STEREOTYPE

The role of grave sets in Corded Ware and Bell Beaker funerary practices

Karsten Wentink

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Contents

1

Introduction

The problem of typical Late Neolithic grave sets and the lack thereof

1.1 Introduction

When I first started my PhD research, a far too long time ago, my project colleague Quentin Bourgeois told me an anecdote. Over the years we have both frequently retold this anecdote, although I am actually not sure whether it really happened. I asked the main protagonist of the story about it, but even he did not seem to remember. The reason, however, why I keep telling this story, is because it perfectly illustrates one of the key problems of understanding Late Neolithic grave assemblages. Here it goes.

> Years ago, the then curator of the National Museum of Antiquities, prof. Leendert Louwe Kooijmans, was working on a book about Dutch prehistory aimed at the general public: *Verleden Land* (1981).[1] In this book the story of Dutch archaeology was told, based on key sites and finds from the Netherlands. In the chapter about the Late Neolithic of course Bell Beaker[2] (BB) graves are discussed, and the *typical* objects commonly found in these graves; beakers, copper tanged daggers, gold ornaments, amber buttons, etc. To illustrate the chapter, he was looking for a grave containing this *typical* assemblage. But here he was presented with a problem. He couldn't find any!

During the 3rd millennium BCE thousands and thousands of burial mounds were erected throughout Europe (Bourgeois 2013, 3). In north-west Europe this practice started around 2800 BCE with the Corded Ware (CW[3]) culture, followed in the Netherlands by the later BB culture. In stark contrast with previous megalithic communal tombs (for example those of the Funnel Beaker culture[4]), these barrows were erected over the graves of single individuals. These individual decedents moreover were adorned with all sorts of grave goods, often exquisitely made and/or made of exotic

1 Bloemers, Louwe Kooijmans and Sarfatij (1981).
2 In Dutch known as *Klokbeker-cultuur*.
3 In Dutch known as *Touwbeker-*, but also *Enkelgraf-* and *Standvoetbeker-cultuur*.
4 In Dutch known as *Trechterbeker-cultuur*.

Fig. 1.1 The grave assemblage of the BB burial from Lunteren de Vlooienpol (AMP0407) that Louwe Kooijmans selected to be depicted in the book Verleden Land. Objects include a Veluvian bell beaker, arrowheads, a nodule of marcasite and a strike-a-light, a copper tanged dagger and a wristguard (collection and photography: Valkhof Museum, Nijmegen).

raw materials. It was recognized early on that these graves, again and again, appeared to contain objects that were both highly similar in style/design, but also that the combination of objects found in graves showed striking similarities throughout Europe. Although this holds true for the CW graves as well (see Bourgeois and Kroon 2017), it was particularly apparent for the BB graves and was hence referred to as the 'BB package' (*e.g.* Burgess and Shennan 1976; Shennan 1976; 1977; Clarke 1976; Vander Linden 2006b, 317). The fact that this 'package' could be found in graves throughout Europe has always been somewhat of an enigma. How should we understand a uniform set of objects, produced in virtually identical styles, which was adopted over such a vast area? The same objects occurring from Poland to Portugal and from Sicily to Scotland?

Both the *set* and the *type* of objects associated with CW and BB graves are well known to any prehistorian. Despite this, prof. Louwe Kooijmans could not actually find an example for his book that contained this full set or package. Each time he found a promising candidate, one or more objects of the *set* were missing. How can it be that *we* as archaeologists know this 'set' so well, but at the same time cannot find any grave to actually contain this 'typical' set?

This thesis explores the nature and meaning of Late Neolithic grave goods. Which objects were included in burials and what do they tell us about the people they accompanied in the grave? This first chapter introduces the key problems and the research questions and presents the structure of this thesis.

1.2 Beakers and burials

The introduction of the first barrows in the early 3rd millennium BCE has puzzled researchers since the early days of archaeology. The sudden emergence of individual burials with such characteristic and often exotic grave goods (*e.g.* elaborately decorated beakers, well-crafted flint and stone tools/weapons, and the earliest metal objects – copper daggers, gold ornaments) led to the formulation of many explanatory theories. In the first half of the 20th century these transformations were generally seen as evidence for the migration of people who either replaced, or enforced their cultural norms on the existing populations (*cf.* Childe 2009 [1958], 147). Or as Heyd (2001, 387) summarizes: "Earlier descriptions vary from the famous 'short headed people who were great archers and traders', 'thieving and plundering warriors' and 'Gypsies of prehistory' to prospectors of copper ore with unusual drinking rites and mysterious intoxicants." During the second half of the 20th century the main research focus shifted towards the chronology of the Late Neolithic. One of the most important contributions was no doubt the key article by Lanting and Van der Waals (1976). In it they present an extensive and detailed pottery typochronology which indicated a gradual development from cord decorated beakers to bell beakers. In this model, the BB culture was seen as having developed out of the CW culture (locally known as Single Grave or Protruding Footbeaker culture) with an intermediate phase represented by the all over ornamented (AOO) beakers.

1.3 The rise of chiefdoms

The new chronological model by Lanting and Van der Waals (1976) showed how different cultural groups and traditions followed each other in time. Such 'evolutionary' developments did not resonate with explanatory models based on migrations but rather favoured cultural evolution and historical continuity. New theories were developed that focussed more on a change in ideology rather than on the migration of people. The change from communal monuments to barrows – covering single individuals – was taken as evidence for the rise of a more segregated society in which those with more power and higher status were selected for burial in barrows. Differences in the way persons were buried, the size of the monuments and the grave goods accompanying the dead were taken to be indications of rank of the individual dead (largely based on the 'Prestige Goods Model' by Friedman and Rowlands (1977); for the Netherlands see Lohof 1991; 1993; 1994; Drenth 1990).

In this line of research the focus often lay on the quantitative aspects of the barrow and the grave, such as the number of grave goods, size of the barrow and the complexity of the grave structure and surrounding features. In some studies (*e.g.* Lohof 1991), the different aspects of the funerary ritual were expressed in specific labour times to investigate which graves represented the most amount of effort and were deemed of the

highest status or rank. This also included the grave goods, where 'rich' graves (measured in quantity and/or quality of grave goods) belonged to high-status individuals. The fact that several of the objects in graves were interpreted as 'weapons', moreover led to the assertion that martiality became an increasingly important aspect of Late Neolithic and later Bronze Age ideology (*cf.* Fokkens 1999; Kristiansen 1994; Salanova 2016).

1.4 Problems of interpreting standardized sets as expressions of individual status

There is a major problem with interpreting Late Neolithic graves with many and/or exotic grave goods as belonging to prestigious high-status individuals or even chiefs (see Barrett 1994, 63; Fokkens 1999; Fontijn 2002; Van der Beek 2004). As noted in the introduction, Late Neolithic graves typically seem to contain specific *sets* of objects. As will be presented in great detail below, both the CW and BB graves only contain grave goods belonging to particular object categories. Again and again the same objects are placed in graves, throughout Europe. Simultaneously other object-categories – that can be equally exotic or 'valuable' – are systematically avoided in graves. A grave is therefore not simply a context of 'showing off wealth or status'. Instead it appears that *specific things* were selected for deposition in *specific places*.

More importantly however, if grave goods indeed represent the status, rank and qualities of a single individual in life, then why is there not more variation in the grave goods to express a person's idiosyncratic individuality? If the grave goods are in fact part of a *fixed set*, then in effect all graves are more or less the same. If there are fixed rules as to which objects should be placed in a grave, then to what extent do they represent the individual identity of the person buried? It is therefore argued that perhaps these objects did not merely signify the high status or rank of an individual but rather a certain type of personhood (Fokkens 1999; Fontijn 2002; Thomas 1991, 129). Van der Beek (2004) argues that because of the fact that these objects are used in such a standardised manner, they cannot be seen as signs of the personal identity of the individual dead. Rather, she proposes, that the dead all conform to a certain archetype, perhaps a certain ideal ancestor. By burying people in a standardised manner and with a standard set of grave goods, continual reference is made to the image of a particular ancestor, who was associated with these objects and way of burial. As Van der Beek (2004, 187) puts it: "[…] *rather than to the deceased as an individual, the image will have referred to the social position once held by this ancestor; a position that must have been of importance to the community as a whole.*"

If we follow this approach, the individuals buried need not necessarily represent a ruling elite or emerging chiefdoms. Instead of a high-status individuals trying to distinguish themselves, these burials rather contain persons that are portrayed as idealized representatives, an ideal that was shared in the whole community. In that case we are not dealing with an increased sense of individual identity, but actually with a different manner of expressing a communal or shared identity.

1.5 Late Neolithic graves from the Netherlands

The Netherlands have long-since played an important role in the research of CW and BB burial mounds. One reason for this is the fact that they are plentiful in this area, another is that they have a long research history due to being clearly visible in the landscape. Bourgeois (2013) made an inventory of barrows, indicating that there are thousands of them present in the Netherlands. Of the ca. 500 excavated barrows included in his database, roughly half date to the 3rd millennium BCE (Bourgeois 2013, 31). Of these Late Neolithic barrows about half can be attributed to the Late Neolithic A (LNA, *i.e.* CW and AAO) and the other half to the Late Neolithic B (LNB, *i.e.* BB). These results were corroborated in this research as will be presented below. We can thus speak of a fairly balanced dataset with equal numbers of graves attributed to both the LNA and LNB.

This also touches upon another reason why the Netherlands are ideally suited for studying Late Neolithic graves. The Netherlands are quite unique in having a cultural chronology containing Funnelbeaker megaliths, the earliest CW burial mounds, graves containing AOO beakers, the earliest maritime bell beakers and later local variant bell beakers (Lanting and Van der Waals 1976). The presence of this full sequence of beakers – seemingly a continuous development – has even led to the postulation of the so-called 'Dutch-model' suggesting that the BB culture developed in the Netherlands. Although this idea is no longer upheld, it does show the relevance of the Dutch data in a wider European debate (for a full discussion of the 'Dutch Model', see Fokkens 2012; but also Fokkens *et al.* 2016, 280; Vander Linden 2012, 77).

As mentioned above, graves were not simply places to deposit *any* type of object, instead the grave seems to have been the context for structured and highly selective deposition. It follows that in order to come to a better understanding of graves and grave goods it is also important to have a good understanding of other contemporaneous depositional practices. Not only is ample evidence for such practices present in the Netherlands, these practices have in fact been the subject of previous investigations, the results of which are readily available for incorporation in this thesis (Fontijn 2002; Wentink 2006a; 2008; Wentink, Van Gijn and Fontijn 2011; Van Gijn 2010).

1.6 Research questions

At its core, this research focuses on the significance and meaning of Late Neolithic graves. Why were people buried in a seemingly standardized manner, what did this signify and what does this reveal about these individuals, their role in society, their cultural identity, and the people that buried them?

In order to answer these broader questions, the following sub-questions were formulated:

- Is it possible to determine, based on frequency of occurrence, whether there are indeed standardized grave sets in the LNA and LNB?
- If so, what elements made up these sets and are there clear differences between the LNA and LNB grave set, and if so, how should these be interpreted?
- Do the use lives of objects from graves (how objects were made, used and deposited) reveal patterns indicative of specific object biographies?
- If so, what do these biographies signify, either in relation to the funerary customs in general and/or the person they accompanied in specific?

- How do the objects from graves relate to the layout, structure and orientation of the grave as the context of deposition, as well as to possible traces of human remains?
- If standardized grave sets are identified, to what degree (if any) do Late Neolithic graves signify some form of individual idiosyncratic identity, or should explanatory models instead focus on commonly held and widely shared notions of personhood and identity?
- The presence of sets implies a conscious act of selecting which objects were and which were not deemed appropriate for inclusion in graves. Can some of these latter items, that were systematically not placed in graves, be identified. And if so, how should these be understood?

1.7 Methodology and dataset

There are two main methodological approaches central to this research. The first focuses on the collection of data and is used to answer questions related to the composition of grave sets. The second focuses on empirically studying objects from graves from a biographical perspective, which includes use-wear analysis.

1.7.1 Data collection

In order to find out exactly which objects were placed in graves, in what combinations and in what quantities, a comprehensive database of Late Neolithic graves was compiled. The core of this dataset was based on the barrow-database compiled by my research colleague Quentin Bourgeois (2013). This dataset contained basic information about excavated barrows in the Netherlands (based on a literature survey). For the current research, the existing database was expanded by including detailed information about the graves (and their location and orientation within the barrow), about any physical remains of the individuals buried (when present), and most importantly, by including detailed, multi-level information about the grave goods. The latter focussed on such things as raw materials used, metrical information, technological attributes as well as types of decoration (in case of pottery) and traces of wear. Different variables were recorded for different types of objects (*e.g.* vessel shape and decoration for beakers, metal signatures for copper daggers, perforation shape and size for amber ornaments, etc.). The dataset was also enlarged by incorporating data on various unpublished barrows and flat graves as well as by including grave goods based on reports from museum find documentation when these were encountered. It must be noted that initially the research focus lay on the central and southern Netherlands, and that only later graves from the northern Netherlands were included. The data from the latter region is therefore mostly based on published excavation reports and less so on find reports from museum documentation.[5] Although it must thus be stressed that the current dataset is not exhaustive, it can be considered representative.

In the early stages of this research it was attempted to include both Late Neolithic and Bronze Age graves, resulting in a database containing records of 1411 graves and 1462 objects from graves. However, it soon became clear that it was not feasible to

5 It must also be noted that there are many finds in museum collections such as beakers and battle axes that were not included in the current dataset for the simple reason that they lacked detailed context information.

include all these data in the present thesis. Therefore, it was decided to focus on the Late Neolithic and a subset of 293 graves that could be positively attributed to either the Late Neolithic A (150 graves; CW and AOO) or the Late Neolithic B (143 graves; BB) was selected. Attribution had to be based on typochronologically specific artefacts, absolute dating (^{14}C) or relative dating (stratigraphic position). Although these graves were all systematically recorded, it must be noted that the quality of the information used to fill the database was highly variable. While modern excavations provided high-resolution and exact information, the older excavations (especially those of the early 20th century) were often much more difficult to evaluate. Sometimes not all finds were systematically recorded and excavation plans were often difficult to interpret. Hence, when working with such databases the inherent differences in data quality should always be taken into account.

Each site was given a unique identifier, for example AMP0257[6], which refers to its corresponding database record. When specific sites are discussed in this thesis, reference is made to this identifier. A list of AMP identifiers and summarized site descriptions are included in the appendices of this thesis. A more detailed list of sites and finds as well as a complete archive of the research database are made available in the EASY online repository (see Appendices).

1.7.2 Functional analysis

The subsequent step, after compiling the database, was the empirical examination of the grave goods. Since many barrows were excavated a long time ago (mostly first half of the 20th century) it turned out to be challenging to locate these, especially older finds. Although most were securely stored in well-maintained museum collections, many finds could either not be located, or only with great difficulty. Some museums and collections had ceased to exist and/or merged with others, some objects were on permanent loan, others were mislabelled and could not be located (or only after extensive periods of searching). Alternatively, other objects occupied prominent places in the permanent exhibition of museums, which sometimes also hindered their availability for research. Locating and collecting the objects from the database for examination was therefore more easily said than done, but with the help of all the various curators I managed to locate and examine a representative number of objects.

The objects were examined from an object-biographical perspective in the Leiden Laboratory for Artefact studies. This means to establish a life-history of the objects: where did the raw materials come from, what techniques were used to manufacture the object, what patterns of decoration were applied, what traces of use, wear and repair can be distinguished and how were objects discarded or deposited? Central to this research is functional analysis using both low- and high-power microscopy[7] to examine both micro-wear and residues, particularly for the stone and flint artefacts (for a detailed methodology, see Van Gijn 1990; 2010). Experiments were performed (with replica artefacts) as part of the functional analysis, in attempts to duplicate and allow interpretation of traces seen on

6 AMP is referring to the project's name, the 'Ancestral Mounds Project'. Some sites have a code starting with AVG, these refer to objects catalogued by the author for the 2010 'Flint in Focus' project of Annelou van Gijn.

7 Low power or stereomicroscopes with a magnification of 10-160×; High-power or incident light microscopes with a magnification of 100-500×.

archaeological artefacts. In addition to the analyses performed for this thesis, the results of previous research by Van Gijn (2010) were included.[8]

Generally speaking, functional analysis is only rarely performed. Ironically, however, making claims based on the presumed function of artefacts is rather commonplace. As mentioned above, for example, several of the items found in Late Neolithic graves are interpreted as 'weapons' and as such they are often attributed to males and connected with social inequalities, the rise of chiefdoms and the glorification of the warrior-ideal (see Section 1.3). But before getting lost in grand narratives, it is actually of crucial importance to question and test the basic premises that lie at their bases. Functional analysis is a tool that can help answer these questions, help determine whether these objects were indeed weapons or if perhaps entirely different interpretations should be formulated.

By studying the life cycles of objects, it is hopefully possible to trace a sequence of choices made, and activities performed by people in the past. By looking for patterns in those choices and activities, glimpses can be obtained of what was considered of importance to the people who placed these objects in graves (see also Fontijn 2002, 21).

1.8 Outline of the thesis

This research focuses on data from the Netherlands. On some level this results in answers that may be specific to the Netherlands, but many results have a far wider applicability. As argued above, the Netherlands are highly suited to the study of CW and BB graves, which themselves have a pan-European distribution. Any explanatory models that result from this research thus have a much wider relevance as well.

The first chapters (2 and 3) of this thesis will present my theoretical framework and provide a general introduction to the 3rd millennium BCE. Subsequently the data collected for this thesis will be discussed per object category in Chapters 4, 5 and 6. Since beakers are the common thread throughout Late Neolithic grave assemblages they are discussed in a separate chapter (4) while the other grave goods are discussed for each period separately in Chapter 5 (LNA) and Chapter 6 (LNB). The focus of these chapters will be on establishing which items were prominently present in graves, and should hence be considered part of the grave set. Subsequently these chapters discuss the life cycle of objects, how they were made, used and discarded. In some cases, the results of the functional analysis can be used to refute long held interpretations of certain types of objects.

Chapter 7 investigates the nature of the graves themselves as contexts of deposition. How were they constructed and how did this develop over time? Are changes seen in burial assemblages linked to changes in the grave structure? How do practices of placing bodies and graves in specific positions and orientations relate to the accompanying burial assemblages?

The final part of this thesis brings the previous chapters together and presents a comprehensive analysis and new interpretation of the significance of Late Neolithic burials in the Netherlands. Chapter 7 further investigates the combinations of objects

8 Van Gijn examined various flint objects from graves for her book *Flint in Focus* (2010) in which the present author was also actively involved as a research assistant.

placed in graves and the concept of *grave sets*. It explores how seemingly standardized grave sets were used to connect people far and wide by adhering to a common practice, but at the same time also retaining expressions of individual identity.

This concept is discussed further in Chapter 9 which focuses on the role of *social fronts* (Goffman 1959). That is, the manner in which people present themselves to others in social situations and their role in mediating social contact and interaction between individuals and groups.

Chapter 10 presents a comprehensive interpretation of the BB grave goods in particular. The objects from LNB graves are connected with travel, drinking ceremonies and maintaining long-distance relationships. In addition to the results of this thesis, corroborating evidence will be presented from the fields of genetics and linguistics. The various results and discussions presented in the thesis are brought together in a final concluding chapter (11).

2

Presentation and perception

2.1 Introduction

The lack of written records is often seen as serious handicap when it comes to reconstructing and interpreting the prehistoric past. Written documents can of course be helpful in many ways and shed light on elements of the past that would otherwise remain obscured. But texts themselves are not some autonomous depository of value. In the end, all they are symbols, figures, configurations of shapes on paper, wood or stone that are read, interpreted and given meaning by those who read them. Any 'normal' text is open to a myriad of interpretations. Ironically, those texts that are forged to withstand this shroud of ambiguity, which are carefully written down by lawyers or notaries, are subsequently nearly impossible to read for lay people. Just as texts, objects can carry all sort of different meanings. This chapter introduces some key theoretical concepts that are used throughout this thesis to interpret the role of objects in graves and how they relate to both the individuals they were buried with as well as the wider community.

In addition to texts, human society is full of other symbols, shapes and figures that are meant to be 'read' and convey meaning to others. Some implicitly but others explicitly, for example a wedding ring. Although one might not be able to read, speak or understand Greek, Italian, French or Spanish, the meaning of a gold ring on a *ring finger* can be understood by almost anyone. Some aspects of how objects are perceived may be embedded in their own materiality, but most are reflective of a deep cultural understanding of what objects mean and represent. Objects can have the power to convey all sorts of messages, some of these might be detailed and only understood within a local community or even kin group. Others, however, are widely shared and cross cultural and linguistic boundaries. By no means should such objects be envisaged to represent the exact same meaning or values to each beholder, instead, their power rather lies in being slightly vague and open to (re-)interpretation. On a general level, however, they convey messages and meanings that are widely understood and recognized. The wedding ring and the concept of 'marriage' can be shared and recognized far and wide even though various people (*e.g.* conservatives versus liberals) will have (sometimes radically) different interpretations of the specific details and meaning of a marriage. Nonetheless, the wedding ring and the concept of marriage can be shared and recognized widely and, even if only on the surface, will provide an image of uniformity, of belonging, of a shared cultural idiom.

'Identity' is an infinitely complex matter. What is the *self* or a *person*, what does it mean to be an *individual* or should we speak of *dividuals* (Fowler 2004) when dealing with pre-modern cultures? Many scholars have written books and papers on this subject, but unfortunately hardly any philosopher, anthropologist or sociologist agrees with one another about any of these matters (see Carrithers *et al.* 1985, Jones 2005, and Lindholm 2007 for excellent overviews and introductions). Similar to words like 'ritual' there are about as many definitions as there are researchers studying the concept.[9] In addition, the actual applicability to archaeology is often limited. In-depth treatises on the notion of self and the human condition do not provide a clear understanding of why some people were buried with stone axes while others had copper daggers or amber beads. Archaeologists need to understand and explain patterns and observations coming from the real world. How can patterns seen in the archaeological record be explained in terms of human behaviour? In the end it all comes down to understanding why people do the things they do.

In this context, the work of the sociologist Erving Goffman proved extremely useful, in particular his work on *the presentation of self* (1959). His work did not focus on the existential/philosophical aspects of *self* but rather on how people manipulate themselves and the world around them to create a particular image of themselves while in the presence of others.[10] The aforementioned ring would be a good example of a small aspect of how people can use material objects to help establish a particular image of themselves, in this case that of a husband or wife. Especially for archaeologists, Goffman's work is most useful as it investigated *how* people use material culture (among other things) to manipulate social relations between themselves and others. Particular objects are seen as an extension of the self, used to portray particular types of personhood, and help to facilitate social interaction *between* people. Since Goffman is not a house-hold name in archaeological literature this chapter begins by providing a concise summary on the *presentation of self* and the importance this has in social interaction.[11] It furthermore is explored how individuals integrate into a wider community and how both these concepts are related to the biography of objects.

2.2 The presentation of self

Throughout his book, Goffman (1959) uses the metaphor of theatre to describe social interaction. During social interaction there are always those who perform, *the actors*, and those who observe, *the audience*. The actor tries to convey a particular message, and to do so he 'plays' a particular role. When in the presence of others, we are hardly ever really *ourselves*, if such a thing actually exists. Depending on the

9 In the words of Rosenberg (1986, 1): "*the 'self' stands as a concept foremost in the ranks of confusion. The substitution of related terms such as ego, the proprium, and identity has not dispersed the clouds, mist, and vapors.*"

10 This approach is hence similar to Cohen's (1985) approach to 'community', similarly a term that he describes as "highly resistant to satisfactory definition". Instead he proposes – following Wittgenstein – not to try to define the term but rather explore how it is used (Cohen 1985, 12).

11 Giddens (1984, 69) mentions there has been critique on Goffman's work where it is said that it is highly specific to a Western/American perspective. Although he does mostly use examples of contemporary society, Giddens defends Goffman by stating that his work "holds up a mirror to many worlds, not just to one" (Giddens 1984, 70).

social context we find ourselves in, we *act* in different ways. In this sense Goffman uses a similar approach as Marcel Mauss (1985 [1938]) in his essay on the person and the notion of self. Mauss explains how the word *person* derives from the Latin word *persona*, meaning 'mask'. Being a *person* is not so much related to the individual's idiosyncratic self, but rather the role or *personage* we play in society (see also La Fontaine 1985). While the term *individual* relates to the internal self, the term *person* relates to the social self, our *social identity*[12], it is this side of ourselves that we *show to others* (see Fontijn 2002, 27; Fowler 2004; La Fontaine 1985, 124; Radcliffe-Brown 1959, 193-194; Rosenberg 1986, 9). "*We come into the world as individuals, achieve character, and become persons*" (Park 1950, 249).

As such we *act* differently when in the comfort of our home with family, or at work with colleagues, waiting for the bus among strangers, while in the pub with friends or when presenting a paper at a conference to our academic peers. In part our behaviour is determined by our own desire to actively show a particular side of ourselves in a particular social setting, but even more so our behaviour is determined by what is expected of us (Goffman 1959, 6). The tools or equipment we use during interaction with others are what Goffman (1959, 22) calls '*front*'. The 'front' is the expressive equipment we can employ to establish, alter or manipulate the image we would like to create of ourselves. This 'equipment' or 'front' involves all variables we can control or manipulate during a performance which will have an effect on our presentation to others. As part of the front, Goffman (1959, 23-24) distinguishes between the 'setting' and the 'personal front'. The 'setting' involves all scenic equipment, such as the location, room, general surroundings or 'stage props' we choose for a performance. The 'personal front' is an integral part of the performer and includes such things as body language, facial expressions, speech patterns, sex and age, but also clothing and paraphernalia such as insignia of rank.[13] Depending on the occasion (for example a business meeting, a funeral or a birthday party) we will choose different locations, or different rooms in our house where we want a particular social occasion to take place. We will also select different types of clothing, employ different speech patterns and use or avoid particular facial expressions. As such the front helps to define the situation for the observers. Some parts of a front can be uniquely linked to a particular individual (such as walking with a limp), while other elements can be shared, adopted and employed by others in similar situations, for example wearing formal clothing and avoiding laughter during a funeral. In extreme cases, a front can take over an individual entirely. For example, when someone dresses up like father Christmas: wearing special clothing, adopting a particular behaviour, lowering ones voice are all part of the performance, all part of the front taking over the idiosyncratic self entirely.

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12 Rosenberg (1986, 9) defines *social identity* as the sum of all groups, statuses or categories an individual is recognized as belonging to (male, female, Catholic, Jew, nephew, mother, doctor, lawyer, machinist, democrat, republican, etc.). The term *personal identity* refers to what makes us unique as perceived by society (our name, social security number, finger print). This, however, is not opposed to *social identity*, in fact, our *personal identity* is part of our *social identity*.

13 Goffman's *front* is similar to what Stone (1970, 397) refers to as *appearance*. Stone, however, adds that a large part of the performance, or *discourse*, also can be seen as *appearance* or *front*, for example 'name-dropping' to create a particular image of ourselves.

The front can also be divided in 'appearance' and 'manner'. The 'appearance' can be described to contain static elements of the front that signal the current social position of the performer (wearing formal attire for a ritual gathering, or leisure wear for informal recreation). The 'manner' has more to do with the actual behaviour of the performer (for example acting in a formal aggressive manner to give the impression that one is in charge, or acting in a docile, apologetic manner to give the impression that the performer is expecting to follow the lead of others) (Goffman 1959, 24). The success of a performance is largely based on the coherence between appearance and manner (*i.e.* if you *dress* the part, you have to *act* the part, and *vice versa*). If, for example, someone appears to be of high social status but uses speech-patterns or a dialect indicative of a lower class, his or her deceit is easily detected. In that case appearance and manner contradict each other. This brings us to one of Goffman's most important points: there is an expected consistency between setting, appearance and manner. Such coherence represents an *ideal type* (Goffman 1959, 25). It follows that the more formal an occasion is, the more important it is to adhere to this *ideal* consistency.[14] During an informal presentation to colleagues at work some inconsistencies might be accepted or not even noticed. However, such indiscretions will not be accepted during a highly ritualised gathering when everyone's behaviour is under scrutiny.

Another important aspect of front is that although different fronts are used in different situations, the individual elements a front consist of are hardly ever unique to a specific occasion. A front is usually composed of individual elements that can be used in different situations, albeit in different combinations or configurations. A full suit and tie are worn during a funeral, while at work the tie may not be necessary and on casual Friday perhaps only the jacket is worn to adhere at least a bit to the normally formal standards of office life. According to Goffman (1959, 26), even in specialized or entirely new occasions, the front that is employed is rarely ever new or unique and usually consists of elements that are employed in other – perhaps similar – situations as well. For example, weddings and funerals are occasions of similarly formal and ritual significance (both rites of passage), and men may wear largely the same attire to both occasions (a suit), with only minor differences (often different in different regions/cultures). In the Netherlands for example, during a wedding, men (on the groom's side) might wear a corsage (of multiple flowers), not to be mistaken with a boutonnière (single flower), which can be worn at other formal occasions, including funerals. The generality and even abstractness of such fronts makes them convenient to use, and share. Even if those minor differences may escape uninitiated observers, the abstract standards will allow the observer to at least place the situation in a broad category.[15] Hence, 'stereotypical' thinking requires observers only to be familiar with a small, and hence manageable, vocabulary of fronts (Goffman 1959, 26).

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14 Inconsistencies between appearance and manner are often a source of humour. For example, breaking wind at an inappropriate moment in public. Popular sitcoms on TV often present a continuous series of such inconsistencies. A good example of this is the classic 1990s sitcom 'Seinfeld'.

15 Goffman's concept of *front* (as relating to persons) is surprisingly similar and compatible with Sackett's (1977; 1986) definition of *style* (as relating to material culture). Apart from an object's 'active voice' directly related to its function, it also has a 'passive' voice which conveys style and acts as a signpost or banner advertising the arena in which the functional roles are being performed (Sackett 1977, 370).

This 'stereotypical' thinking not only affects how observers interpret a performance, the performer himself or herself also tends to adhere to these stereotypical expectations and will act/behave accordingly.[16] Hence, particular fronts tend to become institutionalized, a fact in their own right, they become a 'collective representation' (Goffman 1959, 27). This will make them extremely powerful tools in social interactions as they can be used to normalize or standardize social relations. Even individuals who have never met before, perhaps not even speak the same language, can use such fronts and the stereotypical expectations that go with them to act and re-act in a widely understood manner. They will be able to present themselves in such a way that is recognized by the observers, and the observers will be able to respond in such a way as is expected by the performer. When you wear a business suit and approach a stranger with an extended right hand, most of the world's population will know how to respond; by accepting the hand, shaking it, and taking this formal introduction to engage further in social interaction. The potential power of such an act therefore lies in a shared and widespread understanding of certain stereotypical fronts (which thus includes the clothing worn, various attributes, paraphernalia, insignia of rank and associated behaviour).

Although particular fronts may be used, intended, or especially suited for particular social occasions, it is often not so that one unique front is linked to one unique type of social event. The type of occasion will rather impose certain boundaries on what elements of front are deemed appropriate and which are not. Goffman (1966, 7) gives the example of an afternoon social gathering where a woman has the 'freedom to choose' between her various dresses. Although this is considered as freedom of choice, the occasion actually excludes various other items of garment intended for other types of occasions. Likewise, normative behaviour will not trigger a particular response by the audience, it passes unperceived as an event. It is not until someone deviates from the normative that people will take notice of this 'abnormal' behaviour (Goffman 1966, 7). In a way, the social rules and expectations not only dictate how people should behave, but perhaps more importantly, *how they should not.*[17] The more formal the occasion, the more strictly such 'rules' are applied and deviating behaviour is noticed and punished.

Our *ability* and *desire* to conform to these social norms and expectations determines whether we are able to engage others in the same social discourse, whether we stand out or blend in, whether we are us or them, whether we belong.

2.3 Us and them

Where Goffman explores how individuals fit into a community, it is Anthony Cohen who provides an excellent and concise analysis of what constitutes a community and how different communities relate to each other. Similar to the problems described above with the term 'identity', Cohen (1985, 11) introduces the term 'community'

16 Rosenberg (1986, 13) notes that society builds up a set of *social expectations* or stereotypes. People subsequently base their behaviour towards these individuals based on these 'typifications' (different categories of persons, professors, mechanics, lawyers, are treated differently based on their social identity).

17 Crane (2000, 173) cites a particularly illustrative advertisement for business suits in *The New York Times* of 1986 by Hart, Shaffner and Marx using the slogan "The right suit might not get you to places of power. But the wrong suit might not get you anywhere at all".

as one that has been proven "highly resistant to satisfactory definition". He therefore proposes not to try to define the term but rather explore how it is used. He starts with a basic interpretation of the term consisting of two important suggestions: "*that the members of a group of people (a) have something in common with each other, which (b) distinguishes them in a significant way from the members of other putative groups*" (Cohen 1985, 12). Essentially the term 'community' expresses a '*relational*' idea, the opposition between the members of a community to others (Cohen 1985, 12).

It is this *opposition* between members of a community and non-members that largely defines the community. By seeing the *otherness* of outsiders we are suddenly confronted with those elements that bind and define the members of our community. This observation resonates with the argument of Goffman, presented above, who suggested that normative behaviour in a specific social context is to know which elements of front are *not* appropriate. It is by inappropriate behaviour that we stand out. When we attend a funeral dressed in black with a sincere or sad look on our face, we blend in with the rest of the mourners and are possibly not even noticed. If instead we were to enter with a smile on our face and wearing a colourful leisure suit, we would most certainly be noticed. People would be offended by our inability to 'behave normally' and we would most probably be asked to leave.

The difference between the members of a community and others are marked by boundaries. "Boundaries are marked because communities interact in some way or other with entities from which they are, or wish to be, distinguished" (Cohen 1985, 12). Although boundaries may be physical, such as rivers or mountain ranges, others are administrative such as lines on a map, or racial, linguistic or religious. Particularly the latter become increasingly difficult to objectively define and as a consequence may be differently defined by different members of a community. Boundaries between communities, what separates *us* from *them* are largely symbolic in nature, which means that different members of a community will not only attribute different meaning to a boundary, but some boundaries may be even imperceptible to others (Cohen 1985, 13). The 'feeling' of community, of belonging together, is hence based on the perception of its boundaries which themselves only become apparent in the interaction with *others* (Cohen 1985, 13). This is what Cohen refers to in the title of his book as the symbolic constitution of boundaries, as the *symbolic construction of community*. Just like symbolism, community can be partly rooted in clearly definable aspects, but is also open to interpretation and idiosyncratic experience of the individuals that are part of it. The power of symbols or symbolic categories lies not in their ability to merely represent something else, but in their ability to represent meanings which can be different to each individual (also see Stone 1970, 395). Symbols, or categories such as 'love', can be shared and understood between members of a community, but each individual will have slightly different notions of what they mean exactly.

The constitution of a community therefore lies not so much in a real, objective shared common notion, but rather in a perceived common notion (Cohen 1985, 15). Members of a community believe they make similar sense of things. They share the same symbols, but this is not the same as sharing the same meaning. Cohen (1985, 73) gives the example of two Catholics saying 'I believe in God'. By sharing the same vocabulary, they 'think' they understand each other and mean the same thing, but in fact both may hold very different notions on what exactly 'God' is or what 'believes'

actually means. Cohen (1985, 73) continues to remark that a society hence masks the differentiation within itself by using or imposing a common set of symbols.

It is because symbols are 'imprecise', because part of their meaning is subjective, because people can attribute their own meaning to them, that they are so well-suited for social interaction. Because people can speak this 'common' language and behave according to similar customs, people can participate in the 'same' rituals, pray to the 'same' gods, wear the 'same' clothing, etc. (Cohen 1985, 21). Hence, when people interact with each other in a group, by necessity, the meaning of 'the message' has to be simplified, down to a form and generality with which each of the members can identify (Cohen 1985, 35). It is this very process that increases the significance of the message, as continually its basic shared meaning is reaffirmed.

In many ways the work of Cohen can be seen as a direct extension of the work of Goffman. The strategies of individuals to compose a specific front and create a particular image of themselves, will work best among members of the same community, among people who share a similar symbolic idiom and who can understand the complexities and nuances in our performances. It follows that when engaging *others*, the more distant these others are compared to ourselves the more we have to rely on simplified fronts and stereotypical behaviour. Barth (1969, 15) also notes that when people of different cultures interact, the differences between them need to be reduced and a congruence of codes and values needs to be generated. He continues to note that in the context of inter-community encounters, for all the differences that might exist between them, people need to have a basic *set of rules* to engage with one another. This relates to what Goffman (1959) would refer to as an institutionalized front, a collective representation. A basic front that due to its abstractness can be widely shared and used (Goffman 1959, 26). According to Rogers (2003 [1962], 19), homophily (the sharing of common meanings, subcultural language and personal/social characteristics) is directly linked to more effective communication, interaction and the spread of new things and ideas. Barth (1969, 15) notes that this set of rules, governing inter-community interaction, needs not "*extend beyond that which is relevant to the social situations in which they interact … thus insulating parts of the cultures from confrontation and modification*". In the context of interaction, people may thus adopt a particular front/behaviour to facilitate the interaction, but this will also act to insulate other aspects of their lives, which allows the persistence of cultural differences (Barth 1969, 15). Hence, Japanese and European businessmen will adopt a particular front – consisting of a business suit, handshakes, formal behaviour – in the context of a business meeting, this standardized encounter will insulate both parties from their respective cultural differences that would have manifested themselves in other kinds of occasions and have otherwise potentially hindered social inter-community interaction.

It follows that among potentially quite different cultural groups we can expect recurrent and shared elements, particularly those that can be connected to particular types of personal front. Such elements would help enable social interaction between members of a community, but in their most basic forms also between members of different communities. Such elements would help, if only on the surface and in the context of specific types of social interaction, to create the image of a shared cultural idiom, of shared values and a shared understanding of the world. To keep with Goffman's metaphors, this would *help set the stage* for engaging in inter-group social interaction,

for example for making inter-group exchanges of persons, knowledge or goods. It, therefore, can be expected that when we find an abundance of evidence of inter-group social interaction, for example in the form of exotic objects, we can also expect the existence of shared fronts that helped facilitate such interactions, and *vice versa*. Such recurrent and widely spread elements thus should not be seen as evidence of a widely dispersed 'culture', but rather as the elements that helped facilitate the interaction between different 'cultures'. In fact, these fronts might actually have helped to insulate the underlying differences in various communities (Barth 1969).

2.4 The cultural biography of grave goods

Objects are not merely used by people, for example as tools or as props for composing social fronts, objects can also be socio-cultural entities in their own right. Objects, whether man-made or not, can be seen as animate entities in the context of animistic beliefs (see Harvey 2006). Objects can be produced using cosmological knowledge, hence embedding them with spiritual or ancestral powers (for examples, see Akerman *et al.* 2002; Godelier 1990, 144; 1999, 113; Helms 1988, 115; Stout 2002, 704). Objects can acquire meaning by being the subject of gift-exchange and become commensurable with the givers, contain parts of their 'souls' as it were (Godelier 1999; Mauss 2002 [1950]). Objects can be involved in particular historical events and thus become inalienable possessions that act as 'visual substitutes' for history (Gosden and Marshall 1999; Weiner 1985, 224; 1992). Objects, in short, can for a multitude of different reasons be attributed all sorts of different meanings.[18]

In the previous section, the work of Goffman and Cohen was discussed which focussed on the interaction between persons and communities. In this section I would like to discuss the work of Igor Kopytoff (2008 [1986]) on the cultural biography of things. With respect to this, it will not come as a surprise that the examples I mentioned above were presented in a very particular order; from potentially non-man-made objects to the production of artefacts, to objects acquiring meaning as items of exchange or being involved in historical events. Things 'come into this world', whether they are simply found and picked up or produced by humans. They are used, exchanged, lost and found again, inherited, are involved in events and owned by particular persons. Much like how an individual is born, integrates into society to become a person, interacts with others and goes through life, also things are produced, go through a 'life' of their own and acquire meaning along the way. There is thus not such a strict separation between the life of things versus that of persons as is often thought in contemporary Western thinking (Kopytoff 2008, 64).

The idea of objects having biographies, much like persons, is an interesting concept that is especially appealing to archaeologists studying material culture. We can study where the raw materials came from, how these were worked to transform them into artefacts. We can study the technologies involved and by mapping the raw material sources we can reconstruct how they must have travelled through the world. By means of analysing traces of wear and repair, or residues left, it can be studied how objects

18 These subjects have also been extensively discussed in previous publications by the author (see Wentink 2006, 75-85; Wentink 2008; Wentink, Van Gijn and Fontijn 2011).

were used, and by analysing their places of deposition we can study how they were discarded. As such, archaeologists have various methods by which they can trace or reconstruct parts of the life-histories of individual artefacts. Although this is certainly related to the biography of things, it must be stressed, however, that 'life-history' is not synonymous with Kopytoff's use of the term *biography*.

It is important to understand that Kopytoff considers the *cultural biography* of things. This obviously includes an object's life-history; the sequence of events that led from an object's manufacture to its abandonment. However, crucially, the *cultural* biography includes the *cultural* appreciation and expectation of that sequence of events. In addition to the things that *can* happen to a person or an object, there is a cultural understanding of what sort of events or sequences in a life-history are desirable. In any given culture there are expectations of how, *ideally*, the life of a person should unfold. This is what Kopytoff (2008, 66) refers to as *idealized biographies*, what is seen in a culture as a well-lived life. What exactly constituted a 'good life' will vary from culture to culture and include such things as the acquisition of lots of money, having had many friends, being successful in one's job, having been a skilled hunter, having raised many children, etc. Likewise, the biography of things will reflect what events took place in an object's life-history and to what degree this conformed to what was expected and desired within its cultural context. Hence, the focus is not merely on what the 'career' or 'itinerary' of an object has been, but instead on what is considered the ideal career or itinerary for such things.

As an example of such biographical expectations of things in our own culture, Kopytoff (2008, 67) posits that a biography of a painting by Renoir ending up in an incinerator is as tragic as the biography of a person who ends up murdered. It follows that if particular *ideal biographies* for particular types of objects exist, this should translate to *particular patterns*. By studying an object, one can learn about this object's particular life-history. However, by studying groups of similar objects, patterns in their life-histories indicative for particular cultural biographies can be revealed. An example of this is the work of Fontijn (2002) who studied the deposition of prehistoric bronzes. He found clear patterns of particular types of objects being treated in particular ways. For example bronze swords being preferentially deposited in rivers while bronze axes were deposited in swamps. His research therefore transcended the study of individual life-histories of individual objects, and rather unveiled patterns indicative of widespread and long-lived *ideal biographies* of particular categories of objects.

