

Social Worlds and Communities of Practice: a polythetic culture model for 3rd millennium BC Europe in the light of current migration debates

Mondes sociaux et communautés de pratique : un modèle culturel polythétique pour l'Europe du III^e millénaire avant notre ère à la lumière des débats actuels sur la migration

Martin Furholt



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EDITOR'S NOTE

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Introduction, or prologue

- 1 Nowadays any paper dealing with the 3rd millennium BC in Europe must take into account the effects that biomolecular sciences, especially ancient DNA analyses, have on archaeology. This is a good thing overall, but there are also many genuine concerns about some of the turns the debate has taken. To give an example, in the early summer of 2018, sitting in the audience of a conference devoted to the discussion of the impact genetic studies have on archaeological theory¹, I was very much taken aback by listening to a famous veteran of the British processual archaeology, who admitted to having been wrong in his critique of the school of culture-historical archaeology some 50 years ago. Today he would use the term “beaker folk” when referring to the Bell

Beaker period in Britain, a designation he had consistently rejected at that time, but which, in his opinion, has been rehabilitated through aDNA studies. He made this statement during a period of profound confusion in prehistoric archaeology, a period in which technological advances in biosciences enabled us to consider new sources of data in order to gather information about prehistory, but in which archaeologists are also obviously intimidated by this technology, the methods connected to it as well as the funds and publicity involved in aDNA, to such a degree that they have abandoned decades of research and theoretical sophistication. Over the last five years, aDNA papers dealing with the 3rd millennium BC in Europe have been published in high-ranked journals, and although many archaeologists have been co-authors, these articles display narratives on population history which either treat human societies as if they represent a sample of a lizard population (Bandelt *et al.* 2002), with a purely biologicistic view on social reality, disregarding culturally and socially determined factors or rediscover former culture-historical narratives that would have made Gustav Kossinna smile (Heyd 2017), such as the ‘Beaker folk’ or ‘the Corded Ware people’ collectively moving across the continent. As revealed through many discussions with colleagues, asking for a more sophisticated discussion on 3rd millennium archaeology, investigating the ways in which material culture is related to social identities and biological descent, when discussing migration, is now deemed to be reactionist. This is currently seen as a sign that one is not willing to adopt the new era we live in, to ‘admit one has been wrong all along’, or it is compared with the opposition to the results of radiocarbon dating in the last century. This latter comparison is advanced so often that it is a good starting point to make clear that there is a very significant difference between these two “science revolutions in archaeology” (Kristiansen 2014). While it is true that new technological developments, both radiocarbon dating and aDNA analyses, radically changed our view about Prehistory, the main difference is that in the case of radiocarbon dating there were many colleagues who actually did not believe the validity of the data themselves. In Germany this was the case, for example, well into the 21st century. By contrast, today there is no serious debate about the validity of genetic data. What is discussed are issues of sample size and representativeness, as well as the archaeological and anthropological concepts connected to the data. And these issues are worth discussing. And it is the duty of both archaeologists and geneticists to continue this debate.

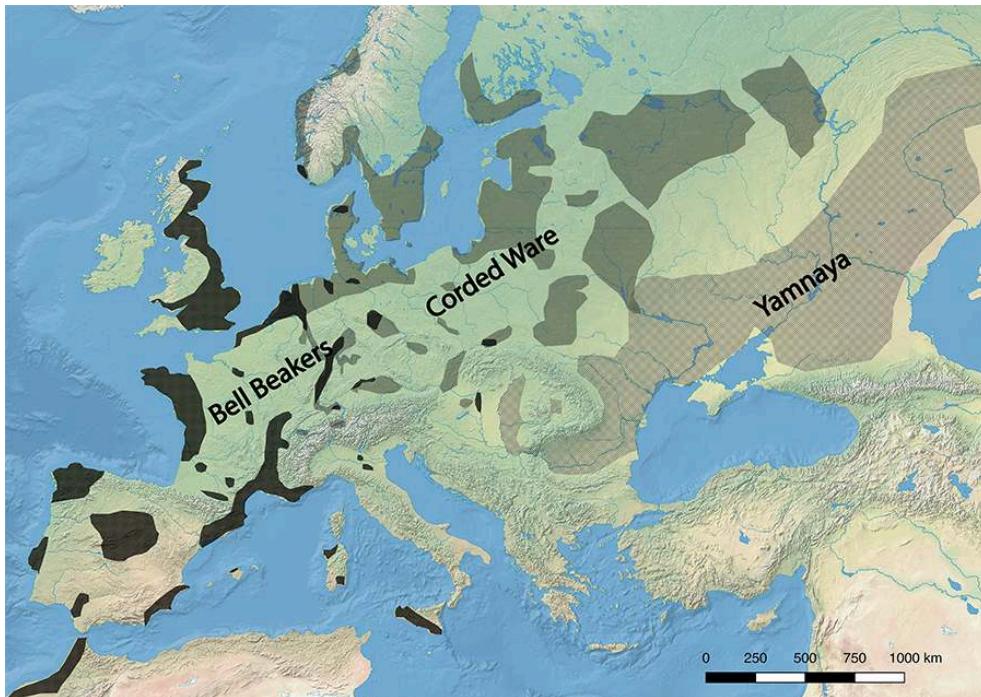
- 2 New genetic data have definitely provided us with new and unprecedented access to the biological dimension of prehistoric life and have therefore changed our perspective on many aspects of the 3rd millennium. The focus is more than ever on the issue of human mobility, which has severe consequences for our understanding of social group composition and social organisation. However, although we have become increasingly aware of the fact that human mobility plays a crucial role in the transformation of social relations and identities, cultural expressions, socio-economic and political systems, the simplified narratives of a migrating Corded Ware or Bell Beaker “folk” are without any real content when it comes to understanding social and cultural processes. It is thus still crucially important to explore the way in which the material expressions of social practices, which are compiled in units such as the Corded Ware or the Bell Beaker, actually relate to social phenomena, what kind of social groups, social relations and social identities, and the way in which the spatial patterns of material culture in our archaeological record actually relate to what form of human mobility and connectivity.

