, translation, and appropriation of technological and non-technological knowledge. Archaeologists have already started to incorporate these insights into their study of the spread of past technologies²⁴—especially with regard to prehistoric metallurgy, where Tobias Kienlin in particular has repeatedly argued for a more complex, non-linear history of diffusion.²⁵ I would like to expand these thoughts and explain hoarding practice as a ritual strategy of managing the non-technical aspects of novel technology in the process of appropriation.

I would like to suggest that hoarding can be seen as a form of innovation management in which the practice of copying seems to have been attributed with a particular meaning. Out of the hundreds of Early Bronze Age hoards from Central Europe, two hoards stand out: Hoard II from Melz, in Mecklenburg, Western Pomerania²⁶ (fig. 1) and the hoard from Kyhna, in Saxony (fig. 3).²⁷

Hoard II from Melz contained several so-called halberds with metal shafting—their shape reminds us of the much later halberds of Medieval Europe. A Carpathian-type axe was deposited along with the halberds (fig. 1–2). This axe was shafted like the halberds before the deposition. For a long time, the axe was considered to be an import from Eastern Europe. However, recent metal analyses clearly point to a local manufacture like

23 Helms 1988.

24 Gramsch 2009, 20.

25 Kienlin 2006a, 115; Kienlin 2006b, 528–529; Kienlin 2008; Kienlin 2010; Kienlin 2014, 453–454; Burmeister and Müller-Scheeßel 2013.

26 Schoknecht 1971; Wüstemann 1995, 75 No. 112–122; 79 No. 133.

27 Coblenz 1986.

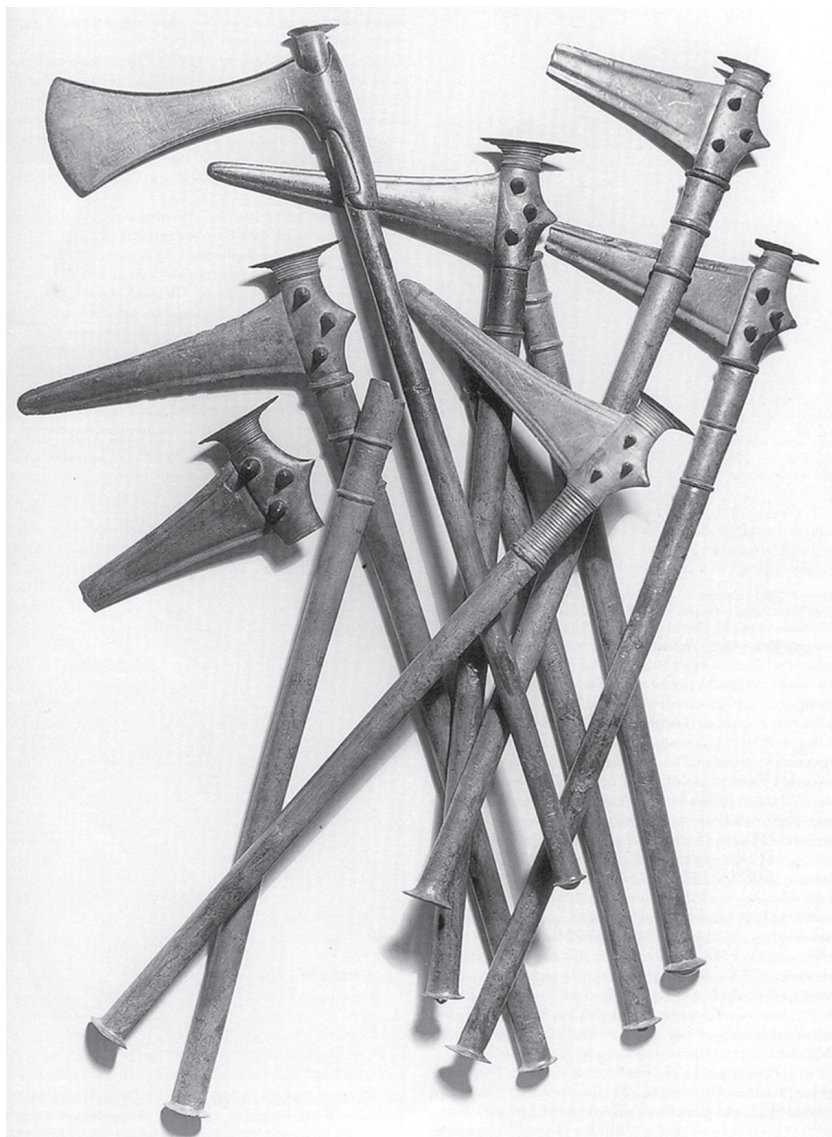


Figure 1: Melz (Mecklenburg, Western Pomerania, Germany), Hoard II: halberds and axe of Carpathian type with metal shafting.