2.5 Concluding remarks

This chapter dealt with the complex ways in which persons present themselves to others in the context of social interaction. Our ability to conform to social norms determines whether we stand out or blend in, whether we can successfully interact with others. As such, this ability is key in the construction of communities, but also enables members of different communities to interact. Material culture can play an important role in interactions, for example by being the subject of exchange, but also in helping to establish the proper social contexts for such interaction, for example as 'stage props' or elements of personal front. For archaeology this means that material culture can hence

be studied as proxies of these social constructs. Particularly the concept of artefact biographies can be helpful in exposing such roles.

The term biography is not without problems or critiques. It must be stressed that the term *biography* should not be confused with *life-history*. Moreover, Hahn and Weiss (2013) have criticized the term *biography* because moments like 'birth' and 'death' (terms used by Kopytoff) are difficult to pinpoint. They instead propose to use the term *itinerary* which would better highlight the "non-linear character of an object's mobility and the subsequent changes in its contexts and roles" (Hahn and Weiss 2013, 8). However, semantics aside, the term *cultural biography* as reflecting an *ideal life* or itinerary of *a class of objects* is still a highly useful concept because such ideals tend to fossilise in the form of particular patterns: particular groups of objects will show specific patterns with respect to how they were made, used and/or deposited. These patterns can be studied by archaeologists and subjected to interpretative frameworks (see Carlin 2018, 173; Fontijn 2002, 24; Wentink 2006a, 23-26). Patterns exist because people in the past did specific things, in a specific manner, for a specific reason.

The basis of this study lies at a 'grassroots' approach of studying the life-histories of individual grave goods. It will be demonstrated that these artefacts' individual itineraries reflect patterned practices, indicative of *idealized cultural biographies* of particular categories of objects. These object biographies are entangled with the biographies of the persons they accompanied in the grave and, in part, are remnants of specific social fronts. By definition both object biographies (Kopytoff 2008) and social fronts (Goffman 1959) are not associated with single individuals but are instead shared with others both in and between communities (Cohen 1985) and reflect widespread notions of personhood, identity and social integration.

> "The nature of man is a single, timeless enigma which has troubled all thinkers in all places. […] The living and the dead all contribute to the same debate. The dead, annoyingly, cannot attend in person but they supply evidence by artifact and in writing, which living interpreters kindly shell out of its archaic language and historical period" (Hollis 1985, 218).

3

The Age of Beakers

3.1 Introduction

This chapter sets the stage by presenting a concise introduction of the 3rd millennium BCE in north-west Europe, with a particular focus on the Netherlands. In Dutch prehistory the 3rd millennium BCE is usually referred to as the Late Neolithic, which is subdivided into the Late Neolithic A (LNA, ca. 2800-2450 BCE) comprising both the CW culture and All Over Ornamented phase (AOO), and the Late Neolithic B (LNB, ca. 2450-2000 BCE) being the era of the BB complex (Louwe Kooijmans *et al*. 2005).

3.2 Late Neolithic A: The rise of Corded Ware

It is at the start of the 3rd millennium BCE that a new complex of cultural traditions rapidly spread across large parts of northern Europe. Until then, this part of the world had been settled by various subgroups of the Funnel Beaker culture. While its origins lay in the early 4th millennium BCE, the classic Funnel Beaker culture dates to the second half of the 4th until the beginning of the 3rd millennium BCE and is characterised by a well-developed set of material culture and cultural practices, most notably farming and the building of megalithic tombs (see Bakker 1979; 1992; Midgley 1992; Raemaekers 2005, 274). Although the Funnel Beaker culture is not one monolithic cultural body, and various subgroups existed with various different styles and peculiarities, these differences were subtle and strong cultural cohesion existed between the various groups (see Midgley 1992). Especially in the later Funnel Beaker culture, the pottery became less and less regionally distinctive, to such a degree that Midgley (1992, 489) speaks of the "blurring of regional boundaries". By all accounts the Funnel Beaker culture appears to be a well-defined, stable cultural group spread out across northern Europe with a very particular material culture, subsistence system and cultural practices. It is perhaps due to this view of the Funnel Beaker culture that made the abrupt changes that took place at the beginning of the 3rd millennium so enigmatic. It is around the turn of the new millennium that suddenly and rapidly a new cultural tradition known as the CW culture spread from the east to Central and north-west Europe to replace the Funnel Beaker culture (see Fig. 3.1; for a chronological overview, see Furholt 2003).

The CW tradition did not merely reflect some changes in material culture, but went hand in hand with altogether new forms of cultural practice. Apart from var-

Fig. 3.1 Distribution map of the CW culture in Europe (after Schnurbein 2009, 79; base map: Wikimedia Commons).

ious new types of material culture (most notably the cord-decorated beaker), this included new burial practices that now typically involve single inhumations covered by relatively small and low burial mounds (Bourgeois 2013; Hübner 2005, 472; Midgley 1992, 488). These *single graves*, situated underneath small mounds, usually contain various types of grave goods (see Fig. 3.2). Some of these are traditionally interpreted as weapons and are hence seen as evidence for the rise of warfare as an ideologically laden activity. Given their association with a single individual, these objects are moreover seen as proxies of a ranked social system and the rise of hierarchy or social stratification (see Vandkilde 2005, 10; Hübner 2005, 637; 964; Drenth and Lohof 2005, 447).

The scale and speed at which this new tradition spread across Europe led to various hypotheses that involved mass migrations and most famously the incursion of fierce horse-riding warriors armed with battle axes (Childe 1957 [1925]). As is the case with the rapid spread of the Funnel Beaker culture in the mid 4th millennium, there has been much discussion about whether the spread of the CW culture primarily involved colonisation or acculturation (see Hübner 2005 for a detailed discussion of CW culture research history). Until fairly recently, the general consensus was that we were dealing with a gradual transition rather than a widespread cultural revolution (Hübner 2005, 964).

New aDNA studies, however, have recently shown evidence of the widespread influx of genetic newcomers in the 3rd millennium BCE (*e.g.* Haak *et al.* 2015;

Fig. 3.2 Grave assemblage of a CW burial near Renkum (AMP0424), objects include a type 1d beaker, a northern flint blade, a flint axe and a battle axe (collection and photography: National Museum of Antiquities, Leiden).

Allentoft *et al.* 2015; Parker Pearson *et al.* 2016; Knipper *et al.* 2017; Olalde *et al.* 2018). Samples taken from CW individuals show a close relatedness to peoples living in the Steppes, most notably the Yamnaya culture (originating in eastern Ukraine and adjacent parts of western Russia). These papers speak of 'massive' migrations of large groups of people over vast distances, indicating that Childe's original interpretation might actually not have been that far off. Some evidence even indicates that new people not only came in, they took over. This can be inferred from a recent paper by Olalde *et al.* (2018) where it is presented that after the influx of Steppe people more than 90% of Britain's gene pool was replaced. The influx of people from the Steppe also gives new credence to the spread of Indo-European languages as part of these migrations from what is generally seen as the heartland of Proto-Indo-European (see Anthony 2007; Kristiansen *et al.* 2017).

Although these studies are absolutely fascinating, they – for now – lack sufficient integration with existing archaeological evidence (see Heyd 2017). The sudden and rapid spread of burial mounds could indeed be explained by large migrations from the Steppes, but at the same time there is also evidence of a continuation of various cultural practices that indicate some form of historical continuity. At the moment these developments in the field of aDNA research are going so fast that it will take time for archaeologists to catch up and provide a better contextualization of the samples taken,

evaluate their representativeness and hence the implication of these results for the understanding of 3rd millennium BCE population dynamics (*cf.* Vander Linden 2016).

3.2.1 Secondary products revolution

The start of the 3rd millennium BCE is not only marked by cultural changes, there are also major shifts taking place with respect to economy and subsistence. The slash-and-burn agricultural practices of the Funnel Beaker culture made an increasingly dramatic impact on the landscape of northern Europe, which at the start of the 4th millennium BCE was still densely forested (Midgley 1992, 311). These forests however gave way to the steady expansion of open landscapes consisting of grass- and heathlands (Doorenbosch 2013). These new types of landscapes could sustain larger groups of domestic animals, in particularly cattle and sheep/goats (Hübner 2005; Becker 2008; Müller 2008; Sherratt 1981). The exploitation of these animals, moreover, became increasingly important due to various changes that occurred across Europe in the second half of the 4th millennium but primarily in the 3rd millennium BCE. They are known as the Secondary Products Revolution (Sherratt 1981). 'Secondary products' refer to animals not being solely kept for meat (primary product), but also for traction (*e.g.* beasts of burden, to pull carts/ploughs), and to provide milk and wool. These developments went hand in hand with the widespread adoption and implementation of new technology such as *the wheel* – allowing increased mobility and transport of goods, *the plough* – allowing new parts of the landscape to be used as arable and the introduction of *the horse* – which of course had a potentially dramatic impact on the mobility of people (see Anthony 2007; Becker 2008).

Although individually these elements all have their own history and point of origin, it is not until the 3rd millennium BCE that they come together and lead to major economic intensification that had extensive socio-cultural consequences (see Greenfield 2010 for a more recent discussion of the Secondary Products Revolution).

3.2.2 The Dutch Corded Ware Culture in context

The research focus of CW sites has primarily been on graves and funerary monuments. This is not only because barrows remained as visible monuments in the landscape, thus attracting early researchers. It is also due to the general scarcity of 3rd millennium settlements or domestic sites in most parts of northern Europe (Salanova 2016, 29). In the Netherlands several domestic sites are known, but most consist merely of (surface) find scatters, classified as the likely remains of settlements (for an overview, see Drenth *et al.* 2008). Many of the excavated settlements are palimpsests of several different occupation phases (see Fokkens *et al.* 2016). Other well-excavated sites, some of which even have revealed house-plans, are located in the wetlands of West-Frisia (see Drenth *et al.* 2008, 157; Kleijne *et al.* 2013; Theunissen *et al.* 2014; Smit *et al.* 2012; Beckerman 2015). At these sites evidence is present for crop cultivation and animal husbandry. However, hunting and fishing also played an important role in the wetland subsistence system. Although these sites are well dated and yielded CW pottery, they are not associated with burial mounds, which are mostly known from the sandy uplands of the northern and central Netherlands. Hence, despite the overlap in chronology and material culture, there may be a marked difference in cultural practice between these

two regions. It therefore remains unclear to what degree these regions can be seen as part of the same 'culture' (see also Kroon *et al*. 2019, 19).[19]

The same problems exist in most parts of northern Europe where clear settlement evidence is rare or fragmentary at best. The available evidence indicates the existence of a landscape that became increasingly more open and was dotted with dispersed small hamlets, often comprising only one or two houses (Müller 2008, 398). An inventory of settlement data in Denmark revealed 340 excavated settlements dating to the 3rd millennium BCE. Of these, 146 had domestic structures with an average of 1.8 houses per settlement, indicating that they were probably the residence of only one (extended?) family (Siemen 2008, 80). Although the growing of (cereal) crops is an ever present constant in 3rd millennium settlement data, the zoological evidence indicates an increasing dependence on animal husbandry, in particular cattle and sheep/goat (Midgley 1992, 488). These animals are easily kept on the extensive heath- and grasslands and became increasingly important to human subsistence due to the secondary products that they provided in the form of traction (plough and transport), milk and wool. In addition to these sedentary structures, the genetic link to the Steppe people also opens up the possibility of a mobile herding population living in wagons, comparable to the Yamnaya Culture (Anthony 2007).

In addition to the characteristic cord-decorated beakers and battle axes, a variety of other objects are typically associated with the CW culture. Apart from a variety of groove- and spatula-decorated beakers, also (storage/cooking?) vessels occur such as large beaker-like vessels (*golfbandbekers* or *Wellenbandbecher*) and large decorated vessels known as 'proto-potbeakers'. CW amphorae occur quite frequently in north-east Europe, but they are very rare in the Netherlands (Van der Waals 1964b). In addition, Drenth (2005, 338) lists various other types of ceramic objects such as small pots, bowls and even spoons. With regards to lithics, the CW culture is rather inconspicuous. Most flint artefacts retrieved from settlements and surface scatters are produced using a simple ad-hoc flake-core technology and mostly consist of (retouched) flakes (Drenth 2005, 338; Van Gijn 2010). The pine-tree shaped tanged arrowheads are perhaps one of the few locally produced flint artefacts typologically indicative of the CW culture. In addition, imported flint objects also occur such as long (ca. 10 cm) Scandinavian flint blades, large (>15 cm) flint axes and in the late LNA – often associated with AOO beakers – the expertly crafted flint daggers made of Grand-Pressigny and Romigny-Léhry flint that were imported from central and northern France respectively.

In the context of the Secondary Products Revolution discussed above, the most notable finds associated with the CW culture are no doubt the wooden disc wheels retrieved from various bogs in the northern Netherlands (Van der Waals 1964a). Especially the fact that some of these appear to have been specifically made for deposition (not finished and made of unsuitable wood types), indicates the major ritual significance of these objects, and in all likelihood the carts they were part of, in 3rd millennium ideology.

19 It must be noted however that even though these wetland sites may display distinct differences with upland Corded Ware groups, according to Barth (1969, 12) it is to be expected that one ethnic group spread over a territory with varying ecological circumstances will exhibit regional diversities in cultural behaviour.

In the Netherlands the CW culture is mostly confined to the northern half of the country. Although the central and western wetlands have revealed several settlements that contained CW pottery (see Fokkens *et al.* 2016), no burial mounds are known from these regions. The CW burial mounds are primarily located on the higher sandy uplands of the Veluwe and Utrechtse Heuvelrug (central Netherlands) and the Drents Plateau (northern Netherlands). It is only in the late CW/AOO phase (probably after ca. 2600 BCE) that several burial mounds are erected in the southern Netherlands located on the edge of the Meuse river valley.

The evidence for habitation (both settlement and burial evidence) in the southern Netherlands is attributed to the Stein-group, while the riverine delta in the central Netherlands is the domain of the Vlaardingen-group (Louwe Kooijmans 1983;1987; Verhart 2010; Van Gijn and Bakker 2005; Amkreutz 2010; Modderman 1964). In this context a remarkable recent discovery of a settlement near Veldhoven (southern Netherlands) should be mentioned. Here five large house plans were found (25-40 m in length) dating to the first half of the 3rd millennium that were associated with Vlaardingen/Stein-type pottery (Van Kampen and Van den Brink 2013). No CW-type artefacts were found at the site and LN burial mounds are also absent. At the start of the 3rd millennium BCE the Netherlands are thus inhabited by several different cultural groups.

There is only limited evidence of the northern CW communities having interaction with the Stein/Vlaardingen groups.[20] The northern CW communities seem to have relied primarily on contacts with their CW neighbours in (northern) Germany and Scandinavia. Apart from close links in material culture and funerary customs, these links are also apparent from exotic materials, in particular flint axes and blades that were most likely imported from northern Germany and/or southern Scandinavia. It is not until the end of the CW culture and the transition to the BB complex that clear exchange relations with the south become apparent – most notably in the form of imported French flint daggers.

3.2.3 All Over Ornamented beakers: The rise of Bell Beaker or the demise of Corded Ware?

A particular type of pottery, known as the all over ornamented (AOO) beaker, has long played an important role in the archaeological debate, especially with regards to the chronology of the Late Neolithic. These beakers show a clear relation with CW beakers – the main difference being that the AOO beakers had decoration applied to the entire body in contrast to the CW beakers of which only the top half was decorated – but also show clear parallels with bell beakers – the main difference being that the latter were decorated in zones rather than have decoration applied continuous from top to bottom. Lanting and Van der Waals (1976, 3) were the first to place the AOO beakers in the typochronological sequence in between the CW beakers and the bell beakers. Dating to around 2600-2450 BCE they form a good typochronological bridge between the CW and BB pottery. It must be noted, however, that according to current views the AOO probably did not concern a distinct chronological horizon but rather co-occurred with late CW beakers, as well as early bell beakers (also see Drenth

20 Inversely, CW imports in Vlaardingen-sites are known, for example CW pottery, see Kroon *et al.* (2019, 15).

Fig. 3.3 Grave assemblage of the AOO grave from mound 4, Garderen Solsche Berg (AMP0257), objects include an All Over Corded Beaker, amber bead necklace, flint axe, Grand-Pressigny flint dagger and a battle axe (collection and photography: National Museum of Antiquities, Leiden).

and Hogestijn 1999, 104; 2007, 76; Lanting 2008, 15).[21] This almost evolutionary trajectory, where CW beakers transformed into AOO beakers and subsequently into bell beakers, however, formed the main reason why many researchers placed the origin of the BB complex in the Lower Rhine Basin, the so-called 'Dutch-Model' (referring to the typological model as presented by Lanting and Van der Waals 1976).

Although further details on the CW grave ritual and the objects typically found in the graves will be presented in detail in the next chapters, it is relevant to the current discussion to mention that *compositionally* the graves containing AOO beakers do not differ from the graves with CW beakers (see Fig. 3.3). Both occur with the same set of grave goods indicating that CW culture and AOO were very much related (*cf.* Fokkens 2012, 24; Fokkens *et al.* 2016, 280). And, importantly, this set differs markedly from the BB grave set. The main difference between CW and AOO graves lies primarily in the origin and geographical distribution of the objects found in the graves; it is not what is *in* the graves, it is *where it is coming from*.

As will be presented in the following chapters, for the CW culture there are strong (cultural/exchange) links with other CW groups in Germany and Scandinavia, but there is little to no evidence suggesting (cultural/exchange) links with the south. This appears to change around 2600 BCE, marked by the first occurrence of AOO beakers. These can be found throughout the CW region in the Netherlands, but also in large parts of Atlantic Europe, including Britain, France and the Iberian Peninsula

21 See Lanting (2008, 15) for several closed contexts where AOO and CW/BB pottery co-occur.

(see Vander Linden 2006a; Salanova 2000, 12; Case 2004a, 19). Although in the Netherlands the AOO is often seen as the final phase of the CW culture, especially in Atlantic Europe the AOO is rather seen as the first phase of the BB complex.[22]

That the AOO does not merely concern a new style in pottery decoration is reflected not only by the rather different distribution of the AOO beakers themselves – including Atlantic Europe – but also by flint daggers (that co-occur with AOO beakers as well as late CW beakers) which were imported from Atlantic Europe (Grand-Pressigny flint daggers from central France and Romigny-Lèhry flint daggers from northern France). As will be argued below (Chapter 5), the introduction of this new type of beaker as well as the introduction of these French daggers does not reflect structural changes in the funerary practice itself, but rather indicate the existence of different exchange lines through which new (styles of) objects start to circulate (see also Salanova 2016). As such it is difficult to decide whether the AOO signifies the final stage of the CW culture or the first stage of the BB complex.[23] In fact, it incorporates aspects of both, reflecting a continuation of the CW culture burial ritual but incorporating objects from different regions/networks more in line with the later developments characteristic for the BB complex.

3.4 Late Neolithic B: Bell beakers on the horizon

The second half of the 3rd millennium BCE is characterized by the spread of a new set of material culture across large parts of Europe. A particular kind of decorated pottery, known as the bell beaker, is found from Portugal to Poland and from Scotland to Sicily. It is not merely the spread of this particular type of pottery, however, but also an accompanying set of paraphernalia that is commonly associated with bell beakers that finds its way through Europe. This 'Bell Beaker package' – as it is usually referred to (*e.g.* Burgess and Shennan 1976; Clarke 1976; Shennan 1976; 1977; Turek 2003) – consists of such items as flint barbed-and-tanged arrowheads, copper tanged daggers, amber V-perforated buttons and stone archers' wristguards. Apart from the more typical items, the set also includes some objects that are rarer, albeit commonly associated with bell beakers, such as gold ornaments and cushion stones – cubically shaped stone implements that are believed to be anvils used for working metal (Butler and Van der Waals 1966). In the Netherlands the introduction of this Bell Beaker package moreover coincides with the first introduction of metalwork in the form of copper tanged daggers and flat axes as well as the first gold ornaments (Butler and Van der Waals 1966). Although the main constituents of the BB 'package' have a wide distribution across Europe, it must be stressed that differences have been recognized between the various parts of Europe. For example, in Spain, Portugal and south-west France the

22 Parker Pearson *et al.* (2019c, 452) mention that the Boscombe Bowmen were among the earliest Beaker immigrants to Wessex. Isotopic signatures suggest they may have come from northern France. They were associated with All Over Cord beakers and a Cord-Zoned Maritime beaker. Dating to 2470-2200 BCE makes them slightly later than the Dutch AOO phase (see Section 3.1).

23 Also see similar argument presented by Fokkens 2012. His analysis shows that AOO ceramic styles were not only adopted by the CW culture but also by other (non-CW) cultural groups in the Netherlands (Vlaardingen), hence the AOO is taken as an intrusive development that marks the beginning of major culture change (Fokkens 2012, 19).

Fig. 3.4 Distribution map of the BB complex in Europe (after Schnurbein 2009, 79; base map: Wikimedia Commons).

'package' is complemented with copper spearheads, known as Palmela points (Vander Linden 2006b, 323), whereas stone archer's wristguards are largely absent in northern Germany and southern Scandinavia (Sarauw 2006, 66).

Originally, this rapid spread of material culture was seen as evidence of either a colonizing culture or perhaps the spread of travelling smiths or merchants (Childe 1957 [1925]; also see discussion of BB research history by Heyd 2001, 387). However, it soon became more and more clear that the Bell Beaker 'culture' is actually a form of cultural practice that is mostly manifested in graves, while settlement data across Europe is much more varied (*e.g.* Burgess and Shennan 1976; Kleijne 2019; Turek 2003).[24] This variation can also be seen in the recent aDNA studies that showed that some BB groups had Steppe ancestry to varying degrees, but others (Iberian Peninsula) had not (Olalde *et al.* 2018).

Research has shown that although grave sets might seem to indicate the existence of a uniform archaeological culture throughout Europe, the study of settlements actually indicates much more local variability, both in terms of subsistence strategies and material culture that in many cases clearly indicate some form of historical continuity (Vander Linden 2006b; Kunst 2001; various contributions in Fokkens and

24 A notable exception is Denmark where only few sites are known that have yielded BB-style pottery. Most finds, however, are associated with domestic sites, while BB pottery is completely absent from graves (Liversage 2003; Sarauw 2006, 66).

Nicolis 2012). The term 'Bell Beaker culture' is thus more and more often replaced by the somewhat vague term 'Bell Beaker phenomenon' or stripped to its bare essentials and simply referred to as the 'Bell Beaker package' (see Czebreszuk 2003 for lengthy discussion on the subject). However, as mentioned above, this 'package' or 'set' is not a fixed, uniform assemblage of objects that occurs throughout Europe. In addition, this 'package' refers primarily to the objects commonly found in graves, but this does not mean that the BB graves themselves are uniform across Europe. Apart from the fact that throughout Europe different variations occur in this 'package' – even if these are slight – the actual graves themselves are very varied indeed. When taking a bird's eye view on BB graves in Europe as a whole, the actual graves themselves adhere much more to regional patterns. In France, for example, typically BB graves are found interred into pre-existing megalithic monuments (Lemercier 2012, 128; Salanova 2016; Vander Linden 2006), a practice that was also prevalent in southern Scandinavia, although also various other burial practices occurred (Vandkilde 2005, 14). In the Netherlands most BB graves are situated underneath burial mounds, in line with the pre-existing CW customs[25], whereas in Poland and Bohemia BB graves are most typically non-monumental flat graves positioned in small north-south oriented rows (Krut'ová 2003; Przemyslaw 2003).[26] For these reasons I prefer to use the more neutral term 'Bell Beaker complex' in general discussions.

The BB complex is mostly manifested by the spread of a certain set of material culture that was shared far and wide and was more or less superimposed on, or integrated in, the local cultural practices. Turek (2003) argued that the BB complex must be seen not so much as resulting from either the spread of objects or people, but more as the spread of a certain style in material culture or ideology. Although without doubt both objects and people would have been (highly) mobile to various degrees (as is shown by recent aDNA and isotope studies, see Knipper *et al.* 2017; Parker Pearson *et al.* 2019c), it is important to realize that the most remarkable aspect of the BB complex is the fact that this set of material culture is employed across large parts of Europe in a rather standardized manner: *as grave goods*.

3.4.1 Bell beakers in context

The Bell Beaker complex is well studied, both in the Netherlands and elsewhere in Europe. Unfortunately due to the nature of the archaeological record, much about the BB complex is still elusive. Although there is a rich dataset on graves, in contrast relatively little is known about BB domestic contexts. This applies to the Netherlands as well as to many other regions in Europe. In the Netherlands only few well-excavated domestic sites with a BB component are known (see Drenth 2005, 354; Fokkens 1998, 111; Louwe Kooijmans 1974; 1985, 127; Kleijne 2019, 172-174). As was the case with the LNA settlements, these sites often contain several occupation phases without

25 Finds of bell beakers as well as a BB ^{14}C-date on cremated bone from the Dutch megaliths indicate these too were re-used, at least to some degree, for funerary practices during BB times, also see Lanting 2008, 60; but also 258-277 for a list of BB finds in Dutch megaliths. See Besse (2004, 141) for a distribution map of Europe displaying communal (megalithic) versus individual BB burials.

26 Both Krut'ová (2003, 211) and Przemyslaw (2003, 145), however, mention that in Central Europe too, it is possible that many of the BB burials may originally have been covered by small mounds that have since been destroyed by later agricultural activities.

a clear stratigraphy, making it very difficult to distinguish the BB finds (other than typologically distinct artefacts) from the finds associated with other periods (see Fokkens *et al.* 2016). Another problem is that most of the known BB domestic sites are situated well outside the main distribution of the BB barrows.[27] It is thus difficult to say to what degree these sites are representative for the people actually building the barrows central to this study (see also similar discussion on LNA settlements above).

What is generally agreed upon, however, is that for the entire Late Neolithic we are dealing with small-scale dispersed settlements involved in mixed farming comprising the raising of cattle, herding of sheep and goats and cultivation of several crops including cereals (Fokkens 2005; Drenth 2005). As was mentioned before, the 3rd millennium BCE is characterized by the widespread adoption of relatively new agricultural techniques involving the plough or ard as well as horse and cart-based transport. In the Netherlands, these developments are complemented in the second half of the 3rd millennium BCE with the first introduction of metallurgy (Butler and Van der Waals 1966).

As was presented above, in the first half of the 3rd millennium BCE there were several different cultural groups present in the Netherlands with varying levels of archaeologically distinguishable forms of interaction. The CW culture in the central and northern Netherlands (north of the main rivers) seem mainly to have been part of an exchange network focussed on northern Germany and southern Scandinavia, as is evidenced by shared cultural practices (for example burial monuments and funerary practices), object styles (most notably pottery) and the exchange of exotic objects (flint axes and blades). In contrast, the western and southern Netherlands had more affiliations with Belgium and northern France, as evidenced by the origins of raw materials used (see Van Gijn and Bakker 2005, 281), as well as object styles (most notably pottery).[28] This is what makes the BB complex all the more remarkable as it appears to cross-cut these pre-existing cultural networks. From the start of the BB complex around 2500 BCE, a clear BB-component can be found throughout the Netherlands from the south to the north. All distinct cultural groups present in the Netherlands around 2500 BCE appear to adopt the BB material package to varying degrees.[29]

The BB complex mostly manifests itself in burial contexts, but this does not mean BB-related material culture is absent in settlements. Especially in the wetlands of the western Netherlands BB pottery regularly occurs in settlements (see Fokkens *et al.* 2016; Kleijne 2019) whereas graves are rare in this region, albeit not absent.[30] Apart from these new types of artefacts, the second half of the 3rd millennium mostly seems to be a continuation of the first half, without any signs of clear changes with respect

27 The two LNB barrows of Oostwoud (Fokkens *et al.* 2017) are a notable exception.

28 These affiliations are manifested in material culture styles such as pottery types and technology but are apparent also from mapping the provenance of raw materials used (see Van Gijn and Bakker 2005, 281). Cultural differences between the northern and southern Netherlands can however already be attested in the Early/Middle-Neolithic Swifterbant culture (Raemaekers 1999, 111).

29 This applies to all groups archaeologically visible. It must however be noted that for large parts of the southern provinces (Brabant and Zeeland) hardly any good data is available for the Middle- and Late-Neolithic, neither from graves nor settlements. However stray finds of such objects as French daggers for example do suggest these parts were indeed inhabited.

30 See for example the BB graves of the well-excavated and well-published site of Molenaarsgraaf (Louwe Kooijmans 1974), or the barrows of Oostwoud (Fokkens *et al.* 2017).

to settlement patterns or subsistence strategies. Simply labelling sites as BB whenever BB-style pottery is found, does therefore no justice to regional differences and local socio-cultural histories. As shall be demonstrated in the following chapters, even in the case of BB burials, there are clear signs of continuation of both specific burial customs and the barrow-building tradition that started in the CW culture (see Chapter 7). Such evidence of a continuation of practices is not unique to the Netherlands, but is also attested elsewhere in Europe. Czebreszuk (2001) for example argues for strong links between the CW culture and BB complex in Poland. Kunst (2001, 83) also notes that during the BB period on the Iberian Peninsula, the non-beaker pottery is largely identical to the earlier pottery. Although the manner, nature and possible reasons for the adoption of this BB package is a much discussed topic, it must be stressed not to oversimplify the cultural heterogeneity of the second half of the 3rd millennium BCE. As shall be demonstrated below, in the BB complex there are clear signs of continuation with previous points in time, as well as clear regional differences that manifested themselves in a multitude of ways. This includes differences in pottery decoration styles, burial customs and regional access to different exchange networks. In this respect it is also important to note that in some parts of Central Europe, the CW culture did not simply merge into the BB complex, as in recent years it has become clear that both BB and CW groups must have co-existed in the same regions, simultaneously (Bertemes and Heyd 2002, 187).

3.6 Typochronology

The core of the typochronology of the Dutch Late Neolithic beaker pottery was composed by Lanting and Van der Waals (1976; see Fig. 3.5) who improved the existing models. Based on their work the Dutch Late Neolithic was divided in three phases – the CW culture, AOO and BB complex – the latter is often subdivided into the (initial) pan-European maritime BB phase and the (later) local-style bell beakers (Veluvian beakers in the central Netherlands and the Dutch North-East group, mainly located in the provinces of Overijssel and Drenthe). However, in recent years it has become clear that several types of these beakers did not really represent 'phases' in which that particular type of pottery was the only one in use (see Beckerman 2015, 167; Fokkens *et al.* 2016, 280). Instead it has become clear that especially in the middle of the 3rd millennium BCE a combination of beaker types was in use simultaneously (see Drenth and Hogestijn 1999).[31]

The most 'iconic' types of artefact that have the widest spatial distribution in both the CW culture and BB complex, were long thought to represent the first phases of either period. However, in recent years it has become clear that this is likely not the case. The first phase in the CW culture is often described as the 'A-horizon', marked by A-type cord-decorated beakers (see Fig. 4.3), A-type battle axes, and so-called *Strichbundel* amphorae (Struve 1955, 82; Midgley 1992, 488; Hübner 2005). These types of objects have a wide distribution, but in absolute quantities they are actually extremely rare. Hübner (2005, 697), for example, notes that in Denmark there is only

31 This is also corroborated by the available ^{14}C-dates indicating various types of beakers must have occurred around 2500 BCE (for dates, see Lanting and Van der Plicht 2000).

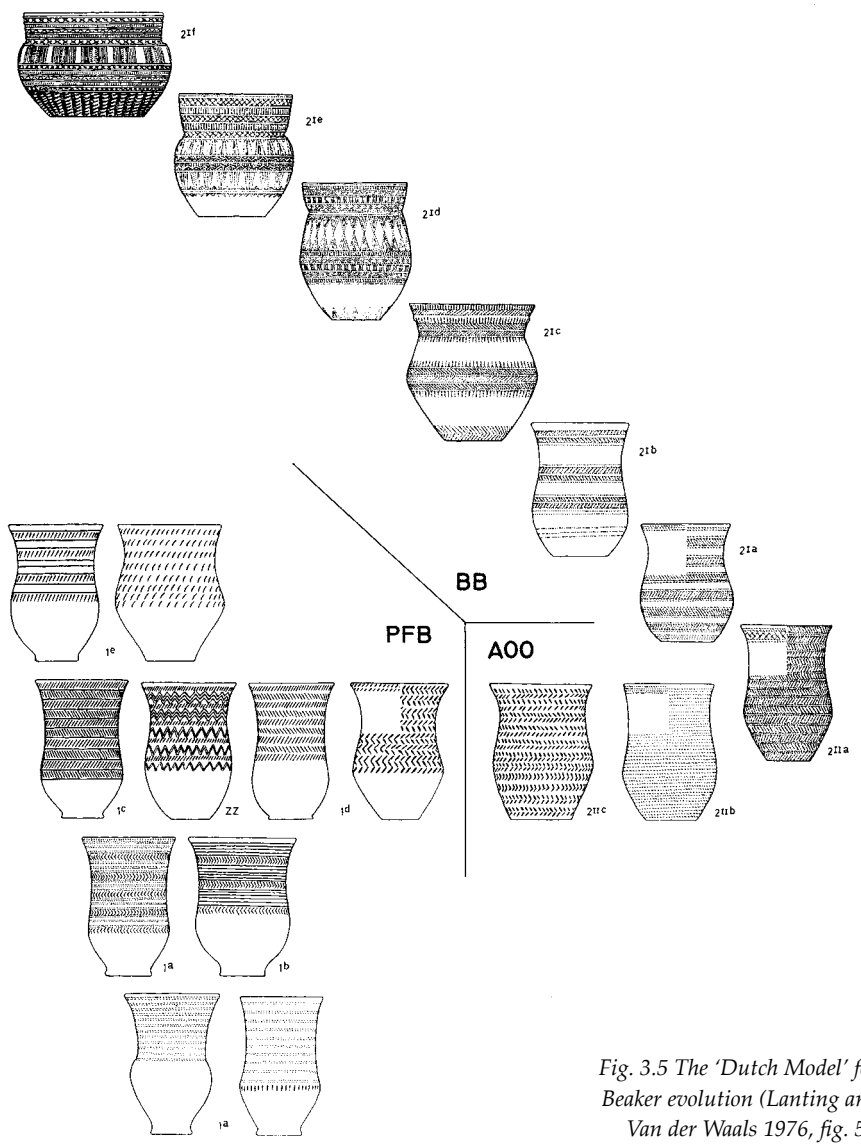

Fig. 3.5 The 'Dutch Model' for Beaker evolution (Lanting and Van der Waals 1976, fig. 5).

one site where an A-type cord-decorated beaker and an A-type battle axe were actually found together in direct association. She therefore rightly questions whether this set of material culture really represents a tightly bound chronological horizon, or whether it is a modern construct of objects that actually occurred over a much longer time-span, but are grouped together by archaeologists due to their stylistic similarities (Hübner 2005, 696). According to Furholt (2014, 4) the definition of the A-Horizon is indeed the result of a circular argument rather than representing a prehistoric reality. The similarity of particular artefacts elsewhere in Europe were automatically linked to the presumed early types in Denmark (as recognized by Glob 1944), but these chronologies were never based on stratigraphy or absolute dating (Furholt 2014, 4). In fact, new analyses of available ^{14}C-dates indicates that these 'A-horizon-types' do not represent a

discrete chronological horizon of pan-European material uniformity, but were instead in use over much longer periods of time with various regional and/or temporal differences (Furholt 2003, 120; 2014, 4).

The same applies the so-called maritime bell beakers (MBB). The MBB have a pan-European distribution and are therefore seen as the most iconic of bell beakers, representing a truly international style (see Burgess and Shennan 1976; Needham 2005; Salanova 2000). These beakers with a slender S-shaped profile are decorated with friezes of comb-decorated zones lined with cord-impressions and alternated by empty friezes (see Fig. 4.6).[32] Despite their pan-European distribution, however, these objects too are extremely rare, making it unlikely that they represent a distinct and exclusive chronological phase. In the Netherlands, for example, maritime bell beakers only occur in a handful of graves.[33]

Proceeding from the general typochronological sequence, some authors have tried to establish a far more detailed typochronology. Drenth and Lanting (1991), for example, presented a detailed four-stage subdivision for the LNA with specific (types of) objects occurring in any of the four 100-year sub-phases. From both a methodological and theoretical perspective, however, I feel that such a detailed typochronology is highly problematic at best. In some cases, it is possible to develop detailed typochronological models. A good example is the Early Neolithic Linear Pottery culture in which typology has led to a chronological scheme of only 50-year periods (Modderman 1970). However, in that case the typochronology was based on vast amounts of pottery from single settlement sites that could moreover be associated with the large Linear Pottery culture houses and associated rubbish pits: closed contexts that due to overlapping features already provided a secure relative dating. This, however, is a completely different situation compared to the Late Neolithic, for which closed contexts with large amounts of contemporary pottery sherds with relative dates are unknown. Instead these finds come from isolated graves, found throughout the Netherlands. And only rarely actual ^{14}C-dates are available that can be used to directly date these finds. There is thus hardly any objective data to indicate which of them are contemporaneous. Also the possible existence of regional styles or regional preferences for specific stylistic elements is largely neglected, as is the possibility that regionally different/similar types of artefacts may have been subjected to different/similar depositional practices (for a similar argument, see Furholt's (2014) critique on typochronology).

Another important objection is the fact that many of these objects come from graves which are essentially ritual contexts. As of yet we only have a rather limited understanding of the nature of the Late Neolithic grave ritual with respect to object

32 According to Drenth and Hogestijn (1999, 102), 'true' maritime bell beakers (type 2Ia in Lanting and Van der Waals 1976) have a slender S-shaped profile, are higher than they are wide and have at least five single or double horizontal friezes decorated with diagonally placed comb-impressions, which are lined with a horizontal line made either by horizontally placed comb or cord-impressions. These decorated friezes are alternated with empty friezes of similar height.

33 Drenth and Hogestijn (2007, 76) only count five or six specimens of the so-called 'true maritime bell beakers' in the entire Netherlands. Also note figure 5 in Salanova (2001, 96) indicating the ratio between AAO/maritime beakers versus local style bell beakers. Throughout France and the Iberian Peninsula the AAO/maritime beakers are quite rare, forming the minority compared to local-style beakers. Only in Brittany and Portugal the AAO/maritime types are more predominant, albeit still forming a minority (see also Case 2004a, 10).

styles. Rituals are the context *par exellence* in which stylistic traits can be used to convey all sorts of messages (*cf.* Bloch 1971; Thomas 1991, 73). Objects that are used in rituals or ceremonies can, for example, be highly traditional, meaning that their stylistic traits need not conform to either their domestic and/or contemporaneous counterparts. An obvious example of this phenomenon is the use of a prehistoric battle axe that was hilted in silver in the 13th century AD (believed to be the hammer of Saint Martin) and is kept as a relic in the cathedral of Utrecht (Schuyf 1995). There are therefore some serious risks when constructing a (typo)chronological scheme based on objects that are – to a large degree – derived from poorly understood ritual contexts.

In addition, many of the Late Neolithic artefact types are not well-defined at all. Especially with regards to the typology of the bell beakers. As will be discussed in Chapter 4, huge variation exists in vessel shapes and types. Especially the Veluvian bell beakers are extremely difficult to fit into the typological scheme as devised by Lanting and Van der Waals (1976). Van der Waals and Glasbergen (1955, 26) argued already in 1955 that in their opinion "it would be unwise to try to freeze into a rigid typology the living and versatile process which is reflected by the Dutch Bell Beaker development." However, much discussion also exists with respect to the definition of the maritime bell beakers. Over the last few decades the definition of this type of beaker has been continually changed and adapted and depending on which one is used, the number of finds in the Netherlands changes from 14 to only two (Drenth and Hogestijn 2007, 76). It may thus be questioned to what degree this is merely a game to keep archaeologists occupied or whether this can really help enhance our understanding of the past.[34]

The problems with the over-detailed typochronologies are also apparent when considering the available ^{14}C-dates. Beckerman (2012; 2015) recently published a critical re-examination of ^{14}C-dates related to the Late Neolithic beaker typochronology. She concluded that many types are not reliably dated at all, and in some instances the available ^{14}C-dates directly contradict the proposed ordering of objects in the existing typochronological frameworks (Beckerman 2012, 40). Similar results were obtained in Britain where a compilation of ^{14}C-dates clearly indicated flaws in the existing typochronology of the late 3rd millennium BCE (Kinnes *et al*. 1991; Needham 2005, 171; but also see Furholt (2014) for similar discussion on CW).

For these reasons I will be very cautious when dealing with Late Neolithic typochronology. I will mostly use Beaker types to indicate early, middle or late stages in the 3rd millennium BCE and will refrain from using artefact types for detailed chronological placement.

3.7 Concluding remarks

The 3rd millennium BCE must have been a highly volatile period, the start of which was marked by the widespread (genetic) influx of people from the Steppes along with horses and most probably Indo-European languages (*e.g.* Haak *et al.* 2015; Allentoft *et al.* 2015; Parker Pearson *et al.* 2016; Knipper *et al.* 2017; Olalde *et al.* 2018; Anthony 2007). In many respects it can therefore be seen as the basis of later Prehistory and even of modern Europe.

34 See Needham (2005) for a similar discussion on typology and chronology of British beakers.

The wheel, the plough, the introduction of the horse, keeping cattle for milk production, keeping sheep for their wool – all of these innovations had their own places of origin and were all in existence well before the dawn of the 3rd millennium BCE. However, it was during the 3rd millennium BCE that all these important developments became commonly accepted and widely adopted (Sherratt 1981; Greenfield 2010). As a set of inter-related developments, it was at this point in time when they resulted in far-stretching economical intensification, which was of major influence on both subsistence as well as on social, ritual and ideological systems.

Although Eastern Europe had already adopted metallurgy, it was not until the end of the 3rd millennium that the widespread exchange of metals and the adoption of metallurgy occurred throughout all of Europe. It were these exchange networks that formed the basis of what subsequently became known as the Bronze Age.