- 3 The aim of this paper is to discuss how a polythetic culture model, based on a polythetic classification of the 3rd millennium BC material as proposed by David Clarke (1968), can enhance our understanding of the local and translocal settings of social relationships, instead of sticking to the traditional, monothetic, block-like picture of closed social units, which is at the heart of the current migration narratives.

3rd millennium BC classification issues

- 4 The classification of units of archaeological material is a long-standing debate in the archaeological discourse on the 3rd millennium BC, which is still very much an issue, as shown by the current discussions about migration (e.g. Müller 2013, Haak *et al.* 2015, Kristiansen *et al.* 2017). Here the idea of a ‘massive migration’ is implicitly based on a monothetic classification of archaeological units such as the Corded Ware or the Bell Beaker, which creates an impression of internal homogeneity and external boundedness of the material culture within clearly defined areas. This is then transferred into the area of social interpretation, as these units are seen to represent distinct, social groups with corresponding qualities, namely an internal social and cultural homogeneity and boundedness towards the outside. This is common practice in the culture-historical tradition of Neolithic archaeology, which continues to be a strong school of thought in continental Europe (e.g. Furholt 2014, 2018a). It constitutes, however, a misrepresentation of the archaeological material and leads to a very biased social interpretation. This can in part be resolved by a polythetic classification, as suggested by David Clarke (1968), and an integration of this mode of classification into a polythetic model of cultural interaction (Furholt 2008c, 2017). A monothetic classification creates block-like, exclusive units, within which all traits considered are assumed to be constantly present in all individuals within the unit. Such an idea can be found in Gordon Childe’s definition of the archaeological culture (Childe 1929). Yet, David Clarke pointed out that the archaeological reality is incompatible with such a concept. There are in reality virtually no instances, in which all traits are constantly present in all individuals studied, while at the same time being constantly absent from any other set of individual instances. Thus, a real monothetic classification cannot be, and is never really applied. What is done however, is something like applying an “as-if” monothetic classification, in which all empirical evidence contradicting monothetic blocks is simply ignored. The archaeological cultures of the Neolithic in Europe are portrayed as if they were monothetic blocks, and represented as such on archaeological maps, for example as shaded areas (fig. 1). In practice, pottery, given its abundance, is used to define these units, to which are added, as a second step, specific tool types, house forms, burial rites (and in the beginning, and again more recently, biological characteristics, ‘races’ or ‘populations’), mostly glossing over their lack of coherence within and between the archaeological cultures. Clarke’s 50-year-old critique of this practice has very often been cited and recommended as a solution (e.g. Lüning 1979, Vander Linden 2006, Roberts & Vander Linden 2011), yet it has been much more seldom actually applied. It seems that this lack of impact of the polythetic classification of material culture is due to its incompatibility with a powerful, widely held view of the Neolithic social units as coherent cultural groups – in a way monothetically configured social groups. With such a view in mind, polythetic classification is seen as vague and even confusing (Eggert *et al.* 2012: 190).

1. Map of the most important archaeological units of classification discussed in this text using the traditional, monothetic model

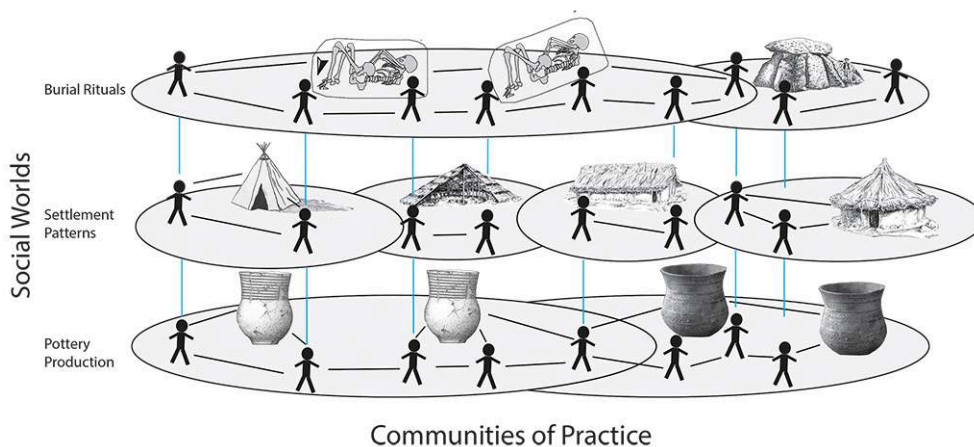


From classification to social model

- 5 Obviously, in order for polythetic classification to be applied in a way that gains acceptance in the field of European Neolithic archaeology, it needs to be combined with a likewise polythetic cultural model. This seems rather straight-forward, as anthropological and sociological research cast off the idea of closed coherent social groups a long time ago. There is a wide array of distinct social theories highlighting a polythetic setting of social relationships and cultural expressions from which one can choose (e.g. Shibutani 1955, Blumer 1981, Strauss 1993, Hansen 2003, Hillier & Hanson 1984, Wenger 1998). Here I will concentrate on Wenger's *communities of practice*, and Anselm Strauss's *social worlds*. Both concepts stress the creation of social groups through the collaborative practices of individuals with regard to specific tasks, or commitments, and both identify the fact that human individuals are usually part of multiple such groups, which overlap in diverse ways.
- 6 Strauss speaks of "*activities*" that constitute a *social world*. The *shared commitment* that underlies the activities in question (Strauss 1993) is crucial for constituting a social world. Being part of different social worlds, individuals will have multiple reference groups with which they share different commitments. Wenger's communities of practice more strongly emphasise shared learning which is an outcome of shared practices (Wenger 1998). This is an important aspect for an archaeological application of this concept, as shared learning by collaborative practices should also involve the establishment of common ideas about technologies and styles of material culture.
- 7 These concepts of multiple social worlds, or communities of practice, can be used to create a social model for archaeology (fig. 2). This can be achieved by connecting these

concepts to a polythetic classification of the material. For example, the identification of burial rites, pottery manufacturing, and/or house forms and settlement patterns with distinct social worlds will not result in a vague, fuzzy picture, which would be difficult to communicate to our colleagues. Instead, such a polythetic culture model can provide a more nuanced, dynamic, yet intelligible representation of past social reality, reflecting the complicated patterns of social reality. It is relatively straight-forward to postulate that pottery-making is connected to a different social world, in which different communities of practice evolved, as opposed to burial rites, or house-building. Also, the circulation of objects, such as ornaments, exotic materials, and metal artefacts, can be seen as referring to several, different communities of practice (not represented in fig. 2). In each social world, that of pottery making, or that of burial rites, there will be different communities of practice, different groups of people who have developed specific cultural standards through continuously or periodically joint practices, or co-socialisation, resulting in archaeologically documented different characteristics, which archaeologists tend to classify as types. In practice the spatial and temporal extension of these different standards will differ from social world to social world. In many cases distinct pottery styles are more locally constrained than are burial rites, or tool types. And there may be cases in which the spatial and temporal setting of pottery styles and burial rites is consistent in space and through time. Yet such a setting can only be empirically detected through polythetic classification, whereas in monothetic classification it is presupposed.