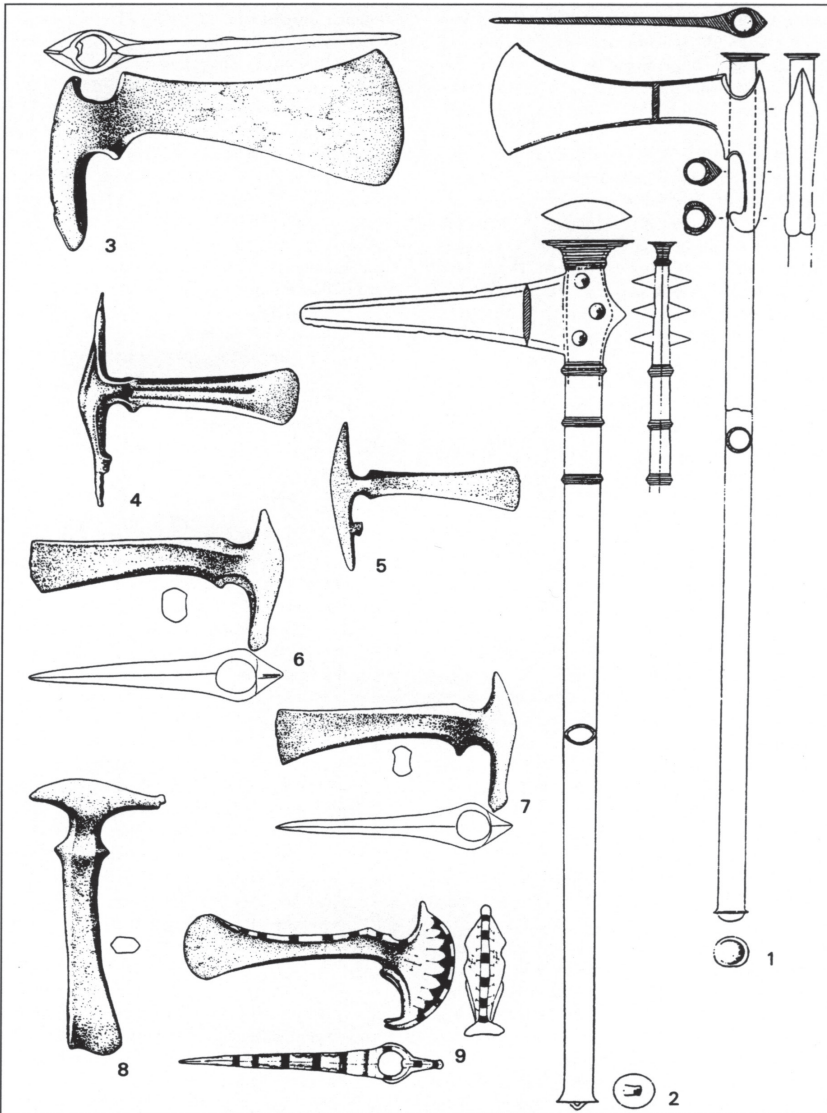


Figure 2: Melz (Mecklenburg, Western Pomerania, Germany), Hoard II: axe (1) and halberd (2) from the hoard and comparable axes (3-9) from the Carpathian basin.



Figure 3: Kyhna (Saxony, Germany), Hoard: vessel with slotted lance head, pins, amber beads, and other body adornments.

that of the halberds.²⁸ The axe from Melz is obviously not an import, but a local product and the copy of a foreign shape at the same time. Without scientific analyses, this copy could not have been distinguished from its Carpathian prototypes. My second example, the hoard from Kyhna, contained a slotted lance head for which the best comparisons can be found

28 Krause 2003, 246 fig. 224; 247

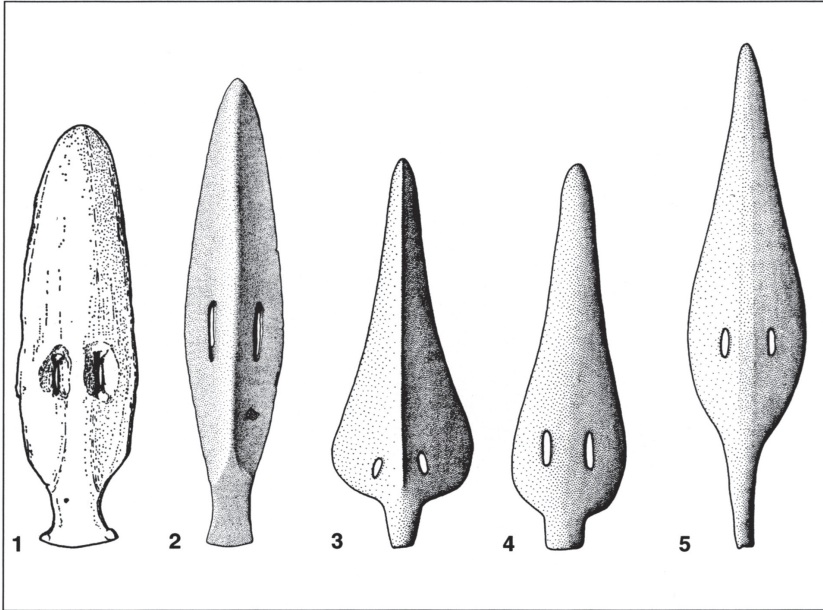


Figure 4: Kyhna (1) (Saxony, Germany), slotted lance head and comparisons (2–5) from the Eastern Mediterranean.

in the Aegean and the Eastern Mediterranean.²⁹ Similar to the axe from Melz, the lance head from Kyhna was considered an import for a long time (fig. 3–4). Quite surprisingly, however, metal analyses were able to demonstrate its local production in Central Germany.³⁰ Following my aforementioned understanding of the “copy” for prehistoric archaeology, it can be identified as a copy of a foreign type of object. Structurally similar findings from other Early Bronze Age contexts in Central Europe, and especially Northern Europe, are also known.³¹ I am convinced that these and further, structurally similar findings need a particular explanation and that they help to shed light on the prehistoric perception and appropriation of bronze technology.