These developments form the background against which Late Neolithic funerary practices must be seen. Throughout this thesis, these issues will be explored in greater detail.

4

The Life of Beakers

4.1 Introduction

Beakers are without doubt one of the most prominent objects in Dutch, Late Neolithic graves. Throughout the 3rd millennium BCE the beaker is the most frequently occurring type of grave good. In the Late Neolithic A (LNA) 70% of the graves studied here contained a pottery vessel with an almost identical percentage for the Late Neolithic B (LNB) at 68%.

It must be mentioned that not all pottery vessels placed in graves were beakers. On occasion also small cups, bowls or even potbeakers could be part of the burial assemblage. In both the LNA and LNB, however, this is very rare (as is demonstrated in the sections below). Therefore, when discussing pottery finds from Late Neolithic graves in general, I will refer to these as beakers.

The term 'beaker' was introduced in the late 19th – early 20th century to refer to standing vessels with an S-profile that were interpreted to be drinking vessels. German archaeologist Paul Reinecke (1902) used the term *Glocken Becher* around 1900, while the Scottish scholar John Abercromby (1904) is said to have introduced the English term beaker. Although the term has been kept in use, the actual function of these beakers has always been speculative and only rarely the main topic of discussion (but see Case 1995). Of old, pottery was primarily used for dating archaeological sites using typochronology (see Chapter 3).[35] The focus of this chapter, however, is not on typological matters, but instead on the life of beakers. Patterns in how these objects were produced, decorated, used and deposited will provide a better insight in the role they played in the funerary ritual and hopefully provide information about their possible meaning and significance.[36]

Late Neolithic beakers are usually subdivided in many different types. However, with regards to their overall biographies – how they were produced, their possible usage and their deposition – beakers have a lot in common. For this reason the CW and AOO beakers (both LNA) and bell beakers (LNB) are considered together in a single chapter, whereas the other objects from graves (which are distinctly different for either period) are discussed in separate chapters for the LNA and LNB (see Chapters 5 and 6 respectively).

35 As far as reference is made to particular beaker types, the reader is referred to the typo-chronological model of Lanting and Van der Waals (1976) reproduced in Chapter 3, Figure 3.5 (but see general discussion of typo-chronology in Section 3.6).

36 For a similar approach to British beakers, see Boast 1995.

		vessel type	n	%	%
Late Neolithic A	CW	1a	17	12,8%	
		1b	15	11,3%	
		1c	3	2,3%	
		1d	20	15,0%	
		1e	12	9,0%	
		1f	4	3,0%	75,9%
		ZZ	8	6,0%	
		amphora	1	0,8%	
		bowl	3	2,3%	
		golfbandbeaker	2	1,5%	
		indet	16	12,0%	
	AOO	2IIa	3	2,3%	
		2IIb	19	14,3%	
		2IIc	4	3,0%	21,1%
		indet	1	0,8%	
		polypod bowl	1	0,8%	
	?	LNA indet	4	3,0%	3,0%
		total	133	100,0%	100,0%

Tab. 4.1 Different vessel types in LNA graves.

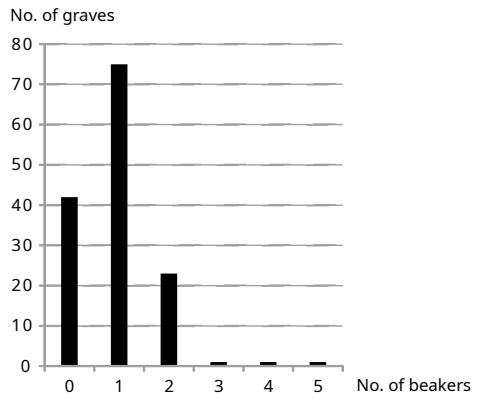

Fig. 4.1 Number of pottery vessels in LNA graves.

4.1.1 Late Neolithic A beakers in graves

The research database comprises 150 LNA graves. Five, however, must be excluded from calculations due to insufficient information about the original grave set.[37] Out of the 145 remaining LNA graves, 101 graves contained pottery vessels (69.7%). The majority of these graves (n=76) contained a single pottery vessel. Only 25 graves contained multiple vessels (see Fig. 4.1). The graves with more than one vessel mostly contain AOO- or Late CW-beakers such as types-1d and -1e, while graves with multiple type-1a cord-decorated beakers are absent. It therefore seems that the practice of

37 For five graves it is only recorded that they contained French daggers, there is no further information about any additional grave goods.

		vessel type	n	%	%
Late Neolithic B	Maritime	2Ia	5	4,1%	12,2%
		2Ib	8	6,5%	
		bowl	2	1,6%	
	Veluvian	2Ic	6	4,9%	53,7%
		2Id	12	9,8%	
		2Ie	21	17,1%	
		2If	15	12,2%	
		indet	12	9,8%	
	NE-group	NE-group beaker	13	10,6%	10,6%
	other	potbeaker	2	1,6%	4,1%
		polypod bowl	1	0,8%	
		bowl	1	0,8%	
		1e (CW)	1	0,8%	
	?	LNB indet	24	19,5%	19,5%
		total	123	100,0%	100,0%

Tab. 4.2 Different vessel types in LNB graves.

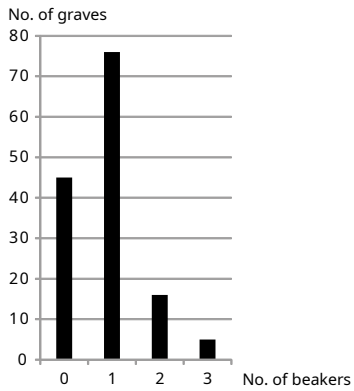

Fig. 4.2 Number of pottery vessels in LNB graves.

placing multiple beakers in graves should probably be dated towards the end of the LNA (see also Drenth and Lanting 1991).

A variety of pottery vessels were included in graves (see Table 4.1), but with the exception of the occasional bowl or amphora the vast majority of these concern beakers.

4.1.2 Late Neolithic B beakers in graves

The research database contains records of 143 LNB graves, 97 of which contained pottery vessels (67.8%). As was the case in the LNA, the majority of these graves only contain a single beaker (n=76), 21 graves contained more than one vessel (see Fig. 4.2). These numbers and percentages are thus virtually identical to those of the LNA.

The vast majority of pottery finds from LNB graves concern beakers, with other types of vessels such as bowls or potbeakers being extremely rare (see Table 4.2). Also note in Table 4.2 the single occurrence of a type-1e CW beaker in a LNB grave. When considering bell beakers in specific (for example technology/decoration) this find is excluded from the analyses presented below. However, it is included when considering ceramic finds from LNB graves in general (for example placement in graves).

4.2 The production of beakers

While most of the general discussion on Dutch Late Neolithic pottery focussed on the typology of beakers (see Section 3.6), hardly any mention was made of how these objects were made or used. One notable exception is the study by Van der Leeuw (1976) who performed an extensive analysis of the techniques used in the production of Dutch Middle Neolithic Funnel beakers, Late Neolithic CW-, AOO – and bell beakers and Early Bronze Age barbed-wire beakers. Following Van der Leeuw, this section will discuss how the Dutch Late Neolithic beakers were produced.

4.2.1 Late Neolithic A Beakers

The LNA beakers were made by squeezing a ball of clay between thumb and fingers to form a pinch bowl (Van der Leeuw 1976). Subsequently this bowl was heightened by adding coils of clay. The problem that occurs at this stage is that the pressure applied to the new coils of clay not only causes the vessel to become higher but also wider, resulting in a splayed profile. A technique often used in the Funnel Beaker culture to prevent/control this was to add new coils not on top of the existing rim but rather on the inside of the rim and subsequently pressing the new coil upwards (Van der Leeuw 1976, 87). According to Van der Leeuw (1976, 88) wraps were used for producing the first CW beakers. While adding new coils of clay, the outside wall was wrapped in pieces of cord, leather or other string-like materials. In his view the wraps – in the LNA typically consisting of cordage – helped to control the width of the vessel. As the new coil can be pressed out from the inside, the wrap on the outside prevents the vessel from becoming wider (see Fig. 4.3). After the beaker had dried, the wraps could be removed leaving clear impressions on the outside of the vessel (Van der Leeuw 1976, 88). Thus, according to Van der Leeuw, the horizontal cord-impressions found on the early cord-decorated CW beakers did not merely serve as decorative elements, but were in fact remnants of the technique used to shape these beakers. Salanova (2000, 141; 2001, 92) also notes the use of cord-wraps in the construction of several French beakers, albeit infrequently.

The interpretation of cord-impressions as wraps and being part of the shaping of these beakers has not been without critique. Ten Anscher (2012, 183-187), for example, questions whether the cord-impressions on CW beakers really were purely technological features. He argues that since these impressions were prominently visible, they surely must have had a decorative purpose. Although Ten Anscher (2012, 187) agrees that for some of the later bell beakers the use of wraps is more likely (where indentations of the wraps are sometimes clearly visible, see below), this is less so in the case of the CW beakers. Recent experiments (see Section 4.2.2 below), however, have shown that although the use of wraps is helpful in the production process, it is likely that

Fig. 4.3 Type 1a cord-decorated beaker from a barrow near Ede (Veluwe, AMP0411), height 218 mm; (bottom left) on the inside the individual coils can still be seen; (right) detail of the double cord impressions (collection: National Museum of Antiquities, Leiden).

the regular horizontal cord-impressions seen on many of the type-1a cord-decorated beakers were actually carefully applied at a later stage in the production process and should indeed be seen as decoration. This means that impressions of the 'construction-wraps' – if used at all – would have had to be erased and later be replaced by the much more regularly applied 'decorative wraps' (see below).

Cord-impressions are the most dominant form of 'decoration' on the type-1a beakers. Apart from impressions of single strings of cord, use was also made of two or even three strings braided together to form a single cord. Experimental research performed

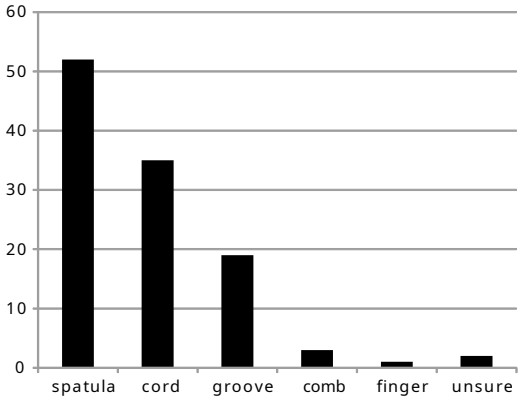

Fig. 4.4 Overview of the different tools/techniques used to apply decoration and the number of LNA beakers from graves to contain those types of impressions. As beakers can contain multiple types of impressions, they can score in each of the categories. Based on a total of 79 LNA beakers from graves for which decoration techniques were recorded in the research database.

by Grömer and Kern (2010) indicates that the cords were probably made of either grass or bast fibres. The non-cord decorated beakers, that are typically dated later in the typological sequence (see Fig. 3.6, but also see concerns raised in Section 3.6), display other forms of decoration such as grooves and in the later AOO beakers also comb-impressions occur (for details see below, in particular Fig. 4.10 and 4.11). However, especially alternating diagonal impressions made with a simple spatula appear popular, often forming the typical herring-bone motif (see Fig. 4.4). All CW beakers have in common that the decoration is restricted to the upper part of the beaker.

Looking at LNA beakers, most people are amazed at how thin-walled these vessels are, on average measuring about 6 millimetres.[38] That the thickness of the vessel walls was also a concern for the potters themselves, is evidenced by the fact that several beakers show signs of scraping on the inside and sometimes even on the outside of the vessels (see Fig. 4.5).[39] Apart from being a feat of technical skill, making thin-walled beakers also had some practical benefits. The thinner a vessel's body is, the more evenly it will dry after shaping, minimizing the occurrence of cracks during either the drying or firing of the beakers (Van der Leeuw 1976, 97). Most of the LNA beakers were tempered with sand (89%), but also organic material (3%), broken quartz (3%) and grog (5%) tempering occur.[40]

4.2.2 Experiments with wraps and cord-impressions

Experiments with reproducing CW beakers were performed by L. Jacobs (ceramic technologist of the Leiden Laboratory for Ceramic Studies; pers. comm. 2012). These led to very interesting observations regarding the discussion on whether the cord impressions on beakers, were purely decorative or as Van der Leeuw (1976) argued, part of the production process.

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38 Thickness could be recorded for 41 beakers from LNA graves resulting in an average of 5.9 mm.

39 Observed on four vessels (AMP0041, AMP0192, AMP0406, AMP0214, see Fig. 4.4), scraping is also observed on British beakers (Boast 1995, 71).

40 Percentages based on total of 37 LNA beakers for which tempering material was recorded. Of these 20 were recorded through personal examination, data for the remaining 17 were collected from their respective publications.

Fig. 4.5 Type 1d beaker from mound 6 at Hilversum-'t Bluk (Utrechtse Heuvelrug, AMP0214), height 303 mm; (right) clearly visible scraping marks on the base (collection: National Museum of Antiquities, Leiden).

In trying to replicate cord-decorated beakers, Jacobs found that especially when working with a soft, relatively low-plastic clay, the use of cords as wraps is quite helpful as it provides much needed wall support. The cord impressions resulting from this, however, appear sloppy, irregularly spaced and not at all 'decorative' (due to pressing out the coils of clay). In addition, if cords were used as wraps for supportive purposes, these would be used as a long wrap, being wound spiral-wise around the vessel's body rather than being applied as individual horizontally spaced rows of impressions. He therefore suggested that if indeed wraps had been used in antiquity, the impressions resulting from initial shaping were removed from the still wet clay, to be subsequently re-applied on the finished vessel. This way, the cord impressions could be applied more carefully and neatly, thus ensuring that they would be evenly spaced and horizontally aligned.

These horizontally spaced cord decorations seem simple. However, in Jacobs' experience doing this *well* takes quite some effort and very importantly, *time*. When looking at the cord impressions from the shoulder upwards, it can be noticed that the impressions higher up, near the neck, become increasingly less neatly applied and appear ever slightly more irregular. Jacobs explained that to make these impressions, the cord should be firmly pressed into the vessel's wall. During production, as time passes, the clay becomes dryer and harder. As a result, when starting at the vessel's belly (or base in case of the All Over Corded beakers) and working upwards, the clay of the upper part of the beaker dried to such an extent that increasingly more force was needed to impress the cord into the clay. In this respect it should also be mentioned that the inclination of the S-shaped wall profile at the neck is reverse to that on the

shoulder. It, therefore, is not only the condition of the clay, but also the shape of the pot that hinders the cord to be impressed and kept in position. In Jacobs' experiments, these factors inevitably resulted in the cord-impressions being less regular and deeper near the rim than the impressions further down, where the clay was still softer when they were applied and where the cord could be kept in place more easily.

The same pattern can be seen on some of the archaeological vessels (see Fig. 4.3). This, therefore, can also be taken as evidence that these cord impressions were applied *after* initial shaping, and thus intended as decoration. It, however, cannot be excluded that cords were used as wraps during the initial shaping of the vessel, which according to Jacobs had clear benefits and could also have formed the inspiration for using cord-impressions as decoration in the first place.

4.2.3 Late Neolithic B Beakers

As the basic technology involved in making bell beakers (making of a pinch bowl, adding coils of clay etc.) mostly overlaps with what has been presented above with respect to the LNA beakers, this section is kept brief in order to reduce overlap. As was the case with the LNA beakers, the Dutch bell beakers are thin walled – thickness generally not exceeding 5 mm[41] – and tempered with sand (62%), stone grit/gravel (28%) or finely crushed grog (10%).[42] Their characteristic reddish colour is the result of being fired in an oxygen rich atmosphere.

Van der Leeuw (1976) suggested that most Late Neolithic beakers were shaped using wraps. This, however, is generally difficult to prove. Especially the maritime bell beakers typically have a very slender S-shaped profile (Drenth and Hogestijn 1999, 102) with no apparent impressions/indentations resulting from wraps (see Fig. 4.6). With the Veluvian bell beakers, however, indentations are sometimes visible that are highly suggestive of the use of wraps. Such impressions occur on the upper half of the vessels (see Fig. 4.7 right). In all likelihood strips of leather or perhaps textile material were used. Similar impressions were observed by Salanova (2000, 141; 2001, 92) on French bell beakers. Following Van der Leeuw, Salanova too interprets these as impressions of supportive wraps.[43] For the Dutch beakers the indented zones resulting from the wrap-impressions were subsequently used as friezes to house intricate decorative geometrical patterns made with comb-impressions (see Fig. 4.7). While the indented zones depicted in Figure 4.7 are very clear, some of the other beakers show no signs of wraps at all. Most of the beakers, however, fall in between these extremes. It, therefore, is difficult to assess to what degree wraps were used in the production process of Veluvian bell beakers in general. This suggests different potters may have had different preferences and/or techniques. Or this may have varied depending on the plasticity of the clay used.

Although the actual decoration applied on these beakers is considered in the section below, I briefly address the primary technique used for applying the decoration because

41 For 40 bell beakers in the research database the thickness was recorded, the average being 5.3 mm.

42 Percentages based on total of 63 LNB beakers for which tempering material was recorded. Of these 32 were recorded through personal examination, the remaining 31 from their respective publications.

43 Interestingly Salanova (2001, 96) notes that the use of wraps occurs predominantly with local-style beakers in north-west France and given the popularity of this technique in the Netherlands, this might have been an innovation inspired by beakers from the Lower Rhine Basin.

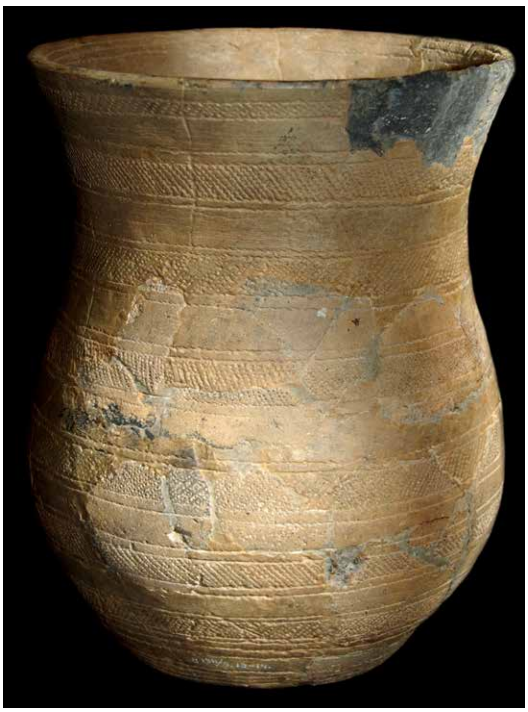


Fig. 4.6 Maritime bell beaker from barrow D near the Uddelermeer (Veluwe, AMP0173), height 200 mm (collection: National Museum of Antiquities, Leiden).

Fig. 4.7 Veluvian bell beaker from mound 4 near Emst (Veluwe, AMP0165), height 190 mm; (left) detail clearly showing the indented friezes resulting from the use of wraps. These indented zones were subsequently filled with decorative motifs (collection: National Museum of Antiquities, Leiden).

Fig. 4.8 Comb-impressions on a Veluvian bell beaker from mound 9 near Speuld (Veluwe, AMP0241), height 192 mm (collection: National Museum of Antiquities, Leiden).

a distinct difference with respect to the LNA can be observed. While grooves, cord and plain spatula impressions were the main techniques used for applying decoration in the LNA, the LNB is characterised by the use of a toothed spatula or comb. The use of such a tool resulted in closely spaced dotted rows of small impressions (see Fig. 4.8). Although this implement was also used for some of the AOO beakers (type-2IIb) it is with the bell beakers that the comb became the dominant tool for applying decoration (see Fig. 4.9). Also elsewhere in Europe the use of the comb is one of the characteristics of Bell Beaker pottery, including those in local styles (Salanova 2001, 91).[44]

4.2.4 Conclusions

It was proposed by Van der Leeuw (1976) that the cord impressions found on LNA beakers were remnants of a wrapping technique used in their manufacture. Experiments, however, indicate that although wraps can be of help while pressing out coils of clay, this cannot account for the almost perfectly horizontally spaced impressions found on LNA beakers. Such impressions could only result from careful application after the vessel had been shaped. Although the origin of the cord impressions may be connected with the use of wraps during production, the actual impressions visible on the finished product should be classified as decorative.

Both the use of cords in the LNA and the comb in the LNB were part of traditions that had a very large geographical distribution. The clear indentations visible in

44 Also other decoration techniques occur, in the coastal areas of Atlantic Europe, but also in Denmark, for example ribbed sea shells were used (Salanova 2001, 94), which provide similar visual results.

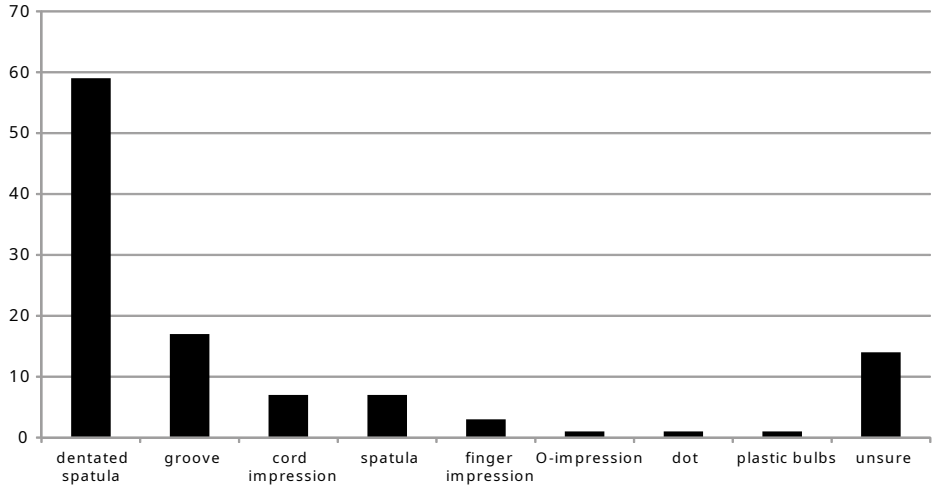


Fig. 4.9 Overview of the different tools/techniques used to apply decoration and the number of LNB beakers from graves to contain those types of impressions. As beakers can contain multiple types of impressions, they can score in each of the categories. Based on a total of 72 LNB beakers from graves for which decoration techniques were recorded in the research database.

some of the bell beakers are highly suggestive of the use of wraps, but these were not present on all beakers. Similarly, different types of tempering agents could be used and while the walls of some beakers showed clear traces of scraping, others were completely smooth. Apparently different potters used/preferred different techniques for shaping these beakers. This indicates that, although some elements such as their basic shape and techniques for applying decoration were shared over large parts of Europe, others could vary locally or even from potter to potter. Apparently, it was the *physical appearance* of the beaker in particular that had to adhere to certain notions that were shared, recognized and recreated over large parts of Europe.

4.3 Decoration of beakers

The beakers discussed in this chapter can be divided into several groups on typological/stylistic grounds. First of all, there are the three main groups CW-, AOO- and bell beakers. The latter can be sub-divided in the pan-European-style maritime bell beakers and the local-style bell beakers, which comprise the Veluvian bell beakers of the central Netherlands and the bell beakers of the Dutch North-East Group (NE-BB; following Lanting 2008). A key characteristic that differentiates these groups of beakers is their decoration, which is often applied in a meticulous fashion and displaying intricate motifs.

In terms of 'making' beakers it can be easily envisaged that the amount of time, skill and energy that was invested in the decoration of such beakers would have been comparable to, if not surpassing, the time, skill and energy invested in shaping the actual vessel. Clearly the decoration formed an important part of 'being a beaker'. At first glance function and style may seem like different and perhaps even opposing concepts, but in reality both are very much entangled (Sackett 1977; 1986). As Sackett

(1977, 370) describes this, objects do not operate "simply in the material realm of technology and economics, but simultaneously as well in the societal and ideational realms". The shape of the vessel and the solid nature of the pottery, for example, allow the beaker to contain liquids. Its style, including (but not limited to) its shape and decoration, will differentiate it from other objects – with perhaps comparable physical characteristics – and help signify for example for which particular liquid the vessel is intended or in which occasion it is to be used. As such, the decoration, although perhaps seemingly trivial, may play an important role in a vessel's overall function, meaning and life-history. In this sense, Sackett's approach to the *style* of objects is very much comparable to Goffman's (1959) concept of *front* with respect to persons. Both are an integral part of the respective subject that helps to define its role, purpose and position in a social context.

In the sections above cursory mention has been made of the decoration found on the various Late Neolithic beakers. Thus far, however, the focus has been on the tools used for applying the impressions rather than the motifs themselves. This section will extend the discussion by focussing on the actual motifs applied to the different groups of Late Neolithic beakers as well as the different compositions in which those motifs are arranged. It is by combining these three aspects that it becomes clear what binds, but also what separates these different groups of beakers.[45] This section starts with a general exploration of which decorative motifs occurred on Late Neolithic pottery. Subsequently the interplay between 'international' and 'local' styles is investigated. After some concluding remarks concerning the decoration of beakers, I briefly present some evidence of decoration found on other forms of material culture.

4.3.1 Late Neolithic motifs

Late Neolithic beakers often give the impression of being richly decorated with all kinds of different motifs. However, when systematically studying the various motifs that occur on the different groups of beakers it appears that there is actually a relatively limited range of motifs that make up the bulk of all decors throughout the Late Neolithic.

In Figure 4.10 an overview is presented of all motifs found on a total of 167 Late Neolithic beakers (see Table 4.3). These concern all beakers from Late Neolithic graves in the research database for which the decoration patterns could be recorded (either by studying the actual beakers or based on sufficiently detailed published drawings/photos). The bar graph in Figure 4.10a shows for each of the different beaker groups the percentage of beakers that carry that particular type of decoration.[46] In this graph 13 different motifs are recorded with the 14th being reserved for 'other' motifs. These latter concern motifs (depicted in Figure 4.10b) observed on Veluvian bell beakers only and vary in frequency of occurrence between 2-8%.

Although a wide range of different motifs is depicted in Figure 4.10, most of these only occur sporadically whereas the bulk of the decoration is actually made up of a subset of about five different motifs. This is particularly clear from Figure 4.11 where the occurrence of motifs is presented for all beaker types grouped together. The four or

45 Also see Salanova (2000; 2001) for a similar study with respect to French beakers or Hodder (1982) for Dutch (Late) Neolithic beakers.

46 Beakers with multiple motifs will thus score multiple times, for each of the motifs that make up their decoration.

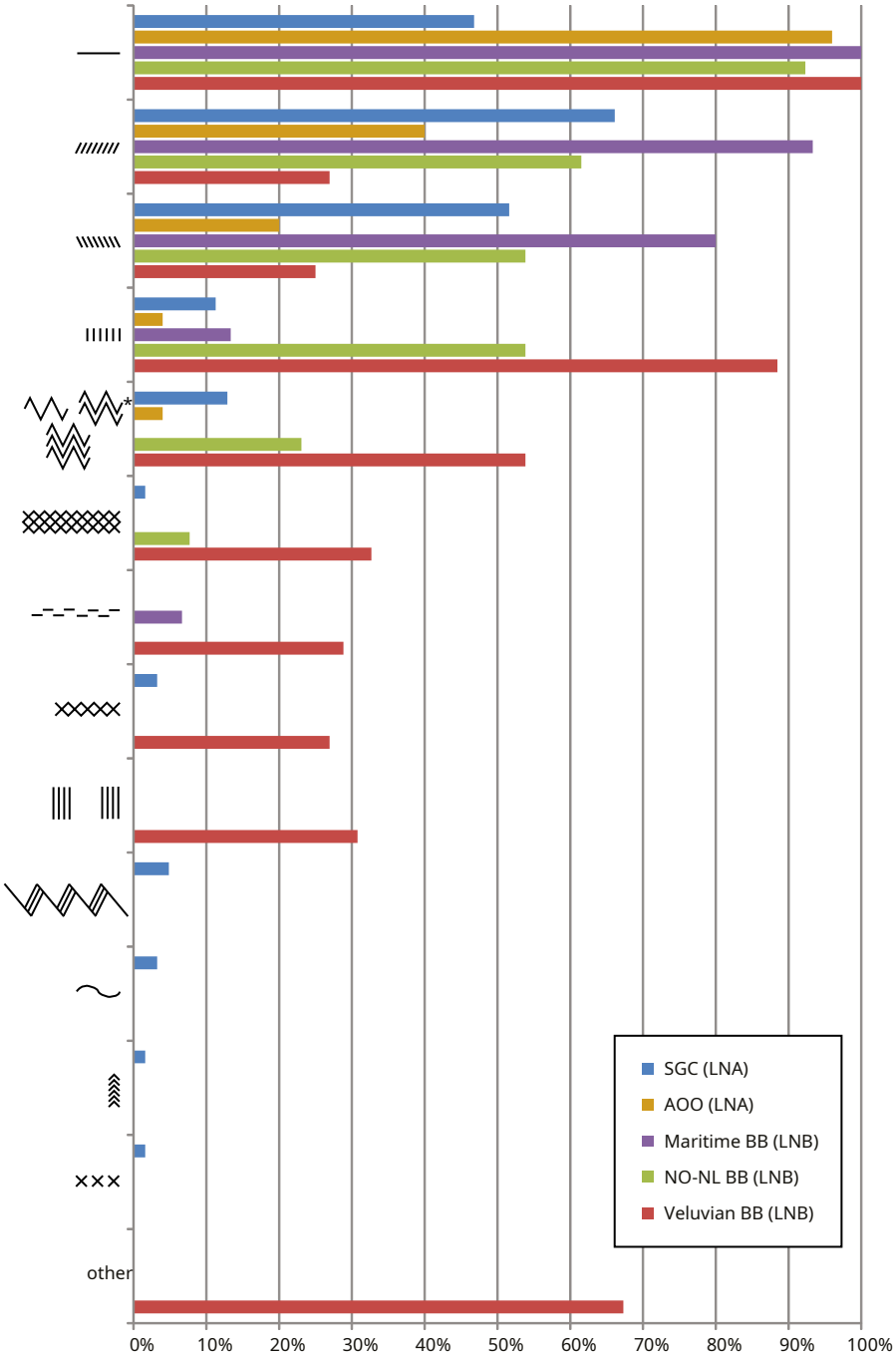


Fig. 4.10a The most frequently observed motifs combined with a bar graph displaying per beaker group the percentage of beakers that contains the respective motif. Percentages are based on a total of 167 beakers for which the decoration motifs could be recorded. The motifs classified as 'other' are observed on Veluvian bell beakers only and are depicted in Fig 4.10b (next page).

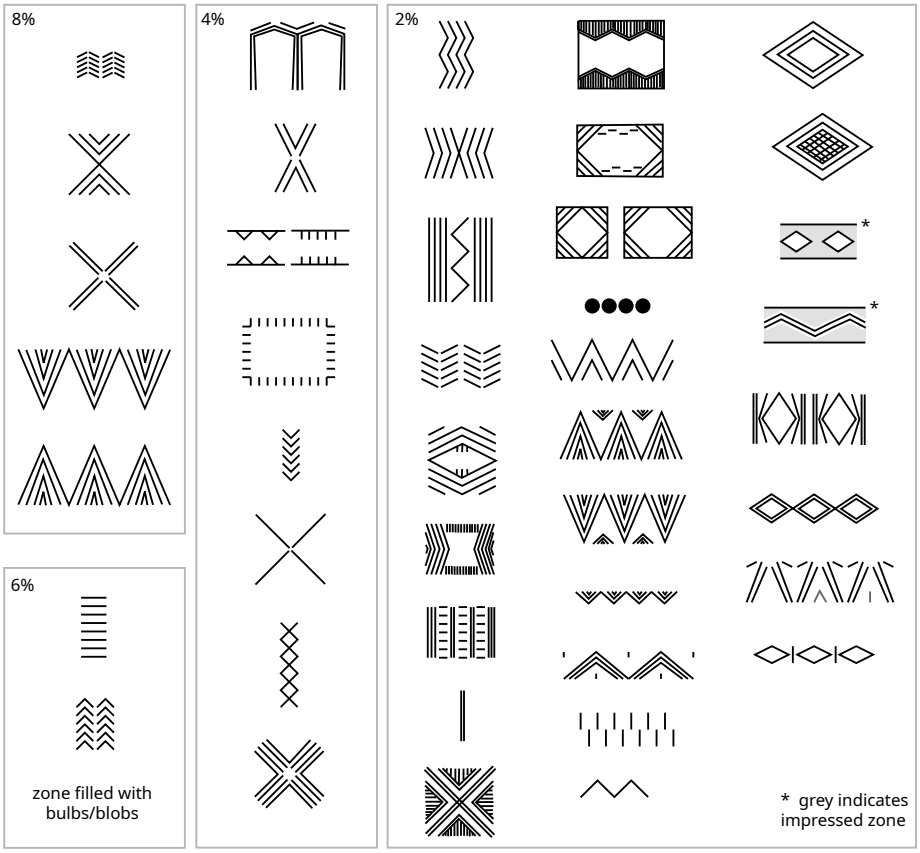


Fig 4.10b A breakdown of the motifs grouped in Fig 4.10a in the category 'other'. These motifs occur on Veluvian bell beakers only. The percentages indicate how many out of the total number of Veluvian beakers contain the respective motifs. Note that combined these do not add up to the 67% indicated in Fig 4.10a due to those beakers that contain multiple motifs classified as 'other'.

Beaker group	No. of beakers	Total No. of motifs	Av. No. different motifs per beaker
SGC	62	11	2,0
AOO	25	5	1,6
Maritime BB	15	5	2,9
NE-BB	13	6	2,9
Veluvian BB	52	51	5,5

Tab. 4.3 Number of beakers for which decoration motifs could be recorded, total number of decorative motifs per beaker group, and the average number of motifs observed per beaker in those groups.

five motifs that make up most of Late Neolithic beaker decoration are horizontal lines, diagonal impressions oriented in two ways (often combined to form herringbone motifs) and vertical impressions. In the Late LNA this repertoire is extended with zigzag motifs, either as single zigzag lines or multiple ones close together that remain in use in the subsequent beaker groups (see Fig. 4.11). These motifs occur on 24-79% of the Late Neolithic beakers whereas the remaining motifs occur at the most on ca. 10% of the beakers, but for most that percentage is even much lower.

Most beaker groups are decorated with the same basic range of motifs as can be seen in Figure 4.10. The Veluvian bell beaker being the exception, for it has a much wider range of motifs (most notably those depicted in Fig. 4.10b). This abundance of motifs can also be clearly observed in Table 4.3 where per beaker group an overview is presented of the numbers of beakers, the number of different motifs that occurs

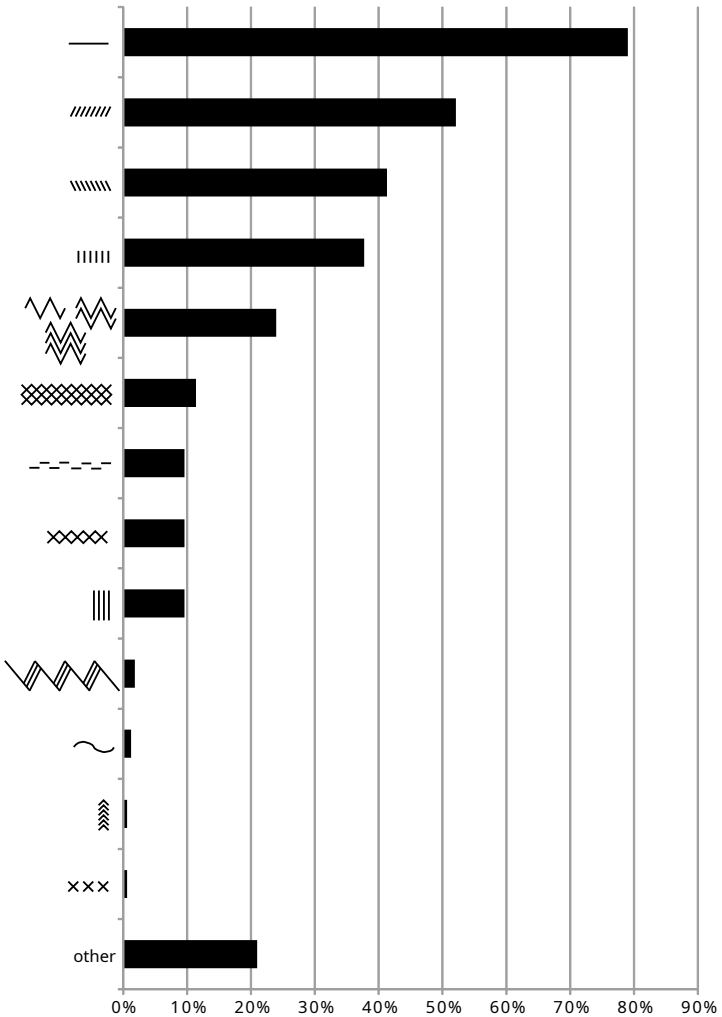


Fig. 4.11 The most frequently observed motifs combined with a bar graph displaying the percentage of beakers that contain the respective motif. Percentages are based on a total of 167 beakers for which the decoration motifs could be recorded.

in that group, and the average number of different motifs observed on individual beakers.[47] The 62 different CW beakers, for example, revealed only eleven different motifs, whereas the Veluvian bell beakers resulted in 51 different motifs recorded on only 52 beakers. It is clear from this that the Veluvian beakers are decorated in an almost singular fashion. The abundance of decoration on the Veluvian bell beakers also stands out when examining the number of different motifs occurring per beaker. While the other beaker groups display on average 2-3 different motifs per beaker, the average for the Veluvian bell beakers is almost double that, with 5.5 different motifs per beaker.

On the one hand some beakers are decorated with a very restricted range of motifs whereas others appear to have been abundantly decorated with a wide range of different and perhaps even unique motifs. It will come as no surprise that the latter – the Veluvian bell beaker in particular – is an example of what is typically characterized as a 'local style' beaker whereas the other Late Neolithic beakers are said to have been made in styles with a much wider geographical distribution. The sections below therefore focus on these 'international' versus 'local' styles beakers.

4.3.2 International style beakers: CW-, AOO- and maritime bell beakers

CW-, AOO- and maritime bell beakers are all quite similar as far as their motifs are concerned, as can be seen in Fig. 4.10 and Table 4.3. The most frequently occurring designs are identical on all these beakers: horizontal lines, diagonal or vertical impressions and, especially with the later CW beakers the occasional zigzag motif. Also the number of different motifs per beaker is similar (2-3 motifs on average).

It follows that the main difference between these types of beakers lies not in the actual motifs used in their decoration. Instead, the differences are mainly related to the techniques used to apply those motifs (primarily cord/plain spatula for CW- and AOO beakers; primarily cord/comb-impressions for maritime bell beakers; see Fig. 4.4 and 4.9) and the composition in which these motifs are applied (top half only for CW beakers, entire body for AOO beakers, and zones alternated with empty zones for the maritime bell beakers).

The style in which these beakers were made was obviously not limited to the Netherlands. Beakers with cord-decoration occur throughout northern and Central Europe, but also the other CW beakers have clear parallels in for example Denmark (Furholt 2014, 3; Hübner 2005; Struve 1955).[48] Likewise the AOO beakers can be found in large parts of Atlantic Europe (Vander Linden 2006a; 2006b; Salanova 2000, 12), but especially the maritime bell beakers have a pan-European distribution (see Burgess and Shennan 1976; Needham 2005; Salanova 2000). However, there is no evidence that these beakers were imported from distant locations. Instead, most studies focussing on the clays used in pottery production for the Late Neolithic have indicated that beakers were produced from locally available clays. Using petrographic analysis Convertini (2001), for example, demonstrated that French Bell Beaker pottery was made of the same (local) clays as the local style settlement pottery (see also Salanova

47 These concern the beakers used for the compilation of Figure 4.10 and 4.11 (see above).

48 See in particular the catalogue in Hübner (2005) for depictions of Danish SGC beakers, or figure 2 in Furholt (2014, 3).

2016, 31; Vander Linden 2006b, 318). Petrological research of the non-plastic inclusions in the beakers found with the Amesbury Archer (southern England) showed that these beakers were probably also locally produced (Williams 2011, 154).[49] Stein and Van der Plas (1987) established that a Moravian type (according to Butler and Van der Waals 1966, 100) bell beaker from a barrow near Ede-Harskamp (Veluwe)[50] was produced of local clay.

We are thus dealing with a tradition in which (local) potters, using local raw materials, produced pottery in a supra-regional style (*cf.* Carlin 2018, 209). It therefore was apparently important for these objects to signal a *belonging* to a much wider community.

4.3.3 Local style beakers: Dutch North-East-group versus Veluvian bell beakers

The beakers discussed above – decorated in a simple but widely adopted style – can be contrasted with the beakers displaying more regional characteristics. Particularly during the LNB a wide range of different vessel types occur. This section focuses on these 'local' style bell beakers and explores how these relate to the seemingly contrasting 'international' style beakers.

4.3.3.1 Bell beakers of the Dutch North-East-group

The use of comb-impressions and the application of decoration in zones, alternated with empty zones are among the most characteristic elements that set the maritime bell beakers apart from other beakers. Although this 'zonation' can be found on the Veluvian bell beakers as well, it is more clearly present in the bell beakers of the Dutch North-East Group. Their main distribution lies more or less north of the river IJssel running just along the north-eastern edge of the Veluwe (see Fig. 4.12) and they are closely related to the bell beakers found in adjacent northern Germany (Lanting 2008, 41). Although some Veluvian bell beakers do occur in the north-east Netherlands, the majority of beakers in this area are distinctly different (Lanting 2008, 57). Where the Veluvian bell beakers are all richly decorated with intricate motifs, the NE-bell beakers are far plainer and closer related to the maritime-type decoration (see Fig. 4.13).[51]

The North-East Group decoration is usually arranged in zones of more or less equal height, comparable with the maritime beakers. The decoration applied in these zones is quite simple[52] and mostly consists of horizontal lines and vertical or diagonal impressions, and occasionally zigzags or hatchings occur. These motifs were already common in the CW culture and AOO (see above). As was the case with the maritime bell beakers, the main difference between the CW beakers and the Dutch North-East Group bell beakers lies primarily in the use of the comb and the application of the decoration in zones alternated with empty zones. These beakers therefore form a blend of elements that are typical of both CW and maritime-type beakers. A similar 'blend' of CW and

49 Sarauw (2008, 84) also mentions the Danish bell beakers were locally produced.

50 AMP0176.

51 These so-called local adaptations of the 'true' maritime beakers are often referred to as epi-maritime beakers (see Lanting and Van der Waals 1976, 10; Lanting 2008, 42).