2. Illustration of a polythetic culture model, which identifies different archaeological object categories with distinct social worlds, in which several differentiated communities of practice exist. Each individual is usually part of different communities of practice connected to different social worlds, and these are not necessarily congruent

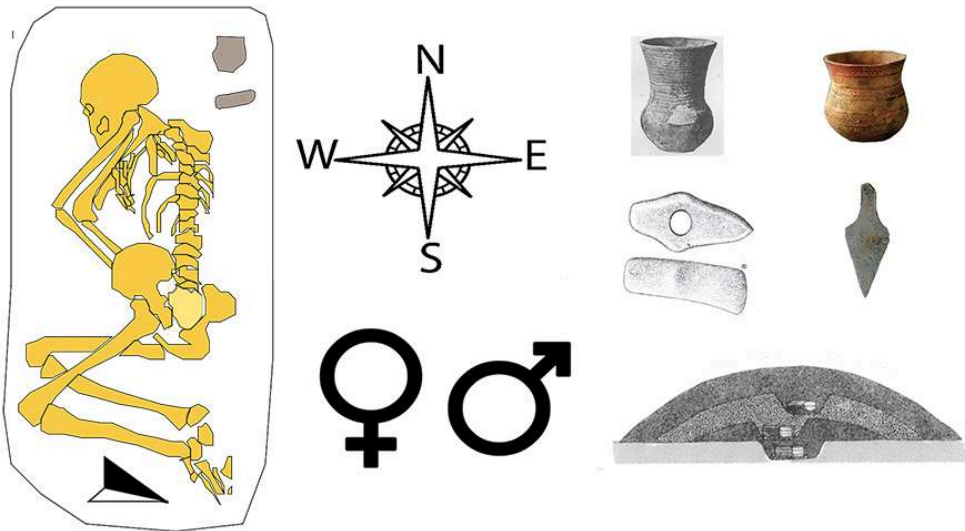


- 8 Obviously, classification is invariably a violation of reality. Yet there are better and worse ways to create types and delineate one unit from the other, as David Clarke argued. Social worlds identified in the archaeological record, are obviously etic impositions by modern archaeologists. Also, identifying several distinct communities of practice within such social worlds, will again involve the risk of ignoring gradual changes or overlapping traits. Yet the explicit application of a polythetic approach in classifying the archaeological record would clearly constitute a significant step forward, because it less blatantly violates the archaeological data and, even more important, it also helps counter the super-narrative of culturally closed communities, which is fostered by the faulty application of monothetic classification.

Social worlds and communities of practice in 3rd millennium Europe

- 9 A polythetic model of social interaction, based on a polythetic classification of the material enhances our understanding of the 3rd millennium BC in Europe. When we compare the distribution of different pottery types, tool types, and burial rite data of what is usually labelled “Corded Ware” and “Bell Beaker”, such a polythetic setting is obvious (Furholt 2014, 2019). It is especially useful to separate burial rites from the constraining culture labels. As demonstrated elsewhere (Furholt 2019), in central Europe, 3rd millennium burial rites show a much greater variation within the archaeological units as well as more overlap between them than is usually stated. Starting around 2900 BC four new elements emerge: individual burials, strict orientation rules (e.g. west-east), gender-related differentiation (e.g. males on their right side, females on their left side) and the association of male individuals with specific weapons. These burials are often found in burial mounds. Although these new elements of the burial rite are usually said to characterise “the Corded Ware”, they are in reality only regularly present in a few regions. In other regions, there are systematic deviations, for example a lack of gender-related differentiation, gender-related differentiation with a reversed pattern (i.e. male individuals buried on their left side and females on their right side), north-south orientation instead of east-west orientation (see Furholt 2019). The latter two elements in particular are, however, said to be regular characteristics of Bell Beaker burials, as well as of the Early Bronze Age Unetice culture, Mierzanowice culture and others. Obviously there is a considerable overlap between the characteristics of 3rd-millennium burial rites, and without the culture labels as pre-determining units one could very well argue (as did Furholt 2019) the existence of a 3rd-millennium BC “Single Grave Burial Rite Complex” (SGBR; see fig. 3). This is an assemblage of distinct elements, not all of which are present in all regions, but in most regions, we can find a variation on the basic theme: individual burials, emphasis on gender, strict (albeit regionally different) orientation rules and the male warrior role. In subdividing the SGBR complex into Corded Ware, Bell Beaker, Unetice burials, popular fallacy is at work: the fact that a monothetic classification of these archaeological cultures with their supposedly exclusive burial rites does not work – as not all the elements are present within a distinct unit, nor are exclusive to the unit – is simply ignored, and the units created are treated as if they had a monothetic setting. Instead, if we apply a polythetic model, and look at the burial rites as social worlds seen individually, a more differentiated picture emerges, with a set of overall new standards, as well as regional variants and deviations from these rules.