As already mentioned, science and technology studies, sociology, and social anthropology have demonstrated that foreign knowledge, technologies, and also objects are very often perceived as powerful and dangerous at the same time—and not only in traditional societies. I suppose the novel bronze technology spreading from the Near East to Central Europe

29 Gerloff 1993.

30 Krause 2003, 245 fig. 223; 247. Gerloff 1993, 73 assumed that this object might be a local imitation of a foreign form, rather than an import.

31 Isotope ratio and trace element analyses are still missing for other seemingly foreign bronzes found in contexts of the Central European Early Bronze Age (e.g. the axe from Naumburg: Wüstemann 1995, 80 No. 134; Schwarz 2004). For practices of copying in the Scandinavian Early Bronze Age, see Sørensen 2012.

would have been similarly perceived. In my view, the ability to copy a foreign object in a quasi-identical shape can be interpreted as the attempt to take possession of the foreign. Those who were able to produce the foreign object in an identical manner were also able to control it. The anthropologist Michael Taussig called this practice the “mimetic faculty.”³² In his book, *Mimesis and Alterity*, he describes the practices of copying used by the Cuna Indians in Panama to manage the threat by Colonial powers. The production of objects that were understood by the Cuna Indians as copies of the foreign and the management of these copies played a crucial role in their encounter with the dangerous “Others.” The philosopher Gunter Gebauer and the anthropologist Christian Wulf hold a similar opinion: “In mimetic processes, the actor constitutes the already acquired as something of his own and it becomes available through habitualisation.”³³ Taussig, Gebauer, and Wulf give us important hints for understanding evidence from the Early Bronze Age. I would, therefore, like to propose that the practice of copying a Hungarian axe from Melz and an Eastern Mediterranean lance head from Kyhna—and their subsequent deposition—should be interpreted as evidence for the management and control of new and foreign techniques.

The transformative power of seriality in the Early Bronze Age

As mentioned before, new bronze technology suddenly enabled prehistoric man to produce series of almost identical objects, whereas objects in all previous periods of human existence were rather characterized by their singularity and individuality. This possibility raises the question whether the ability to mechanically reproduce objects changed human world views, which are always very much influenced by the surrounding material world.³⁴ Again, Early Bronze Age hoards are of particular interest when exploring this question. Many of these hoards are characterized by the deposition of objects of the same type but in large numbers. Six almost identical halberds were chosen for deposition in Melz,³⁵ while another ten halberds were placed in nearby Groß Schwechten.³⁶ Similar to halberds, daggers and hatches were also deposited together in large numbers, e.g. in the hoards of Malchin, Dobra, Gau-Bickelheim, and Ingolstadt—each of which contained several daggers,³⁷ or the hoard from Gröbers-Bennewitz, which held a large number of hatchets.³⁸ Many Early Bronze Age hoards

32 Taussig 1997.

33 Gebauer and Wulf 2003, 9 (“In mimetischen Prozessen wird vom Handelnden bereits Erworbenes als Eigenes konstituiert und durch Habitualisierung verfügbar;” translation by the author).

34 Robertson 1992, 69–77; Maran 2012, 63.

35 Coblenz 1985.

36 Wüstemann 1995, 81–84 No. 139. 140. 146. 147. 153–155. 161. 162; 89 No. 181

37 Hundt 1971; Schwenzer 2004, 271–273; 303.

38 von Brunn 1959, 57–58; pl. 31, 32. For many further examples, see Hansen 2002.

contain more than one type of object. However, there are always several objects of the same type deposited together (as in Guben-Bresinchen).³⁹

Interestingly, the same practice of selecting objects for deposition according to their similarity is visible in the so-called princely burials of the Early Bronze Age Únětice culture, in what is now eastern Germany, western Poland, the Czech Republic, and parts of Austria and Slovakia. The most prominent grave, which was constructed around 1940 BCE, was discovered in Leubingen, near Halle.⁴⁰ According to the descriptions by the excavator, almost all of the grave goods were present in multiple examples, with the hatchets and probably also the daggers placed in cross-like positions.⁴¹ The deposition of several, often almost identical weapons in Early Bronze Age hoards and graves has already been emphasized by Svend Hansen and defined as *Überausstattung* (over-endowment).⁴²

Svend Hansen pointed to the fact that this over-endowment required a particular motivation, which he relates to world views transmitted by the Epic of Gilgamesh, from late second millennium BCE (or possibly even late third millennium BCE) Mesopotamia.⁴³ Within the epic, Gilgamesh, king of Uruk, and his friend Enkidu are equipped with numerous heavy and obviously identical weapons.⁴⁴ Following Hansen, the equipment of the contemporaneous burials in Ur with several identical weapons indicates that ideas from the Gilgamesh epic influenced Mesopotamian burial practices. In this line of thought, the particular status of the deceased was emphasized by his over-endowment with weapons upon burial. Hansen assumes that related or similar myths were transmitted from the Near East to Central Europe with the knowledge transfer of bronze technology.