52 In comparison with the Veluvian bell beakers; see Figure 4.10.

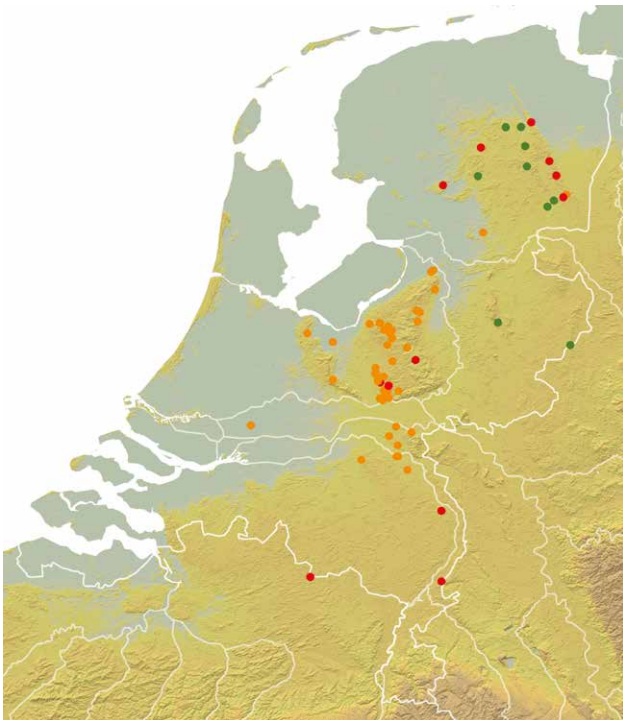
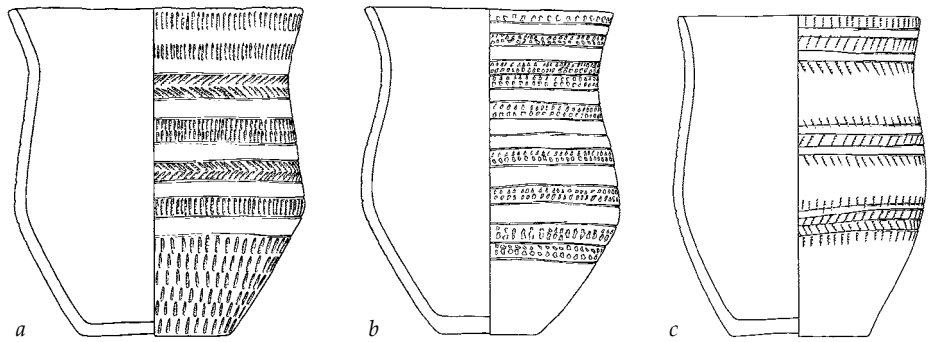


Fig. 4.12 Distribution map of maritime (type 2Ia and 2Ib) (red), Veluvian (orange) and NE-Group (green) beakers from graves in the research database (base map: AHN).



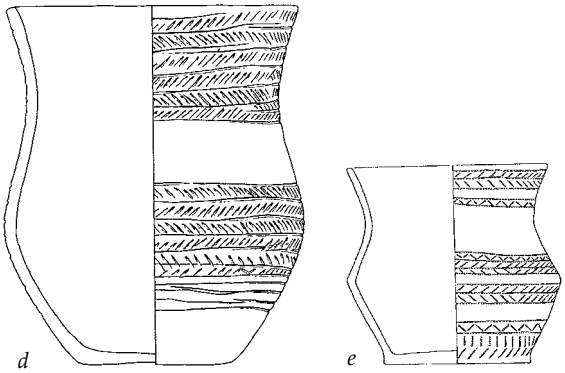


Fig. 4.13 Selection of bell beakers of the Dutch North-East Group (after Lanting 2008), scale 1:4: (a) beaker from grave A near Rolde (Drenthe, AMP0460); (b) beaker from barrow near Elp (Drenthe, AMP0467); (c) beaker from grave near Zuid-Esmarke (Overijssel, AMP0472); (d) beaker from flat grave near Holsloot (Drenthe, AMP0463); (e) beaker from flat grave near Oud-Avereest (Overijssel, AMP0470).

BB elements can be found in northern Germany where beakers occur with zoned decoration in BB style but applied only to the top half of the vessel in accordance with CW customs.[53] On the one hand these beakers clearly display BB influences, but on the other hand they also retain elements of times gone by.

4.3.3.2 Veluvian bell beakers

The 'plainness' of the Dutch North-East Group bell beakers makes the contrast with the Veluvian bell beakers of the central Netherlands all the more noteworthy, as these beakers were elaborately decorated with many new motifs and display high levels of crafting skills. Although a few maritime bell beakers occur on the Veluwe – both of 'true' maritime type as well as 'local adaptations' (see Section 3.6) – most beakers by far are of Veluvian type (see Fig. 4.12). Both in shape and decorative motifs these Veluvian beakers are quite different from the maritime-type beakers, or even the AOO or CW beakers. They have a rather angular profile as opposed to the slender S-shaped profiles of the maritime and AOO beakers. The Veluvian beakers, in contrast, are typically (much) wider than they are high (Van der Waals and Glasbergen 1955, 24). Although some notion of the decoration applied in zones remains – reminiscent of the maritime beakers – many are in fact almost completely covered with decoration, albeit applied in horizontal friezes. The beakers of type-2Ic have a clearly zoned decoration, but this consists of only three large decorated zones at the foot, belly and neck of the vessel with two large undecorated zones in between at the lower belly and shoulder. These two empty friezes, however, are used to house decorative motifs on the beakers of 'type-2Id-e and -f' (see Fig. 4.14 left). Especially the zone on the vessel's shoulder is used as the canvas for the decoration applied in panels or metopes[54] that is so typical for the Veluvian bell beaker (see Fig. 4.14 right).

Although the Veluvian beakers are all richly decorated with various combinations of mostly unique motifs, there is also a commonality binding these beakers as a group. For example, most Veluvian beakers share their basic shape and technological properties such as being thin-walled, fired in an oxidizing atmosphere and sand tempered (see above). Despite the wide variation in the actual decorative motifs, there is a clear system or logic when it comes to where this decoration is located on the beaker. The location of the decoration on the Veluvian beakers can be divided into four zones: (1) the foot/lower belly, (2) the belly around the point of the maximum diameter, (3) the shoulder and (4) the neck (see Fig. 4.15). Although all may be decorated in similar ways, usually several methods are employed to make these four main zones stand out from each other, for example by being demarcated by (narrow) empty zones or by a few friezes with less complex decoration (*e.g.* just a few horizontal lines or a row of vertical impressions). The decoration applied on the belly around the maximum diameter is usually very similar to the decoration applied at the neck of the vessel (zone 2 and 4, see Fig. 4.15). Often both even have the same or a highly similar sequence of quite narrow decorative friezes. The shoulder stands out because it is decorated as one main frieze, that is thus higher than the narrow friezes on the belly or neck. The shoulder can be

53 Beakers from various sites and sources depicted in Lanting 2008, 41; fig 10.

54 Metope is a term borrowed from Classical Greek architecture where it is used to describe a rectangular space, that is typically alternated by triglyphs to form a decorative band.

Fig. 4.14 Two richly decorated Veluvian bell beakers: (left) beaker from mound 3 near Heerde (Veluwe, AMP0222), height 185 mm: (right) beaker from barrow near Apeldoorn (Veluwe, AMP0436), height 150 mm (collection: National Museum of Antiquities, Leiden).

uniformly decorated with triangular or lozenge-shaped elements, it can be filled with different panels or metopes or be empty and polished. In either case, it visually clearly stands out from the belly and neck. The foot or lower belly can be empty, partly filled with triangular or lozenge-shaped motifs or even finger impressions. Metopes however, generally do not occur here.

This broad description binds the Veluvian beakers as a group. The decoration applied in these friezes and metopes, however, can be highly variable as discussed above. A few popular motifs can be found on most beakers – simple hatchings, zigzag motifs and rows of vertical or diagonal impressions, (see Fig. 4.10a). In addition to these, most beakers will also contain one or a few motifs that are not found on many other beakers, or that are even unique to that specific beaker (see Fig. 4.10b). On the one hand the Veluvian beakers are thus shaped and decorated according to basic principles that are shared among the Veluvian beakers as a group, while on the other hand these beakers also contain elements that are extremely rare or even unique. In a manner of speaking, this 'uniqueness' is therefore typical for Veluvian beakers.

In a sense these vessels appear to materialize different levels of cultural/personal practice or identity. The decoration applied in friezes and consisting of comb-impressions links them to bell beakers across Europe. The specific shape of the vessel and the basic system behind their decoration (as described above) binds the Veluvian beakers as a group but sets them apart from other bell beakers, for example the beakers of the Dutch North-East Group.[55] At the same time the specific types of decoration applied to the individual vessels, as well as the sequence in which they are placed on the vessels,

55 Interestingly the bell beakers found higher upstream in the Rhine Basin, around Koblenz in Germany, are obviously stylistic related to the Veluvian beakers, but they are also clearly distinct from each other (see for example the beakers depicted in Gebers 1978).

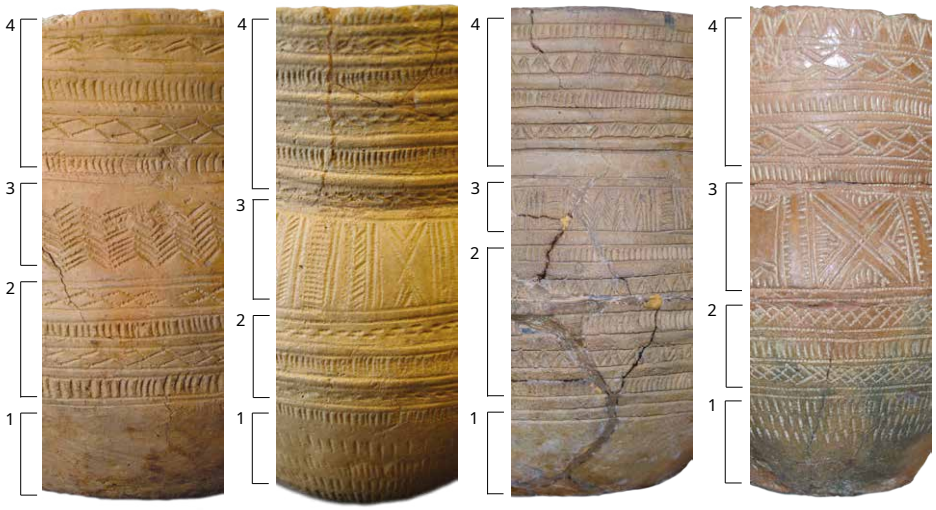


Fig. 4.15 The four main zones of decoration as seen on four different Veluvian bell beakers. From left to right beakers from: Bennekom mound 12 (AMP0245); Lunteren-Lunterse Heide (AMP0412); Ede-Koeweg (AMP0428); Apeldoorn-Gardense Veld (AMP0435); Not to scale (collection: National Museum of Antiquities, Leiden).

would in all likelihood have made each beaker unique.[56] As such, these beakers could serve as items used to display both some form of individuality as well as integration in a wider social setting.

4.3.4 Conclusions

Despite the apparent abundance of decorative motifs found on Late Neolithic beakers, it was found that in reality most beakers are decorated using only a rather limited and specific set of motifs. For the most part these motifs were shared with communities far and wide, legitimizing the use of the term 'international styles'. The often meticulous nature in which this rather uniform type of decoration was applied indicates that it must have been important for a 'beaker' to look a certain way (see also Boast 1995, 76; Fokkens 1998, 104; Needham 2005, 183). Even the so-called 'local style bell beakers' adhere to commonly held 'rules'. Although individual beakers may display highly regional or even unique types of decoration, they also contain common elements and are decorated using a basic 'logic' which binds them as a group.

This latter development of 'regionalisation' is not unique to the Netherlands. In fact, throughout Bell Beaker Europe it is found that the international style bell beakers usually only form a minority of the finds, whereas the vast majority consists of local style beakers (Needham 2005, 171; Salanova 2001; Case 2004a). Salanova (2001, 92) suggests that perhaps we should not refer to these local styles as bell beakers and reserve that term only for the 'European phenomenon'. The fact remains, however, that this 'regionalisation' did not take place in a single area. It can be found throughout Europe and, as such, is in fact an international phenomenon. As a result, their idiosyncratic

56 Salanova (2001, 92) also notes for the local-style (non-maritime/AOO) bell beakers in France that "there are never two identical pots".

nature binds them with other 'regional' bell beakers throughout Europe. Hence, both the 'international' and the 'regional' type beakers are part of pan-European developments. Whatever meaning or function these beakers may have had, they apparently played an important role in portraying the (individual) dead as members of a much wider community or network of people.

4.4 Decoration found on other forms of material culture

Decoration often plays an important role in the study of prehistoric pottery. It, however, is important to realize that decoration of pottery may not have been an autonomous or singular phenomenon, but instead part of a much wider practice of decorating material culture in a similar fashion (also see Prieto-Martínez 2012, 40). Unfortunately, decorative patterns painted on walls of houses, hides of tents, carved into wooden carts or woven into brightly coloured textiles would not have survived in the archaeological record. Apart from material culture, such motifs may also have been used to decorate human bodies. Ethno-archaeological research performed by the author, for example, revealed that some of the potters in southern Malawi carried the same types of decorations they applied to pottery in the form of scarifications on their bodies (Wentink 2006b).

For the Dutch Late Neolithic there is unfortunately no evidence that similar forms of decoration were present on other forms of material culture.[57] Elsewhere in Europe, however, various examples have been found. Stones from a cist in north-west Spain (Carnota) and a grave from Norway (Mjeltehaugen) both showed engraved motifs commonly found on BB-pottery. Similar decoration was also found on an anthropomorphic stele from Sion, Switzerland (all examples listed in Prieto-Martínez 2012, 41-43). The latter example suggests that these motifs may have been used to decorate either human beings directly (tattoos, scarification) or instead the clothing they were wearing.

When thinking about these decorative motifs (and the manner in which such 'styles' spread across Europe), it is thus important to realize that pottery may only have been the tip of the iceberg. Similar motifs may have occurred on various forms of material culture or even on human bodies. This may even explain why, for example, the maritime-type decoration is found across Europe even though the actual number of maritime bell beakers is extremely low in some regions (see Case 2004a, 10; Salanova 2001, 96). In the Netherlands, for example, only about a dozen[58] finds are known (Drenth and Hogestijn 2007, 76; Lanting 2008, fig. 8); see also above). It is difficult to understand how these motifs could have had such an impact while they were observed on so few beakers. If they were indeed found on a much wider variety of material culture, especially on items of exchange (for example textiles), this would help to explain both their sudden and widespread occurrence throughout Europe.

57 The decoration on the gold ornaments (see Chapter 6) is reminiscent to some of the decoration on Veluvian beakers, but not a clear match.

58 Including both complete vessels from graves as well as surface finds of single sherds.

4.5 The 'ugly ducklings'

The sections above make it clear that throughout the Late Neolithic great care and skill was involved in the production and decoration of beakers. Although this may indeed apply to most beakers, there are, however, exceptions. Although it is difficult or even impossible to objectively assess or quantify the 'beauty' of a beaker, it is clear that while many display great crafting skills, others appear to have been made quite clumsily. Some beakers are for example rather asymmetrical in shape. While most are meticulously decorated, some decoration seems to have been applied quite sloppily. This variation in the quality of the workmanship is not unique to Dutch beakers and has also been noted for their British (Case 1995, 56) and French (Salanova 2001, 99) counterparts.[59] Although it is obvious that there would have been differences between potters, with one being more skilled/experienced than the other, some vessels really seem to stand out.

As the overall quality of the beakers, in terms of symmetry in shape and regularity in application of the decoration, cannot be objectively converted into numerical data, the purpose of this section is to merely present a few examples of these 'ugly ducklings' as a contrast to the often excellently shaped vessels depicted throughout this chapter. The beakers depicted in Figure 4.16 all show particular characteristics setting them apart from their overall well-made counterparts. For example, the CW beaker depicted in Figure 4.16a is undecorated and very asymmetrical in shape, even to such a degree that the vessel could not be photographed while standing due to the risk of it falling over. Apparently the top half of the beaker was too thick-walled, a problem that was addressed by extensive scraping. The scraping marks, however, were not removed and are clearly visible on the outer surface of the beaker.

Figure 4.16b shows a LNA beaker that despite being quite symmetrical in shape, stood out because of its decoration. The zigzag motifs are applied rather irregularly and the 'sharpness' of the grooves suggest that this beaker was decorated, or should we say 'engraved', when the clay was already very hard (either fully dried or even fired). In addition, LNA beakers are typically decorated on most of the upper part, usually from the point where the belly has the maximum diameter up to the rim. In this beaker it seems that the potter forgot about the beaker, letting it dry too much to be properly decorated, attempted to make grooves in a too dry a state, only to abandon the attempt after just three rows of zigzags near the rim, leaving most of the body undecorated.

The beakers depicted in Figure 4.16c-d display an interesting contrast. Although both beakers came from the same grave, the difference between them is quite apparent. The beaker on the left (Fig. 4.16c) is a well-made, rather symmetrical and meticulously decorated vessel. The beaker, however, was over-fired resulting in a crackled surface (see detail photo). Despite the vessel having been over-fired – making it questionable to what degree it could have fulfilled a practical function – it was clearly shaped by a skilled potter. The same cannot be said for the beaker on the right (Fig. 4.16d). It is crudely shaped, irregular and thick-walled. The decoration is applied with simple grooves instead of comb-impressions, consists of merely two friezes and is not particu-

59 Salanova (2001, 99) for example notes that graves may contain vessels of poor quality, with an irregular profile or clumsy decoration.

a

b

c

d

Fig. 4.16 Selection of the less well-made beakers from Late Neolithic graves: (a) undecorated LNA beaker from mound D4 near Niersen (Veluwe, AMP0406), height 175 mm; (b) zigzag beaker from mound XXVIII near Ermelo (Veluwe, AMP0192), height 155 mm; (c) and (d) two bell beakers from a mound near Wolfheze (Veluwe, AMP0420), (c) well-made but over-fired beaker, height 130 mm (note the small cracks in the detail, the darker colour indicates where the outer layer over the vessel's wall has broken off due to being over-fired), (d) clumsily made beaker, height 65 mm (collection: National Museum of Antiquities, Leiden).

larly regular. It is hard to believe that both are the product of the same potter. Clearly this second vessel was not included in the grave as a token of outstanding crafting skills.

For the British beakers, Brodie (1997, 301) mentions that the higher quality beakers are associated with males, whereas the smaller and more poorly made beakers are associated with females or children. Similar patterns are reported by Shennan (1977) for Central Europe. It, however, is unclear from these reports to what degree these attributions are based on actual physical anthropological research or rather on interpretations of particular grave goods commonly ascribed to either males or females. For the Netherlands there is no empirical basis to connect skilled or poorly made beakers to either a sex or age-group. Moreover, as is illustrated in Figure 4.16c-d, both can occur together in the same grave.

It is difficult to assess what we can conclude from these observations. Although in general much time and effort appear to have been invested in producing beakers, this did not prevent some of the less impressive specimens to be included in graves as well. Research by both Helms (1988) and Godelier (1999) indicated that the possession and display of extraordinary skills – whether to craft or acquire particular goods – is often connected with mythical or magical powers. Although such interpretations might be relevant for the particularly skilfully crafted beakers, it is hard to apply these to the 'ugly ducklings'. This therefore can be taken to indicate that beakers were not placed in graves as items of 'special power' in their own right, but rather because of their function or role in social life. That would explain why in some occasions it was apparently more important to have 'a' beaker in the grave rather than one of a particular quality.

4.6 The use life of beakers

4.6.1 Late Neolithic A use life

Unfortunately, there is not much evidence that provides us with information about the actual function of these beakers or their possible contents. Virtually all beakers from barrows were excavated a long time ago and have usually been part of museum collections since the first half of the 20th century. They are often well-cleaned after excavation and restored, which on some occasions even involved painting the entire surface of the vessel. Hence, no residues of left-over foodstuffs or other traces of carbonization indicative of cooking could be observed by the author.

For future research it might, however, be possible to explore the possibilities of lipid-analysis (for possible techniques see Copley *et al.* 2005; Mukherjee *et al.* 2011; Oudemans 2006; Šoberl and Evershed 2011). The only beaker from a Dutch grave that was subjected to such analyses came from a grave near Twello (edge of the Veluwe)[60] which showed evidence of animal fats on the external surface, perhaps used to waterproof the beaker (Meurkens *et al.* 2015, 41). The inside of this beaker showed evidence of cereal pollen, perhaps the remains of a primitive wheat beer (see Section 4.8). Unfortunately, no other such research has thus far been per-

60 This grave was published after the collecting of data for this thesis was completed and it was hence not included in the research database.

Fig. 4.17 Long and slender AOO beaker from a barrow near Bennekom (Veluwe, AMP0246), height 190 mm (collection: National Museum of Antiquities, Leiden).

formed on the beakers from Dutch grave assemblages. The only other evidence from Dutch beaker material that can be mentioned in this respect is the find of carbonized residue on both decorated as well as undecorated CW-pottery sherds from LNA settlement sites in West-Frisia (Hogestijn 1997, 33; Beckerman 2015), which suggested that decorated CW beakers were also used for cooking, at least in this region. Similar residues were also observed on beaker material excavated at P14, a settlement site in the Noordoostpolder (located at the fringe of the wetlands, more or less in between the Veluwe and Drenthe). Carbonized residues, however, were observed primarily on the coarse ware, 53% of which contained residues while only 6% of the CW beakers contained carbonized residues (Ten Anscher 2012, 187). Ten Anscher, however, noted that the few beakers with residues were relatively thick-walled. He therefore proposes that the thin-walled decorated beakers would

not have functioned as cooking vessels and were probably primarily used as drinking vessels instead (Ten Anscher 2012, 187). Although hard evidence is lacking, I agree that a primary function as drinking vessel is very likely, particularly given the fact that these beakers are so thin-walled and often have a long and slender shape which makes them rather unsuitable as cooking vessels (see Fig. 4.17).

Many of the beakers that were examined for this thesis showed signs of wear. Especially on the bottom of the beakers the outer oxidized layer of the pottery had sometimes largely been worn away, revealing the darker colour of the inner part of the ceramics. It cannot be excluded that this is – at least in part – the result of prehistoric usage. It is, however, perhaps more likely that this type of wear is the result of post-excavation handling by excavators, researchers and museum curators. This type of wear, therefore, was not systematically recorded. Another potential sign of usage that must be mentioned is the fact that two beakers from barrows had multiple repair holes.[61] Although it is possible such perforations served to repair cracks that occurred during the drying or firing of the vessel, it is also possible that such holes served to repair cracks that were the result of actual usage. Although these two vessels might thus be presented as evidence indicative of these beakers having had a use life prior to their deposition in the grave, other evidence points to the contrary. Examination of some of the beakers in the collection of the National Museum of Antiquities in Leiden lead L. Jacobs[62] to conclude that at least two beakers showed cracks, that according to Jacobs (pers. comm. 2009), were not post-depositional but had in his expert opinion most likely occurred during either the drying or firing of these vessels.[63] Although it might have been possible to repair these cracks using some form of sealing agent, it is unlikely that they would have been suitable for containing liquids. Unfortunately, Jacobs' findings were chance observations made while visiting the author in the National Museum of Antiquities, rather than part of a systematic survey. Even so, they reveal the need for a more detailed analysis of such cracks as part of future research (but also see discussion of LNB beakers below).

4.6.2 Late Neolithic B use life

The problems that were discussed above unfortunately also apply to the bell beakers. Restorations, circulation in museum collections as well as handling by excavators, curators and researchers have left their mark. The bottoms of vessels are often partially worn away and display a shiny polish which could be the result of prehistoric usage, but is perhaps more likely the result of the activities described above. Based on wear and tear it is thus not possible to come to any conclusions about their prehistoric use lives. But for future research, as mentioned above, it might prove useful to explore the possibilities of chemical (lipid) analysis.

The only empirical observations related to the function of these vessels concern cracks that are believed to have originated during drying or firing of the beakers in question. A cursory examination of some of the beakers in the collection of the

61 AMP0382, beaker from barrow near Emmen (Drenthe) had repair holes alongside a crack near the rim; AMP0466, beaker from barrow near Vries (Drenthe) had two repair holes at a crack just below the rim.

62 Ceramic technologist at the Leiden Laboratory for Ceramic Studies, see Section 4.2.2.

63 AMP0243, beaker from barrow near Bennekom (Veluwe); AMP0421, beaker from barrow near Renkum (Veluwe).

Fig. 4.18 Two beakers showing cracks: (top) beaker from barrow near Ede (Veluwe, AMP0248), height 150 mm; (bottom) beaker from mound 2 near Vaassen (Veluwe, AMP0132), height 121 mm (collection: National Museum of Antiquities, Leiden).

National Museum of Antiquities in Leiden led L. Jacobs[64] to conclude that at least nine bell beakers showed substantial cracks[65] that most likely had originated during either drying or firing (see Fig. 4.18).[66] In addition, two beakers showed clear signs of having been over-fired, in both cases resulting in a cracked reddish surface and very brittle pottery.[67] Unfortunately – as mentioned above – these observations were not part of a systematic survey and it is thus currently not possible to assess what percentage these cracked beakers represent in relation to all beakers from graves. Although clearly needing a more thorough investigation, these preliminary observations suggest that some of the beakers from graves may not have fulfilled a practical function. In any case not as the containers of liquids. Perhaps these vessels were thus specially made for the funeral. Interestingly, similar cracks were observed on beakers from a collective grave in southern England known as the grave of the Boscombe Bowmen (Barclay 2011, 40), whereas some of the beakers from the Amesbury Archer found near Stonehenge had actually not been thoroughly fired and still partly consisted of un-fired clay (Cleal 2011, 147). For these beakers too it was argued that they had been specially produced for the grave (Cleal 2011, 147). The inability of such vessels – be that the English or Dutch examples – to be used in everyday life apparently did not disqualify them from being used as beakers for the dead. As some of these beakers had been beautifully decorated – which must have taken quite some time, effort and skill – this was perhaps considered more important than their actual functional potential.

A similar argument is presented by Boast (1995) who studied British beakers and found that compared to beakers from settlements, the grave finds were often of a much poorer fabric (lower quality ceramics) but more extensively finished and decorated. From this he concluded that many beakers were not intended to be actually used, but instead were specially produced for inclusion in the grave, with particular attention being paid to the visual appearance of the beakers.[68]

In the previous section it was suggested that the LNA beakers most likely served as drinking vessels. As was the case with the LNA beakers, the bell beakers too are thin-walled, which would not fit well with a function as cooking vessel. The shape of the Veluvian bell beakers, being much wider than high, does make one wonder whether that would have been a convenient shape for a drinking vessel. If the Veluvian bell beakers were intended to contain some sort of beverage they would perhaps have been used in combination with smaller cups that could be used for the actual drinking. If that was case, such drinking cups are generally not included in the graves, or made of perishable materials such as for example cattle-horns. An exception might be the small cup (height ca.7 cm, diameter ca. 6 cm) found in a barrow near Apeldoorn (Veluwe; see Fig. 4.19)[69] alongside sherds of a larger Veluvian Bell Beaker with highly similar

64 Ceramic technologist of the Leiden Laboratory for Ceramic Studies.

65 Some running from rim to bottom and all along the bottom, with many such cracks per beaker.

66 Cracks: AMP0412; AMP0222; AMP0436; AMP0132; AMP0168; AMP0245; AMP0248; AMP0404; AMP0260; Over-fired: AMP0260, AMP0420.

67 One of these also showed cracks that had probably occurred prior to firing.

68 It must be mentioned, however, that the beakers in his study also include those from the first half of the 2nd millennium BCE.

69 AMP0434.

Fig. 4.19 Small cup from a grave near Apeldoorn (Veluwe, AMP0434), height 71 mm (collection: National Museum of Antiquities, Leiden).

decoration. Another similar find is the small beaker (height 8 cm, diameter 9.5 cm) with maritime-style decoration found together with two larger beakers of AOO-type in the central grave of a barrow near Hoenderloo (Veluwe).[70]

4.6.3 Conclusions

Whether or not the actual beakers from graves had been used, the occurrence of beakers in settlements does suggest they had a function in daily life and were not solely intended for use in funerary contexts. Although the residues discussed above indicate that on occasion these would have involved cooking, it is more likely that their primary function was related to drinking. The fact that the LNA beakers are very thin-walled and often very narrow/slender in shape also suggests that they would be more suitable as drinking vessels than as cooking pots (see Fig. 4.17). To some degree this also applies to the Veluvian beakers, although their shape would not be ideally suited for drinking. It therefore was suggested that these vessels may have been used in conjunction with drinking cups.

Especially the consumption of alcohol – in the form of beer – has often been related to beakers (Thurnam 1872; Childe 1957 [1925]; 2009 [1958]; Burgess and Shennan 1976; Sherratt 1987). Since there is no direct evidence for the presence of beer in Dutch beakers, this subject is not explored further here. Instead the possible role of alcohol and the evidence for the consumption of beer/ale in the 3rd millennium BCE in general is addressed below in Section 4.8 below.

4.7 Placement in the grave

4.7.1 Late Neolithic A Placement in the grave

Although the beaker is the most frequently occurring type of grave good in the LNA, due to a general lack of human remains or body silhouettes there is only limited information on where these objects were placed in relation to the body (see Table 4.4).

70 AMP0168.

location	n	%
head	6	4,5%
torso	1	0,8%
pelvis	1	0,8%
knee	3	2,3%
feet	10	7,5%
unknown	112	84,2%
total	133	100,0%

Tab. 4.4 Location of LNA pottery vessels in relation to the body.

location	n	%
head	5	4,1%
back	1	0,8%
knee	1	0,8%
feet	4	3,3%
unknown	112	91,1%
total	123	100,0%

Tab. 4.5 Location of LNB pottery vessels in relation to the body.

Although there seems to be a slight preference to place the beaker near the feet of the deceased (n=10), placement near the head also occurred relative regularly (n=6), but other locations too were observed such as in front of the torso, near the pelvis or near the knees.

4.7.2 Late Neolithic B Placement in the grave

For the LNB too, the location of only few beakers could be recorded in relation to a body silhouette (see Table 4.5). With the exception of one beaker found near the knees of the deceased and one beaker found behind the back of an individual, all beakers associated with body silhouettes were found either near the feet (n=4) or the head (n=5).

In addition to inhumation graves, the LNB also revealed a few cremation burials (of the 143 LNB graves in the research database, 19 concerned cremations) 17 of which were accompanied by beakers. An important difference with later periods in time, is that the beakers found in such graves did not function as funerary urns. Instead the grave goods, including the beaker, were placed – usually close together – next to the pile with cremated remains. For six of these graves it was recorded that the beaker was situated next to the cremated remains, and in one grave the cremated remains had been scattered around the beaker. For the remaining graves no further details about the placement of the grave goods was recorded.

4.7.3 Conclusions

For both the LNA and LNB the numbers of finds that could be related to the position of the body are too few to come to statistically sound conclusions. For both periods, however, the limited data suggest a preference of beakers being places either near the head or feet of the deceased. Similar patterns were observed by Case (2004b, 197) for Britain, although he noticed a difference between north Britain – where beakers were predominantly placed near the head, and south Britain – where the feet were the preferred location, although other locations occurred too.[71]

In contrast with later periods in prehistory the beakers did not serve as containers for cremated remains, but instead were deposited in graves either as objects in their

71 See Bourgeois and Kroon (2017) for an analysis of the location of grave goods in relation to the body throughout north-west Europe.

own right or as containers for particular perishable materials (drink or foodstuffs). The overall quality of the beakers and their often elaborate designs, however, suggest that apart from the significance of their possible contents, the beakers themselves too must have been considered important and meaningful objects.

4.8 Beer and beakers

As was mentioned in Section 4.6.3, Late Neolithic beakers have often been connected with the consumption of alcohol, most prominently in Sherratt's (1987) famous article "Cups that Cheered". Since beer has the uncanny tendency to resist fossilization, his arguments were mostly theoretical in nature. Although still rare and often circumstantial, over the years, several sites across Europe have provided physical evidence to support Sherratt's hypothesis.

Sherratt (1987; 1991) argued that the role of beakers in the grave ritual can be easily understood because the consumption of food, and in particular different types of beverages, play an important role in structuring the passage of time and social events that take place at various locations and times. As he reminds us that, even today, our timetable is structured by drinking-events, with different drinks being consumed at different moments (milk or water at breakfast, coffee at around 11 o'clock, lunch being traditionally consumed with a pint of beer, tea in the afternoon and wine at dinner) (see also Hazan 1987). Interestingly, different cups, beakers or glasses are used for each specific beverage (Sherratt 1987, 90). Apart from playing a role in structuring daily routine, the exchange of drinks also plays an important part in many social or ceremonial occasions. Sherratt mentions several examples including the importance of tea ceremonies in Japan and China, whereas in the Arab world coffee seems to accompany all forms of formal negotiation. Likewise in many Arab and North African countries all formal social occasions are started with the consumption of sweet mint tea, whereas in northern Europe in particular beer is consumed at social gatherings, especially those of a festive nature.[72] Not only is alcohol consumed during such social gatherings – and usually actively promoted by the participants – the opposite – 'drinking alone' – is quite interestingly frowned upon. Inversely, participants can expect the same signs of disapproval when refusing to consume alcohol during social gatherings, and usually need to provide a legitimate reason for their unwillingness to do so (for example being pregnant or having to operate a motor vehicle).

Like the wheel, the plough, milk and wool, Sherratt (1987) argues that alcohol too was probably not commonly consumed until at least the mid-4th or 3rd millennium BCE (see also Sherratt 1991). Many of the fruits (such as grapes) used for the production of alcohol today originally did not contain the high levels of sugars needed for fermentation. Other sugary products such as honey are also quite rare in nature[73], hence the most likely source of sugars used for producing alcohol on a domestic scale,

72 But also see Rehfisch (1987) for an interesting ethnographic account of competitive beer drinking ceremonies in Nigeria.

73 The earliest unambiguous evidence for mead was found in the famous Hallstatt wagon-grave of Hochdorf near Stuttgart, dated to around 500 BCE (Körber-Grohne 1985).

would have come from fermented cereals.[74] As Sherratt (1987, 389) argues, the production of beer or ale from cereals is a complex and rather precise affair. It, therefore, is not likely to have originated directly with the first introduction/adoption of cereals in Europe, but would have been introduced later.[75]

Unfortunately, Sherratt's (1987) alcohol hypothesis is not supported by extensive physical evidence. His only direct evidence for beakers having contained alcohol is the find of several types of pollen in direct association with a beaker from a grave at Ashgrove Farm (Methilhill, Fife, UK) that are taken to reflect the presence of honey, indicative of mead or a honey-flavoured ale (Sherratt 1987). Although this is only one case, in recent years several similar observations have been made at various sites across Europe, that directly support mead or beer/ale being the content of beakers as well as indicate the importance of some of the ingredients used in the production of beer. Likewise, evidence for other contents, especially dairy-based, are largely absent. A study on the presence of lipids in various types of Neolithic pottery from the UK showed that animal lipids (likely the remains of milk or other dairy products) were present on most sherds sampled for the study, beakers being the notable exception however (Copley *et al.* 2005). A similar lack of animal lipids was recorded for the beakers found with the Boscombe Bowmen (southern England), these results could point to a function associated with alcoholic beverages such as beer (as opposed to dairy products or other foodstuffs that would contain lipids) (Šoberl and Evershed 2011, 58). Similar results came from the beakers of the Amesbury Archer (southern England), although in some vessels low lipid levels were detected, these could also result from sealing the pots with milk upon firing them. It was considered unlikely that these beakers had been used for actual cooking (Mukherjee *et al.* 2011, 156).

In 2000 a Danish burial mound was excavated in Refshøjgård (Folby, eastern Jutland). From the central grave a CW beaker was retrieved that contained traces of some sort of residue (Klassen 2008, 52). The residue was subjected to various kinds of microscopic examinations which revealed the presence of starch grains – made visible by using polarized light. Key to making beer is the fermentation of cereals, during which the starch is transformed by enzymes into sugars, which subsequently can be transformed into alcohol (see Dineley 2004 for detailed description of – and recipes for – beer-making). During this transformation process, the morphology of the starch grains changes. According to Klassen (2008, 53) the degradation of the starch grains observed in this residue was in line with the morphological changes occurring in the fermentation process (also see Heiss *et al.* 2020). Although the level of conservation did not allow for all morphological characteristics to be observed, the evidence was in line with what was to be expected in ale or beer.

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74 Although milk can also be used for producing alcoholic beverages, it requires a type of milk with a high sugar content. Especially mare's milk can be used for fermentation. However, no evidence for large-scale horse farming has been found according to Sherratt (1987).

75 However, see critiques on this hypothesis by Vander Linden (2001, 46) who argues that surely fruits/cereals needed for alcohol production would have been available during the Early/Middle Neolithic as well. The oldest central European evidence of malting was found in 4th millennium BCE lakeshore settlements (see Heiss *et al.* 2020).

In a Dutch grave near Twello (edge of the Veluwe)[76] residue was found inside a CW beaker that contained high levels of cereal pollen (Meurkens *et al*. 2015, 41). Although other cereal-based products are not excluded (porridge, bread), the authors interpret these as indicative of a primitive wheat beer. Recent residue studies performed on maritime bell beakers from graves in Spain also revealed evidence of a primitive form of wheat beer (Rojo-Guerra *et al.* 2006).[77] Using a wide range of analytical methods, which included both optical (microscopy) and chemical analyses, the presence of what must have been a primitive beer was attested in four of the ten studied vessels. Several markers were taken to be indicative of beer, most notably, cereal phytoliths and starch granules that showed surface alterations caused by enzymatic attack during fermentation. In addition the presence of yeast could be attested by means of microscopic examination. The chemical and biochemical analyses confirmed the presence of starch and indicated the presence of *Calcius oxalatum*, also known as 'beerstone', being a by-product of the aminoacid chemical reactions during the heating of the malt (Rojo-Guerra *et al.* 2006, 251).[78] In addition, Rojo-Guerra *et al.* (2006, 252-3) list several – both published and unpublished – other Spanish beaker finds that were tested to have probably contained beer/alcoholic beverages.

Dineley (2004) provided a detailed overview of the ale or beer-making process and performed various experiments.[79] Apart from using cereals – as a source of sugars – for the production of alcohol, other ingredients are needed as well. A beer or ale made solely of cereals does not taste particularly nice, and most importantly, cannot be kept for more than just a few days (Dineley 2004, 9). In modern beer, hop (*Humulus lupulus*) is used for flavour and as a preservative. Hops, however, were only cultivated in Europe from about the 9th century AD onwards. Before that time, other herbs were used. According to Dineley (2004, 13), bog myrtle (*Myrica gale*), ground ivy (*Glechmona hederacea*), mugwort (*Artemedia vulgaris*) and in particular meadowsweet (*Filipendula ulmaria*, see Fig. 4.20) were the most popular additives used by medieval brewers and alewives. The latter, meadowsweet (see Fig. 4.19), was the herb Dineley used in her own experiments. The resulting ale was clear, dark, reddish-brown in colour with a distinct flavour of meadowsweet. Not only was the ale very well received by the tasters, according to Dineley (2004, 9), the addition of dried meadowsweet flowers caused the brew to remained fresh enough to drink for several months. The properties of meadowsweet as a preservative is an effect caused by the high concentration of salicylic acid contained within its flowers. Salicylic acid, apart from working as a preservative, also has several medicinal applications and is known to reduce pain and fever and has

76 This grave was published after the collecting of data for this thesis was completed and it was hence not included in the research database.

77 One of these finds came from a beaker found in a BB inhumation grave positioned in an older Neolithic cairn at La Peña de Abuela (Ambrona), the others were from a collection of beakers found in a BB complex addition in another older Neolithic cairn known as La Sima (Miño de Medinaceli) (Rojo-Guerra *et al.* 2006, 224).

78 Rojo-Guerra *et al.* (2006, 251) do note that apart from beer, it cannot be excluded that these results were caused by some form of post-depositional fermentation of a similar cereal base to that of beer.

79 Interestingly the large (proto-)potbeakers found in the Late Neolithic would, according to Dineley's description of the equipment needed for beer-production, be very suitable for both the production and storage of beer. One of the benefits of large, coarse pottery vessels is that the yeast can survive inside the vessel's wall, causing the fermentation process to start automatically when the vessel is re-used to make a new supply of beer (Dineley 2004, 9-10).

Fig. 4.20 Meadowsweet (Filipendula ulmaria) (photography: Jolanta Dabrowska, dreamstime.com).

largely the same properties as aspirin (Ramsay and Miller in prep.; Dineley 2004, 13; Drenth *et al.* 2011, 216).

Although beer itself may not easily survive in the archaeological record, pollen in contrast do. Given the properties of meadowsweet and its usefulness in the brewing process, it should come as no surprise that its pollen are observed again and again in Beaker graves. One of the species of plant found mentioned by Sherratt (1987, 396) in the Ashgrove Farm beaker (see above) was meadowsweet. In addition, meadowsweet pollen have been found frequently inside beakers from grave contexts. Dineley (2004, 18) mentions several examples, including pollen retrieved from a vessel that accompanied a female burial in a stone cist found at North Mains, Strathallen Fife (UK). Here a mixture of cereal residues and meadowsweet pollen were interpreted as the remains of ale. Interestingly, evidence for meadowsweet is not confined to pollen from beakers. In a recently excavated plank-lined Bell Beaker grave from the Netherlands, large amounts of meadowsweet pollen were found and taken to be indicative of a bouquet that was placed in the grave alongside a Bell Beaker, sherds of a second beaker,

several amber ornaments and a flint tool (Drenth *et al.* 2011, 215).[80] More compelling evidence of meadowsweet flowers being placed in a grave comes from Scotland, where actual macro-remains were found in a cist-burial at Forteviot (Brophy and Noble in prep.). As a direct result of this find, an inventory was made of other Scottish cist burials that contained evidence for meadowsweet. For Scotland alone Ramsay and Miller (in prep.) could list eight different graves that contained Meadowsweet pollen. In some of these graves the pollen were retrieved from inside beakers or Food Vessels[81], whereas in others the pollen were sampled from the cist floors.