3. The components of the new Single Grave Burial Rite (SGBR), which emerged in Europe around 2900 BC



- 10 While burial rites and pottery styles are clearly transregional, settlement patterns and house forms are definitely regional, often following local traditions. For example, in eastern Switzerland new house forms emerge in connection with Corded Ware pottery (Hafner & Suter 2003, Suter 2017), but these obviously follow the tradition of the northern-alpine lake-side dwellings. In southern Scandinavia, the few houses connected to Corded Ware materials resemble houses associated with the preceding Funnel Beaker complex (Dörfler & Müller 2008). Similar observations can be made for the Netherlands (Kleijne 2013, Beckerman 2015), Northern Germany (Brozio *et al.* 2013, Brozio 2016), and the Baltic region (Salzman 2004). A similar pattern has been pointed out regularly when it comes to the Bell Beaker (Vander Linden 2006), which are in general integrated into an already existing settlement pattern, which is most visible on the Iberian Peninsula (Kunst 2007, Prieto Martínez & Salanova 2013, Gonçalves 2017).
- 11 When it comes to subsistence economy, Corded Ware pottery or SGBR are also incorporated into existing regional structures, instead of introducing a new, uniform subsistence strategy. As a result Corded Ware pottery is found in connection with economies based on hunting and gathering in the north and the east (Prescott 1996, Bläuer & Kantanen 2013, Rimantienė 1989), as well as different variants of agriculture in the west and the south (Dörfler & Müller 2008). Such a sharp contrast is not visible in the Bell Beaker context, which is, however, due to the fact that the Bell Beaker were only found in regions which have a long tradition of full agriculture.

Social worlds as reflected by pottery making

- 12 So far burial rites, pottery styles, house building traditions, and subsistence strategies have been considered here as different social worlds, in which specific cultural standardisations are adopted by different communities of practice, which only partly overlap in a polythetic setting. It is, however, also possible to take a more detailed look. The social worlds defined are related to specific archaeological find categories. However, in cases in which the material remains are studied in more detail, for example pottery production, it becomes clear that here, too different social worlds can

be observed. For example, Beckerman (2015) demonstrated that in some of the Dutch coastal settlements she studied coarse ware attributed to the local Vlaardingens culture was associated with Corded Ware fine ware. A similar observation was made by Larsson (Larsson 2009, Larsson & Graner 2010) for southern Swedish materials. It is conceivable that fine ware table vessels might constitute a different social world, and are connected to different social networks than are utilitarian coarse ware vessels. Such a model has been proposed for the pottery of the 4th millennium Baden Culture. In the early phase in particular the so-called Boleráz pottery style, the transregional Boleráz style vessels, which spread along the entire course of the Danube – if we take into account the Cernavoda III pottery that looks similar but comes under a different designation (Furholt 2009) – as far as Lake Constance (De Capitani 2002), are associated with local coarse ware vessels assigned to regional styles such as Funnel Beaker, Baalberge, Pfyn and Horgen, etc. In 2008 I therefore proposed a polythetic model to understand Late Neolithic pottery within a polythetic setting, in which the fine ware was connected to transregional styles and social networks, whereas the coarse ware pottery was usually made in the local styles, and connected to different social worlds (Furholt 2008c).

- 13 Such a model seems to also suit the Bell Beaker, for which the duality of transregional fine ware, the bell-shaped beakers, and the rather local ‘accompanying pottery’ (*Begleitkeramik*) is a well-studied feature (Besse 2003). This indicates that during the late 4th and early 3rd millennium fine wares and coarse wares may constitute two different social worlds, representing different social commitments with different communities of practice connected to different social networks. It is impossible to extend this assertion to every pottery assemblage, but it is not necessary to be able to identify clearly distinct styles everywhere either. However, the observation that there are several contexts in which the transregional styles (Boleráz, Corded Ware, Bell Beaker) are mainly present as fine ware vessels, may help us to understand how and why these styles actually spread. At least in these cases, Bell Beaker or Corded Ware pottery styles and connected social or ideological values probably created a disposition to participate in these trans-regional networks, especially in a social context requiring the use of fine table ware, for example for entertaining guests and serving (alcoholic) drinks or food.

Social processes in the 3rd millennium BC

- 14 Thus the picture that emerges from this polythetic classification of the material is that of a period during which, on the basis of regional and local traditions (concerning settlement patterns, house types, subsistence economy), a powerful new trend of burial rites emerges, all over Central Europe, including certain common themes (individuality, binary gender roles, specific weapons), which, however, show regional variations. At roughly the same time new pottery styles (mostly fine wares) were deposited in these single graves, first Corded Ware as early as 2900 BC, and subsequently Bell Beaker Ware from 2700/2600 BC on in western Europe and from 2500 BC on in central Europe. These transregional styles of fine ware pottery are not new in the 3rd millennium BC: such a phenomenon is already known from previous periods, for example the Boleráz style or possibly also the Globular Amphorae (Szmyt 1999, Woidich 2014).
- 15 Over the last few years fascinating new genetic evidence has become available, a data source that was completely missing until recently and that is related to population

history, biological relatedness, and genetic proximities. These data have revealed that a significant influx of new genetic lineages from eastern Europe fundamentally modified the European gene pool during the 3rd millennium BC (Brandt *et al.* 2013, Haak *et al.* 2015, Allentoft *et al.* 2015). Based on these discoveries, a simplified narrative was created, namely that of a westward ‘massive migration’ of people – usually identified as the Yamnaya culture –, taking with them a pastoralist economy and new social and ideological values, thus constituting the Corded Ware and Bell Beaker ‘cultures’. While the genetic data clearly reveal these changes in the gene pool, the narrative of a distinct migration event, or a continuous migration flow, and the connection of this event or process to specific archaeological units of classification (Yamnaya, Corded Ware, Bell Beaker cultures), as is now envisaged, is a model that has to be discussed (Furholt 2018b). Our knowledge of the archaeological material should be an important argument within this debate, instead of simply the use of culture labels as substitutes for biological populations.

- 16 The polythetic way of looking at the archaeological material, as discussed above, is not compatible with the idea of a uniform migratory process in which a group of people advances into central and later western Europe from the east, bringing all their belongings with them, as is proposed in several publications related to aDNA research (Allentoft *et al.* 2015, Brandt *et al.* 2013, Haak *et al.* 2015, Olalde *et al.* 2018).
- 17 An advanced model was proposed by Kristiansen *et al.* (2017). In this model, the transformation of the gene-pool and the emergence of Corded Ware cultures are thought to have been triggered by a migration flow of young males from the eastern steppes (associated with the Yamnaya culture) to eastern Europe, where they married local women, their male descendants migrating again farther west, into central Europe, where they again married local women, creating a new material culture, the Corded Ware. This is based on the observation of a male bias in the genetic change (Goldberg *et al.* 2017). Plague disease is considered to have driven this migration flow (*Yersinia pestis*, see Rasmussen *et al.* 2015).