However, interest in serial objects had already begun before the Early Bronze Age in Central Europe (certainly by the early third millennium BCE and probably even by the second half of the fourth millennium BCE), as is indicated by the anthropomorphic stele from Tübingen-Weilheim (Baden-Württemberg) and stelae and engravings in the southern alpine region.⁴⁵ These stelae depict the over-endowment of individuals with a large number of weapons—especially daggers and halberds. The earliest systematic depositions of serial metal objects—in this case hatchets and axes made out of copper—can be found in the so-called Vučedol culture (roughly situated in parts of present Croatia, Slovenia, Bosnia and Herzegovina, and Serbia). This serial production of copper weapons was enabled by the innovative casting technologies available in these regions.⁴⁶ Since the early third millennium BCE, local actors in different parts of Europe

39 Breddin 1969.

40 Höfer 1906; Becker, Krause, and Kromer 1989.

41 Höfer 1906; Sørensen 2005, 288–289; Meller 2011.

42 Hansen 2002.

43 Hansen 2002.

44 Maul 2005.

45 Anati 2008; Horn 2014, 76–91. Structurally very similar are the numerous engravings of daggers in the Nucă cave in Rumania (Soroceanu and Sîrbu 2012).

46 Born and Hansen 2001; Durman 2006.

had felt the need to possess a multitude of identical objects—or at least expressed the wish to possess serial objects by depicting individuals with many almost identical weapons. However, only the novel bronze technology enabled the comprehensive realization of this need.

There is no doubt that the multiplicity of the identical object, i.e. the serial object, was considered meaningful and it was the new casting technology that allowed the production of such objects for the first time. I propose that this new ability to reproduce objects also changed man's perception of the surrounding material world and—as a consequence—individual's life worlds,⁴⁷ even if the number of serial objects in an Early Bronze Age household was still rather low, and in stark contrast to our present-day situation and present-day households, which are particularly characterized by an enormous number of often identical objects.⁴⁸ In many parts of the world today, we take for granted the ability to acquire and possess a large number of identical objects—and to be able to replace a broken or lost object with an almost identical one in many cases. In the Early Bronze Age, these possibilities arose for the first time and may have exerted influence on general perceptions of and practices with objects. The selection of visually identical objects for deposition in hoards and graves and for pictorial representation shows that the identical was perceived as meaningful. A series of almost identical objects was considered an adequate means of honoring an eminent individual, whether in the form of images on a stele or of physical items in a grave, or a goddess in the context of offering practices. The transformative power that arose from the interplay between humans and this new technology of reproduction resulted in a new perception of the world of “things.” The ability to produce almost identical copies was not only an expression of technological knowledge but also indicated a newfound competence to adorn outstanding humans and goddesses with something completely new: the first technically mass-produced objects.

This stands in a most interesting dialectic to Walter Benjamin's famous association of the “authentic” and the “original” in the past with magic or religious ritual: “The unique value of the ‘authentic’ work of art has its basis in ritual, the location of its original use value.”⁴⁹ In Benjamin's view, “for the first time in world history, mechanical reproduction emancipates the work of art from its parasitical dependence on ritual,” because asking for the authentic or original object “makes no sense” any more.⁵⁰ In the case of the serial objects of the Early Bronze Age, an industrialized state of mechanical reproduction had not yet been reached. Nevertheless, and maybe also due to the lack of an “original,” the early serial object could occupy a position that Benjamin has restricted to the original.

47 Schütz and Luckmann 1979; Habermas 1981; Habermas 2011.

48 Hahn 2005, 81–83.

49 Benjamin (1936) 1968, 224.

50 Benjamin (1936) 1968, 224.

Summary

In the beginning of my contribution, I showed that it is very difficult to identify an object as a “copy” in the prehistoric record. Consequently, archaeologists have not reflected much on this issue. The identification of a copy in prehistoric archaeology is usually closely related to the long-distance and transcultural exchange of objects and/or technologies from an epistemological point of view. This has to be kept in mind when we speak about practices of the secondary in my discipline. Nevertheless, there are cases where we are able to identify practices of reproduction, and these practices call for an explanation. Having focused on the Early Bronze Age in the second part of my contribution, I set out to demonstrate the societal impact of this novel technology which, on the one hand, triggered social practices of innovation management and, on the other hand, enabled mechanical mass production of serial objects for the first time in human history. Copying became a practice of innovation management as much as it changed human life worlds: new reproduction techniques not only offered new possibilities—such as the possession of visually identical objects and the replacement of one copy with another—but also changed the human perception of the material world which was now full of serial objects. This in turn led to the creation of new practices with and assigning new meaning to objects, as well as a particular valuation of mass-produced objects that is quite different from the public perception in our present age.