It could be argued that both the shape of the beakers, the fact that they are extensively decorated and very thin-walled, makes them more suitable for drinking than for cooking. None of these features, however, actually proves that these beakers served as drinking vessels. Sherratt (1987; 1991) provides a compelling, although largely theoretical, hypothesis that beakers were used for the consumption of ale or beer. Although empirical data is still relatively scarce, a growing body of evidence indicates that Late Neolithic beakers were indeed used as such. This includes the above presented residue studies performed on beakers from various sites in Europe, as well as ample evidence for the presence of Meadowsweet, a known additive used for making ale or beer. It is of course possible that regionally beakers had different functions or were occasionally used for different purposes (as for example indicated by carbonized residues on several beakers from West-Frisia, see above). Likewise there may have been a functional dichotomy between beakers found in graves and other contexts such as settlements. However, based on the available evidence, it can be considered likely that the primary function of beakers was indeed related to the consumption of alcoholic beverages, most likely beer or ale.

4.9 Concluding remarks

The inclusion of beakers in graves is a common practice that connects the LNA and LNB. Even though, as will be demonstrated below, the remainder of the grave set in either period is quite distinctly different. Various lines of evidence can be taken to indicate that beakers most likely functioned as drinking vessels used for the consumption of alcoholic beverages (see Section 4.8). The fact that beakers were usually well-made and richly decorated, in particular the later Veluvian bell beakers, suggests that they were made to be seen, indicating that the consumption of these beverages most likely took place in a social context (see also Fokkens 1998, 104). The sharing of (alcoholic) drinks during particular moments in time, or at particular events is a widely documented practice around the world (Sherratt 1987, 90).

It can thus be argued that throughout the 3rd millennium the beaker was used for the consumption of alcohol during social gatherings, but this does not mean that all beakers were the same. Some of the beakers examined during this study show signs of repair, which may indicate repeated usage, whereas others show cracks and damage originating from the production process (either from drying or firing). These latter specimens are not likely to have been used to actually contain liquids. Their inclusion

80 AMP0497, grave 1 from Hattemerbroek (Veluwe).

81 'Food Vessels' are a richly decorated Early Bronze Age beaker-like vessel type from the UK.

in graves indicates that this apparently did not matter in the context of the funerary ritual. In this context the beaker perhaps served more as a symbol of social cohesion and sharing, rather than that they actually represented the preferred drinking cup of the deceased individual.

An important difference between the different types of beakers found in 3rd millennium graves lies in the nature of the style of decoration and shape. Up until ca. 2400 BCE beakers were made and decorated in a highly international style. This may be taken to indicate that the 'drinking ritual' these beakers were used in was extremely widespread. Although the actual meaning attributed to such events may have varied considerably from region to region, or even household to household (see Cohen 1985), the *appearance* of the social occasion, however, would have been widely recognized and appreciated (see Goffman 1959; 1966). In the context of social cohesion this would have been a powerful instrument for establishing and maintaining (long distance) relations.

Interestingly, however, in the later Beaker traditions, the beakers become the medium, not only for displaying an international style, but are increasingly used to display regional styles. In particular the Veluvian bell beakers are richly decorated with a wide range of motifs, resulting in – as far as could be found – all uniquely decorated vessels. Despite the fact that all Veluvian beakers are different, they all conform to some basic rules and guidelines with respect to shape, the ordering of the decorating and the types of motifs applied. As such they encapsulate not only the unique and regional, but also refer to the pan-European Bell Beaker complex itself.

5

The life of Late Neolithic A grave goods

5.1 Introduction

This chapter focuses on the non-ceramic grave goods from LNA graves. The role of the beaker is discussed extensively in the previous chapter. During the LNA, the additional grave goods consist of a very specific and limited set of objects. Apart from beakers, the 150 LNA graves in the research database contained flint blades/daggers, flint and/or stone axes, stone battle axes and flint flakes (see Fig. 5.1 and Table 5.1). Sporadically, other types of objects are also found, such as flint arrowheads, amber ornaments or grindstones, but their occurrence is extremely rare.

Five of the LNA graves must be excluded from most of the comparative calculations due to insufficient information about the original grave set. For these graves it was only recorded that they contained French flint daggers (see Section 5.4).

LNA grave goods	**number of objects**		**occuring in graves**		**objects per grave**
object type	n	%	n	%	average
beaker	133	28%	101	70%	1,3
blade/dagger	84	18%	77	51%	1,1
axe	65	14%	51	35%	1,3
battle axe	34	7%	34	23%	1,0
flake	58	12%	22	15%	2,6
beads	82	17%	5	3%	16,4
grindstone	4	1%	4	3%	1,0
arrowhead	10	2%	3	2%	3,3
metal	1	0%	1	1%	1,0
hammerstone	4	1%	3	2%	1,3
spindlewhirl	1	0%	1	1%	1,0
indet/other	4	1%	2	1%	2,0
total	480	100%			

Tab. 5.1 Overview of the number of LNA grave goods per object category, number of graves containing objects of that category and the average number of objects per grave.

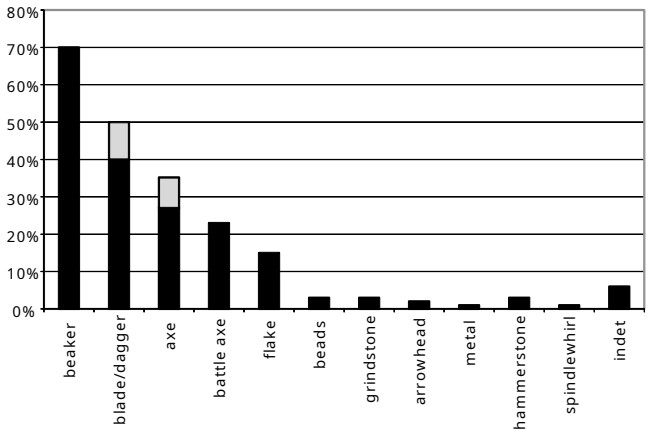


Fig. 5.1 Relative frequency of object types in LNA graves. For the category 'blade/dagger' grey represents the relative proportion of French daggers, black being the northern blades. For the category 'axe', grey represents the relative proportion of stone axes, black being the flint axes.

Information on other possible grave goods is lacking, hence for most calculations I use 145[82] as the total number of LNA graves.[83]

This chapter discusses the life-histories of each of the main categories of grave goods found in the LNA graves. Starting with their place of origin, raw materials used and techniques involved in their production, I proceed with an examination of traces of use and ultimately their placement in the grave. The focus is primarily on the role or function of these objects and their possible meaning or significance. The analysis of grave sets, the graves they were found in and their role in the construction of identities is addressed in Chapters 7 through 11.

5.2 Flint blades and daggers: Introduction

Apart from pottery, the most frequently occurring type of grave good in the LNA is the flint blade/dagger (see Fig. 5.1). In most cases this concerns an unretouched flint blade, but some of the later LNA graves contain retouched and on occasion ground specimens that are generally referred to as daggers. This section considers these objects which traditionally are placed in three distinct categories: the northern flint blade, the Grand-Pressigny dagger and the so-called pseudo-Grand-Pressigny dagger (see Fig. 5.2). Combined, these objects occur in 77 (51.3%) of the LNA graves in the research database. Although these objects are discussed in more detail below it is important to start by giving a short definition of all three types of objects.

The northern flint blades are relatively regular and long flint blades (on average ca. 10 cm long, largest being about 15 cm long, see Fig. 5.4) that were imported from northern Germany or southern Scandinavia and were included in graves and depositions throughout the LNA (Van Gijn 2010, 142). The Grand-Pressigny examples are skilfully crafted flint 'daggers' on average measuring ca. 20 centimetres in length (largest is ca. 25 cm in length, see Fig. 5.7) and originate from central France (ca. 50 km

82 Only for statistics dealing specifically with flint blades/daggers is the total of 150 graves used.

83 It must also be noted that one of these graves is recorded as a double burial. Although it is one grave pit, it contained two burials, and two separate grave sets, therefore these burials are listed here as two graves (AMP0039, mound 6 near Swalmen, Limburg).

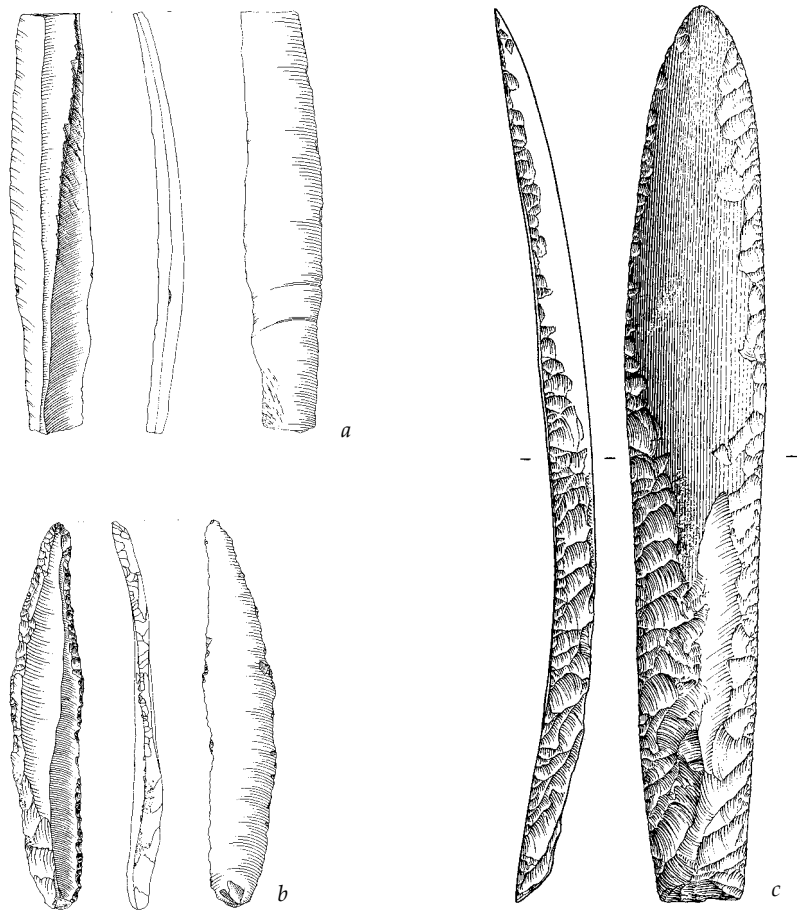


Fig. 5.2 Illustration of flint blades/daggers from LNA graves, scale 1:2: (a) northern blade from mound 1 near Vaassen (Veluwe, AMP0131, drawing: R. Timmermans); (b) so-called 'pseudo-GP-dagger' from mound D4 near Niersen (Veluwe, AMP0406, drawing: R. Timmermans); (c) French dagger from mound 3 Eext-Galgwandenveen (Drenthe, AMP0321, drawing: GIA).

south of Tours) (Plisson *et al.* 2002; Airvaux and Primault 2002). Apart from extensive and often highly regular surface retouch on the dorsal side, they were sometimes also ground on this side. In addition to the daggers made of Grand-Pressigny flint, highly similar objects also occur that were made of Romigny-Lhéry flint originating from northern France (ca. 100 km north-east of Paris, near Reims). As both types of objects occur in LNA graves, and it is often difficult to distinguish between the two (especially when objects were not available for study), I suggest – following Van Gijn (2010, 145) – that these items should be referred to simply as 'French daggers'.

Lastly there is the somewhat problematic category of the 'pseudo-Grand-Pressigny daggers' defined by Drenth (1990, 100) – following Struve (1955) – as blades made of non-French flint that to some degree show similarities with the French daggers, mainly due to bilateral dorsal retouch and/or dorsal grinding. The problem

with this 'category' is that it is in fact not a category[84] but rather an interpretation. The name itself implies that it reflects a conscious act on behalf of prehistoric agents to imitate the French daggers.[85] The question, however, is whether this is indeed the case, and if so, to what degree. The most important thing to note about these 'pseudo-Grand-Pressigny daggers' is that they are in fact northern flint blades imported from northern Germany or southern Scandinavia. As such, they should be seen in a long tradition of exchanging objects in general and blades in particular with this part of the world. Although it cannot be excluded that, influenced by the skilfully retouched French daggers, some of the northern flint blades were subjected to secondary retouching (and some also to dorsal grinding), this does not automatically imply that they were mere imitations. For this reason, 'pseudo-Grand-Pressigny dagger' is not used as an object category in this thesis. Here only a distinction is made between flint blades imported from northern Germany/southern Scandinavia, and flint daggers imported from central and northern France.

5.3 Northern flint blades

Compared to the meticulously decorated beakers and impressive battle axes, the often unretouched flint blades are usually not considered the most impressive of LNA grave goods (see Fig. 5.3). Nonetheless they are the most frequently occurring type of object in Dutch LNA graves apart from the beaker. In total 65 northern flint blades were retrieved from 58 graves, meaning that 40% of the LNA graves contained northern flint blades.

5.3.1 Production and origins from afar

Although they may be a regular element in Dutch LNA graves, these blades were not locally produced. In fact, they are one of the few object types of the LNA burial package of which it is relatively certain that they were imported from faraway places. The long and regular flint blades made of northern flint were most probably produced in northern Germany or southern Scandinavia.[86] They were produced with soft-hammer percussion and are 6 to 16 centimetres in length, with an average of about 10 centimetres (see Fig. 5.4). Although northern flint can be found in the glacial sediments in the northern part of the Netherlands, it does not contain flint nodules of the quality needed for the production of these blades. Also no debitage related to the production of these blades has been found in the Netherlands, indicating that they were imported as finished objects (Van Gijn 2010, 142). Furthermore, the fact that these blades were imported as finished tools is substantiated by the find of a LNA hoard found near the peat trackway of Nieuw-Dordrecht (Drenthe, see

84 See also the wider discussion in Chapter 8 about categorization.

85 Interestingly, Lanting and Van der Waals (1976, 67) provide a more nuanced description of the retouched flint blades by merely saying that 'their makers may have been inspired' by the real French daggers, this in contrast to Drenth (1990) who sees them as direct imitations and attributes the 'pseudo-Grand-Pressigny' daggers to people of lesser social status.

86 One exception may be a blade found in a grave from Twello (Meurkens *et al.* 2015) that is said to have been of Belgian flint. The authors suggest we may see this southern import in the same light as the first French daggers appearing in LNA contexts, which corresponds with its date of 2631-2554 cal BCE. This grave was published after the collection of data for this thesis was completed and it was hence not included in the research database.

Fig. 5.3 Northern flint blade from barrow near Renkum (Veluwe, AMP0424), scale 1:1 (collection National Museum of Antiquities, Leiden; photography: Q. Bourgeois).

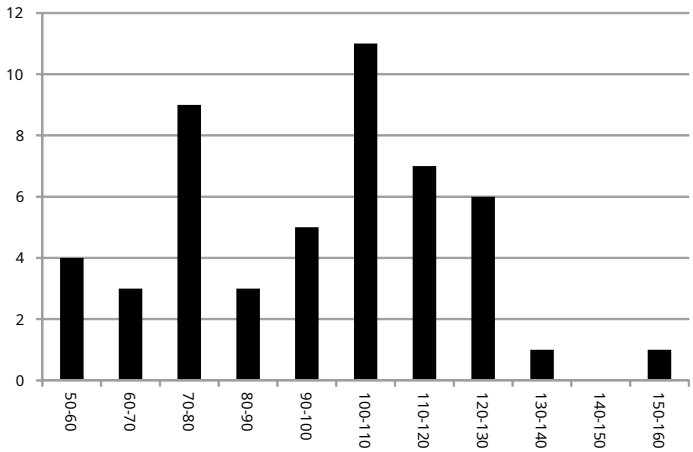


Fig. 5.4 Length distribution of northern flint blades from LNA graves. Based on 50 complete blades from graves from the research database for which the length could be recorded. Average length is 98 mm.

Fig. 5.5). Here at least eleven flint blades and a large unpolished thick-butted axe of Lindø type were found deposited at the edge of the peat (Harsema 1981; Ter Wal 1996). Both the axe and at least one of the flint blades were made of the same type of northern flint[87], moreover, at least some of the flint blades could be refitted indicating that they came from the same blade-core. Neither axe nor blades showed

87 Determination in collaboration with Jaap Beuker 2019 (Drents Museum ret.).

Fig. 5.5 Hoard of Nieuw-Dordrecht, length axe 242 mm, scale ca. 1:2 (collection National Museum of Antiquities, Leiden; photography: Q. Bourgeois).

any traces of actual usage, only some generic spots of polish probably related to packaging and transport (Van Gijn 2010, 142; pers. observ. of the author).

Although the production of these types of blades is not a feat of great technical skill, their production does require a fair degree of craftsmanship. Good quality flint nodules have to be selected and carefully prepared before blade production can begin. Platforms have to be prepared and maintained throughout the production process during which a variety of percussion implements is used, including both stone and antler hammers. As such, these blades do contrast with the level of flintworking generally observed in LNA domestic contexts. Here a preference can be seen for local raw materials, often of low quality, used for the production of flakes in a rather opportunistic manner (Van Gijn 2010, 139). The level of skill involved in domestic flintworking in this part in time can thus be considered low – a development that already started in the Funnel Beaker culture. In this context the imported flint blades do stand out, both in the quality of the flint used as well as the technical skill required for their production.

5.3.2 A life of circulation

Out of the 65 blades from graves 23 were subjected to functional analysis (see Table 5.2; Van Gijn 2010, 142; pers. observ. of the author). Most of these appeared to be in mint condition showing no signs of wear (n=12). Only four blades displayed minor traces of wear, which could not be connected to clearly defined tasks. The traces observed were usually not well-developed and most of these objects also displayed extensive traces of post-depositional surface modifications (PDSM). The latter caused three additional blades to be not interpretable.

Two blades showed traces of wear that could be related to possible crafting activities. One blade displayed traces with a longitudinal directionality that showed similarities with both hide and plant working.[88] As these traces were not heavily developed it remains uncertain whether they are the result of actually working these materials or if this polish is the result of a bark sheath of some sort, as is generally observed on the French and later Scandinavian daggers (Van Gijn 2010; see Section 6.6.3). A second blade displayed possible traces of working plant/wood in a longitudinal direction, perhaps cutting or sawing.[89] However, since this object also showed extensive traces of PDSM this interpretation should not be considered to be very reliable.

The two remaining blades showed possible traces of hafting. One of these also displayed a hide-like polish over most of its surface. This was possibly the result of having been kept in a leather sheath. Clear traces of use were however lacking.

In general, the northern blades do not show traces of usage and most are in virtually mint condition. Although some show minor generic traces of wear, these could not be attributed to clear activities. Since these objects were imported from sources hundreds of kilometres away, it is to be expected that they show at least some traces of wear resulting from handling, transport and perhaps the packing or wrapping in protective materials. Although not all activities result in clear traces of wear, the general absence of wear traces on these northern flint blades suggests that these objects did not have a practical purpose related to specific crafting or subsistence activities.

Two blades did show traces of red ochre. However, these came from the same grave where they were found in a patch of ochre.[90] There is thus no evidence that ochre was applied directly to the blades themselves.

In addition to the LNA blades from graves, several northern blades from LNA hoards were subjected to functional analysis. This included one blade from the hoard of Holsloot (Drenthe), seven from the hoard of Nieuw-Dordrecht (Drenthe) and three from a hoard near Gammelke (Overijssel) (see Van Gijn 2010, 235; pers. observ. of the author). Like the blades from graves, these blades too did not show signs of use. Although occasionally spots of polish were observed, these could very well have resulted from packaging and transport. Especially the Nieuw-Dordrecht blades (see Fig. 5.5) are very interesting as they could be partially refitted, showing that they came from the same blade-core and travelled as a set, together with a large unpolished flint axe.

Although these LNA blades were imported as finished products, as was argued above, it is of course difficult to determine how, and in what context, these objects

88 AMP0353, from Tumulus I near Borger (Drenthe).
89 AMP0429, from a barrow near Ede (Ginkelse Heide, Veluwe).
90 AMP0535, Borger mound VI (Drenthe).

contextcode	site	object	retouched	traces of wear	traces of use	remarks
AMP0133	Vaassen mound 3	blade	+	-	-	
AMP0219	Ede-Hotel Bosbeek mound 1	blade	-	-	-	
AMP0315	Eext-Huttenheuvel	blade	-	-	-	
AMP0325	Eext-Eexterhalte mound 1	blade	+	-	-	
AMP0361	Hijken-Hijkerveld	blade	-	-	-	
AMP0401	Angelsloo	blade	-	-	-	
AMP0422	Renkum-Quadenoord	blade	-	-	-	
AMP0443	Garderen-Gardense Veld	blade	-	-	-	
AMP0518	Ermelo-Groevenbeekse Heide	blade	-	-	-	
AMP0546	Arnhem-Schaarsbergen	blade	-	-	-	
AMP0558	Roden-Lieveren	blade	-	-	-	
AMP0535	Borger-Molenplaatsweg mound VI	blade	-	-	-	ochre (found in stain of ochre)
AMP0535	Borger-Molenplaatsweg mound VI	blade	-	?	?	PDSM possibly some Hi (unclear), ochre
AMP0325	Eext-Eexterhalte mound 1	blade	-	+	?	PDSM possibly light traces of SiPl
AMP0406	Niersen mound D4	blade	+	+	?	PDSM possibly light wear traces, unclear
AMP0424	Renkum-Quadenoord	blade	-	+	-	some spots of polish (packaging/ transport?)
AMP0179	Ermelo-Ermelose Heide mound III	blade	-	?	?	PDSM
AMP0501	Hattemerbroek grave 3	blade	+	?	?	PDSM
AMP0558	Roden-Lieveren	blade	-	?	?	PDSM
AMP0353	Borger-Drouwenerstraat Tum I	blade	-	+	+	Hi/SiPl + Hi
AMP0429	Ede-Ginkelse Heide	blade	+	+	?	PDSM possibly Wo/Pl but very unclear
AMP0403	Ede-Slijpkruik	blade	+	+	?	Hi all over (sheath?) possibly from hafting
AMP0402	Angelsloo	blade	-	+	?	broken part, frinction gloss from hafting

Tab. 5.2 Overview of the LNA flint blades from graves subjected to functional analysis: (+) present; (-) absent; (?) unsure/not interpretable; PDSM (Post-depositional surface modifications).

reached the Netherlands. There, however, are a few avenues that can be explored. The evidence indicates that these objects reached the Netherlands in finished form and as traces of use are generally lacking, this implies they were brought here in unused form. The fact that apart from pottery, these blades are the most frequently occurring type of grave good in the LNA (not to mention their presence in several LNA wet context hoards) indicates that these objects had a well-established role within the LNA grave ritual. The presence of the same types of blades in CW burials in Denmark (see Hübner 2005, 409) indicates that this role was not limited to the Netherlands, but part of a burial practice that was shared with neighbouring communities and, most importantly, with those from which these blades originated.[91]

The occurrence of these exotic objects in the Netherlands were thus not unique events but part of a well-established exchange network in which objects circulated that played a prominent role in the burial practices of communities over a vast part of north-west Europe.

5.3.3 Placement in the grave

Although there is evidence of blades being deposited in natural places as part of multiple object hoards (most notably the above-mentioned hoard of Nieuw-Dordrecht), the majority of LNA blades have been found in graves. Most blades for which the location in relation to the body was recorded were deposited with the upper part of the body (see Table 5.3). Only one blade was found between the knee and the pelvis. While beakers were regularly found near the feet (see Chapter 4), no flint blades were found at this location.

From the placement of these blades, especially those near the head or behind the back of the body, it can be inferred that these objects were put in the grave after the body had been placed in the grave. This means that these objects were thus not physically attached to the body as a type of dress (as for example a dagger in a shaft attached to the belt of an individual). This is particularly evident at a barrow at Eexterhalte (Drenthe) where a blade was found pressed upright in the ground against the top of the skull (Harsema 1977, 252).[92] Although further details are lacking from

location	n	%
head	4	6,3%
back	3	4,7%
pelvis	3	4,7%
knee-pelvis	1	1,6%
torso	1	1,6%
unknown	53	82,8%
total	65	100,0%

Tab. 5.3 Location of northern flint blades in relation to the body.

91 It is interesting to note that the same types of objects occur in Danish CW graves, but the relative frequencies in which they occur is quite different. From Hübner (2005) it follows for example that in Denmark the battle axe is the most frequently occurring object in CW graves (44%) while axes, beakers and blades occur much less frequently (all around 20%).

92 AMP0336.

the publication, it is clear that this object was placed in the grave when the body was already present there.

For the large majority of the graves either no traces of a body were present, or the location of the finds in relation to the body went unrecorded. Although there thus seems a preference for the deposition of blades with the upper part of the body the sample size is insufficient to come to definite conclusions.

5.4 French daggers

An inventory of all French daggers found in the Netherlands revealed 42 specimens (complete or broken).[93] Of these, 14 came from barrows in the research database (see Fig. 5.6 for a selection of French daggers). For five additional specimens the museum documentation did suggest that they were found in barrows or graves, however detailed context information was lacking. As mentioned above, these sites cannot be used for comparative statistics with other grave goods. However, they were included in the sections dealing with French daggers, setting the total number of LNA graves to 150. This means that 19 out of 150 LNA graves contained a French dagger (12.7%).

The remaining 23 specimens all concern stray finds which may originally have been part of burial assemblages. It is important to note that apart from graves or stray finds (which may have been graves), no other find contexts for complete French daggers are known to the author, although Van Gijn (2010, 145) does report the occurrence of (reworked) dagger fragments in various LNA settlement contexts.

5.4.1 Origins from afar

As was mentioned in Chapter 3, towards the end of the LNA some changes can be observed with respect to the exchange networks that existed in the mid-3rd millennium BCE. Up until now the only exotic objects found in CW contexts – that survived in the archaeological record – indicated the existence of exchange lines with north-west Germany and southern Scandinavia. This is evidenced by both the occurrence of the imported flint blades and axes as well as the distribution of pottery types and burial practices in general. However, starting around 2600 BCE a regular occurrence of objects and object styles can be observed in CW contexts that indicate contact lines to the south, reaching at least to central France. The objects indicative of these contacts are the AOO beaker, a type of beaker that has a much more southerly distribution than the CW beakers (including Atlantic Europe; see Chapters 3 and 4), and the skilfully crafted French daggers of either Romigny-Lhéry or Grand-Pressigny flint.

The co-occurrence of French daggers with AOO beakers, as well as late CW beakers indicates that their first occurrence should be dated to the end of the LNA, around 2600 BCE. The fact that no French daggers are found associated with later bell beakers suggest that their distribution had stopped before ca. 2450 BCE. The occurrence of these objects therefore most likely should be dated ca. 2600-2450 BCE, making them contemporaneous with the AOO beakers. It must be noted, however, that flint daggers

93 Compiled by the author for Van Gijn's 2010 book *Flint in Focus*. Inventory was made on the basis of Archis (Dutch National Archaeological Database), museum collection/records and a literature survey of several Dutch archaeological publication series.

Fig. 5.6 French daggers, scale ± 1:3: (left) mound 4 near Garderen (Veluwe, AMP0257); (centre) mound 2 near Emst (Veluwe, AMP0163); (right) mound 3 near Emmen (Drenthe, AMP0379) (collection: National Museum of Antiquities, Leiden; photography: Q. Bourgeois).

in general are notably absent in Bell Beaker graves. It therefore is possible that French daggers continued to circulate in the BB period as well, perhaps resulting in some of the 'stray' finds. The later Scandinavian flint daggers (see Section 6.6.3), for example, definitely date to the BB period, but are also absent from BB graves.

The introduction of the French daggers in the Netherlands does not seem to be related with the 'invention' or first production of these objects as the production of the long blades of Grand-Pressigny flint started already around 3000 BCE and lasted until ca. 2100 BCE (Linton 2012, 47; Pétrequin and Pétrequin 1988). The time span during which these objects reached the Netherlands was thus much more limited than their actual production/availability in the region of origin. This illustrates that the occurrence of French daggers in the Netherlands is not linked to their sudden availability, but was rather the result of changes in the exchange networks in the mid-3rd millennium BCE.[94]

5.4.2 Production

The production of Grand-Pressigny daggers required – apart obviously from high quality raw materials – exceptional skills. The blanks of these daggers are long flint blades that were removed from specially prepared cores known as *livres de beurre* (Airvaux and Primault 2002). The average length of the specimens found in the Netherlands is

94 In southern France too, pre-existing cultural boundaries appear to fade with the advent of AOO/BB (Vander Linden 2006b, 326).

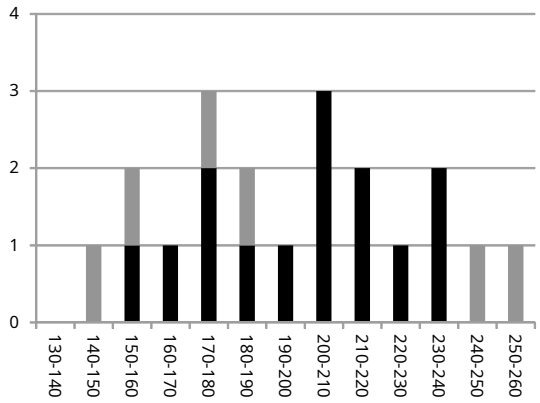


Fig. 5.7 Length distribution of French daggers. Apart from 16 complete daggers from graves from the research database (in black) also the length of four additional French daggers are included (in grey), these concern either surface finds or finds from suspected graves for which no detailed records were available. Average length is 199 mm.

about 20 centimetres, with the longest measuring about 25 centimetres (see Fig. 5.7), but even longer specimens occur in France. Such blades cannot be simply removed by either direct hard or soft hammer percussion. Instead, experiments have shown that the most likely technique used was indirect percussion (Pelegrin 2006; Pelegrin and Millet-Richard 2000). After removal from the cores, these blades were often partially ground and retouched on the dorsal sides (see Table 5.4). The ventral side was usually left untouched with the exception of the bulb of percussion which was often removed by surface retouch.

The removal of the bulbs of percussion, which hardly seems to have had a practical purpose, is quite interesting. The ventral side of a flint flake or blade usually provides most technological clues indication how a flint object was made. Specifically, the character of the bulb of percussion in combination with the percussion waves. It is for this reason that archaeologists studying lithics generally investigate these attributes. It can, however, be expected that these aspects would also be informative to our Neolithic agents who were used to work (with) flint. For the Funnel Beaker culture ceremonial axes I have even suggested that specific technological markers were explicitly kept intact and were used to communicate the skills required in the production of these objects (Wentink 2006a; 2008). In the case of the French daggers however, exactly these elements were removed or obscured. The techniques used caused hardly any waves of percussion to develop and the bulb of percussion was carefully removed, while leaving the remainder of the ventral surface untouched (Van Gijn 2010, 145; pers. observ. of the author).

Based on these observations it seems that the people producing these daggers tried to obscure the elements that conveyed technological information rather than make them especially apparent. As both Helms (1988) and Godelier (1999) have argued, in many societies objects are produced and circulate that are believed to have special powers, that are sacred. Such objects are often produced using technological and cosmological knowledge that was passed on from generation to generation and is attributed to specific ancestors or spirits whose powers subsequently reside in the object (see Wentink 2006a, 75-85). Perhaps the removal of technological markers, such as the bulb of percussion, could be seen in this context, as Van Gijn (2010, 145) suggests, in an attempt to further obscure the origins of the object in question. On the other hand, it could be imagined that these objects were produced in the context of a restricted

group of craftspersons, perhaps not unlike a secret society in which technological information was passed through the generations and was kept from those not part of it.[95] Thus, using secrecy as a means of guarding the legitimacy of both the significance of the daggers produced and the social status the makers generated in the process.

5.4.3 Use life, and the origin of wear traces

Like the northern blades, the use life of the French daggers must have involved transport and exchange. Especially the dagger-blades of Grand-Pressigny flint must have travelled a distance of at least 800 kilometres – as the crow flies – in order to reach the central Netherlands, and even further for the northern Netherlands. Given the specialized techniques required for their production as well as the absence of production waste in the Netherlands – especially the typical cores known as *livres de beurre* – there is no question that these daggers travelled this distance as finished objects. Unlike the northern blades – that generally show no traces of use or even wear in general – the French daggers display characteristic traces indicative of a very specific use.

Out of the 19 daggers or dagger fragments from graves, nine could be subjected to functional analysis (see Table 5.4; Van Gijn 2010, 145; pers. observ. of the author). In addition, the use wear results of four French daggers with uncertain find contexts were also available and hence included in this thesis (Van Gijn 2010). Museum records indicate that one of these almost certainly came from a grave, however, due to a lack of context information this site was not included as a grave in the main dataset. The three remaining objects concern stray finds. Based on their find locations, however, it can be considered likely that they came from disturbed graves as well (see Table 5.4).

All 13 objects subjected to functional analysis displayed highly similar wear traces (see Fig. 5.8). First of all, the presence of a combination of generic polish, friction gloss and in some occasions residue of presumably birch bark tar indicated that the proximal part over a length of 5-10 centimetres had been hafted, probably in a haft made out of a combination of wood and vegetal materials. Similar hafting arrangements can be seen on daggers from well-preserved lake-side settlements in both France and Switzerland (Bocquet 1984; Plisson and Beugnier 2007). The remainder of the daggers' blades show extensive and well-developed traces that look like a combination of the traces resulting from working siliceous plants and hides. A contact material likely for causing such traces might be bark (Van Gijn pers. comm. 2012). Van Gijn (2010, 147) interprets these traces as the result of the dagger having been repeatedly pulled in and out of a sheath. If the daggers would have been employed as tools for working these materials, for example cutting hide or grasses, the traces of wear would mostly develop on and near the cutting edge. In the case of the daggers, however, it is striking that the distribution of the wear does not conform to what can be expected from usage as a tool. Instead of being confined to the cutting edge, the wear traces are located on all protruding edges, including the dorsal ridges (when present) and is often also present on the flat surfaces such as the ventral side of the blades (indicating the contact material fully surrounded the blade). Another argument that is presented by Van Gijn is that the direction that can be observed in the polish – in the form of striations – does not

95 This can be supported by the fact that in the region of origin dagger production appears to have taken place at special activity sites not connected with domestic activities (Linton 2012, 201).

contextcode	site	object	dorsal grinding	traces of wear	hafting	sheath
AMP0101	Doorwerth-Kievitsdel	RL-dagger	+	+	+	+
AMP0163	Emst-Hanendorp mound 2	GP-dagger	+	+	+	+
AMP0257	Garderen-Solsche Berg mound 4	GP-dagger	-	+	+	+
AMP0319	Eext-Visplaats Tum I	GP-dagger	-	+	+	+
AMP0321	Eext-Galgwandenveen 3	GP-dagger	+	+	+	+
AMP0322	Eext-Schaapsdijkweb B	GP-dagger	+	+	+	+
AVG0011	Buinen	RL-dagger	+	+	+	+
AMP0379	Emmen-Emmerdennen mound 3	GP-dagger	+	+	+	+
AMP0393	Vaassen-Hertekamp mound 1	GP-dagger	-	+	+	n/a*
possibly from a grave:						
AMP0537	Garderen	GP-dagger	-	+	+	+
stray finds:						
AVG0023	Zuidlaren-Annertol	RL-dagger	+	+	+	+
AVG0001	Westerbork	RL-dagger	+	+	+	+
AVG0102	Anloo	RL-dagger	+	+	+	+

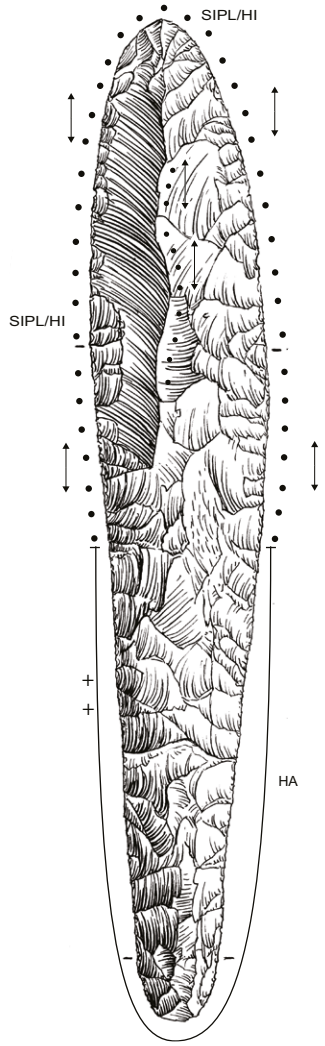
*Tab. 5.4 Overview of the French daggers from graves subjected to functional analysis: (+) present; (-) absent; (?) unsure/not interpretable. *Only proximal part.*

follow the dagger's edge, as would be the case when employed as a tool, but is instead strictly parallel to the longitudinal axis of the blade, making the pulling in and out of a sheath the most likely explanation.

Especially the traces of sheaths are generally very well developed, indicating that this activity must have been repeated countless times throughout a dagger's use life. However, other clear traces of wear, not related to the sheath, are lacking. Although it might be possible that the daggers were occasionally used for activities that did not cause extensive traces to develop, the absence of traces – other than from the sheath – suggests that these objects did not serve a utilitarian purpose. Van Gijn (2010, 147) therefore proposes that these daggers were not actually used as tools but rather served as items of display and exchange.

It is of interest to note that the French daggers revealed quite different traces of use in their region of origin. Grand-Pressigny daggers found in central France were subjected to functional analysis and revealed to have been used for harvesting cereals (Beugnier and Plisson 2000; Linton 2012; Plisson *et al.* 2002; Vaughan and Bocquet 1987). Although this may have been their primary function as envisaged by their mak-

Fig. 5.8 (opposite page) Schematic representation of use wear traces found on French daggers with below each a microscope photograph of the wear traces: (left) mound 4 Garderen (Veluwe, AMP0257); (right) mound 3 Eext-Galgwandenveen (Drenthe, AMP0321) (drawings: GIA, scale 1:3).


SIPL/HI
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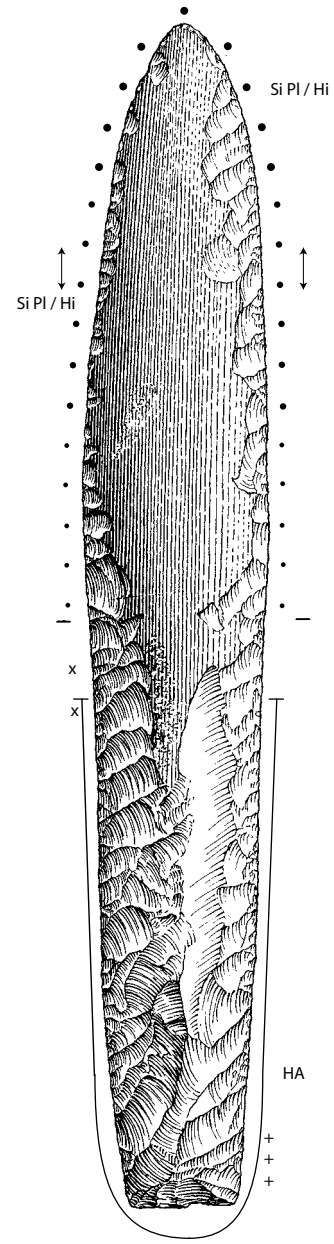
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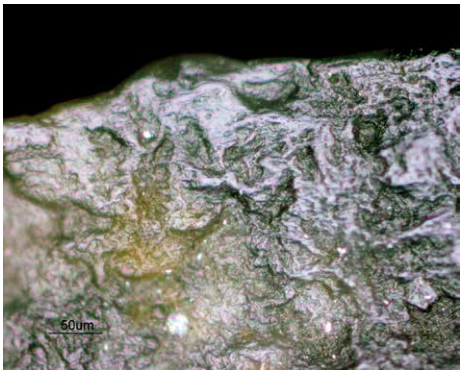
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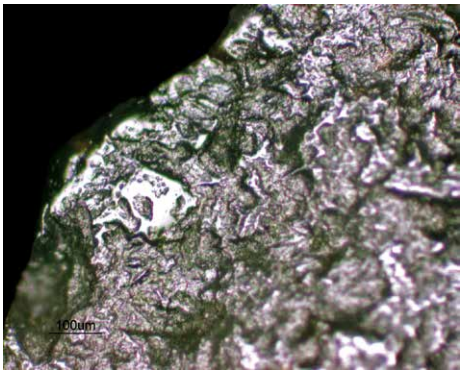
100um

location	n	%
head	1	7,1%
pelvis	1	7,1%
torso	1	7,1%
unknown	16	114,3%
total	19	100,0%

Tab. 5.5 Location of French daggers in relation to the body.

ers, apparently in the Netherlands these objects were re-interpreted and functioned in a different manner. Both Van der Beek (2004) and Van Gijn (2010) mention that although the term 'dagger' suggests that these objects were weapons there is no actual evidence to support such an interpretation.

5.4.4 Placement in the grave

There are unfortunately only three sites for which information about the placement of a French dagger in relation to the body is available (see Table 5.5). One of the daggers was placed near the pelvis, one was found higher up associated with the torso and the third had been placed near the head of the deceased. This latter example indicates this object was placed in the grave after the body had been placed there. Although the information is scarce, it does conform to the observations presented above with respect to the placement of the northern flint blades. These too were found on various locations around the upper-body.

For the majority of the graves no traces of the body were present, or the location of the finds in relation to the body went unrecorded. Although the placement of the French daggers thus seems to be in line with the placement of northern flint blades, the sample size is too small to come to definite conclusions.

5.4.5 Blades from afar

Lanting and Van der Waals (1976, 67) already suggested that the northern flint blades and French daggers were somehow linked because the French dagger seems to take in the place of the northern blade. Van der Beek (2004, 165) made a similar argument suggesting that French daggers and the northern blades may have had a similar function and/or meaning as they "exclude one another as grave gifts". Although the composition of the grave set is discussed in more detail in Chapter 8, this study too showed that in the later LNA the French dagger seems to take in the place of the northern blade. Of all the LNA objects that can be found in graves the French dagger and the northern blade are the only types of objects that are mutually exclusive.