A new migration model

- 18 Although this model can be considered as a clear advance when compared with the simple migration narrative referred to above, it is, in my opinion, still much too generalised and simplified when it comes to explaining the diversity identified in the archaeological record, even within units such as the Corded Ware, and the Bell Beaker, as discussed above. With regard to the modelling of social processes, it is important to remove monothetic thinking at the heart of almost all current debates. At a conceptual level, it is useful to separate biological patterns from patterns of social traditions or innovations, and also to separately deal with the different categories of finds, seeing them as potentially connected to different social worlds.
- 19 In the following, it will be argued that the SGBR complex is a distinct complex of burial rites that is very strongly associated with migrants from eastern Europe. The SGBR is the main expression of new cultural and social norms associated with genetic ‘steppe ancestry’, not Corded Ware’ or the ‘Bell Beaker’. With regard to pottery styles, weapons and tools, the connection with individuals with steppe ancestry is much less pronounced: several styles – Corded Ware, Bell Beaker and several early Bronze Age styles – are related to steppe ancestry, but not exclusively. The different pottery styles

found in SGBR tombs dated to after 2900 BC are strongly associated with individuals with steppe ancestry. In cases in which these same pottery styles are found outside of SGBR tombs they are not or are to a much lesser extent associated with steppe ancestry, as in the case of the western Bell Beaker (Olalde *et al.* 2018). In earlier, or contemporary, non-SGBR contexts, for example collective graves or megalithic tombs, generally no steppe ancestry could be identified, or at least much less of it (Skoglund *et al.* 2012). It is therefore important to emphasise that the SGBR, and not the ‘Corded Ware’ or the ‘Bell Beaker’, is primarily associated with migrants from the steppe or their descendants. The strong connection between steppe ancestry and SGBR suggests that SGBR is indicative of a new cosmology and new views on character, gender and the role of violence. However, as these individual burials are the main sampling target for aDNA analysis, it is also very likely that the current aDNA record over-represents steppe ancestry, because the non-migrant population, or those people not connected to the new cosmology, continued to be buried according to the traditional burial rite, which is archaeologically almost invisible in most of central Europe, or which is subject to extremely poor bone preservation in the northern European Megalithic area.

- 20 While there seems to be a rather strict separation between people with steppe ancestry and those without steppe ancestry concerning the right to be buried in a SGBR tomb, there is strong evidence for both a biological and a cultural admixture early on. As is the case for the biology, PCA analyses of whole-genome sequences and admixture analyses clearly show that, as the number of sampled individuals increases, the two clusters ‘steppe ancestry’ and ‘Early European Neolithic’ merge, and there even seems to be a temporal gradient, with some Corded Ware burials being the closest to individuals from the steppe, and later burials, including several Bell Beaker graves, showing greater of affinity with the European Neolithic cluster. With regard to cultural mixing, there are numerous cases in which Corded Ware material culture is found in the context of traditional, local Late Neolithic pottery, in settlements or in burials. The same is true for the later Bell Beaker. These are mostly non-burial contexts and thus not detected by aDNA analysis. It has to be admitted, however, that cultural mixing is not necessarily linked with biological mixing, but there is some probability that it often is.
- 21 Nevertheless, it is obvious that until now discussions about models of migration have been basically dominated by an understanding of Corded Ware and Bell Beakers as clearly homogenous, bounded units. It is time to take a closer look at the archaeological material, and at the manifestations of these units in different regions.

Varying manifestations of the Corded Ware in Europe

- 22 The polythetic approach to the material remains dated to the 3rd millennium BC, as discussed above, reveals a more differentiated picture of the culture elements commonly designated as “Corded Ware”. There are regional groups assigned to the Corded Ware (or rather regions, in which Corded Ware pottery is abundant) in which completely different burial rites can be observed, for example the continuous use of megalithic graves – as is the case in the Danish Isles (Iversen 2015) or in North-eastern Germany (Jacobs 1991) –, or in which no or only a few individual burials can be found – as is the case in Switzerland (Strahm 1971, Hafner & Suter 2003), the Baltic states

(Rimantienė 1992), Finland (Nordqvist & Håkälä 2014), Norway (Prescott & Glørstad 2015), and the coastal regions of the Netherlands (Beckerman 2015).

- 23 As a matter of fact, an interesting inversion can be stated here. In regions in which SGBR tombs are abundant, almost no settlement remains are known – for example in Central Germany, Bohemia, Moravia, the Netherlands, Northwest Germany and Jutland. In other regions in which only very rare burials are known Corded Ware settlements are abundant. However, in some of these regions Corded Ware remains occur in settlements mixed with other, more local pottery styles, such as Switzerland (Wolf 1993), the Baltic region (Rimantienė 1989) and coastal regions of the Netherlands (Beckerman 2015).
- 24 There are thus different ways in which Corded Ware pottery, weapon and tool types, and the SGBR are incorporated into local communities in central Europe. Here six different types are distinguished:
- Type 1: SGBR together with Corded Ware pottery, weapons and tools in previously unoccupied or sparsely occupied areas, no or scarce settlement evidence (Jutland, northern Germany).
 - Type 2: SGBR together with Corded Ware pottery, weapons and tools in previously densely occupied areas, no or sparse settlement evidence (Netherlands, NW Germany central Germany, Bohemia, Moravia, southern Poland).
 - Type 3: (Some) Corded Ware pottery, weapons and tools occurring in pre-existing settlements, no or only a few SGBR tombs (western Switzerland, Kuyavia, Baltic Coastal Areas)
 - Type 4: (Dominant) Corded Ware pottery, weapons and tools in pre-existing settlements, no or only a few SGBR tombs (eastern Switzerland, Dutch coastal areas)
 - Type 5: Corded Ware in tombs of previous periods (megaliths), no or scarce settlement evidence (eastern Denmark, North-eastern Germany)
 - Type 6: Different or mixed pottery styles in SGBR tombs, no or scarce settlement evidence (Złota group in Southern Poland).
- 25 The creation of such types involves the risk of re-introducing monothetic thinking into the discussion. This is a danger that should be avoided by acknowledging that these types are the results of a polythetic classification. And, more importantly, by keeping sight of the fact that they are just units of classification used for heuristic purposes.
- 26 The most obvious difference is surely the one that exists between regions in which there is a co-occurrence of the SGBR, Corded Ware pottery, and battle axes, and regions in which Corded Ware pottery and battle axes occur in pre-existing settlements and there are no or only a small number of SGBR tombs. The first type, which evidences the abundance of SGBR tombs and regular co-occurrence with Corded Ware pottery and battle axes in a previously sparsely settled area, can mostly be documented in regions in which settlements including Corded Ware pottery are very rare. A good example here is the Jutland peninsula (Hübner 2005) where the light, less fertile soils in the central and western regions in particular are colonised by the new SGBR and where there were very few prior activities in the preceding Funnel Beaker period. These SGBR tombs from an early date are associated with Corded Ware battle axes, and subsequently with Corded Ware pottery (Hübner 2005). Other regions in which high densities of SGBR tombs with Corded Ware pottery (type 2) can be attested are located in areas with a long tradition of Neolithic settlement and various burial rites, such as central Germany (Müller 2001), southern Germany, Bohemia, Moravia (Bertemes &