Figures

- Fig. 1: With kind permission by Landesamt für Kultur und Denkmalpflege Mecklenburg-Vorpommern, Landesarchäologie, A. Bötöfür.
- Fig. 2: After Krause 2003, 248, fig. 226.
- Fig. 3: After Meller 2004, 187.
- Fig. 4: After Krause 2003, 246, fig. 225.

References

- Anati, Emmanuel. 2008. “The Way of Life Recorded in the Rock Art of Valcamonica.” *Adoranten* 7: 13–35.
- Bachmann-Medick, Doris. 2009. Introduction to “The Translational Turn.” Special issue, *Translation Studies* 2 (1): 2–16.
- Bartsch, Tatjana, Marcus Becker, and Charlotte Schreiter. 2010. “Das Originale der Kopie: Eine Einführung.” In *Das Originale der Kopie: Kopien als Produkte und Medien der Transformation von Antike*, edited by Tatjana Bartsch, Marcus Becker, Horst Bredekamp, and Charlotte Schreiter, 1–26. Transformationen der Antike 17. Berlin: De Gruyter.

- Baudrillard, Jean. (1981) 1994. *Simulacra and Simulation*. Ann Arbor: University of Michigan Press.
- Becker, Bernd, Rüdiger Krause, and Bernd Kromer. 1989. "Zur absoluten Chronologie der Frühen Bronzezeit." *Germania* 67: 421–42.
- Benjamin, Walter. (1936) 1968. "The Work of Art in the Age of Mechanical Reproduction." In *Illuminations: Essays and Reflections*, edited and with an introduction by Hannah Arendt, translated by Harry Zohn, 217–251. New York: Schocken Books.
- Bieber, Margarete. 1977. *Ancient Copies*. New York: University Press.
- Bijker, Wiebe E. 1994. "Sociohistorical Technology Studies." In *Handbook of Science and Technology Studies*, edited by Sheila Jasanoff, Gerald E. Markle, James C. Petersen, and Trevor Pinch, 229–256. London: SAGE.
- . 2001. "Social Construction of Technology." In *International Encyclopedia of the Social and Behavioral Sciences*, edited by Neil J. Smelser and Paul B. Baltes, 15522–15527. Amsterdam: Elsevier.
- Born, Hermann, and Svend Hansen. 2001. *Helme und Waffen Alteuropas*. Sammlung Axel Guttman 10. Mainz: Verlag Sammlung Guttman bei von Zabern.
- Braun-Thürmann, Holger. 2005. *Innovation*. Bielefeld: transcript.
- Breddin, Rolf. 1969. "Der Aunjetitzer Bronzehortfund von Bresinchen, Kr. Guben." *Veröffentlichungen des Museums für Ur- und Frühgeschichte Potsdam* 5: 15–56.
- Burmeister, Stefan, and Nils Müller-Scheeßel. 2013. "Innovation as a Multi-faceted Social Process: An Outline." In *Metal Matters: Innovative Technologies and Social Change in Prehistory and Antiquity*, edited by Stefan Burmeister, Svend Hansen, Michael Kunst, and Nils Müller-Scheeßel, 1–12. Mensch – Kulturen – Traditionen: Studien aus den Forschungsclustern des Deutschen Archäologischen Instituts 12. Rahden: Maria Leidorf.
- Coblentz, Werner. 1986. "Ein frühbronzezeitlicher Verwahrfund von Kyhna, Kr. Delitzsch." *Arbeits- und Forschungsberichte der Sächsischen Bodendenkmalpflege* 30: 37–88.
- D'Agata, Anna Lucia, Yuval Goren, Hans Mommsen, Alexander Schwedt, and Assaf Yasur-Landau. 2005. "Imported Pottery of LH III C Style from Israel: Style, Provenance, and Chronology." In *Emporia: Aegeans in the Central and Eastern Mediterranean*, edited by Robert Laffineur and Emanuele Greco, 371–379. Proceedings of the 10th International Aegean Conference, Athens, April 14–18, 2004, Aegaeum 25. Liège: Université de Liège.
- Durman, Aleksandar. 2006. *Symbol of God and King: The First European Rulers*. Zagreb: Galerija Klovičevi Dvori.
- Eggert, Manfred K. H. 2001. *Prähistorische Archäologie: Konzepte und Methoden*. Tübingen: Francke.
- Fehrmann, Gisela, Erika Linz, Eckhard Schumacher, and Brigitte Weingart, eds. 2004. *Originalkopie: Praktiken des Sekundären*. Köln: DuMont.
- Frieman, Catherine Julia. 2010. "Imitation, Identity, and Communication: The Presence and Problems of Skeuomorphs in the Metal Ages." In *Lithic Technology in Metal Using Societies*, edited by Berit Valentin Eriksen, 33–44. Aarhus: Jutland Archaeological Society.