The French daggers are therefore not merely an addition to the LNA grave set. When present, they seem to replace the northern blades. Both the northern blades and the French daggers have been found deposited with the upper half of the body and both occur as single items in graves. They both occur in combination with any other type of grave good, but not with each other. There is thus no reason to suspect that the French daggers were treated any different than the northern blades that had already been part of the burial package for centuries.

Although the French daggers are clear evidence of changes in the mid-3rd millennium exchange networks, their inclusion in graves does not signal radical changes in

the funerary ritual. Although these objects may be 'new', they were treated conform pre-existing notions of how to deal with 'exotic blades'. An interesting parallel might be the encounter between Michael Leahy's 1930s expedition and the Hagen people of the New Guinea Highlands. Objects of 'exchange' involved empty sardine cans, empty cornflake boxes and porcelain saucers which the Hagen people incorporated in 'traditional' headdresses (Verhart and Wansleeben 1997; Connolly and Anderson 1988, 128). Normally these headdresses featured large shells obtained via long-distance exchange, but now these new items were incorporated. Although these objects were new and never seen before, they were treated as other objects obtained in traditional *moka*-exchange. In this way, despite being 'new', objects can nonetheless be treated in a standardized traditional manner.

Of course people knew very well that these French daggers must have come from a different place, they looked different and were produced differently. However, this did not result in them being *treated* as a new category of object. This perhaps indicates that despite the fact that these objects may have been valued for reasons unique to these French daggers, in the end they were foremost valued for the characteristics they shared with the northern blades: they are both long flint blades acquired through long-distance exchange networks.

5.5 Axes

Among archaeologists the polished stone or flint axe has always been seen as one of the primary symbols of transforming a natural environment into a cultural landscape, of clearing forests, laying out agricultural fields and constructing houses (see Bradley 1990, 48). That these objects (see Fig. 5.9) played an important role in the life of our prehistoric agents as well is evidenced by the role axes play in selective depositions in waterlogged places and graves, as well as the fact that people went to great lengths to make or acquire axes. Raw materials used for axe production, for example, were extracted from special sites at tops of mountains such as at Great Langdale in Britain (Bradley and Edmonds 1993) or by means of mine-shafts to reach deep underground flint deposits at various sites in Europe, including the southern Netherlands (see Felder *et al.* 1998, or Russell 2001 for the UK). The products of these remarkable efforts often circulated over vast distances and were among other things subjected to selective deposition, as evidenced by probably thousands of axe hoards found throughout Europe. The special role of axes was not limited to the Neolithic alone, as for example can be seen in the fact that all over Bronze Age Europe thousands of copper, bronze and even solid gold axes were still subjected to selective deposition in waterlogged places and graves (see Fontijn 2002; 2019).

In this section I chose to combine the axes made from both stone and flint. Although both raw materials have different – albeit comparable – qualities and the production process is different in parts, the overall traces of wear as well as the manner of deposition in the grave do not suggest that these items were treated as distinctly different types of objects. This, of course, does not mean that people in the past did not differentiate flint from stone axes, which could well have been the case. The shaft-hole axes, also known as battle axes or hammer axes, in contrast show traces of quite a different usage. In addition, their rather different physical characteristics

Fig. 5.9 LNA axe from a barrow near Renkum, length 109 mm, scale ca. 1:1 (Veluwe, AMP0424), (collection National Museum of Antiquities, Leiden; photography: Q. Bourgeois).

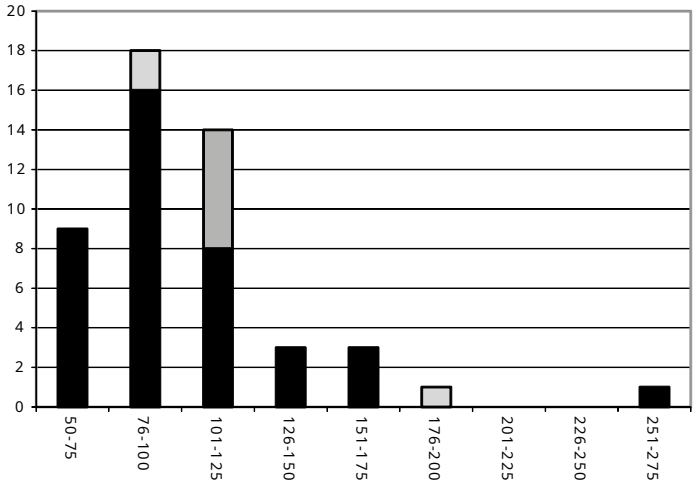

Fig. 5.10 Length distribution of axes from LNA graves. Based on 49 complete stone (grey) and flint (black) axes from graves from the research database for which the length could be recorded. Average length is 103 mm.

make that their overall biographies are very different altogether and as a result necessitates them being discussed separately.

The graves in the research database yielded a total of 65 axes (15 stone and 50 flint axes) from a total of 51 LNA graves. Being present in 35.2% of the 145 LNA graves in the research database, the flint/stone axe thus constitutes one of the main object-categories of the LNA grave set.

5.5.1 Local production and objects from afar

Some of the axes found in graves must have been imported as finished objects from northern Germany or southern Scandinavia, the vast majority of finds, however, were most likely locally produced. Both flint and various types of stone occur as raw materials in the natural subsoil of most parts of the northern half of the Netherlands as well as in adjacent regions in Germany. Although especially the flint occurring in these predominantly glacial deposits is of low quality, it would have been suitable for the

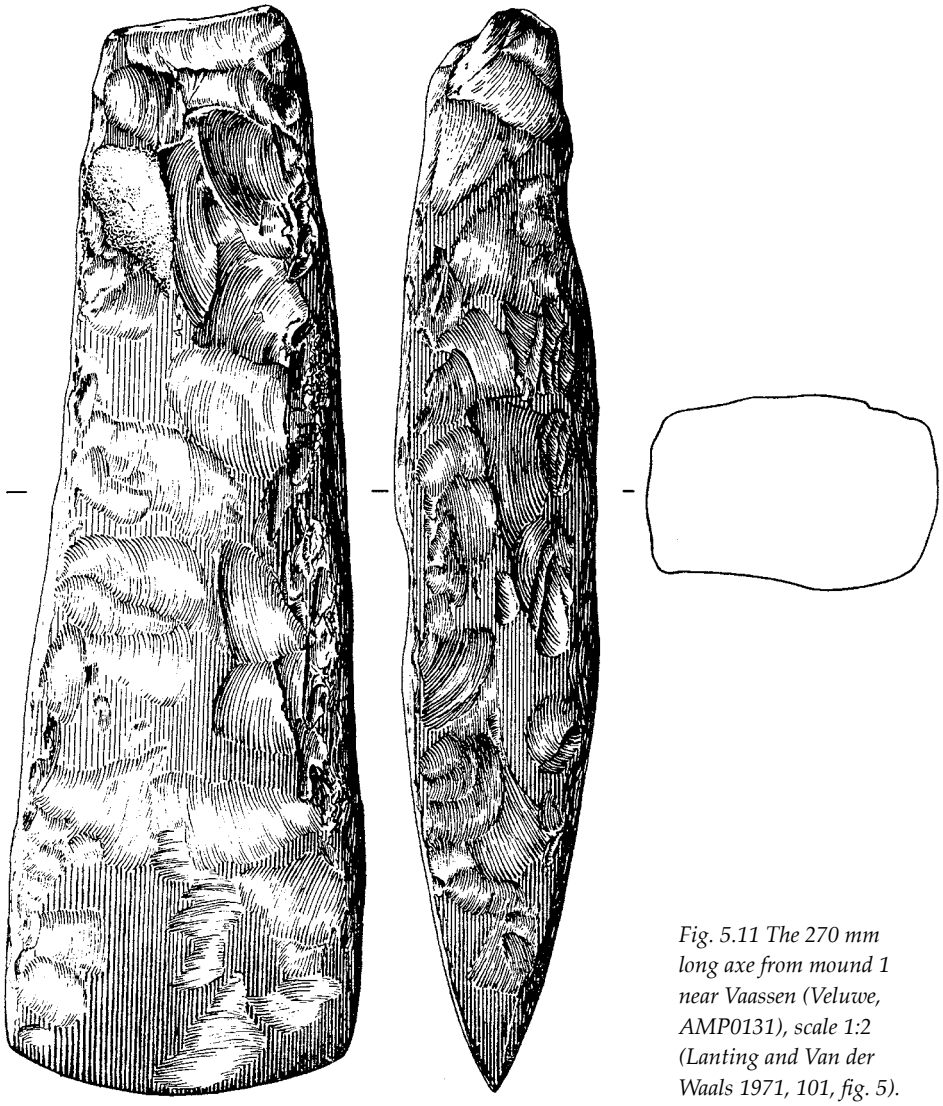

Fig. 5.11 The 270 mm long axe from mound 1 near Vaassen (Veluwe, AMP0131), scale 1:2 (Lanting and Van der Waals 1971, 101, fig. 5).

production of small axes. Bakker (1979, 80) suggests that as a rule of thumb all flint axes exceeding 150 mm in length should be regarded as imported items.

Following Bakker, only four of the 50 flint axes from graves should be regarded as imported items (see Fig. 5.10). Three of these vary in size between 160-166 mm, thus hardly exceeding the 150 mm rule suggested by Bakker. Only one flint axe found in a barrow near Vaassen (Veluwe; see Fig. 5.11)[96] can be regarded as an imported object with any certainty. With a size of 270 mm it not only well exceeds the 150 mm rule of thumb, it also represents the largest LNA flint axe from the Netherlands. Interestingly, an axe of this size can be regarded as too large for actual use and should be seen in the context of the Funnel Beaker culture tradition of producing oversized ceremonial axes (Wentink 2006a; Wentink 2008; Wentink and Van Gijn 2008). The inclusion of this object in a grave is surprising because in the Funnel Beaker culture such items were

96 AMP0131, mound 1 near Vaassen (Veluwe).

never placed in graves, but instead deposited in waterlogged locations. This object can be seen as remarkable, as most axes in LNA graves are rather small with an average of 103 mm. This is very similar to the average length of axes placed in Funnel Beaker culture graves for which the average length is 94 mm (Wentink 2006a). Although the Vaassen axe is an exception, in general there seems to be much continuation between the Funnel Beaker culture and LNA practice of placing axes in graves.

Leaving the Vaassen axe aside for the moment, most of the remainder of the flint axes were probably locally produced and can from a typological point of view be characterized as *Flachbeile* (Brandt 1967, 102-108). Although in general they are quite irregular in shape – mostly due to the poor quality of the raw materials used – they are made with a rectangular cross-section, a tradition of axe-making that originated in the Scandinavian Funnel Beaker culture and still prevailed in the northern half of the Netherlands throughout the Late Neolithic (Bakker 2006). This technique of axe making can be contrasted to the Atlantic tradition, originating in the early Michelsberg culture, in which axes were produced in a bifacial manner, resulting in an oval cross-section.[97] This tradition of axe making can be found in the southern half of the country, roughly south of the main rivers Rhine and Meuse. Only three of the LNA graves contained flint axes that were of this latter type, having an oval cross-section. These three graves were all located in the central Netherlands. Interestingly, two of these graves contained other finds that indicated that they dated to the final stages of the LNA; both graves included French daggers combined with an AOO and ZZ beaker[98] respectively. As was argued above the introduction of AOO beakers and French daggers indicated a change in the CW exchange networks around 2600 BCE to also include exchange lines to the south. Perhaps these oval cross-section axes too can be seen as evidence of those southern contacts.[99]

The flint axes in LNA graves generally are roughly worked and do not display signs of outstanding crafting skills. The flake negatives that are often still visible show signs of a rather haphazard and irregular flaking technique. As such they blend in well with the overall *ad hoc* knapping techniques observed in LNA settlement debitage (Peeters 2001; Van Gijn 2010, 140). Although in size and shape they do not really differ from the locally produced axes found in Funnel Beaker culture graves, there is a distinct technological difference between the two. The Funnel Beaker culture axes are typically ground and polished on a sandstone slab. This resulted in the higher parts of the axe being ground away, whereas the deeper flake scars were left untouched. The LNA flint axes in contrast display an additional grinding technique that can be observed inside the deeper flake scars as these too display clear traces of grinding. Experiments (including those performed by the author) have shown that these likely result from polishing an axe on a piece of leather or

97 Also known as Buren-type axes (see Bakker 2006).

98 CW beaker decorated with zigzag (\/\/\) motifs that are placed late in the typo-chronological model (Lanting and Van der Waals 1976; see figure 3.5). The fact that these beakers date to the late CW is corroborated by the fact that several graves contained French daggers as well as ZZ beakers.

99 In the northern half of the Netherlands stray finds of southern axes are known as well. Although it is thus possible that these represent exchanged items at the time of the LNA, it is more likely that these objects pre-date the LNA as their production already started in the middle of the 5th millennium BCE and lasted well into the 3rd millennium BCE (Bakker 2006). In addition, none of these objects – apart from the three small oval axes mentioned above – came from clear LNA associated contexts, graves or otherwise.

contextcode	site	object	length (mm)	traces of use	traces of hafting	resharpened/ repaired	used/worn tool
AMP0101	Doorwerth-Kievitsdel	axe	102	+	+	-	+
AMP0164	Emst-Hanendorp mound 3	axe	75	+	+	-	+
AMP0257	Garderen-Solsche Berg mound 4	axe	105	+	+	-	+
AMP0315	Eext-Huttenheuvel	axe	103	+	+	+	+
AMP0388	Marum-De Haar mound 3	axe	75	+	+	-	+
AMP0403	Ede-Slijpkruik	axe	75	+	+	-	+
AMP0424	Renkum-Quadenoord	axe	109	+	+	-	+
AMP0546	Arnhem-Schaarsbergen	axe	103	+	+	-	+
AMP0243	Bennekom-Oostereng mound 4	axe	109	?	+	+	+
AMP0319	Eext-Visplaats Tum I	axe	85	?	?	+	?
AMP0321	Eext-Galgwandenveen 3	axe	68	?	?	+	?
AMP0353	Borger-Drouwenerstraat Tum I	axe	166	?	+	+	+
AMP0353	Borger-Drouwenerstraat Tum I	axe	96	?	+	+	+
AMP0361	Hijken-Hijkerveld	axe	87	?	+	+	+
AMP0361	Hijken-Hijkerveld	axe	160	?	+	+	+
AMP0131	Vaassen mound 1	axe	270	-	?	-	-

Tab. 5.6 Overview of wear traces on LNA axes from graves: (+) present; (-) absent; (?) unsure/ not interpretable.

hide in combination with sand and water (Van Gijn 2010, 144). This latter technique proved to be quite successful and also resulted in the deeper flake scars being polished.

Above, the focus has been on the flint axes, rather than stone axes as the former represent the majority of the axes found in graves. As far as technology is concerned, stone axes are produced in a different manner. They are mostly made out of various types of igneous rock that were first roughly knapped and subsequently shaped by pecking and grinding (Beuker 1990; Beuker *et al.* 1992). Just as the flint axes, the stone axes were produced in a northern tradition as evidenced by their rectangular cross section. A more detailed description of working stone is presented in the section below dealing with the battle axes. As various types of stone naturally occur in the subsoil, especially in the tills of the northern Netherlands it is in most cases not possible to distinguish between locally made and imported axes (Beuker *et al.* 1992, 120). However, since flint axes had a long tradition of being exchanged over hundreds of kilometres (see Wentink 2006a), it may be assumed that apart from local production, at least part of the stone axes were involved in various types of exchanges as well.

5.5.2 A useful life

In total 16 axes out of 65 were subjected to functional analysis (see Table 5.6). Like the Funnel Beaker culture axes from the megalithic tombs known as *hunebedden*, the LNA axes from graves virtually all display traces of a long and extensive use life. Apart from the oversized axe from Vaassen, most axes appeared to have been used, probably for all

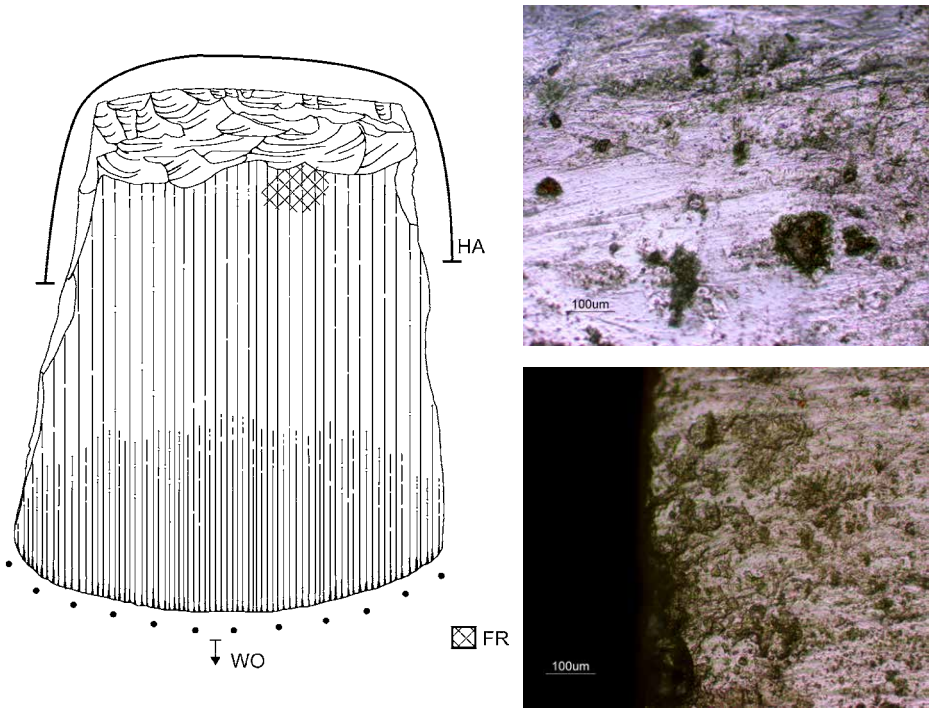

Fig. 5.12 Drawing indicating the wear traces on an axe from mound 3 near Marum, scale 1:1 (Groningen, AMP0388); (top left) microscope photo depiction friction gloss from hafting; (bottom left) showing wear traces, rounding and edge damage on cutting edge (drawing: author).

sorts of activities related to woodworking (Van Gijn 2010, 95; pers. observ. of the author). Although traces of hafting were apparent and often could be distinguished with the naked eye (see Fig. 5.12), wear traces on the cutting-edge of the axes proved more elusive because many of the axes studied appeared to have been resharpened prior to deposition. This is a practice that was also observed on axes retrieved from the Funnel Beaker culture megalithic tombs (Wentink 2006a; Wentink and Van Gijn 2008).

The oversized axe from Vaassen did not display clear traces of wear or hafting. At the cutting edge a hide-like polish could be seen, that was probably related to polishing with sand and hide (see above). Of the remaining 15 axes, 13 showed clear traces of use, in the form of wear traces on the cutting edge and/or traces of hafting (see Fig. 5.12). For only two axes it was unsure whether they had been used due to them having been resharpened to such an extent that any traces of previous use had been removed. Although six additional axes also showed signs of resharpening, here traces of wear could still be attested. The resharpening of axes prior to deposition is evidenced by several different facets of grinding near the cutting edge, resulting from different acts of grinding. Although most of the wear traces that would originally have been present were removed by these acts, there are often still minor traces of wear visible in the form of edge damage, polish and rounding (especially inside the deeper scars of edge damage). This, combined with the fact that most of these axes also showed clear traces of hafting, can be taken to indicate that these axes had an extensive use life and must have been treasured tools.

Small spots of red ochre were present on only two specimens, which can hardly be seen as a pattern. Incidental occurrences of ochre on objects is perhaps even to be expected as ochre would have played a role in many aspects of prehistoric life, from dying fabrics and objects, perhaps applied as body paint and in various ritual or ceremonial occasions.[100]

5.5.3 Two axes, one toolkit?

Of the 51 LNA graves with axes, 14 actually contained two axes. Lanting and Van der Waals (1976, 65) already noted that in those cases where two flint axes were included in graves, there is often a substantial difference in size between the two, one being large, the other being small. This observation could be confirmed in the present study that included four graves with two flint axes. Of these, one grave contained two small flint axes of roughly the same size. The other three graves indeed contained two flint axes that were quite different in size (see Table 5.7), the larger specimens being among the largest flint axes from graves, while the smaller ones were all below average in size (also see Fig. 5.10).

What is even more apparent, however, is the fact that of the ten remaining graves with multiple axes, these all concerned graves with one flint and one stone axe. Unfortunately, the sizes of the axes are known for only five of these graves. One grave displayed the same size difference as with the graves with two flint axes. The stone axe was 190 mm whereas the flint axe was only 80 mm in length. For the other graves the size difference between the stone and flint axe was much smaller (see Table 5.10).

With the exception of one grave[101] from the central Netherlands (Veluwe), all graves containing multiple axes are located in the northern Netherlands. There thus may have been regional differences in this practice.

In a previous publication it was already suggested that the flint axes of different sizes may have had different, albeit complementary, functions (Wentink, Van Gijn and Fontijn 2011, 405). The large flint axes being related to heavy woodworking, whereas the small flint axes may have been related more to fine carpentry. A similar explanation may apply to the graves containing both a stone and a flint axe. Experiments by Olausson (1983) showed differences between the innate qualities of the raw materials used for axe production. Stone axes are on average slightly blunter but less susceptible to damage, making them more qualified for heavy duty work, such as felling trees. The flint axes in contrast can produce sharper cutting edges, making them better suited for finer woodworking.[102] Rather than seeing graves that contain two axes as a sign of 'accumulation of wealth', it is thus more likely that these two axes were valued for slightly different qualities and were both part of a set of woodworking tools.

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100 See for example ochre in Mesolithic burials (Verlinde 2005,179), ochre on Early Neolithic querns and as nodules in graves (De Grooth and Van der Velde 2005, 223), ochre on Funnel Beaker culture ceremonial axes (Wentink 2006a) or possible ochre on intentionally destroyed sickle blades in Ypenburg (Middle Neolithic) (Van Gijn 2010, 173).

101 AMP0443, Gardense Veld.

102 It must be noted that a recent experiment with reconstructing a Neolithic house led by Annelou Van Gijn and Diederik Pomstra, using only stone age tools, revealed that stone axes were overall much more suitable for all sorts of tasks than flint axes.The latter became blunt very fast. Both experienced and inexperienced builders preferred the stone axes above the flint ones (Van Gijn, pers. comm.).

contextcode	site	object	raw material	length (mm)
AMP0559	Pesse-Sportveld	axe	flint	75
		axe	flint	70
AMP0353	Borger-Drouwenerstraat Tum I	axe	flint	166
		axe	flint	96
AMP0361	Hijken-Hijkerveld	axe	flint	160
		axe	flint	87
AMP0265	Eese (secondary grave)	axe	flint	162
		axe	flint	74
AMP0265	Eese (primary grave)	axe	stone	117
		axe	flint	80
AMP0539	Ballo-Tumulusbos grave 1	axe	stone	190
		axe	flint	80
AMP0264	Steenwijkerwold-Eese mound 5	axe	stone	80
		axe	flint	90
AMP0443	Gardense Veld-Erve Stegeman	axe	stone	102
		axe	flint	109
AMP0541	Rolde-Nijlande Tum 1	axe	stone	ca. 125
		axe	flint	ca. 80
AMP0354	Borger-Drouwenerstraat Tum 2	axe	stone	?
		axe	flint	?
AMP0448	Fochteloo	axe	stone	?
		axe	flint	?
AMP0521	Havelte-Koningskamp grave 1	axe	stone	?
		axe	flint	?
AMP0522	Havelte-Koningskamp grave 2	axe	stone	?
		axe	flint	?
AMP0524	Havelte-Koningskamp grave 4	axe	stone	?
		axe	flint	?

Tab. 5.7 Overview of LNA graves that contained multiple axes. Note (in red) that with exception of Pesse-Sportveld, all graves with two axes either have a big difference in size, or they concern sets of a stone and flint axe. Also note that with the exception of the grave from Gardense Veld (AMP0443) located on the Veluwe, all these graves come from the northern Netherlands.

location	n	%
head	2	3,1%
pelvis	1	1,5%
torso	1	1,5%
unknown	61	93,8%
total	65	100,0%

Tab. 5.8 Location of LNA axes in relation to the body.

5.5.4 Placement in graves

For only four graves information about the placement of the axes in relation to the body is available (see Table 5.8). These axes were found in the pelvic region, in front of the torso and two near the head of the deceased. Of the latter, one was found placed in front of the face, whereas the other was found at the back of the head.

Although there is far too little data to come to clear conclusions, it can be noted that the limited data that is available is in line with the observations presented above with respect to the northern flint blades and French daggers. These objects too were found solely near the upper half of the body.

5.5.5 The role of axes in the Late Neolithic

The fact that seven of the axes were resharpened before deposition could be interpreted as providing the dead with tools that are ready for use (*e.g.* Wentink 2006a, 60). However, it should be questioned whether this act of resharpening was specifically related to the funerary ritual or that the act of resharpening was merely part of the way axes were used and maintained. My grandfather was a carpenter and always very strict and careful with his tools. After every use he would always clean them, sharpen them and put them in their proper place. Similarly, it is easy to imagine that our Neolithic ancestors would have valued their tools and would have resharpened their axes after use. Perhaps the resharpening of axes should therefore be seen as the result of a habitual form of tool maintenance, rather than as an act specifically related to the burial ritual. In either case, however, it illustrates an involvement with, and respect towards these important tools.

That the axe would have been an extremely important tool in the LNA, or indeed throughout the Neolithic and Bronze Age, is without question. Vegetation reconstructions show that the Late Neolithic barrows were constructed in extensive heathlands (Doorenbosch 2013). Such heathlands are not a natural phenomenon and, although subject to debate (*e.g.* Vera 1997), they were most probably the result of deforestation caused by humans. While fire might be part of that process, the axe definitely was. By clearing the forest, the landscape was transformed into one that could be used for agriculture, where livestock could graze and that was suitable for cart-based transport. In addition to these practical benefits of creating a more open landscape, the heathlands must also have been of ideological significance as they provided the building blocks for the sod-built barrows whose symbolic function was – at least in part – related to them being visible in these open landscapes (Bourgeois 2013).

Apart from landscape management, the axe also would have played a pivotal role in all sorts of crafting activities. These can be related to such things as building houses, fences and other forms of domestic architecture. The LNA, however, is the first period in prehistory where unambiguous evidence is found for both the widespread use of the plough or ard in agriculture, and the first introduction of disc-wheeled carts (Fokkens 1998, 102; see Chapter 3). Both technologies, especially the latter, would have required extensive and highly developed woodworking skills.

These first wheels were made of solid pieces of oak, cut longitudinally out of tree trunks in order to avoid the heart of the tree and minimalizing the risk of breakage (Van der Waals 1964a). The significance of the cart can be demonstrated by the 13 separate finds of LNA disc-wheels at various waterlogged places in the northern Netherlands. What is of interest is that at least some of these wheels were unfinished

Fig. 5.13 Unfinished LNA disc wheel found deposited in the peat near Midlaren (Drenthe), diameter 56 cm (collection: Drents Museum, Assen; photography: J. Beuker).

and made of alder wood instead of oak and are therefore not considered to be of practical purpose. It seems that these wheels had been specially made for deposition (Van der Waals 1964a, 41). Although Van der Waals presents several profane interpretations explaining the presence of these wheels in bogs, I argue that this practice should be seen in the context of other depositional practices going on in waterlogged places, including those of depositing hoards of axes both in the Funnel Beaker culture and the LNA (*e.g.* Butler and Fokkens 2005, 390). Also noteworthy is the fact that apart from two Iron Age specimens (Van der Waals 1964a, 47), all prehistoric wheels found in the bogs of Drenthe only date to the LNA and first half of the LNB (2900-2200 BCE) (Lanting and Van der Plicht 2000). This further indicates that these must be interpreted as part of selective and intentional depositional practices, and illustrates the ideological/symbolical significance of the wheel/cart.

In this context also the existence of extensive peat trackways should be mentioned, as these occur in the same parts of the Netherlands. At least some of these would have functioned as bridges, for example to cross the Bourtanger Veen, that were wide enough to be used by carts (Casparie 1987; 2005). It is not clear to what extent such trackways were in use in the Late Neolithic in the Netherlands as only one trackway at Nieuw-Dordrecht could be positively dated to the LNA.[103] Several other trackways,

103 Dates provided by Casparie (1987, 53) span between 2900-2500 BCE when calibrated.

however, have been dated to the Funnel Beaker culture whereas others date to the Bronze Age, Iron Age and the Roman Age. Wooden trackways dating to the LNA have also been documented outside of the Netherlands, including examples in north-west Germany (Hecht 2007, 171). It is therefore reasonable to infer that bog trackways were in use throughout prehistory from at least the mid-4th millennium BCE onwards.

The above mentioned LNA trackway, found in the immediate vicinity of the previously mentioned hoard of Nieuw-Dordrecht (consisting of an unfinished Funnel Beaker culture-style axe and eleven flint blades), appears to have had a purely ceremonial function (Casparie 1987). The trackway must have been between 1-2.5 kilometres long and ends in the middle of the bog. It does not seem to extend to the other side across the bog. Moreover, the surface of the trackway was unworn indicating it had been hardly used. In fact, although the surface of the trackway was made with planks of slab wood (used to make an even surface suitable for wheeled traffic), a suitable substructure to support the weight of carts was largely absent (Casparie 1987, 53). Although the trackway looked like it was made for carts, it could not actually have been used for this. This is therefore very similar to some of the (unfinished) disc-wheels that were made of unsuitable wood-types, they too would never have been able to actually function.

In the immediate surroundings of the trackway several depositions were found. Apart from the axe and blade hoard (unfinished and unused) already mentioned, these included a disc wheel (found next to the trackway) and two well-preserved handles for stone axes (underneath the trackway; Casparie 1987, 53). As such, several different elements of deposition (carts, trackways, and objects acquired though long distance exchange) come together here, with the axe playing an important role in all of them. Casparie (2005, 402) calculated that for the Nieuw-Dordrecht trackway alone about 40 hectares of forest would have needed to be cleared.

Although the importance of complex technologies such as carts, the plough and trackways would have been significant, the importance of woodworking in normal day-to-day activities should not be underestimated (see Louwe Kooijmans and Kooistra 2006, 225). Although flint and metal are used by archaeologists to distinguish between periods in time, it should not be forgotten that throughout prehistory wood would have been the primary raw material used in all spheres of both ritual and domestic life. In fact, I assert that the majority of all material culture present in a typical prehistoric household was made out of wood. Even in today's society with all of its metals and plastics one only needs to look to see that wood is still all around us. It is only by realizing this that we can begin to understand why the axe was such an important object throughout prehistory and why it is again and again encountered in special contexts such as graves and/or votive depositions (Wentink *et al.* 2011).

5.6 Battle axes

The 'battle axe' or 'hammer axe' is the last of the main object categories in LNA graves. Occurring in a total of 34 graves (23.4%), the battle axe is the 'rarest' of the main four object categories in LNA graves (beaker, blades/daggers, axes, battle axes). There were no graves containing multiple battle axes. For one grave it must be mentioned that, strictly speaking, the battle axe was found just outside the actual grave pit, but was covered by the primary burial mound indicating that its placement there must have been

Fig. 5.14 Type 1a battle axe from a flatgrave near Hijken (Drenthe, AMP0361), length 175 mm, scale ca. 2:3 (collection: Drents Museum, Assen).

part of the funerary ritual. It was therefore included in this selection.[104] One additional grave contained a reworked fragment of a battle axe.[105] Although this find is discussed in more detail below, it was not included in this selection (see Fig. 5.16).

As an object, the battle axe is probably one of the most striking artefact types of the LNA. In part this may be related to the fact that these items are often skilfully crafted and include a shaft-hole drilled through solid stone (see Fig. 5.14). The supposed function of these objects, however, is without doubt what is most intriguing. It will come as no surprise from the designation 'battle axe' that these objects were traditionally seen as the weapons of choice of fierce horse-riding tribes that supposedly roamed northern Europe in the 3rd millennium BCE (Childe 1957 [1925]).

The prevalent interpretation of these objects as weapons continues to this day. Butler and Fokkens (2005, 395) substantiated this interpretation by remarking that although shaft-hole axes are quite common throughout the Neolithic and even the Early Bronze Age, they become increasingly more stylized in the Late Neolithic making it unlikely that they functioned as mere tools. I, however, am of the opinion that it are the Middle Neolithic Funnel Beaker culture battle axes, in particular the double-bladed specimens of the Hannover type, that appear unpractical due to their rather extravagant shape and decoration. Although still skilfully crafted objects, the Dutch LNA battle axes are in comparison much more basic in design, despite the fact that some have a slightly concave longitudinal cross-section.

Although other studies were mostly concerned with the typo-chronology of battle axes (see Hübner 2005, 68 for a lengthy discussion on typology). This section, in con-

104 AMP0257, mound 4 near Garderen (Veluwe).
105 AMP0238, mound 1 near Speuld (Veluwe).

trast, focuses on their life-histories instead. As typological matters have been discussed at length elsewhere (Hübner 2005; Glob 1944, for Denmark, and Addink-Samplonius 1968 for the Netherlands) and do not appear to contribute greatly to understanding their possible function or meaning, the discussion below focuses primarily on those aspects that have largely been ignored: the technology involved in the production of battle axes, wear traces and the possible functions of these objects, their placement in graves and hence their possible meaning or significance in respect to the grave ritual.

5.6.1 Production

The Dutch LNA battle axes are mostly made of igneous rock types such as diabase and diorite or gabbro (see Addink-Samplonius 1968, 236; Beuker *et al.* 1992, 132). These rock types all share some common characteristics: they are hard and tough, making them well suited for the production of heavy-duty tools. These rock types are all black to dark green in colour. Some of the latter types are also known as greenstone (Beuker 1990, 12). Primary sources of these types of rock occur in Scandinavia, but they can also be found locally throughout the northern Netherlands and adjacent parts of Germany as part of the tills found in the Saalien ice-pushed ridges (Beuker 1990, 12; Van der Lijn 1949). Although it is thus possible that these battle axes, or the raw materials they were made of, were exchanged throughout northern Europe, they could also have been produced from local raw materials. That local production did indeed occur is evidenced by the finds of several unfinished specimens (Beuker 1990, 36; Beuker *et al.* 1992, 136; Harsema 1976; see Fig. 5.15). As some types of battle axes are found throughout Europe – most notably the A-type battle axes (see Fig. 5.14) that are part of the CW A-Horizon (see Chapter 3) – it is clear that these were produced in an international style, just as the CW beakers.

Contrary to popular belief, making a battle axe out of a nodule of stone is not very complex, it is merely time consuming (see Olausson 1997). First, raw materials have to be acquired. These could be found locally in most parts of the northern Netherlands, but may also have been obtained through exchange. As Olausson (1997) describes it, during the first stages of production these nodules of igneous rock can be roughly knapped – depending on rock type – using the same basic principles as flint knapping. This technique, however, is only suitable to produce a very coarse rough-out. Quite early in the production process the transition is made from knapping to pecking and grinding. By hitting the rough-out with a hammerstone under a steep angle, small bits of stone are removed. Although this is a relatively slow process, it is not very complicated as only small bits of stone are removed at a time (Olausson 1997, 132). It is thus possible to make even more complex-shaped objects without much additional effort or skill. When the rough-out approximates its final shape, the hammerstone is switched for a grindstone. By careful grinding, with the addition of water and sand, the final shape, and most importantly the cutting edge, is produced. The shaft-hole is drilled in the final stage of production. This can be done by using either a solid or hollow wooden drill that, with the addition of sand and water, is used to grind its way through the battle axe (see Fig. 5.15). Although a hollow drill works faster, solid drills were also used as can be seen on discarded half-fabricates (Harsema 1976). Beuker (1990) furthermore reports that German experiments have indicated a drilling speed of 6 mm per hour. This would mean that the shaft-hole alone would be at least one- or

Fig. 5.15 Battle axe half fabricate with unfinished perforation made with a hollow drill, find context unknown, scale ca. 1:1 (collection: National Museum of Antiquities, Leiden, z.n. 54).

two-day's work. Olausson (1997, 130) mentions several – both published and unpublished – experiments that confirm this one-to-two-days estimate. It, however, may be assumed that our prehistoric agents, who were deeply familiar with these raw materials and highly experienced with the techniques used for working them, were probably much more efficient than modern experimental archaeologists trying to replicate these techniques.

It is difficult to accurately assess how much time was needed in total to finish a battle axe. Raw material selection, knapping a rough-out and pecking it until it was ready to polish would have certainly taken an entire day, perhaps two. The subsequent grinding of the surface and cutting edge would also take at least two days. Drilling a shaft-hole was probably also at least one- or two-day's work (*e.g.* Osipowicv 2006). Combined, the manufacturing of a battle axe would have taken something in the order of 80-100 hours work.[106] This conforms well with the 90 hours a German experimental archaeologist needed for the manufacture of a medium sized battle axe (Vosgerau 1984, cited in Beuker 1990, 38). Olausson (1997, 130), however, lists two experiments with reproducing a battle axe that took between 25 and 50 hours of work. Fenton (1984, 230) argues that the production time can be minimised by careful selection of the raw materials used, preferably a nodule that already approximates the shape of a battle axe.

However, manufacture of the axe head itself was not all that needed to be done. A handle also has to be manufactured. For the battle axes this was relatively easy in comparison to the large handle that were needed to mount an ordinary flint or stone axe head. The shaft-hole axes, including the battle axe, only needed a simple, firm but thin handle of approximately 20-30 mm in diameter depending on the shaft-hole.

106 Some authors consider battle axes as 'high status markers' which is in part related to the fact that they are so time consuming to produce (see for Dutch examples Drenth 1990, 108; Lohof 1993, 6). I would argue however that we should see the production of these battle axes as so many other time consuming crafts and activities that must have taken place in any prehistoric household. They were perhaps performed during the evenings while sitting near the fire and telling stories. As such, this would not at all be that different compared to how nowadays people spend their free time to knit. Being a keen knitter, my grandmother informed me that knitting socks is relatively little work (10-15 hours). A jumper however will take easily 60-90 hours of work (comparable to a battle axe), whereas a bedspread takes at least 300-400 hours (A. Wentink-Molenkamp pers. comm. 2010). Also see Coope (1979, 99) for using knitting in comparison to stone axe making.

A rare find in the bog near Emmer-Compascuum of a hammer axe, or *Arbeitsäxte*, with a preserved 70 centimetre long handle indicates that these handles would have been relatively long (Glasbergen 1957). Although this find was ^{14}C-dated to the LNB (Brinkkemper and Drenth 2002), it is in all technical and practical aspects very comparable to the LNA battle axes. This handle was made of *Sorbus* – also known as whitebeam, rowan or service tree (Glasbergen 1957)[107], a type of wood that is both tough and resilient (Beuker 1990, 55). As this is only a single lucky find it is impossible to tell to what degree people specially selected particular types of wood to be used for this type of axe handle. Given that people spend a lot of time on making the axe-head and selected a type of wood (*Sorbus*) for its handle that due to its properties is still used to this day to make tool handles and walking sticks (Vedel and Lange 1960), suggests that they knew very well the properties of different species of wood and carefully selected those most suitable for the task at hand.[108]

5.6.2 History of speculation, lives of use

As was presented in the introduction of this section, for long the common belief has been that battle axes were unsuitable as mundane tools and a function as specialized weapon was considered plausible (see for example Childe 1957 [1925]; Butler and Fokkens 2005, 395). This allocation might seem acceptable when considering these objects solely based on published drawings. I must admit that I also shared this presupposition at the start of this research. However, an examination of the real-life objects quickly makes one question this interpretation. Already when going through the museum collection of the Dutch National Museum of Antiquities – where all battle axes are kept together in a drawer – it was obvious that most of them showed extensive traces of wear and tear, as evidenced by heavily worn shaft-holes and cutting edges. Although the former generally showed extensive rounding resulting from the battle axe having been hafted, the cutting edges generally showed well-developed traces in the form of edge damage and deep striations. Also the edge-angles were often clearly indicative of repeated acts of resharpening, as a result of which the original length had often greatly been reduced (see Figs. 5.17 and 5.18). Hübner (2005, 638) described similar traces of wear for the Danish battle axes. According to Hübner the majority of the Danish specimens from graves showed traces of use, with at least 10% displaying rather extensive signs of wear.

Similar traces of wear and tear were reported by Bakker (1979) in his catalogue of Funnel Beaker culture battle axes. One of the things that he noticed again and again, was that many of these finds appeared to be heavily used: they show signs of resharpen-

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107 Original determination of wood species was done by dr. U. Grohne of the *Niedersächsische Landesstelle für Marschen- und Wurtenforschung* (Wilhelmshaven). Brinkkemper and Drenth (2002, 126), however, question whether such a determination is possible. According to them it is not really possible for the wood to be classified any further than that it is part of the *Pomoideae* or *Maloideae*, a group that also contains species such as apple, pear and hawthorn.

108 Although much older (5th millennium BCE), a similar find comes from a lake-side settlement in Switzerland where a shaft-hole axe was found with an intact wooden handle that was enfolded with decorated straps of birch-bark indicating that the handles too were subject to much care and attention (N.N. 2000, 199).