Heyd 2002), and Lesser Poland (Włodarczak 2006). In these regions the Late Neolithic groups preceding the Corded Ware are associated with the Funnel Beaker, Cham, Řivnáč, Jevišovice B, Bošaca, Vučedol, Polish and Czech Baden cultural groups, often represented by settlement sites including abundant pits and cultural layers, often fortified, or in elevated positions. In some parts of central Germany, the traditional burial rite is the deposit of the deceased in megaliths, stone cists, or other, in most cases collective, graves (Matthias 1968, 1982). In the other regions mentioned, burial rites are almost undetectable by archaeology (for example those related to the Cham, Řivnáč, Jevišovice B, Bošaca, Vučedol, Polish and Czech Baden settlements). In these Late Neolithic villages, dated to the time span 3000-2700 BC, Corded Ware pottery sherds are frequently found too (Furholt 2008b).

- 27 The third type of Corded Ware is characterised by the presence of Corded Ware pottery, sometimes also axes and other tools, within a context characterised by a Late Neolithic tradition of material culture. These settlements more or less follow the regional settlement tradition, as is the case in the Baltic coast area, western Switzerland, Finland, or the coastal regions of the Netherlands. In these regions there are no (Switzerland, see Hafner & Suter 2003), or only a few (Finland, Baltic region, see Nordqvist 2018) SGBR tombs including Corded Ware pottery. Type 4 is very similar to type 3, with the difference that Corded Ware material culture over time becomes more abundant than the late Neolithic traditions (eastern Switzerland see Hafner & Suter 2003, Winiger 1993).
- 28 Type 5 corresponds to the occurrence of Corded Ware pottery and weapons in traditional burial forms – megaliths – without a substantial number of settlements including Corded Ware. This is the case in eastern Denmark (Iversen 2015). In North-eastern Germany, a hybrid of types 2 and 5 can be identified, i.e. 50% of Corded Ware remains stemming from megaliths and 50% from SGBR tombs (Jacobs 1991). Lastly, type 6 corresponds to the occurrence of Corded Ware material mixed with other, Late Neolithic pottery styles in SGBR tombs. This has so far only been found in the Złota group in Southern Poland (Krzak 1976, Furholt 2008a).
- 29 Varying manifestations of Bell Beaker in Europe
- 30 The situation concerning the Bell Beaker is equivalent to that of the Corded Ware. Again, the association of Bell Beaker with steppe ancestry is closely related to the context of SGBR tombs. This combination occurs in central Europe, the Netherlands, France, and the British Isles. Outside these regions, in Spain and Italy, where Bell Beaker remains were mostly found in caves or in collective burial structures of different kinds, only a few individuals associated with Bell Beaker show steppe ancestry and most do not (Olalde *et al.* 2018). In central Europe too, a minority of SGBR with Bell Beaker lack steppe ancestry, indicating that the connection between SGBR and steppe ancestry becomes less strong in the later 3rd millennium as compared to the earlier period.
- 31 We can distinguish the following five main types of Bell Beaker occurrences (also summarised in Strahm 1995, Vander Linden 2006):
- Type 1: Bell Beaker remains in SGBR tombs, in a setting corresponding to Corded Ware type 2, in regions in which SGBR tombs including Corded Ware remains were attested previously (Moravia, Bohemia, southern Germany, central Germany, NW Germany, Netherlands).

- Type 2: Bell Beaker remains in SGBR tombs, in a setting corresponding to Corded Ware type 2, in regions in which no SGBR tombs including Corded Ware remains were attested previously (France, British Isles).
 - Type 3: Bell Beaker remains occurring in cremation burials, no or little evidence as to the presence of Bell Beaker settlements (Hungary).
 - Type 4: Bell Beaker remains in a variety of collective burials (mainly France, Italy, Iberia), Bell Beaker remains in Chalcolithic settlements (Iberian Peninsula)
 - Type 5: Bell Beaker remains in settlements, no, or very little evidence of Bell Beaker remains associated with the SGBR (Jutland).
- 32 The Bell Beaker situation is made more complex by the fact that the earliest radiocarbon dates associated with Bell Beaker stem from the Iberian Peninsula (Müller & Van Willigen 2001, Vander Linden 2013, Prieto Martínez & Salanova 2013). This type of pottery seems to have been invented in the southwestern part of Europe and later became associated with the SGBR complex in central Europe, from where this new combination was introduced to Britain and France through human migration.