- . 2012. *Innovation and Imitation: Stone Skeuomorphs of Metal from 4th–2nd Millennia B.C.: Northwest Europe*. Oxford: Archaeopress.
- . 2013. "Innovation and Identity: The Language and Reality of Prehistoric Imitation and Technological Change." In *The Archaeology of Hybrid Material Culture*, edited by Jeb J. Card, 318–341. Center for Archaeological Investigations, Occasional Paper No. 39. Carbondale: Southern Illinois University Press.
- Gebauer, Gunter, and Christoph Wulf. 2003. *Mimetische Weltzugänge: Soziales Handeln – Rituale und Spiele – ästhetische Produktionen*. Stuttgart: Kohlhammer.
- Geels, Frank W. 2005. *Technological Transitions and System Innovations: A Co-evolutionary and Socio-technical Analysis*. Cheltenham: Edward Elgar Publishing.
- Gerloff, Sabine. 1993. "Zu Fragen mittelmeerländischer Kontakte und absoluter Chronologie der Frühbronzezeit in Mittel- und Westeuropa." *Prähistorische Zeitschrift* 68: 58–102.
- Gilfillan, Sidney C. 1935. *The Sociology of Invention*. Chicago: Follett Publishing Company.
- Görmer, G. 2005. "Neolithische Depots in Südost- und Mitteleuropa sowie Südsandinavien: Bemerkungen zu ihrer Deutung." *Ethnographisch-Archäologische Zeitschrift* 46: 449–57.
- Habermas, Jürgen. 1981. *Theorie des kommunikativen Handelns*. Frankfurt am Main: Suhrkamp.
- . 2011. "Von den Weltbildern zur Lebenswelt." In *Lebenswelt und Wissenschaft*, edited by Carl Friedrich Gethmann, 63–89. 21. Deutscher Kongress für Philosophie. Deutsches Jahrbuch Philosophie 2. Hamburg: Meiner.
- Hahn, Hans Peter. 2005. *Materielle Kultur: Eine Einführung*. Berlin: Reimer.
- Hansen, Svend. 2002. "'Überausstattungen' in Gräbern und Horten der Frühbronzezeit." In *Vom Endneolithikum zur Frühbronzezeit: Muster sozialen Wandels?*, edited by Johannes Müller, 151–173. Universitätsforschungen zur Prähistorische Archäologie 90. Bonn: Habelt.
- . 2005. "Neue Forschungen zur Metallurgie der Bronzezeit in Südosteuropa." In *Anatolian Metal 3*, edited by Ünsal Yalcin, 89–104. Bochum: Deutsches Bergbau Museum.
- . 2013. "Bronzezeitliche Deponierungen in Europa nördlich der Alpen: Weihgaben ohne Tempel." In *Sanktuar und Ritual: Heilige Plätze im archäologischen Befund*, edited by Iris Gerlach and Dietrich Raue, 371–387. Studien aus den Forschungsclustern des Deutschen Archäologischen Instituts 10. Rahden: Maria Leidorf.
- Helms, Mary W. 1988. *Ulysses' Sail: An Ethnographic Odyssey of Power, Knowledge, and Geographical Distance*. Princeton: Princeton University Press.
- Henrich, Joseph. 2001. "Cultural Transmission and the Diffusion of Innovations: Adoption Dynamics Indicate That Biased Cultural Transmission Is the Predominate Force in Behavioral Change." *American Anthropologist* 103 (4): 992–1013.

- Höfer, Paul. 1906. "Der Leubinger Grabhügel." *Jahresschrift für die Vorgeschichte der sächsisch-thüringischen Länder* 5: 1–99.
- Horn, Christian. 2014. *Studien zu den europäischen Stabdolchen*. Universitätsforschungen zur prähistorischen Archäologie 246. Bonn: Habelt.
- Hundt, Hans-Jürgen. 1971. "Der Dolchhort von Gau-Bickelheim in Rheinhessen." *Jahrbuch des Römisch-Germanischen Zentralmuseums* 18: 1–43.
- Junker, Klaus, and Adrian Stähli, eds. 2008. *Original und Kopie: Formen und Konzepte der Nachahmung in der antiken Kunst*. Akten des Kolloquiums in Berlin, 17.–19. Februar 2005. Wiesbaden: Reichert.
- Kienlin, Tobias L. 2006a. "Frühbronzezeitliche Randleistenbeile von Böhringen-Rickelshausen und Hindelwangen: Ergebnisse einer metallographischen Untersuchung." *Prähistorische Zeitschrift* 81: 97–120.
- . 2006b. "Waffe, Werkzeug, Barren: Zur Deutung frühbronzezeitlicher Randleistenbeile in Depotfunden des nordalpinen Raums." In *Grundlegungen: Beiträge zur europäischen und afrikanischen Archäologie für Manfred K. H. Eggert*, edited by Hans-Peter Wotzka, 461–76. Tübingen: Francke.
- . 2008. *Frühes Metall im nordalpinen Raum: Eine Untersuchung zu technologischen und kognitiven Aspekten früher Metallurgie anhand der Gefüge frühbronzezeitlicher Beile*. Universitätsforschungen zur prähistorischen Archäologie 162. Bonn: Habelt.
- . 2010. *Traditions and Transformations: Approaches to Eneolithic (Copper Age) and Bronze Age Metalworking and Society in Eastern Central Europe and the Carpathian Basin*. BAR International Series 2184. Oxford: Archaeopress.
- . 2014. "Aspects of Metalworking and Society from the Black Sea to the Baltic Sea from the Fifth to the Second Millennium B.C." In *Archaeometallurgy in Global Perspective: Methods and Syntheses*, edited by Benjamin W. Roberts and Christopher P. Thornton, 447–72. New York: Springer.
- Knappett, Carl. 2002. "Photographs, Skeuomorphs, and Marionettes: Some Thoughts on Mind, Agency, and Object." *Journal of Material Culture* 7 (1): 97–117.
- Krause, Rüdiger. 1998. "Zur Entwicklung der frühbronzezeitlichen Metallurgie nördlich der Alpen." In *Mensch und Umwelt in der Bronzezeit Europas*, edited by Bernhard Hänsel, 163–192. Abschlußtagung der Kampagne des Europarates: Die Bronzezeit; Das erste goldene Zeitalter Europas, an der Freien Universität Berlin, March 17–19, 1997. Kiel: Oetker-Voges.
- . 2003. *Studien zur kupfer- und frühbronzezeitlichen Metallurgie zwischen Karpatenbecken und Ostsee*. Vorgeschichtliche Forschungen 24. Rahden: Maria Leidorf.
- Kubler, George. 1982. *Die Form der Zeit: Anmerkungen zur Geschichte der Dinge*. Frankfurt am Main: Suhrkamp.
- Latour, Bruno. 1986. "The Powers of Association." In *Power, Action, and Belief: A New Sociology of Knowledge?*, edited by John Law, 264–280. Sociological Review Monograph 32. London: Routledge & Kegan Paul.
- Lorenz, Luise. 2010. *Typologisch-chronologische Studien zu Deponierungen der nord-westlichen Aunjetitzer Kultur*. Universitätsforschungen zur prähistorischen Archäologie 188. Bonn: Habelt.