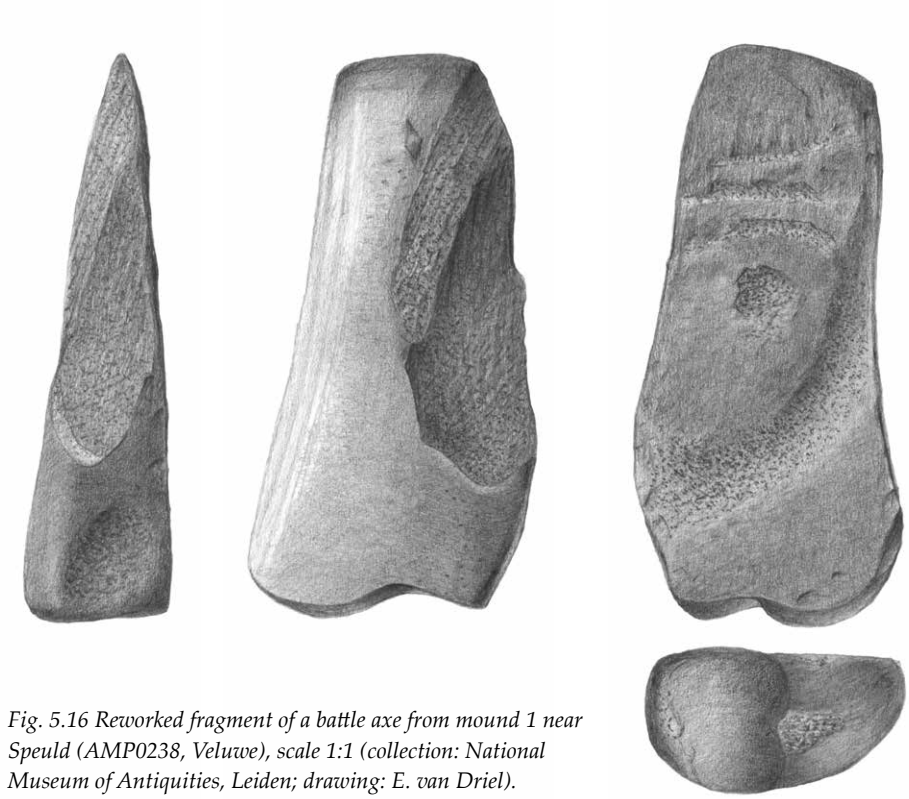

Fig. 5.16 Reworked fragment of a battle axe from mound 1 near Speuld (AMP0238, Veluwe), scale 1:1 (collection: National Museum of Antiquities, Leiden; drawing: E. van Driel).

ing, repair and wear.[109] At first glance, both the Funnel Beaker culture and LNA battle axes show extensive traces of wear. Although it is certainly not implausible that combat or war took place every now and then, it may be questioned whether this really would result in such extensive traces of wear.

Of the 145 LNA graves in the research database, 34 contained a battle axe, with none containing multiple battle axes. One of these graves, however, contained only the butt-end of a battle axe broken at the shaft-hole. This object was not available for study and it was thus not possible to determine whether this object was broken during excavation or placed in the grave as a fragment.[110]

One additional grave contained a strange looking stone object that was revealed to be a reworked piece of a battle axe (see Fig. 5.16).[111] Part of the side and part of the shaft-hole of the battle axe remained. This, however, was not just a broken piece, as the fractured surface showed traces of grinding. It is not uncommon that broken parts of axes were reworked into new tools. However, that did not appear to be the case here. Although the broken surfaces clearly showed traces of modification by grinding, it was not possible to recognize a particular tool type in the object formed. Functional analysis also did not reveal traces indicative of a particular use.

109 Similar findings of wear were reported for the Danish Funnel Beaker culture battle axes (Zápotocký 1992, 157 in: Hübner 2005, 638).

110 AMP0001, barrow near Ermelo (Veluwe).

111 AMP0238, mound 1 near Speuld (Veluwe).

contextcode	site	object	length (mm)	traces of use	traces of hafting	resharpening/ repair	used/worn tool
AMP0538	Groenlo-Gelre de Woerd	battle axe	120	+	+	+	+
AMP0424	Renkum-Quadenoord	battle axe	172	+	+	-	+
AMP0361	Hijken-Hijkerveld	battle axe	175	?	+	-	-
AMP0319	Eext-Visplaats Tum I	battle axe	152	+	+	-	+
AMP0172	Uddelermeer mound E	battle axe	161	+	?	-	+
AMP0133	Vaassen mound 3	battle axe	128	+	?	-	+
additional objects studied:							
AMP0550	RMO nr: L1931/2.1	battle axe	160	+	+	+	?
AMP0551	RMO nr: L1931/2.2	battle axe	180	+	+	-	?
AMP0552	RMO nr: BPL I310	battle axe	128	+	+	+	+
AMP0553	RMO nr: AM10	battle axe	160	+	?	?	+
AMP0554	RMO nr: E1929/8.2*	battle axe	85	+	+	?	+
AMP0555	RMO nr: G1934/8.1*	battle axe	144	+	+	-	+
AMP0556	RMO nr: L1938/6.41*	battle axe	87	+	+	-	+

*Tab. 5.9 Overview of wear traces on LNA battle axes from graves as well as the additional objects that were studied: (+) yes; (-) no; (?) unsure/not interpretable; *distal fragments.*

It, therefore, is possible that we are dealing here with a fragment that was kept and treasured as some sort of heirloom. Because this object was completely reworked into something else, this object was not included in the current selection.

Not all objects were available for study and in addition many of the battle axes appeared to be quite badly preserved, making them unsuitable for functional analysis. Of the 33 complete specimens from LNA graves, only six could be subjected to functional analysis (see Table 5.9).

One of the battle axes appeared to be in more or less mint condition. Although this skilfully crafted battle axe showed some minor traces of wear in the shaft-hole and near the cutting edge, it did not appear to have been intensively used, although it may have been hafted.[112]

The remaining five specimens, however, all showed quite clear traces of use in the form of rounding and damage on the cutting edge as well as deep transverse striations indicating the object had been used in a chopping motion (see Fig. 5.17). The shaft-holes also displayed clear traces of hafting in the form of a rounded and smoothened surface inside the shaft-hole, sometimes completely obscuring the grooves caused by the drill during production. Both indicate that these battle axes must have been hafted and extensively used in a chopping motion on a contact material hard enough to cause serious edge damage and deep striations. One of the battle axes showed clear signs of repair and resharpening (based on edge angles and shortened body, see Fig. 5.18).

112 AMP0361, flatgrave near Hijken (Drenthe).

Fig. 5.17 LNA battle axe from mound E near the Uddelermeer (Veluwe, AMP0172), length 161 mm; (bottom right) macro photograph showing edge damage and deep striations on the cutting edge; (bottom centre and left) pictures taken with stereo microscope of the cutting edge, note the ca. 1 mm wide striations (collection: National Museum of Antiquities, Leiden).

Battle axes are also known as hammer axes because of their hammer-like butt ends. These hammer-shaped butts, however, did not reveal clear traces indicating they had been used as such. Although traces of battering were present on some specimens, it was difficult to say whether these were remnants of production or traces of actual use. In any case, these traces are not at all comparable to the completely battered surfaces of regular hammerstones. However, the possibility that the back ends of these tools were hit with wooden hammers that did not result in actual damage cannot be excluded.

Although five of these battle axes showed rather uniform and distinctive traces, it was decided some additional specimens had to be studied in order to better assess the function of these objects as a group. For this reason, seven additional LNA battle axes were selected from the collection of the National Museum of Antiquities (four complete battle axes and three broken specimens of which the cutting-edge was intact). The only criteria for selection consisted of a positive attribution to the LNA based on typological grounds and the general level of preservation should allow investigation of wear traces. No additional attention was paid to the find circumstances of these objects, but as all objects knowingly coming from graves were part of the first selection, these items may be assumed to be mostly stray finds, some of which may have come from disturbed grave contexts.

Interestingly, most of the seven additional axes showed virtually identical traces of use compared to the specimens from grave contexts discussed above. From these seven additional battle axes, five showed clear traces of use in the form of deep striations,

Fig. 5.18 Battle axe from a grave near Groenlo (AMP0538, Gelderland), length 120 mm, scale 1:1, note the repaired scar (a) from edge-damage and (b) the relatively steep edge angle, both the result of extensive repair and resharpening (photography: ADC).

edge damage and rounding of the cutting edge as well as clear rounding and wear in the shaft-holes as a result of hafting. One of these items, however, had a somewhat sharper cutting edge which should be attributed to resharpening. The extensive use life of this item was apparent from the general edge angle indicating that the axe blade had originally been considerably longer, but was repeatedly reworked and resharpened. Of the two remaining battle axes one also showed limited traces of wear, which, although still visible, had been largely removed through resharpening. One battle axe was very well-made and did not show clear signs of use near the cutting edge in the form of damage or striations. The edge, however, was extremely rounded and the shaft-hole too had become completely smooth, probably due to hafting.

As a group, the battle axes thus show signs of a very distinctive usage. Not only did this result in high levels of wear, the patterns of wear were also quite different from those generally observed on stone and flint axes. Especially the deep striations that started at the cutting edge and could easily extend for 10-20 mm onto the axe's body are a feature unique to the battle axes. As these striations are deep and long, to such an extent that they are easily visible with the naked eye, these must be the result of heavy use. Also, when touching the cutting edge with a finger, the striations and edge damage can be felt and almost give the impression of a serrated edge.

5.6.3 Experiments

Key to interpreting wear traces is comparing them to those observed on experimentally used tools (*e.g.* Van Gijn 1990). Since there were no existing experimental parallels for the traces observed on the battle axes, new experiments were devised in an attempt to find a contact material and activity that would result in similar traces. For the various experiments that were performed replica battle axes were used[113], which were produced by D. Pomstra (expert in experimental archaeology and prehistoric technology) who also collaborated in the experiments themselves. Each experiment was performed with different battle axe replicas.

5.6.3.1 Using battle axes as weapons

Based on the preliminary observations it seemed unlikely, as described above, that the high levels of wear observed could be the result of combat. However, because their function as weapons was a long-held assumption, it was a valid hypothesis to test. A total of 17 red deer heads and one wild boar's head was acquired through an abattoir specialized in large game. The heads – left-overs from Christmas – had been kept in a refrigerator and were fully intact, including all flesh, brains and skin. The experiments were performed in a field where the heads were placed on a bed of straw, both for stabilization of the heads and to prevent the battle axe from accidentally hitting the ground (see Fig. 5.19). The battle axe was subsequently used in a downward chopping motion to hit the heads repeatedly. After 10-20 blows the skulls lost all structural integrity at which point they were discarded and the experiment was continued on the next head. During the experiment the state of the cutting edge was regularly inspected and documented with both video and photo cameras. In total the battle axe was used to deliver 315 blows to a total of 18 animal heads.

During the experiment it was immediately evident that the battle axe was highly suited to the task, since a well-aimed blow easily penetrated the skull, which surely would result in a lethal injury. Although the battle axe itself was thus well-suited for the task at hand, it was found that even after 315 – lethal – blows, hardly any signs of wear could be observed macroscopically. After the battle axe had been cleaned, it was subjected to microscopic analysis. This revealed traces of use in the form of some micro-damage to the cutting edge, and one larger chip of damage removed from the edge (see Fig. 5.19). Clear signs of rounding could be observed. The experiment had clearly resulted in traces of wear. However, these were very different from the traces observed on the archaeological specimens.

The experiment showed that in times of need, the battle axe could be used as a rather effective lethal weapon. It is likely, however, that this did not only apply to battle axes, since other stone or flint axes or adzes would have been equally effective. More importantly, however, the traces indicated that even though battle axes would have been useful as weapons, in daily life, they must have had an altogether different function.

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113 Replica battle axes were produced using modern techniques, but were manufactured in accordance to both the stone-types (diorite) and typology (especially shape of the cutting edge and diameter of the shaft-hole) of the LNA P2-type battle axes.

Fig. 5.19 Experimentally using a battle axe as a weapon; (bottom) pictures taken with stereo microscope of cutting edge after delivering 315 blows to 18 animal heads, some rounding and minor edge damage can be seen, shallow scratches are part of production traces (grinding).

5.6.3.2 Chopping and splitting wood

Because axes are usually connected with wood-working, it was decided that the next experiments should focus on chopping and splitting wood (see Fig. 5.20). For the wood chopping experiment a hackberry, also known as Bird Cherry (*Prunus padus*) was selected with a diameter of about 25 centimetres. At the offset of the experiment the battle axe seemed to be quite useful, similar to regular flint or stone axes. However, it soon became apparent that the battle axe was not very suited for this activity after all. One of the problems that presented itself within a few minutes was the lack of balance. The axe head itself is relatively heavy whereas the handle it is hafted on is quite thin and round. This makes handling it in this manner very uncomfortable, as the weight

Fig. 5.20 Experimentally using a battle axe to chop a tree; (top right) broken battle axe (after 5 minutes of use); (centre and bottom right) pictures taken with stereo microscope of cutting edge of second battle axe, some rounding and minor edge damage can be seen, shallow scratches are part of production traces (grinding).

of the axe head makes it quite hard to use in a sideways chopping motion. From an ergonomic point of view this type of axe, with its thin round handle, would best be used in a downward chopping motion. A second problem, related to the first, is that when chopping under an angle (as you do when you chop sideways), the axe head soon gets loosened and starts to rotate on the round handle. This is very uncomfortable as with almost each blow the axe has to be re-aligned.

The main problem, however, was that the axe and the way it was hafted did not appear to be able to absorb the impacts. As the tree itself is a rather solid body, the main impact has to be absorbed by the axe itself. The first battle axe that was used broke

after only five minutes of use (broken right through at the point of the shaft-hole, see Fig. 5.20). Although another battle axe lasted longer, the wooden handle kept breaking at the point where it was inserted in the shaft-hole. Apparently, a haft this thin cannot withstand the forces generated while chopping down a tree.

When the tree was chopped about halfway through it was decided to cease our attempts as clearly this was not working. Leaving the broken specimen aside, the battle axe used for the main part of the experiment was inspected for traces of use. Although not intensively used, the cutting edge showed clear traces of wear, comparable to those on other experimental tools used for woodworking. However, as of yet there was no trace of the deep striations and levels of edge damage as seen on the archaeological battle axes. The conclusion was therefore that the battle axe itself was rather unsuited to chopping trees. The traces observed on the experimentally used axe did not seem to indicate that we were on the right track.

After the tree had been felled using a steel axe, an attempt was made to use a replica battle axe for splitting a log. This attempt, however, was soon abandoned as the implement did not appear to be suited to this task. According to Pomstra, who performed the experiment and is highly experienced in working wood with stone tools, the angle of the cutting edge was not suited to split the log.

5.6.3.3 Uprooting trees

Although at this point we had not succeeded in replicating the traces observed on the archaeological specimens, we did learn some lessons about the functionality and handling of the battle axe that allowed us to formulate a new hypothesis. During the experiments it had become clear that due to its balance, the battle axe is best used in a downward chopping motion. Although the cutting edge itself is suitable for chopping wood, the manner in which it is hafted is not, as the force of the impact on the tree could not be absorbed by the axe head/handle combination.

Taking these characteristics into account, a new experiment was devised that focussed on the uprooting of a tree (see Fig. 5.21). The chopping of tree roots would necessitate the battle axe to be used in a downward chopping motion. In addition, the contact material would – apart from the wood of the tree roots themselves – also consist of sand, dirt and bits of gravel present in the soil. It was hypothesised that the 'addition' of such particles could possibly result in the deep striations observed on the archaeological specimens. Moreover, the uprooting of trees is an activity that can be expected to have been important in the Late Neolithic. As mentioned in Chapter 3, the 3rd millennium saw the widespread introduction and incorporation of the plough in agriculture. In order for a field to be ploughed, it is necessary to be cleared of obstacles such as tree trunks and roots.

Using a modern shovel, the ground around the tree trunk of the above described experiments was cleared and the roots were exposed. Apart from several larger roots (10-15 cm in diameter), many small roots (1-2 cm in diameter) were encountered. The latter could be easily chopped through with the battle axe with a single blow using little force. The larger roots were easily chopped through as well. As expected, chopping in a downward motion went well and did not present any problems. Interestingly the roots were much 'springier' than the tree trunk. In part this is because the roots are much more saturated with water, but also because they are

Fig. 5.21 Experimentally using a battle axe to uproot a tree; (bottom) pictures taken with stereo microscope of the cutting edge showing extensive edge damage and ca. 1 mm wide striations are clearly visible.

thinner and the shocks generated at impact are partly absorbed by the surrounding soil. Chopping through a root of 10-15 centimetres took about 10 minutes, whereas smaller roots could be easily chopped through, often even with a single blow. After about an hour of chopping roots, the battle axe was still highly functional although clear traces of wear could be observed, even while the cutting edge was mostly covered with dirt and sand. Neither the axe nor the handle broke, even when the thicker roots were chopped at with full force.

The design of the battle axe and its hafting arrangement was also very suited to chopping through the roots. Underground, especially near the trunk of the tree, there is a complex network of tree roots running in various directions, crossing each other at various angles and depths. The battle axe is quite slender, and also the way of hafting – by means of a shaft-hole – results in no parts of the hafting arrangement sticking out to the side of the axe's body (in contrast to how regular flint or stone axes are hafted). Chopping through the roots, one finds oneself often working in unusual angles chopping at roots in difficult to reach places, especially where several roots crosscut each other. While chopping through these roots, it became evident that this would have posed several problems if a normal flint or stone axe would have been used. Not only would the hafting arrangement take in much more space – and therefore not allow for the more difficult roots to be reached – such an arrangement would also easily be damaged as the sides of the axe blade regularly grazed higher lying roots when trying to reach lower lying roots. In that respect, the battle axe with its slender hafting arrangement, was ideally suited to the task.

After an hour of chopping tree roots, it could be concluded that the battle axe performed very well. More interestingly, however, the traces that occurred were very much in line with the traces observed on the archaeological specimens. Already with the naked eye it could be seen that lots of edge damage had occurred resulting in an almost serrated edge, but also deep striations were present. This preliminary assessment could be confirmed after further inspection using both low and high-power microscopy. The type of wear, polish, edge damage, and the deep and distinctive striations could all be observed and closely resembled the traces on the archaeological specimens.

As always, it cannot be excluded that other (unknown) activities could also result in similar traces. It is therefore always important to continue performing further experiments with different activities or by varying certain variables of previously performed experiments. At the moment, however, the uprooting of trees is the most plausible explanation for causing the characteristic wear traces observed on the archaeological battle axes as a group. As these traces were often well-developed and had caused the battle axes to wear out considerably, it is reasonable to assume that this was their primary function in daily life.

5.6.4 Battle axes for clearing the land

From the premise that battle axes were weapons it is perhaps not difficult to understand why they were included in graves. Warfare and martiality usually are assumed to have been highly significant and ideologically-laden activities. Although it cannot be excluded that such activities were indeed associated with battle axes, the wear traces indicate that in daily life these objects played a rather different role. The uprooting of trees may not seem as a particularly glamorous activity, however, when taking into consideration the general developments taking place in the late 4th and early 3rd millennium BCE in north-west Europe, it becomes clear that these objects must have played a rather important role.

As presented in Chapter 3, in the late 4th and especially the 3rd millennium BCE several technological and economic changes occur that include the widespread introduction and usage of the plough, wheeled carts, and the introduction of the horse. These developments, however, were above all linked to a changing landscape. With the opening of the landscape, the increasingly expanding grass and heathlands provided

the stage where carts could be used to transport goods, where ploughs were used to work the fields, where herds of animals could graze. Especially for the use of the plough it is imperative that fields are free of obstacles, most notably tree stumps (*e.g.* Fokkens 1984; 1986). Although beasts of burden can be used to pull tree stumps out, at least the larger of the roots first need to be cut through.[114]

As such the 'battle axes' would have played an important role in the opening of the landscape and preparing fields for the use of the plough. Not only had such an activity great economic significance, it can also be assumed that this would have played an important role on an ideological level.[115] In the previous section it was already mentioned that several graves contained a set of axes (either a small and large flint axe, or a flint and stone axe) that may have been part of a single toolkit. The large/stone axe used for the heavier work, such as the felling of the trees, and the small/flint axe for more delicate crafting activities and woodworking. Instead of seeing the battle axe as a separate class of object, it rather appears to have been an integral part of the toolkit that focussed on the felling of trees, the removing of the stumps and hence preparing the land for ploughing, and the processing of the wood itself in order to craft a multitude of objects that made up the main part of the Neolithic material world. In this sense this toolkit played a pivotal role in various spheres of Neolithic life: the creation of open landscapes, the laying out of agricultural fields, the manufacturing of a wide range of products, both mobile artefacts (tools, carts, furniture, etc.) and immobile structures (houses, fences, trackways etc.).

From this perspective it is clear why the 'battle axe' was such an important tool. However, as an object the battle axe was not new. From the Funnel Beaker culture too, a wide variety of battle axes is known. Although these were not part of this study, the general description of the wear traces on these objects (see Bakker 1979) is quite similar (heavily worn, clear signs of damage and resharpening). Interestingly, however, they do not appear to have been present in Funnel Beaker culture graves as a cursory inventory did not reveal any finds of Funnel Beaker culture battle axes in either flat graves or megaliths. A notable exception is a recent find of a single battle axe in the exceptional Funnel Beaker culture grave field of Dalfsen (Henk van der Velde, pers. comm. 2015). The fact, however, that some are nicely decorated or have rather ostentatious shapes (such as the double-bladed specimens of Hanover type) that clearly surpass what is purely 'functional' indicates that these objects are likely to have had some symbolic or ideological significance. A more detailed investigation into the nature of the wear traces and find contexts of the Funnel Beaker culture battle axes would therefore be much welcomed.

5.6.5 Placement in graves

Again, the data available to study the position of battle axes in graves in relation to the body is extremely scarce. In fact, for only three finds the location in the grave was

114 Fokkens *et al.* (2016, 284) note that in the CW settlements of West Frisia, battle axes are notably absent, but given the fact that these were located on dunes in marshy environments where most of the transport must have been river-based (Fokkens *et al.* 2016, 27), there was perhaps no need to cut tree-roots or remove tree trunks.

115 For the potential ideological significance of tree stumps, see also the tree stump positioned upside-down in the centre of a henge monument in Britain known as 'Seahenge' dating at the end of the 3rd millennium BCE (Pryor 2001).

location	n	%
head	2	5,9%
torso	1	2,9%
unknown	31	91,2%
total	34	100,0%

Tab. 5.10 Location of LNA battle axes in relation to the body.

recorded in relation to the body (see Table 5.10). Two battle axes were found near the head and one in front of the torso.

Based on the battle axes alone, there is not enough data to come to any statistically sound conclusions. However, it can be observed that as was the case with the flint/stone axes as well as with the northern blades and French daggers, the battle axes too are only found near the upper half of the body.

5.7 Flakes, beads, arrowheads and other grave finds

The beaker, blade/dagger, axe and battle axe form the four main object categories present in LNA graves. In addition, a variety of other items occur such as flint flakes, amber ornaments, grindstones and arrowheads (see Table 5.1). Of these, flint flakes are the most common, with 58 objects coming from 22 graves (15.2% of the LNA graves). Amber beads are quite numerous when focussing on individual beads. However, the 82 recorded objects came from only five graves (3% of the LNA graves) and should probably be seen as five necklaces. As can be seen from Table 5.1 at the beginning of this chapter, the remaining types of objects are even rarer, such as grindstones (in four graves), hammerstones (in three graves), and flint arrowheads occurring in only three graves. The remaining categories only occurred as single objects in single graves.

These remaining categories – perhaps with the exception of the flint flakes (see below) – can thus hardly be seen as typical for LNA graves. In addition, these objects, without exception, only occur in graves when accompanied by one or more of the items out of the main four object categories (beaker, blade/dagger, axe or battle axe). This section primarily focuses on the role of flint flakes, arrowheads and amber beads, but the other remaining object categories are also discussed briefly.

5.7.1 Flint flakes

Generic flint flakes with an average length of ca. 30 mm should perhaps be seen as the fifth object category often present in LNA graves.[116] From the various excavation reports it becomes clear that flint flakes must have been present in at least 15.2% of the LNA graves (58 flakes coming from 22 graves). This, however, is a rather problematic object category for a variety of reasons. First of all, most barrow excavations date to the first half of the 20th century AD at which time simple flint flakes did not generate much interest. When in luck, it is mentioned in the excavation report that an often-undisclosed number of 'flint splinters' – as they were often called – were

116 These include also small blade-like flakes, although these can be twice as long as they are wide, they do not show parallel edges or a dorsal pattern indicative of standardised blade production, and therefore were included in this category.

contextcode	site	object	retouched	traces of use	remarks
AMP0229	Putten	flake	-	-	
AMP0229	Putten	flake	-	-	
AMP0229	Putten	flake	-	-	
AMP0229	Putten	flake	-	-	
AMP0229	Putten	flake	-	-	
AMP0229	Putten	flake	-	-	
AMP0387	Marum-De Haar mound 2	flake	-	-	
AMP0387	Marum-De Haar mound 3	flake	-	-	
AMP0387	Marum-De Haar mound 4	flake	-	-	
AMP0538	Groenlo flatgrave	flake/blade	-	-	
AMP0538	Groenlo flatgrave	flake/blade	-	+	cutting mineral mat.

Tab. 5.11 Overview of wear traces on LNA flakes from graves: (+) yes; (-) no.

location	n	%
torso	1	1,7%
pelvis	3	5,2%
knee	1	1,7%
feeth	3	5,2%
unknown	50	86,2%
total	58	100,0%

Tab. 5.12 Location of LNA flakes in relation to the body.

also found. Many of these, however, did not reach the museum collections that now house the beakers, blades and (battle) axes. If they did, this also did not guarantee their availability as many of these finds appeared to have been lost or misplaced, making them unavailable for analysis.

It should also be expected that in many occasions flint flakes were found – or were at least present – but that this information did not make it into the excavation report. The 15.4% mentioned therefore likely represents a minimum. Furthermore, many of the older reports do not describe the find locations in much detail. The problem with generic flint flakes of course is that they also occur in the normal Neolithic settlement debris. It is thus not always clear whether the 'flint splinters' described in these reports really were formal grave goods or that these objects were simply part of the backfill of the grave pit. That this is indeed a potential problem became clear during the recent excavation of several Late Neolithic graves near the town of Hattemerbroek (Drenth *et al.* 2011). Here the fill of the grave pits was carefully sieved and were found to contain dozens of flint and stone artefacts as well as pottery sherds that predated the graves, indicating that these finds should be regarded as intrusive material and not as proper grave goods.

There are thus several reasons why the occurrence of flint flakes in graves is problematic, both with respect to the quantity of finds as well as their possible associations with other grave goods. The information that is available, however, does suggest that flint flakes occur in combination with any other type of grave good. In about half of the graves containing flakes, they were part of sets of up to seven flakes.

Of old, most flint artefacts only generated interest when they could easily be recognized as specific tool types, or if at least they showed signs of modification in the form of retouch. Functional analysis, however, revealed that common, unretouched flint flakes and blades often show traces of all sorts of uses (Van Gijn 1990; 2010). This is well understandable as no form of modification will create a sharper edge than is already present on a freshly knapped flake or blade. This, in combination with the ease at which simple flakes can be produced, makes them ideally suited for many tasks. In many ways a set of flint flakes can be seen as the prehistoric equivalent of the modern Swiss Army knife.

Although it is very difficult to analyse the data with the above problems in mind, there are some general patterns that can be observed. Of the 22 graves known to have contained flint flakes, ten contained only a single flake. The other 12 graves contained multiple flint flakes varying in numbers from two to seven, with an average of three to four. The dead apparently were provided with either a single flake or a set of flakes.

Out of the total of 58 flakes, unfortunately only 11 flakes, coming from three graves, were available for functional analysis (see Table 5.11). One blade-like flake from a grave near Groenlo[117] showed traces of cutting a mineral material. Of the remaining graves, however, none revealed any distinguishable traces of use.

As with the other object categories, there is only very limited information about the placement of flint flakes in the grave in relation to the body (see Table 5.12). Although the numbers are again far too small for sound statistical patterns, it is interesting that most flint flakes for which the find location was recorded were actually found near the lower half of the body, the feet, knees and pelvis. This in contrast with the find locations of the blades/daggers, axes and battle axes that were solely associated with the upper half of the body. Although these observations should be greeted with great caution, it does seem that there were some structuring principles when it came to the placement of specific objects in relation to the body.

5.7.2 Arrowheads

Arrowheads are notably absent in Dutch LNA graves (see also Modderman 1982, 22). In the Funnel Beaker culture megaliths the arrowhead is the most frequently occurring formal flint tool type (excluding flint flakes and waste) with finds numbering in the dozens or even well over a hundred per tomb (Van Woerdekom 2011). In the later LNB, the arrowhead is also a frequently occurring item in graves (see Chapter 6). In the LNA, however, only three graves contained arrowheads (2.1% of the LNA graves). In two occasions only a single arrowhead was found in which case it should even be questioned whether these represented formal grave goods or rather the cause of death. For one of these arrowheads, moreover, it is not even clear

117 AMP0538 (Gelderland).

contextcode	site	object	traces of use	remarks
AMP0353	Borger-Drouwenerstraat Tum I	arrowhead	-	
AMP0353	Borger-Drouwenerstraat Tum I	arrowhead	-	
AMP0353	Borger-Drouwenerstraat Tum I	arrowhead	-	
AMP0353	Borger-Drouwenerstraat Tum I	arrowhead	?	
AMP0353	Borger-Drouwenerstraat Tum I	arrowhead	+	shooting
AMP0353	Borger-Drouwenerstraat Tum I	arrowhead	+	shooting
AMP0353	Borger-Drouwenerstraat Tum I	arrowhead	+	shooting
AMP0353	Borger-Drouwenerstraat Tum I	arrowhead	+	shooting

Tab. 5.13 Overview of wear traces on LNA arrowheads from graves: (+) yes; (-) no; (?) unsure/not interpretable.

whether it was actually found in the grave. It might also have come from somewhere in the mound body.[118]

Only one LNA grave near Borger (mound 1, Drenthe)[119] unambiguously contained arrowheads as grave goods. In this grave a total of eight arrowheads were found that were all subjected to functional analysis by Van Gijn (2010) (see Table 5.13). One of the arrowheads was not interpretable and three did not display signs of wear. The remaining four, however, all showed signs of use as a projectile resulting in fractures on the tip and characteristics streaks of polish that occur as result of impact. It must be noted that in experiments it was shown that only two out of three arrowheads will show signs of wear after use as a projectile (Van Gijn 1990). It is thus well possible that some of the arrowheads without wear traces were in fact used. It is unclear whether these arrowheads were retrieved from shot enemies, wounded comrades or the prey of a hunting expedition.

For the LNA this, however, is a unique grave. It is in fact far more reminiscent of earlier Funnel Beaker culture graves. Some of the arrowheads, although they appear clumsily made, resemble the typical pine-tree shaped CW-arrowheads (triangular with a tang but without barbs; Drenth 2005). Most, however, are transverse arrowheads, which are typical for the Funnel Beaker culture. It is thus well possible that this grave should be placed early in the 3rd millennium BCE as it appears to combine both Funnel Beaker culture and CW elements in the grave set.

For only one arrowhead it was recorded that it was located near the head of the deceased. For none of the other arrowheads the location of the finds was/could be recorded in relation to the body.

5.7.3 Amber beads

Like the arrowheads, ornaments – in particular beads – are largely absent from LNA graves. This absence is remarkable as in both the preceding Funnel Beaker culture and subsequent LNB (see Chapter 6) they are a well-represented category in graves. The Funnel Beaker culture tombs have revealed many well-made amber beads (Verschoof 2011; 2013; Van Gijn 2017; 2015) and although various types of beads and half fabricates are known from CW domestic sites (Bulten 2001, 471; Garcia-Diaz 2012; Piena

118 AMP0094, barrow near Helden (Limburg).
119 AMP0353.

context-code	site	no traces of wear	lightly worn	medium worn	heavily worn	indet/not interpre-table	total nr. of beads studied
AMP0257	Garderen-Solsche Berg mound 4	-	8	5	18	5	36
AMP0387	Marum-De Haar mound 2	-	-	1	1	1	3

Tab. 5.14 Overview of wear traces on LNA amber ornaments from graves.

and Drenth 2001, 433; Van Gijn pers. comm. 2012), there are only five LNA graves in the research database that contained amber beads (3.4%). Ornaments from other materials such as jet are lacking entirely. Based on the associations with pottery types (AOO, 1b, 1d and 1e type beakers) and French daggers, it is furthermore likely that all graves with amber beads should be dated to the end of the LNA. The wear traces described below were analysed by Van Gijn as part of various published and ongoing research projects focussing on amber and jet ornaments (see Van Gijn 2017; 2015; 2011).

For one of the five graves containing ornaments it is uncertain whether the single bead retrieved was really part of the grave as the bead was only found after excavation in the spill of the grave pit and no further information is published.[120] One grave near Marum[121] contained three beads, two of which showed clear signs of wear, the third being not interpretable due to bad preservation (see Table 5.14). These lozenge- and biconically-shaped beads were well-made and had apparently been part of a necklace of some sort before they were placed in the grave.

The three remaining graves all contained highly similar, albeit unique, types of amber beads. Two of these graves came from two neighbouring barrows (mound 3 and 4) near the town of Garderen (Veluwe). In one of these graves (mound 4), what must have been a complete necklace was found consisting of 39 beads[122], 36 of which could be studied for traces of wear (see Fig. 5.22 and Table 5.14). The other grave (mound 3) contained only three beads.[123] In both cases the beads appeared to be more or less natural nodules of amber that, although showing evidence of flaking, did not really give the impression that they had been carefully shaped. These irregular nodules, moreover, were perforated with a solid drill resulting in hourglass-shaped perforations. This seemed rather 'primitive' as the Marum beads – but also many of the Funnel Beaker culture beads and later LNB beads – in comparison show very carefully created cylindrical perforations. In addition, the perforations coming from both sides of the beads often did not align, creating highly irregular holes. All in all the beads from these two graves give the impression of having been made rather clumsily.

The beads from mound 4 showed extensive signs of wear (see Table 5.14). Some were even broken and repaired by the drilling of a new perforation (see Fig. 5.23). Not all beads showed wear to the same degree, suggesting that every now and then new

120 AMP0356, mound 2 near Borger (Drenthe).
121 AMP0387, mound 2 near Marum (Groningen).
122 AMP0257.
123 AMP0002.

Fig. 5.22 Amber bead necklace from mound 4 near Garderen (Veluwe, AMP0257), scale 1:3 (drawing: author).

beads were added – and perhaps worn out beads that could not be repaired were discarded. It is difficult to reconstruct the biography of such a necklace, but what is clear is that these beads all had individual life-histories. This means that beads must have been added and – as may be assumed – extracted from the necklace at various points in time.[124] This might be related to the exchange of these objects between individual people or alternatively with the maintenance of the individual necklace. Both scenarios, however, imply that the necklace was a valued item that was maintained, repaired and showed signs of wear and tear. This necklace, moreover, should not be seen as a static singular object but rather as a dynamic composite object.

The beads from mound 3 near Garderen could not be studied for traces of wear. However, their general appearance indicates a close relation to the beads of the above described necklace. These beads too appeared clumsily made – looking basically like perforated raw nodules of amber. Given both the close spatial proximity of the two graves and the similarity of the beads, it is reasonable to assume a strong link between the two. Perhaps both sets of beads were produced by the same person, or at one stage were even part of the same necklace. It would even be reasonable to imagine that the people buried in these separate barrows knew each other and had a social relation in life. The fact that in addition to these peculiar beads both graves also contained a flint axe and – much rarer – a French dagger made of Grand-Pressigny

124 Also see Sheridan's (2015) research on different life histories of buttons found together in closed contexts (see also Barrett 1994, 121-123).

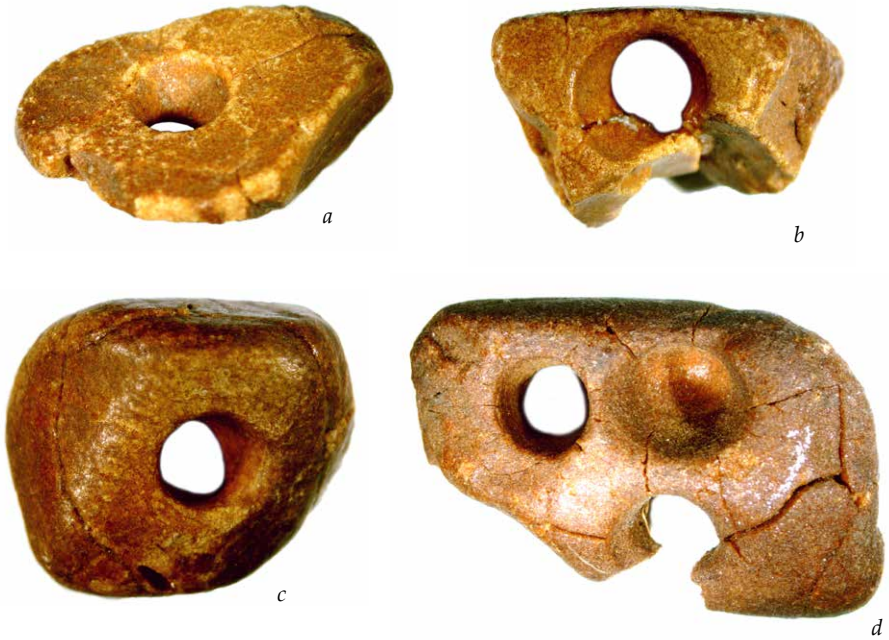

Fig. 5.23 Several photos taken with a stereomicroscope of the beads from mound 4 near Garderen (Veluwe, AMP0257). Note the overall irregular character of the beads. The perforations show rounding and wear, note especially the asymmetrically worn perforations on (b) and (c). The beads (d) and (e) show old and unfinished perforations resulting of multiple phases of repair. Maximum dimensions of the beads depicted are: (a) 18 mm; (b) 17 mm; (c) 17 mm; (d) 24 mm; (e) 16 mm (collection: National Museum of Antiquities, Leiden).

flint further substantiates this. The grave with the 39-bead necklace (mound 4) furthermore contained an AOO beaker and a battle axe, although the latter was found outside the actual grave pit making its relation to the grave somewhat uncertain. Nonetheless the similarity between the two graves is striking.

The third grave containing these types of beads is located near Aalden (Drenthe).[125] Here 36 beads were found together with an AOO beaker (almost identical to the AOO beaker from mound 4 at Garderen) and according to the publication also the 'remains of a heavily degraded cup' were found (see Lanting and Van der Waals 1976, fig. 14). Although these beads were not studied for traces of wear, they strongly resemble the Garderen beads. Interestingly, however, the beads reportedly were found scattered throughout the grave pit[126], suggesting that if they had been part of a necklace, the necklace was broken and the beads were subsequently intentionally scattered through the grave. Alternatively, the beads could have been sewn to a blanket or shroud that covered the body.

Unfortunately, for none of the LNA graves with beads it is known where they were found in relation to the body.

125 AMP0547. It is interesting to note that similar, rather clumsily made beads are known from Denmark. See for example grave 8 from a barrow near Rørkær (Esbjerg) where apart from 40 beads also a bucket-shaped beaker was found with BB-related decoration (see Hübner 2005, catalogue no. 1256).

126 Based on documentation of the grave in the collection of the Drents Museum, Assen.

contextcode	site	object type	raw material	length	funct. analysis	wear traces	traces of use	remarks
AMP0529	Baarn-De Drie Eiken	awl	bone	-	-			burned frag., amonst cremated remains
AMP0529	Baarn-De Drie Eiken	awl	bone	-	-			burned frag., amonst cremated remains
AMP0514	Emmerhout-Angelslo-Kruidhaarsveld Tum X	grindstone	stone	-	-			no details known
AMP0361	Hijken-Hijkerveld	grindstone	stone	95	-			no details known
AMP0495	Anlo grave D	grindstone	stone	-	-			no details known
AMP0528	Putten-Voorthuizenseweg	grind stone	stone	415	+	+	+	large flat grindstone, traces of grinding stone (axes?)
AMP0518	Ermelo-Groevenbeekse Heide	hammerstone	stone	-	-			published as "stone ball" probably a hammerstone
AMP0518	Ermelo-Groevenbeekse Heide	hammerstone	stone	-	-			published as "stone ball" probably a hammerstone
AMP0560	Pesse-Sportveld grave 2	hammerstone	stone	60	-			no details known
AMP0448	Fochteloo	hammerstone	stone	-	-			no details known
AMP0365	Weerdinge-Steenkransheuvel mound 1	unknown	flint	-	-			exc. report mentions 3 "flint objects" (flakes?)
AMP0041	Swalmen-Bosheide mound 8	unknown	stone	-	-			4 fitting frag. of sandstone, unknown if it is an artefact
AMP0146	Soesterberg-Rijksstraatweg mound 3	unknown	flint	-	-			exc. report mentions 3 unworked blocks of flint
AMP0231	Soestdijk-Roosterbos mound 2	unknown	flint	-	-			possibly flint scraper, lost at excavation
AMP0539	Ballo-Tumumusbos grave 1	unknown	stone	-	-			no details known
AMP0039	Swalmen-Bosheide mound 6	indet	flint	-	-			"flint splinter" (flake?) lost at excavation
AMP0535	Borger-Molenplaatsweg Tum VI	indet	metal	-	-			small block of copper, no parallels known
AMP0529	Baarn-De Drie Eiken	barley	seeds	-	-			carbonized barley grains
AMP0529	Baarn-De Drie Eiken	spindle whirl	ceramic	-	-			no details known

Tab. 5.15 Overview of 'other' finds from graves.

5.7.4 Other grave finds

The only objects found in LNA graves that have not already been mentioned can be found in Table 5.15. Apart from four grindstones and four hammerstones, the list contains a variety of items that were either non-diagnostic – items mentioned in old excavation reports and either not collected or lost – or occurred in a grave only once. These latter finds include two fragments of a bone awl, a spindle whorl, carbonized barley grains and a small copper object (see Table 5.15). Although none of these items can be said to be a 'typical' part of the LNA grave set, they are discussed in more detail below.

Fig. 5.24 Metal object found in a LNA grave near Borger (Drenthe, AMP0535), scale 2:1 (collection: Drents Museum, Assen; photography: J. Beuker).

Fig. 5.25 Large grindstone from a LNA grave near Putten (Veluwe, AMP0528), length 415 mm, scale ca. 1:3 (collection: GAS).

One of the most remarkable objects is a small piece of copper (see Fig. 5.24) found alongside two northern flint blades in a central grave of Tumulus 4 near Borger (Drenthe).[127] Unfortunately, this excavation is not published and no more detailed information is available than that during excavation a fragment of copper was found. As such this find would be the only confirmed metal find in a Dutch LNA grave as far as is known to the author. The object itself does not seem to be a specific artefact type. It is a small block/nodule with a maximum length of merely 9 mm.

Seven LNA graves are said to have contained a total of four grindstones and four hammerstones (see Table 5.15). Only one of these could be examined for traces of use. This concerned the rather remarkable find of a large, 6.5 kg weighing grindstone (see Fig. 5.25) that was found in a grave near Putten (Veluwe).[128] Use wear analysis indicated it had most probably be used to grind/polish stone implements such as stone or flint axes.