3rd millennium scenarios

- 33 For good reasons it can be assumed that the SGBR complex emerged as early as 2900 BC as an expression or a set of specific ritual practices and probably cosmological values, related to eastern Europe and the steppes, with a strong connection to migrants and their descendants in central Europe and parts of northern Europe. Although some elements of the SGBR complex were very probably inspired by burial customs from the eastern European steppes, associated for example with the Usatovo, or Yamnaya culture (Frînculeasa *et al.* 2015; single burial under a kurgan, W-E orientation of the dead), the SGBR complex itself emerged outside of the steppe, in eastern or central Europe.
- 34 At roughly the same time Corded Ware pottery types also developed in the same region. According to a traditional and widespread opinion the SGBR and the different elements of the Corded Ware material culture would have occurred as a package and emerged quite suddenly (Glob 1944, Buchvaldek 1986, Haak *et al.* 2015). However, there is no real evidence backing such an assertion. As for a sudden appearance, because of the calibration curve plateau from 2900 to 2650 BC a temporal resolution below 100 or 200 years must remain highly speculative. During that period Corded Ware pottery occurred in a number of settlement sites usually designated to the Late Neolithic, which is technically assumed to be pre-Corded Ware (Furholt 2008b), probably before it appears in SGBR tombs. Also, there are solid indications pointing to a differential regional origin of several of the most significant Corded Ware types (Furholt 2014). For example, it has been argued previously, that the Corded Ware amphora can be derived from the eastern variant of the Globular Amphora (Beran 1992, Furholt 2008a) and consequently was an eastern central European local invention. The Corded Ware battle axes, by contrast, are most elaborate and most common in Jutland (Hübner 2005), and there are reasons to believe that this is their region of origin (Furholt 2014). The origin of the Corded Ware beakers is more difficult to assess because different regional origins may be advanced for the different variants (Ullrich 2008, Furholt 2014). Thus, the Corded Ware elements were most probably created in different parts of central and northern Europe. In the same way, the mixing of SGBR tombs and the new Corded Ware

materials is a more complex story, as many early SGBR tombs lack Corded Ware pottery (Furholt 2014).

- 35 The main point here is that these elements of the Corded Ware ‘A-Horizon’ are elements of probably different origins, which were associated with each other in the early 3rd millennium BC. They do not represent a package of material culture which was brought with a migrating group, rather they are the result of different social worlds, different communities of practice, which overlapped at different regional and temporal levels. These communities of practice had local, regional and transregional dimensions, and it is important to point out that the transregional social worlds existed not only in the early phase of the Corded Ware, as the classical view would suggest. This classical model may be called the “founder model”: there is an initial transregional similarity of material culture as result of common origin, and subsequent regionalization, and this model fits the simplified migration theory advancing one single migration event at the beginning. However, there is no evidence for increased transregional similarity in the early phase of the Corded Ware compared to the later phase (see Furholt 2018a). Apart from the three supposedly early ‘A-horizon’ components (the cord-impressed beaker, the type A battle axe, the amphora), there are hardly any diagnostic material culture elements to define a common “archaeological culture” shared by different regional groups in the early phase. Moreover, these A-horizon types are not, as revealed by scientific dating, restricted to the early phase of the Corded Ware (Winiger 1993, Müller 1999, Dresely & Müller 2001, Furholt 2003). On the other hand, there are pottery trends, for example, that appear at a later point in time, and spread across large regions within the Corded Ware area of distribution. To name only a few these are straight-walled beakers, triangular decoration, and handled beakers (Furholt 2003). It must be assumed that not only in the early phase but throughout the 3rd millennium BC SGBR and Corded Ware indicate a high degree of human residential mobility along probably overlapping networks on a regional and transregional scale, or using the terminology suggested here, communities of practice within different overlapping social worlds.
- 36 This is why it is crucial to take a closer look at the different ways in which these different elements assigned to the “Corded Ware material culture” and the SGBR are interwoven translocal, as well as in local traditional cultural contexts. The different types of Corded Ware and SGBR in central and eastern Europe, defined above, in my opinion reflect different ways in which translocal and local social worlds were intertwined, in which people with different social and ancestral backgrounds met, interacted and merged. Type 1 Corded Ware seems to be closest to a classical colonisation model, according to which newcomers settled in a previously unoccupied or only sparsely occupied area (as was advanced by Kristiansen 1989 for the case of Jutland). These newcomers, however, had intensive contacts with people in neighbouring areas. Type 2 Corded Ware (as well as type 1 and type 2 Bell Beaker) is very similar but more direct interaction and/or mixing of individuals with a migrant background and people with stronger local roots can be assumed. The presence of Corded Ware material culture in nominally Late Neolithic settlement sites evidences continuity from the preceding Late Neolithic period and indicates such contacts, which may include the immigration of individuals into existing communities, or an exchange of goods. With regard to type 2 the rather small number of Corded Ware materials in these settlements would rather favour the latter. The fact that most Late Neolithic settlements ceased to exist a few generations after the emergence of the SGBR in these

type 2 regions suggests that the Late Neolithic populations with local roots increasingly adopted elements related to the settlement and economy customs of the immigrants, by adapting their lifestyle, or they moved away or perished. It can be argued that we have no archaeological basis for the latter possibility. In general, as the burial rite of these native populations is probably not detectable in the archaeological record (as a result of practices which leave no tangible traces below ground), or at least in the aDNA record (as a result of poor bone preservation), an assimilation of the local population to Corded Ware lifestyles outside the social world of burial practices is very possible, and in my opinion seems more plausible than the possibility of genocide, as suggested by Kristiansen *et al.* (2017), for which I would expect more tangible archaeological remains. Several burials with signs of violent conflicts (Haak *et al.* 2008, Schroeder *et al.* 2019) are insufficient to confirm such a hypothesis; more particularly a systematic review of pathologies in Neolithic burials does not show a dramatic rising trend of lethal interpersonal violence during that period (Peter-Röcher 2007).