- Maran, Joseph. 2012. "One World is not Enough: The Transformative Potential of Intercultural Exchange in Prehistoric Societies." In *Conceptualizing Cultural Hybridization: A Transdisciplinary Approach*, edited by Philipp W. Stockhammer, 59–66. Transcultural Research: Heidelberg Studies on Asia and Europe in a Global Context. Heidelberg: Springer.
- Maul, Stefan M., ed. 2005. *Das Gilgamesch-Epos: Neu übersetzt und kommentiert*. Munich: C. H. Beck.
- Meller, Harald, ed. 2004. *Der geschmiedete Himmel: Die weite Welt im Herzen Europas vor 3600 Jahren*. Stuttgart: Theiss.
- . 2011. *Bronzerausch: Spätneolithikum und Frühbronzezeit*. Begleitheft zur Dauerausstellung im Landesmuseum für Vorgeschichte Halle 4. Halle, Saale: Landesamt für Denkmalpflege.
- Menke, Manfred. 1978/79. "Studien zu den frühbronzezeitlichen Metalldepots Bayerns." *Jahresberichte der bayerischen Bodendenkmalpflege* 19/20: 5–305.
- Mommsen, Hans, Anna Lucia D'Agata, and Assaf Yasur-Landau. 2009. "Neutron Activation Analysis of Mycenaean IIC-Style Pottery." In *Excavations at Tel Beth-Shean, 1989–1996*. Vol. 3, *The 13th–11th Century BCE Strata in Areas N and S*, edited by Nava Panitz-Cohen and Amihai Mazar, 510–518. Jerusalem: Israel Exploration Society.
- Mountjoy, Penelope A. 2011. "An Update on the Provenance by Neutron Activation Analysis of Near Eastern Mycenaean IIC Pottery Groups with Particular Reference to Cyprus." In *Our Cups Are Full: Pottery and Society in the Aegean Bronze Age; Papers Presented to Jeremy B. Rutter on the Occasion of his 65th Birthday*, edited by Walter Gauß, Michael Lindblom, R. Angus K. Smith, and James C. Wright, 179–186. Oxford: Archaeopress.
- Pinch, Trevor J. and Wiebe E. Bijker. 1984. "The Social Construction of Facts and Artefacts; or, How the Sociology of Science and the Sociology of Technology Might Benefit Each Other." *Social Studies of Science* 14 (3): 399–441.
- Probst, Ernst. 1996. *Die Bronzezeit in Deutschland*. München: C. Bertelsmann.
- Rammert, Werner. 2007. *Technik – Handeln – Wissen: Zu einer pragmatistischen Technik- und Sozialtheorie*. Wiesbaden: VS Verlag für Sozialwissenschaften.
- Ridgway, Brunhilde S. 1985. *Roman Copies of Greek Sculpture: The Problem of the Originals*. Ann Arbor: University of Michigan Press.
- Robertson, Roland. 1992. *Globalization: Social Theory and Global Culture*. London: SAGE.
- Rogers, Everett M. 2003. *Diffusion of Innovations*, 5th ed. New York: Free Press.
- Rouse, Irving. 1960. "The Classification of Artifacts in Archaeology." *American Antiquity* 25: 313–323.
- Schoknecht, Ulrich. 1971. "Ein neuer Hortfund von Melz, Kreis Röbel, und die mecklenburgischen Stabdolche." *Jahrbuch der Bodendenkmalpflege in Mecklenburg*: 233–253.
- Schütz, Alfred, and Thomas Luckmann. 1979. *Strukturen der Lebenswelt*. Frankfurt am Main: Suhrkamp.
- Schwarz, Ralf. 2004. "Die Nackenkammmaxt aus Naumburg." In *Der geschmiedete Himmel: Die weite Welt im Herzen Europas vor 3600 Jahren*, edited by Harald Meller, 180–181. Stuttgart: Theiss.