- 37 Type 3 and type 4 Corded Ware (as well as type 5 Bell Beaker) clearly indicate very different scenarios. The incorporation of Corded Ware pottery or Bell Beaker pottery as well as of associated weapons and tool types into pre-existing settlements indicates strong interaction between migrants and locals. Given that most of the potteries in these contexts were most probably produced locally, an integration of migrants into pre-existing, and thus mainly native, populations is highly likely. Type 4 Corded Ware represents either a larger number of people immigrating into these communities than type 3 Corded Ware, or at least more influential potters, who were able to establish the new styles and technologies more effectively than those holding on to the old ones. Although some type 3 and type 4 Corded Ware settlements are associated with some SGBR tombs in the vicinity, in general, the new cosmology only partly or not at all emerged with the new material culture. The same seems apply to type 5 Corded Ware and type 4 Bell Beaker: in these cases, it is once again unknown as to what extent the presence of new pottery and weapon types in megaliths and collective graves was connected to individuals with steppe ancestry. Type 6 Corded Ware (the Złota group) generally seems to be very similar to type 1 and type 2, but here the SGBR tombs contained a greater variety of pottery styles than is the case in other contexts. Type 3 Bell Beaker is representative of the incorporation of the new transregional style into a more regional burial rite (cremations).
- 38 With regard to the situation in the first half of the 3rd millennium BC in central Europe, and despite the fact that archaeologists have defined a “Corded Ware Culture”, a closer look at the archaeological record does not necessarily imply that the migrants formed a closed group of people or that we are dealing with one single process. On the contrary, the Corded Ware pottery style, the Corded Ware tool and weapon kit, and also the SGBR tombs may be interpreted as the result of a possible mixing of different traditions, through the establishment of tight regional networks, involving different, overlapping communities of practice. These networks remained dynamic, which is illustrated by the differential ways in which these traditions are either incorporated or excluded in different regions. But even if a single closed group of people originating from eastern Europe is assumed, their spread over the whole of Europe would clearly indicate that they probably split into different groups, many of these joining other communities. The same applies to the “native” people. First of all, it must be assumed that they were equally mobile and interconnected throughout central Europe and beyond as well. We are therefore most probably dealing with several groups of immigrants, and several

groups of locals, with different social and cultural backgrounds, and all types of mixing, making this distinction (immigrants vs. locals) obsolete.

- 39 As early as 2500 BC the Bell Beaker, a new pottery style and new weapon and tool types, emerged. These objects most probably developed in the Iberian Peninsula and became popular among many communities of practice in central Europe, some of which had a large proportion of eastern European ancestry and distinguished themselves through the SGBR. Some of these decided to replace the Corded Ware material culture with the Bell Beaker material culture. During that period the SGBR also expanded to the British Isles and France, which might have been facilitated by the pre-existing Bell Beaker networks of western Europe. Again, these new styles were incorporated into settlement contexts, in which they invariably remained in low numbers, and were found in the context of local pottery styles. Here too, the local populations are probably missing in the aDNA record because they were not deposited in the SGBR tombs.

Conclusion

- 40 Monothetic thinking heavily obstructs the current debates on 3rd millennium mobility and social change in Europe. This bias derives from the traditional school of cultural history in European Prehistory, and is currently again distorting the narratives created on the basis of new aDNA evidence. We will never be able to even evaluate the phenomena of migration and mobility, if we are not able to free ourselves from the idea of such a monolithic, one-dimensional view of past societies. Polythetic classification and a polythetic model of cultural interaction and social composition, which make it possible to admit the existence of several different, overlapping social worlds, or communities of practice, enable more positive incorporation of the archaeological material into models of mobility and social integration. In order to distinguish between different types of manifestations of Corded Ware and Bell Beaker materials, as is suggested here, a step forward has been taken towards a more serious debate about aDNA data and migration concepts, and a true integration of archaeological materials beyond the use of stereotypical culture labels.

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NOTES

1. The scene described happened during the workshop 'Can science accommodate multiple ontologies? The genetics revolution and archaeological theory' (11-12 June 2018, McDonald Institute for Archaeological Research), organised by Alexandra Ion and Darryl Wilkinson.

ABSTRACTS

As an alternative to the traditional practice of cultural history using a monothetic classification of material, creating “archaeological cultures”, a polythetic culture model based on Strauss’s social worlds and Wenger’s communities of practice is proposed, which better represents the archaeological record dated to the 3rd millennium BC in Central Europe. Based on this approach current migration models elaborated for the 3rd millennium in connection with aDNA evidence are re-evaluated. It is argued that the use of “archaeological cultures” misleads our understanding of population movements. Steppe ancestry, as representing migrants or their descendants, is not primarily connected to specific “cultures” such as the Corded Ware or the Bell Beaker, but rather to a specific social world, a new set of burial practices, i.e. the Late Neolithic complex of individual, gender-specific burials with strict rules of orientation. A strong expression of a new cosmological understanding, a specific set of values is the migration process, rather than specific pottery styles, specific weapons or specific tool types. Including the differential patterns of material culture in the archaeological record results in suggestions of different scenarios of population mixing and social change.

Nous proposons ici un modèle polythétique basé sur les mondes sociaux de Strauss et les communautés de pratique de Wenger en tant qu’alternative à la pratique traditionnelle de l’histoire culturelle qui met en œuvre une classification monothétique des vestiges matériels en créant des « cultures archéologiques ». Celui-ci permet de mieux représenter les données archéologiques du III^e millénaire en Europe centrale. Les modèles de migration actuels élaborés pour le III^e millénaire en relation avec des données aDNA sont réévalués sur la base de cette approche. Nous soutenons que l’emploi de « cultures archéologiques » en tant que modèle explicatif induit en erreur notre compréhension des mouvements de population. L’ascendance

steppique, représentée par des migrants ou leurs descendants, n'est pas essentiellement connectée à des « cultures » spécifiques comme le Cordé ou le Campaniforme mais plutôt à un monde social spécifique, un nouvel ensemble de pratiques funéraires qui correspond au complexe des sépultures individuelles à différenciation sexuelle du Néolithique final avec des règles d'orientation strictes. Le processus de migration correspond précisément à cette forte expression d'une vision cosmologique nouvelle, d'un nouvel ensemble spécifique de pratiques funéraires, plutôt que la diffusion de styles céramiques particuliers, d'armes ou de types d'outils spécifiques. En incluant différents modèles de culture matérielle aux interprétations archéologiques, divers scénarios de mélanges de populations et de changements sociaux sont proposés.

INDEX

Mots-clés: Néolithique européen, ADN ancien, migration et changement social, théorie de la culture, classification archéologique

Keywords: European Neolithic, aDNA and Archaeology, Migration and social change, Culture theory, Archaeological classification

AUTHOR

MARTIN FURHOLT

Professor, University of Oslo, Department of Archaeology, Conservation and History, Oslo,
Norway

martin.furholt@iakh.uio.no