- Schwenzer, Stefan. 2004. *Frühbronzezeitliche Vollgriffdolche: Typologische, chronologische und technische Studien auf der Grundlage einer Materialaufnahme von Hans-Jürgen Hundt*. Kataloge Vor- und Frühgeschichtlicher Altertümer 36. Mainz: Verlag des Römisch-Germanischen Zentralmuseums.
- Settis, Salvatore, and Anna Anguissola, eds. 2015. *Serial/Portable Classics*. Milan: Fondazione Prada.
- Sommer, Ulrike. 2014. "Zeit, Erinnerung und Geschichte." In "Zeichen der Zeit: Archäologische Perspektiven auf Zeiterfahrung, Zeitpraktiken und Zeitkonzepte," edited by Sabine Reinhold and Kerstin P. Hofmann. Special issue, *Forum Kritische Archäologie* 3: 25–59.
- Sørensen, Tim Flohr. 2012. "Original Copies: Seriality, Similarity, and the Simulacrum in the Early Bronze Age." *Danish Journal of Archaeology* 1 (1): 45–61.
- Sørensen, Marie L. S. 2005. "The Grammar of Drama: An Analysis of the Rich Early Bronze Age Grave at Leubingen, Germany." In *Die Dinge als Zeichen: Kulturelles Wissen und materielle Kultur*, edited by Tobias L. Kienlin, 283–291. Internationale Tagung Johann Wolfgang Goethe-Universität, Frankfurt am Main, April 3–5, 2003. Universitätsforschungen zur prähistorischen Archäologie 127. Bonn: Habelt.
- Soroceanu, Tudor, and Valeriu Sirbu. 2012. "La grotte de Nucu du néolithique à l'âge du Bronze." In *Un monument des Carpates orientales avec des représentations de la préhistoire et du moyen âge – Nucu – „Fundu Peșterii”, département de Buzău*, edited by Valeriu Sirbu and Sebastian Matei, 119–335. Brăila: Ed. Istros.
- Stein, Frauke. 1976. *Bronzezeitliche Hortfunde in Süddeutschland: Beiträge zur Interpretation einer Quellengruppe*. Saarbrücker Beiträge zur Altertumskunde 23. Bonn: Habelt.
- Stern, Bernhard J. 1927. *Social Factors in Medical Progress*. New York: Columbia University Press.
- Stockhammer, Philipp W. 2004. *Zur Chronologie, Verbreitung und Interpretation urnenfelderzeitlicher Vollgriffschwerter*. Tübinger Texte 5. Rahden: Maria Leidorf.
- , Ken Massy, Corina Knipper, Ronny Friedrich, Bernd Kromer, Susanne Lindauer, Jelena Radosavljević, Fabian Wittenborn, and Johannes Krause. 2015a. "Rewriting the Central European Early Bronze Age Chronology: Evidence from Large-Scale Radiocarbon Dating." *PLoS ONE* 10 (10): e0139705, doi: 10.1371/journal.pone.0139705.
- , Ken Massy, Corina Knipper, Ronny Friedrich, Bernd Kromer, Susanne Lindauer, Jelena Radosavljević, Ernst Pernicka, and Johannes Krause. 2015b. "Kontinuität und Wandel vom Endneolithikum zur frühen Bronzezeit in der Region Augsburg." In *2200 BC – Ein Klimasturz als Ursache für den Zerfall der Alten Welt?* edited by Harald Meller, Helge W. Arz, Reinhard Jung, and Roberto Risch, 617–641. Halle, Saale: Landesamt für Denkmalpflege. Paper presented at the 7. Mitteldeutscher Archäologentag, October 23–26, 2014.
- Suchman, Lucy A. 2005. "Affiliative Objects." *Organization* 12 (3): 379–399.

- Taussig, Michael. 1997. *Mimesis und Alterität: Eine eigenwillige Geschichte der Sinne*. Hamburg: EVA. Originally published as *Mimesis and Alterity: A Particular History of the Sense*. New York: Routledge, 1993.
- Volti, Rudi. 1995. *Society and Technological Change*. New York: St. Martin's Press.
- Von Brunn, Wilhelm A. 1959. *Bronzezeitliche Hortfunde I: Die Hortfunde der frühen Bronzezeit aus Sachsen-Anhalt, Sachsen und Thüringen*. Deutsche Akademie der Wissenschaften zu Berlin, Schriften der Sektion für Vor- und Frühgeschichte 7. Berlin: Akademie Verlag.
- Wüstemann, Harry. 1995. *Die Dolche und Stabdolche in Ostdeutschland*. Prähistorische Bronzefunde VI, 8. Stuttgart: Franz Steiner.