In Baarn (Utrecht)[129] an extremely rare CW cremation burial was excavated that contained some unique grave goods as well, including a spindle whorl, fragments of two bone awls, the burnt remains of a beaker and a considerable quantity of carbonized grains of naked barley. All finds appear to have been burned on the pyre alongside a young woman based on analysis of the cremated remains (Van Tent 1996, 31).

127 AMP0535.
128 AMP0528.
129 AMP0529.

For only one of the hammerstones mentioned in this section it was recorded that it had been found behind the back of the deceased, for none of the other finds information is available about their placement in relation to the body.

5.8 Concluding remarks

In summary, the LNA graves considered in this research contained a very limited and almost rigid set of items. Apart from the beaker, this set consisted of imported flint blades from southern Scandinavia or the later flint daggers from central France, flint and/or stone axes and battle axes. Although generic flint flakes also regularly occur, other objects are either extremely rare or absent altogether.

The northern flint blades did not appear to have been used, and apparently were valued as items of exchange from other CW groups in northern Germany and southern Scandinavia. It is not until the end of the LNA that items appear in graves indicating exchange relations with the south, of which the French daggers are the clearest example. As such, both blades/daggers and beakers appear to emphasize the importance of these exchange relations, either by including objects obtained from afar, or, in the case of the beakers, items made in an international style (see Chapter 4).

The stone and flint axes and, as argued in this chapter (Section 5.6), the battle axes, can be seen as part of a toolkit related to woodworking and landscape management. It was suggested that the large flint and stone axes were used for heavy woodworking (such as the felling of trees), the battle axes for uprooting of the tree stumps, and the small flint axes could be employed for the finer carpentry. Although these objects were probably valued items in their own right, their main importance comes from the task they were used for: woodworking. Although 'stone' is used to characterise the Neo*lithic*, the vast majority of material culture actually would have been made out of wood. The felling and uprooting of trees created a landscape suitable for agriculture, ploughing and grazing livestock. It moreover created the open landscapes in which the barrows were erected and transport by cart and horse were possible. The wood itself was used in a multitude of ways varying from the building of houses, fences, trackways, carts and wheels, to all sorts of domestic tools and furniture. These were the objects used to shape the landscape and create a large part of the Neolithic material world.

6

The Life of Late Neolithic B grave goods

6.1 Introduction

As was the case in the LNA, during the LNB the beaker also is the most frequently occurring type of object in graves. The percentage of LNB graves containing pottery is even almost identical to that of the LNA graves, being 68% versus 70% respectively (see Chapter 4). As far as the practice of placing beakers in graves is concerned, there is thus a strong level of continuity between the LNA and LNB. Apart from the beaker, however, all other types of grave goods seem to change (see Fig. 6.1 and Table 6.1). The

LNB grave goods	**number of objects**		**occuring in graves**		**objects per grave**
object type	n	%	n	%	average
beaker	123	27%	97	68%	1,3
flakes/blades	77	17%	39	27%	2,0
arrowhead	70	16%	20	14%	3,5
wristguard	21	5%	20	14%	1,1
amber ornaments	85	19%	19	13%	4,5
copper dagger	11	2%	11	8%	1,0
cushion stone/anvil	7	2%	3	2%	2,3
gold ornament	7	2%	4	3%	1,8
copper other	6	1%	5	3%	1,2
strike-a-light	8	2%	7	5%	1,1
pyrite/markasite	4	1%	4	3%	1,0
arrow shaft smoothener	3	1%	2	1%	1,5
battle axe	8	2%	7	5%	1,1
flint dagger	3	1%	3	2%	1,0
flint/stone axe	4	1%	3	2%	1,3
other	11	2%	6	4%	1,8
total nr. of objects	448	100%			

Tab. 6.1 Overview of number of LNB grave goods per object category, number of graves containing objects of that category and the average number of objects per grave.

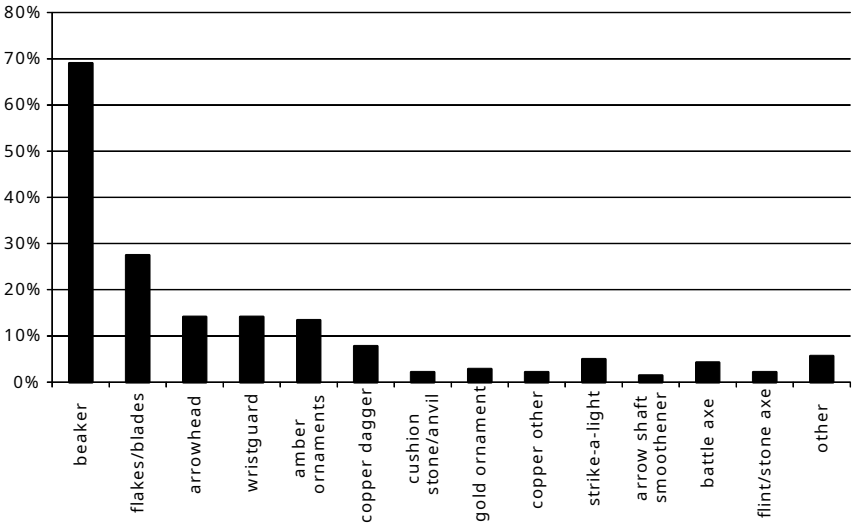

Fig. 6.1 Relative frequency of object types in LNB graves.

most frequently occurring types of objects in the LNA graves (northern flint blades, axes and battle axes), are (largely) absent in the LNB graves. In contrast, objects that were notably missing in the LNA – such as archery equipment or amber ornaments – are in the LNB among the most frequently occurring types of objects. Apart from the practice of placing beakers in graves, there thus appears to be a clear difference between the LNA and LNB when it comes to grave goods.

The 143 LNB graves in the research database reveal many different types of objects. The grave set in the LNB becomes more varied, comprising more different categories of objects. The LNB grave set is therefore less standardised than the LNA one. As a result, this also means that per object category, the grave goods in the LNB are much rarer than the objects types predominantly found in the LNA graves. In the LNA, for example, the most frequently occurring type of object, apart from the beaker, was the flint blade/dagger which occurred in 51% of the graves. For the LNB, however, the most frequently occurring type of object, apart from the beaker, are flint flakes. These, however, occur in only 27% of the LNB graves. These are followed by the stone archer's wristguards and flint arrowheads. Even when these two categories are combined, 'archery equipment' is found in only ca. 14% of the graves. Amber ornaments occur in only 13% of the graves and the other types of grave goods all drop (well) below 10% (see Table 6.1).

6.2 Flakes and blades

With the exception of the bell beaker itself, simple flint tools (either retouched or unretouched flakes and the occasional blade) are by far the most frequently occurring type of object in LNB graves. The research database revealed that 39 LNB graves contain a total of 77 (retouched) flint flakes and blades. This group also includes the occasional flint scraper and so-called 'Bell Beaker knives', a type of retouched flint flake regularly found in BB contexts. Although these are often described as a

separate category, it is in fact quite difficult to draw a clear line separating flakes, retouched flakes and Bell Beaker knives. Since they do not represent a clearly delimited object-category – and essentially are retouched flakes – it was decided that in the context of this thesis it would be better to discuss these various types of retouched and unretouched flint artefacts together.

Before discussing these finds in detail, the reader should be reminded of the discussion presented in the previous chapter regarding flint flakes (Section 5.7.1). Although many of these flint tools would have been intentionally deposited in graves, the flint artefacts as a group are quite problematic. To summarize the problem, there is the issue of representativity. In many of the earlier excavations flint artefacts were not always retrieved, kept or published. In addition, flint tools occur in and around human activity sites throughout prehistory. It is therefore not always possible to determine whether simple flint artefacts concern intentional grave goods or were part of the backfill of the grave pit. Hence, not all of these finds are necessarily intentional grave goods, and there also might have been many more graves for which flint artefacts went missing, were left unrecorded or went unpublished. Although from the current dataset it is clear that simple flint tools must have been one of the most regularly occurring types of grave goods, it is difficult to precisely define this in quantitative terms.

6.2.1 Production

The flint flakes and 'blades' found in LNB graves are typically made in an opportunistic, *ad hoc* style and do not portray any particular form of special skills (Van Gijn 2010, 149). Although some are twice as long as they are wide, allowing the term 'blade' to be used, these 'blades' are not the result of standardized blade production – which involves special core preparation, maintenance and reduction techniques. In this case, 'blades' are merely blade-shaped flakes coming from an otherwise simple flake-oriented production sequence. In some cases these flakes show signs of secondary modifications, but even when this is the case, this often takes the form of a rather haphazardly applied zone of border retouch. In one occasion the retouched flake could be classified as a scraper. The raw materials used are typically of a local origin. For both the Veluwe and the north-east Netherlands this primarily concerns moraine flint. In all respects the flint flakes represent items made locally from easily obtainable raw materials in an *ad hoc* manner. Although some of the 77 flakes show signs of retouch (27%), making them suitable to be used, for example, as scrapers, most are just simple unmodified flint flakes with sharp edges (73%). Some of the other flint objects in circulation during the LNB – most notably the imported Scandinavian flint daggers, but also the LNB arrowheads – show considerable skill and craftsmanship. Flint working skills were thus present and apparently appreciated. However this did not involve these generic flint tools. Their inclusion in graves, however, does suggest that they were valued enough to be placed in graves, but apparently for reasons other than the skill involved in their production.

Apart from generic flakes and blades, Bell Beaker graves, on occasion, also contained objects that are generally classified as so-called 'Bell Beaker knives' (ca. 14 specimens depending on definition used). These objects show some form of standardisation, being thin and wide flint flakes with partially applied border retouch, or sometimes surface retouch, usually only on the dorsal face (Lanting 2008, 64).

As a group, however, the flint tools found in Bell Beaker graves comprise both unretouched and retouched flint flakes, the latter with various levels of regularity. Although some well-made Bell Beaker knives exist, there are also more roughly shaped flakes with dorsal retouch. As it is a sliding scale it is thus not really possible to draw a clear line that separates the Bell Beaker knives, as an object-type, from the other retouched flint flakes.

6.2.2 Use life

Both retouched and unretouched flint tools are highly effective in the performance of all sorts of tasks. Throughout the Stone Age, but probably well until the Bronze/Iron Age, a simple flint flake provided the sharpest cutting edge available on any tool. As was mentioned in the previous chapter, a set of flint flakes can thus best be compared with the modern Swiss Army knife: suited for all sorts of tasks, which can easily be transformed into another tool in usually no more than a few seconds with the use of a small pebble or retoucher.

In total 18 flint tools from certain LNB burial contexts were studied for traces of wear (see Table 6.2). The majority of the flint items subjected to functional analysis did not show signs of wear (n=10) or could not be interpreted due to post depositional surface modifications (n=2). The six tools remaining however, appeared to have been used for a variety of tasks.

contextcode	site	object	retouched	traces of wear	contact material
AMP0172	Uddelermeer mound E	flake*	+	+	wood
AMP0172	Uddelermeer mound E	natural	-	-	-
AMP0172	Uddelermeer mound E	flake	+	+	wood
AMP0172	Uddelermeer mound E	flake*	+	?	-
AMP0404	Ede-Ginkelse Heide	flake	-	-	-
AMP0404	Ede-Ginkelse Heide	flake	+	-	-
AMP0404	Ede-Ginkelse Heide	flake	-	-	-
AMP0404	Ede-Ginkelse Heide	flake	-	-	-
AMP0404	Ede-Ginkelse Heide	flake	+	+	clay/pottery
AMP0404	Ede-Ginkelse Heide	flake	-	-	-
AMP0404	Ede-Ginkelse Heide	flake	-	-	-
AMP0412	Lunteren-Goorsteeg	flake*	+	-	-
AMP0427	Renkum-Quadenoord	blade	+	+	mineral
AMP0436	Apeldoorn-Gardense Veld	flake	-	-	-
AMP0436	Apeldoorn-Gardense Veld	flake	-	-	-
AMP0440	Ermelo-Erve Danelaar	flake	-	?	-
AMP0487	Wijchen-Bijsterhuizen grave 3	flake*	+	+	wood
AMP0497	Hattemerbroek-Hanzelijn grave 1	flake*	+	+	soft material

*Tab. 6.2 Overview of retouch and wear traces on LNB flakes and blades: (+) yes; (-) no; (?) unsure; * indicates flakes that could be classified as Bell Beaker knives.*

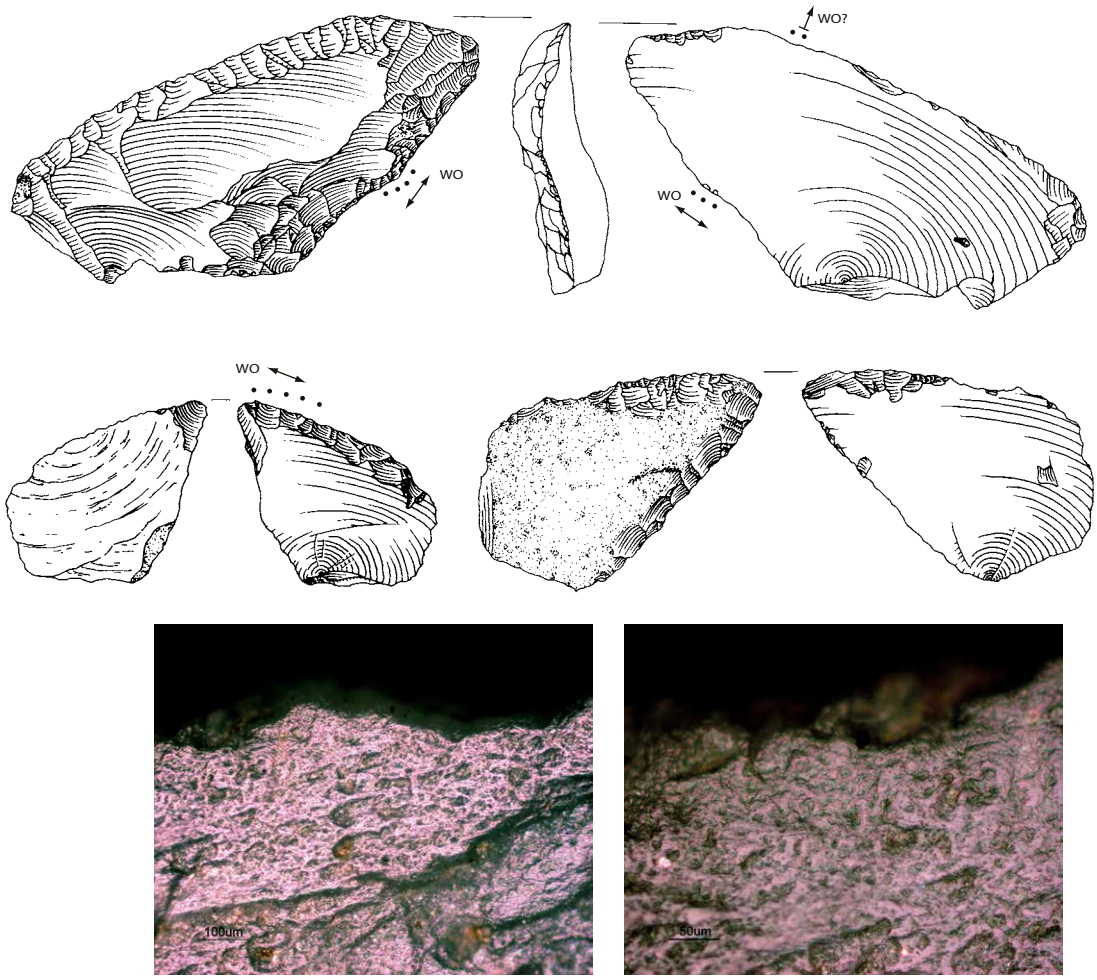

Fig. 6.2 Presence of wear traces indicated on retouched flakes from a grave near the Uddelermeer (AMP0172, Veluwe), scale 1:1; microscope photographs illustrating the wear traces observed on the upper retouched flake, resulting from wood-working, (left) magnification 100x; (right) magnification 200x (drawing: R. Timmermans).

Four flint objects from a barrow near the Uddelermeer (Veluwe, see Fig. 6.2)[130] were studied for traces of use. One concerned a naturally formed frost-cracked piece without traces of use. Perhaps this object was not a formal grave gift but rather part of the natural subsoil. The remaining three flakes showed signs of retouch and two, albeit roughly shaped, could be classified as Bell Beaker knifes. Of the three retouched pieces, two showed signs of wear. However, the polish resulting from usage was located only on isolated spots along the edge. In all likelihood the pieces had been sharpened by applying retouch after they had been used. Although the wear traces found were not very well-developed and, more importantly, partly removed through secondary retouch, it appears that these retouched pieces had been employed in cutting wood.

130 AMP0172, mound E.

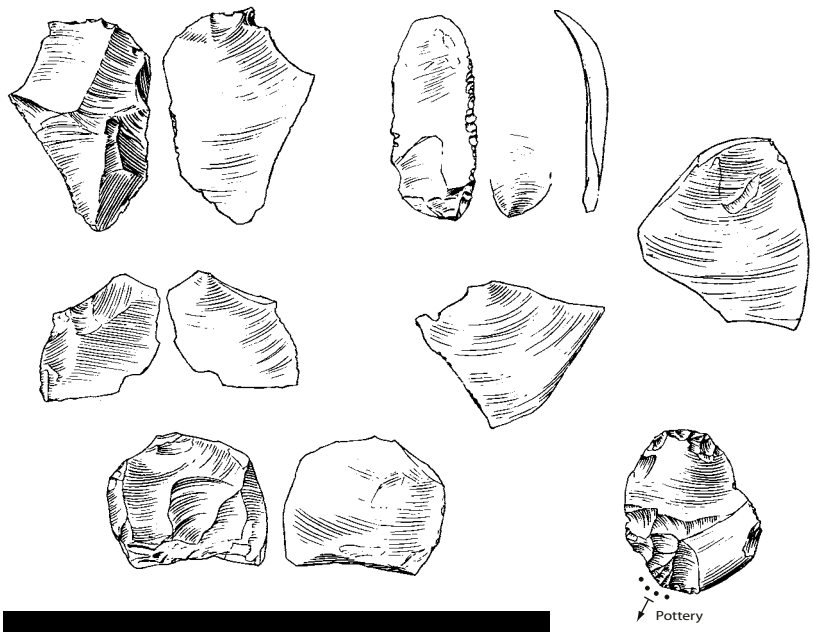

Fig. 6.3 Flint flakes from a grave near Ede-Ginkelse Heide (AMP0404, Veluwe), scale 1:1, with indicated traces of use; (bottom right) microscope photograph (magnification 100x) illustrating traces resulting from scraping pottery (drawing: Butler and Van der Waals 1966, fig 4a).

That flint tools were not always used for activities we expect – based on the presence of other grave goods – is illustrated by the wear traces found on one of the flint tools from the famous archer's grave of Ede-Ginkelse Heide (Veluwe).[131] This well-known barrow contained a cremation grave with various grave goods: seven flint arrowheads, two strike-a-lights, a stone wristguard, a maritime-style Bell Beaker, a tanged copper dagger and seven flint flakes (one of which with retouch). The cremated remains were studied shortly after excavation (first half of the 20th century) by prof. H.F. Nierstrasz (Utrecht University) and were said to be of an adult male, though apparently the remains also included those of a young child. Given the early date of this analysis the reliability of these results should be greeted with caution (see Van der Vaart-Verschoof 2017, 30). Six of the flint flakes showed no signs of retouch and neither did their very sharp edges display signs of wear. Although these objects would have been suitable for a multitude of tasks, they did not show traces of use. The seventh flake, however, had

131 AMP0404.

a small retouched zone with very clear and well-developed traces of use that could be interpreted as the result of scraping dry clay or pottery (see Fig. 6.3). The heavy rounding and clear striations are indicative of such an activity. The scraping of pottery is generally done for thinning the vessel's wall and even its thickness. The presence of the arrowheads, wristguard and tanged a dagger may be taken as indicative of an 'archer' or 'warrior' identity. However, hidden among the flint flakes evidence was found for an entirely different sphere of activities.

The remaining three flint tools that showed traces of use were retrieved from three different graves. A Bell Beaker knife from a cremation grave of an adult individual found near Wijchen (Gelderland)[132] had been used for cutting wood. Similar to the finds from Apeldoorn-Uddelermeer (see above), the wear traces were observed only on isolated spots indicating that the tool had been sharpened after use and prior to deposition. A retouched blade from a barrow near Renkum (Veluwe)[133] showed heavy rounding and striations indicative of a transverse motion. The polish showed similarities to both hide and mineral substances. Unfortunately, the piece suffered quite some post-depositional surface modifications, making it impossible to further narrow down what the object had been used for. A flat grave near Hattemerbroek located just north of the Veluwe[134] contained a Bell Beaker knife that showed minor traces of scraping a soft material.

To conclude, several different types of wear were observed on the various flint tools described above. They all appear to have been related to crafting activities: the working of wood, scraping of pottery and scraping of mineral substances or possibly hide. Notably missing are activities related to subsistence: the production and preparation of food. There are no traces of butchering animals, scaling of fish or most notably the harvesting of cereals. Especially the latter is a type of activity that generates highly characteristic traces that cannot be easily overlooked. Moreover, cereal harvesting tools are regularly found in graves of the Linear Pottery culture and Funnel Beaker culture (Van Gijn 2011; pers. observ. of the author).

6.2.3 Placement and arrangement in graves

In only a few cases it was recorded where in the grave the flint tools were found in relation to the body (see Table 6.3). Four flint tools were found with the feet, four near the knees, another four near the pelvis with an additional five found in the centre of the grave pit suggesting they were originally placed near the pelvis. Two flint tools were found behind the back of the deceased and five near the head. In addition, six flint tools were recorded near the western edge of the grave and two near the eastern edge suggesting that they were placed either near the head or the feet, depending on the orientation of the body.[135] One flake was found near the northern edge and another near the southern edge, these were probably placed behind the back or in front of the pelvis/torso respectively.

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132 AMP0487.
133 AMP0427.
134 AMP0497, Hattemerbroek-Hanzelijn grave 1.
135 Bodies are generally oriented E-W with their heads either in the east or the west, see Chapter 7.

location	n	%
head	5	6,5%
back	2	2,6%
pelvis	4	5,2%
knee	4	5,2%
feet	4	5,2%
unknown	58	75,3%
total	77	100,0%

Tab. 6.3 location of flint flakes and blades in relation to the body.

Although for most finds the location in the grave went unrecorded, it can be concluded that a wide variety of locations in relation to the body was deemed suitable for depositing flint tools. When found near the pelvis, it is possible that the flint tools were perhaps inside a small bag worn around the waist (and part of the overall dress). However, particularly the finds near the head or feet indicate these objects were placed in the grave as a distinctly separate action. It, therefore, is important to realize that *we* may tend to overlook these seemingly 'generic' flint tools or underestimate their importance (they are often only cursorily mentioned or not even depicted in excavation reports), but these items were evidently not simply 'items left accidentally in the deceased's trouser pockets'. Instead they represent distinct and meaningful depositional actions performed by the mourners.

6.3 Archery equipment

Throughout the Early and Middle Neolithic, arrowheads had been part of burial assemblages (for example in the Linear Pottery culture and Funnel Beaker culture, see Section 5.7.2). However, as was discussed in the previous chapter, the arrowhead almost completely disappeared from graves in the LNA. It therefore is noteworthy that the flint arrowhead made a clear comeback in the LNB, when it once again became one of the main elements of the grave set. Apart from the arrowhead, however, other paraphernalia related to archery also found their way into BB graves. These include the stone archer's wristguards and stone arrow shaft smoothers. Combined, these items occur in 31 graves (ca. 22% of the LNB graves in the research database).

The wristguard or bracer is a thin slab of polished stone with one or two perforations at either end.[136] It was commonly accepted that these items were worn on the lower arm in order to protect the wrist from the slap of the bowstring (see Woodward and Hunter 2011,1 for discussion on research history of bracers). Fokkens *et al.* (2008), however, noted that many bracers were actually found in graves on the outside of the wrists, suggesting they may have had an ornamental rather than a practical function. The arrow shaft smoothers are fist-size stones with a flattened surface and a central groove. When used as a pair, these stone implements can be used to grind and straighten wooden arrow shafts. Obviously, these objects are quite different in raw material, production and use, and their biographies should be described and investigated separately. However, as they are all part of, or are believed to relate to, the same activity – archery – their individual life stories will be combined at the end of this section.

136 Elsewhere in Europe specimens are known with more perforations, see Woodward and Hunter 2011.

6.3.1 Flint arrowheads

Across Europe the flint arrowhead (re)emerges in BB graves.[137] Although the Dutch BB graves yielded various types of arrowheads, one type is of particular interest: the barbed-and-tanged arrowhead (see Fig. 6.4 left). This type of arrowhead did not occur previously and is taken to be a type-artefact for the BB complex as it occurs throughout Europe (Burgess and Shennan 1976, 309; Cornelissen 1988; Nicolas 2016; Parker Pearson *et al.* 2019b, 177).[138] When considering the raw material used in their manufacture, these objects were probably locally manufactured, mostly from moraine flint, although it cannot be excluded that some were also exchanged or produced from specially imported flint (see Van Gijn 2010, 151). Similar to the beakers, the barbed-and-tanged arrowheads too were items that were probably locally produced but in a supra-regional style.

A variety of other arrowhead-types also occur in BB graves, such as triangular ones with surface retouch and either a straight or concave base (see Fig. 6.4 centre and right). Both these types of arrowheads have a long history of usage and occur from the Early Neolithic onwards, but are predominantly known from the Middle Neolithic (Cornelissen 1988). It is important to note, however, that although these types of arrowheads had been around for a long time, this did not involve the central and northern Netherlands. These types of arrowheads are found throughout the Neolithic in the southern Netherlands and further south towards Belgium and northern France. They are common finds in Michelsberg and Seine-Oise-Marne (SOM) Culture contexts (Cornelissen 1988) or even in the Middle Neolithic of the Dutch wetlands (see Van Gijn *et al.* 2006 for various examples from the Hazendonk site of Schipluiden, near The Hague), but they did not occur in Funnel Beaker culture or CW contexts. In contrast, the types of arrowheads that were predominantly used in the northern Netherlands, such as the Funnel Beaker culture transverse arrowhead and the CW tanged-arrowhead (pinetree-shaped) are completely lacking from BB graves.

Perhaps this renewed interest in arrowheads was thus not so much invested in arrowheads in general, but rather in arrowheads from a particular region – *the south.*[139] This included both the new BB barbed-and-tanged arrowhead as well as previously common types from those parts of the world (see Fig. 6.5 for their respective frequency of occurrence). We may even question to what degree the people of the Veluwe and northern Netherlands would have distinguished between the new BB types (our definition!) and pre-existing types from Atlantic Europe. Perhaps to them, both were equally 'new' and served the same purpose of portraying new identities and social relations.

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137 For example, in Scandinavia too arrowheads had not been part of the grave set in the CW/SGC but re-emerge in graves around 2350 BCE (Sarauw 2006, 67); see also discussion on the 'Beaker package' in Chapter 3.

138 Cornelissen (1988, 215) mentions that barbed-and-tanged arrowheads occur in SOM culture contexts in northern France but these are seen as BB influences.

139 Fontijn (2009, 147) presented a highly similar phenomenon where particular French and British imported bronzes are combined and subjected to selective deposition in the Netherlands, possibly because they were both perceived as different and as coming 'from the south'.

Fig. 6.4 Different types of arrowheads from LNB graves, scale 1:1, from left to right: barbed-and tanged arrowhead from a grave near Angelsloo (Drenthe, AMP0454, collection: Drents Museum, Assen); triangular arrowhead with a concave base from a barrow near Lunteren-Vlooienpol (Veluwe, AMP0407, collection: Valkhof Museum, Nijmegen); triangular arrowhead with a straight/slightly convex base from a barrow near Ede-Ginkelse Heide (Veluwe, AMP0404, collection: National Museum of Antiquities, Leiden).

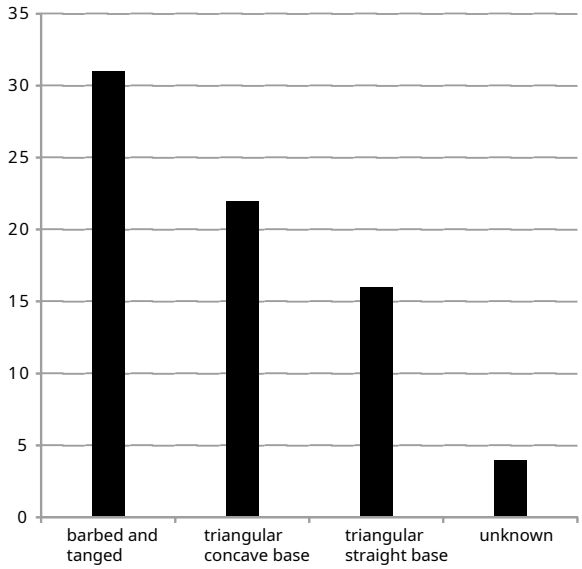

Fig. 6.5 Frequency (n) of occurrence of different arrowhead types in LNB graves.

6.3.1.1 Production and use

Particularly the BB barbed-and-tanged arrowheads are the result of skilled production. Especially the manufacture of the barbs and tang is a delicate procedure with a relatively high risk of breaking or damaging the arrowhead. Although the display of skill might thus have been an important aspect, this should not be exaggerated. Each individual with some basic flint working skills should be able to master the skills needed for the production of these arrowheads in a few weeks at the most. For an experienced craftsperson the production of a BB arrowhead should not take longer than 30-45 minutes.[140] The actual gathering of raw materials, production of the arrow shaft and application of the fletching needed for flight stabilization in all likelihood would

140 D. Pomstra is a highly experienced flintknapper. It usually takes him about 30 minutes to make a barbed-and-tanged arrowhead, or 45 minutes at the most when the flake used is slightly thicker and more thinning-flakes need to be removed (pers. comm. 2012).

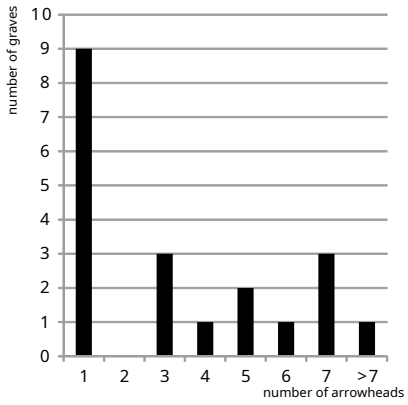

Fig. 6.6 Quantity of arrowheads (x-axis) per grave (y-axis).

have taken considerably more time. The fact remains, however, that the BB arrowheads in general are well-made and display as much skill as can reasonably be invested in an arrowhead, which is essentially only a relatively simple item.

The BB graves from the research database contained a total of 70 flint arrowheads coming from only 20 different graves. Being present in only 14% of the BB graves may not seem very much, but it still means the arrowhead is the most frequently occurring object in BB graves apart from the beaker and flint tools. Of the 20 graves containing flint arrowheads, ten only contained a single specimen. Although these may be formal grave gifts, some could also have been the cause of death. The other ten graves contained a set of arrowheads varying in numbers from three to seven with one grave containing a set of 14 arrowheads[141] (see Fig. 6.6). A total of 35 arrowheads could be examined for traces of wear. None of these appeared to have unambiguous traces of use as a projectile (Van Gijn 2010, 226). Arrowheads used as projectiles can display various traces of use such as characteristic streaks of polish or distinctive fractures resulting from impact (Van Gijn 1990[142]). Although, as mentioned in Section 5.7.2, wear traces do not always develop, none of the arrowheads from BB graves showed any of these traces. Seven of these arrowheads did show traces of having been hafted, in the form of friction gloss, two of which also displaying a black residue, probably the remains of tar.

A find from one grave should be mentioned in this respect as there is some circumstantial evidence that it had been used for shooting. This grave (Ede-Ginkelse Heide, Veluwe, see Fig. 6.7)[143] contained a total of five arrowheads. Located underneath a barrow, this grave contained a small heap of cremated bone with next to it a collection of grave goods, including four arrowheads. The fifth arrowhead, however, was found among the cremated bone and had been burnt, suggesting it either accompanied the deceased on the funeral pyre (in contrast to the other grave goods), or it might actually have been the cause of death.[144] Unfortunately, the degree of burning did not allow for

141 AMP0454, Emmen-Angelso (Drenthe).

142 In addition to Van Gijn's initial experiments published in her dissertation (1990), several new shooting experiments have been performed in recent years by the Laboratory of Artefact Studies staff and students. These involved several different types of arrowheads, including types common in the LNB.

143 AMP0404.

144 Lanting (2013, 33), however, mentions that according to fieldnotes by the excavator (Bellen) the stone and flint artefacts were partly found on top of the cremated bones, in contrast to what Bellen later reported to Van Giffen.

the detection of actual traces of wear. Although the find of this one burnt arrowhead among the cremated remains is highly suggestive, it must be noted that in some BB cremation graves the grave goods appear to have accompanied the deceased on the funerary pyre. The fact that this single arrowhead was burnt therefore cannot be taken as proof that it was the cause of death instead of a grave gift. Other examples of burnt grave goods are the wristguard found in the grave of Lunteren (Veluwe)[145], two burnt wristguards from two different cremation graves in Dalen (Drenthe)[146] and a selection of flint and stone implements in the grave of Meerlo (Noord-Brabant).[147] The best example, however, might be the grave of Angelsloo (Drenthe)[148] which contained a collection of 14 burnt barbed-and-tanged arrowheads as well as seven additional flint tools that were also burnt. These arrowheads were all burnt as evidenced by their white discolouration as well as several potlids (see Fig. 6.8).

Barbed-and-tanged arrowheads are sometimes interpreted as weapons, intended for warfare rather than hunting. Sarauw (2006, 73) and Keeley (1996, 52) mention several ethnographic studies where arrowheads with barbs were specially intended for warfare, whereas arrowheads without barbs were used for hunting. The idea is that the barbed arrowheads are more difficult to extract, the barbs can moreover break off and hence be left in the wound to cause inflammation (see also Christensen 2004, 139). Interestingly, Parker Pearson *et al.* (2019b, 180) note that hardly any of the British Beaker graves show evidence of violence, but they do mention the find of six barbed-and-tanged arrowheads found embedded in the bones of an aurochs.

It is of importance to stress that the Dutch LNB graves contained various types of arrowheads, the majority of which did not have barbs (see fig 6.5). Even *if* the Dutch BB people considered the barbed-and-tanged arrowheads to be specialized for warfare, this apparently did not disqualify other types from inclusion in the grave. For the Dutch LNB this either means that barbed-and-tanged arrowheads were not specially intended for combat, or that combat was not the (sole) activity symbolized by inclusion of arrowheads in graves.

6.3.1.2 Placement in graves

Again, for only a few sites there is information about the location of the finds in relation to the human body (see Table 6.4). One arrowhead was found near the back of a body silhouette[149] and one grave contained seven arrowheads located near the feet of the deceased.[150] For three graves it was reported that arrowheads were found near the north or north-western edge of the grave pit and in two graves near the centre of the grave pit. Although this does not tell us much of a preferred location in respect to the body, it is of interest to note that in those cases where multiple arrowheads were included in the grave (for those graves where the find-location was recorded) they were all found together in a group. This may be indicative of either a bundle of arrows or perhaps even a full quiver having been placed in the grave.

145 AMP0408.
146 AMP0517 and AMP0451.
147 AMP0081, tumulus I
148 AMP0545, probably a flat grave.
149 AMP0269, Haren-Harenermolen (Groningen).
150 AMP0407, Lunteren-De Vlooienpol (Veluwe).

location	n	%
back	1	1,4%
feet	7	10,0%
unknown	62	88,6%
total	70	100,0%

Tab. 6.4 Location of arrowheads in relation to the body.

6.3.1.3 Similar or different?

Typology does not play a prominent role in this thesis, but when looking at which types of arrowheads occur side by side in the same grave, a brief typological excursion is warranted. It was mentioned above that ten of the 20 graves with arrowheads contained sets, rather than single objects. While some graves contained sets of 'identical' arrowheads, others, in contrast, contained sets of different types of arrowheads.

In the case of graves containing virtually identical arrowheads – all of highly similar type, size and quality – it seems likely they were all made by the same craftsperson. Perhaps they were produced by the deceased themselves. Alternatively, the arrowheads could all have been specially produced for deposition in the grave by a single craftsperson. This, however, is quite different from the graves that contain a variety of different types of arrowheads, including barbed-and-tanged arrowheads, as well as triangular arrowheads with both straight or concave bases (see for example Figure 6.7 for different types of arrowheads from one grave versus Figure 6.8 that shows highly identical, albeit burnt, arrowheads from one grave). In addition, these arrowheads can vary greatly in size and overall quality of workmanship. Although it is possible that different types of arrowheads had different functions, it is perhaps more likely that they were actually produced by different persons with different skills and preferences. In the latter scenario it appears that different people, with different levels of skill and/or preferences, contributed arrows or arrowheads that were placed in the grave together as a set.

There thus appear to be two different manners in which a set of arrow(head)s can be brought together for deposition in the grave. On the one hand there is the option of special production of a set of arrowheads by a single individual, resulting in a collection of highly similar arrowheads. On the other hand, different individuals might have contributed arrow(head)s, resulting in a more diffuse collection comprising different types of arrowheads. Brück and Fontijn (2012, 206) presented similar practices for Bronze

Fig. 6.7 Arrowheads from a grave near Ede-Ginkelse Heide (Veluwe, AMP0404) with the burnt arrowhead in the centre, scale 1:1 (collection: National Museum of Antiquities, Leiden).

Fig. 6.8 Arrowheads from a grave near Angelsloo (Drenthe, AMP0454), scale 1:1 (collection: Drents Museum, Assen; photography: Q. Bourgeois).

contextcode	site	region	arrowhead type			
			barbed & tanged	triangular straight base	triangular concave base	total
AMP0454	Emmen-Angelslo	North NL	14	-	-	14
AMP0449	Buinen-Hoornseveld	North NL	5	-	-	5
AMP0473	Holten mound 4	North NL	3	-	-	3
AMP0245	Bennekom-Oostereng mound 12	Central NL	-	-	7	7
AMP0218	Hilversum-'t Bluk mound 10	Central NL	1	-	2	3
AMP0408	Lunteren-De Valk (grave 1)	Central NL	4	1	1	6
AMP0408	Lunteren-De Valk (grave 2)	Central NL	-	2	5	7
AMP0407	Lunteren-De Vlooienpol	Central NL	-	4	3	7
AMP0404	Ede-Ginkelse Heide	Central NL	3	2	-	5
AMP0081	Meerlo mound 1	South NL	-	3	-	3
		total	30	12	18	60

Tab. 6.5 Overview of arrowhead types in graves that included multiple arrowheads, indicated in red the graves with different types of arrowheads.

Age graves and argued that, rather than possessions of the deceased, these should be seen as gifts from the mourners to give material form to inter-personal relationships.

It is noteworthy that these two modes may have a different geographical distribution. All the graves with multiple arrowheads in the northern Netherlands (n=3) were of the same type, whereas in the central Netherlands this was only found to be the case in a single grave. All other graves with sets of arrowheads in the central Netherlands (n=5) contained different types (see Table 6.5).[151] It must be stressed, however, that overall numbers of sites (n=10) are far too few to provide a statistically sound pattern.

6.3.2 Wristguards: bracers or bracelets?

In addition to flint arrowheads, a relatively frequently occurring type of object found in BB graves is the stone archer's wristguard. The research database contains records of 21 wristguards from 20 different graves. In its most basic form, a wristguard is a small, flat slab of stone with perforations on either end. Traditionally they are interpreted as archery equipment and are believed to be attached to the lower arm to protect the wrist from the slap of the bowstring upon release of an arrow (see Fig. 6.9a) (for a full discussion on the interpretation and function of these objects see Fokkens *et al*. 2008; Woodward and Hunter 2011). In addition to the flat wristguards, concave specimens which follow the curvature of the arm and have a perforation on each of the four corners also occur (see Fig. 6.9b).[152] Although originally there had been some discussion on the function of these objects by early researchers, there is now a general consensus that these objects should indeed be seen as archer's paraphernalia (Fokkens *et al*. 2008, 120; Woodward *et al*. 2006; Woodward and Hunter 2011; 2015; Van der Vaart 2009a).

Fokkens *et al*. (2008), however, rightly question the functionality of the wristguards because their study revealed that across Europe many of the archaeological finds associated with skeletal remains were found on the outside of the arm instead of the inside.[153] The latter would be the expected position if it were to protect the arm while shooting arrows. Fokkens *et al.* therefore postulated that perhaps the wristguards – also known as bracers – did not directly serve a practical purpose but were rather attached to the outside of the arm as a more decorative element (without downplaying its potential ideological significance), hence the title of their publication "Bracers or Bracelets?".[154] In their paper they provide various ethnographic examples of wristguards made of leather and other organic materials. One of the most compelling ethnographic examples, however, is a leather wristguard that has a silver ornament on the outside for decorative purposes (Fokkens *et al*. 2008, 119). Although it is clear from their publication that many wristguards were not found in a position (outside of the arm) in which they would have been useful, there are likewise many examples in which the wristguard was indeed located on the inside of the arm (Fokkens *et al*. 2008). Although this observa-

151 For an additional grave in the central Netherlands the types of arrowheads are unknown and also a grave from the southern Netherlands contained three arrowheads of the same type.

152 More complex designs with 6 or more perforations occur elsewhere in Europe (see Sangmeister 1974; Woodward and Hunter 2011), but are absent in the Netherlands.

153 Woodward and Hunter (2011, 104) mention several additional cases.

154 See also Case (2004a, 24) who claims stone wristguards would not have been practical but rather symbolic objects.

Fig. 6.9 Stone wristguards, scale ca. 1:1: (top) concave wristguard with four perforations from a barrow near Stroe (Veluwe, AMP0432, collection: National Museum of Antiquities, Leiden); (bottom) straight wristguard with two perforations from the barrow of Lunteren-Vlooienpol (Veluwe, AMP0407, collection: Valkhof Museum, Nijmegen).

tion justifies the question as proposed in the title of their publication, it is difficult to reach a definite conclusion. Especially when considering that the way in which items were placed in the grave or were worn by the dead does not need to reflect how they were used or worn by the living.

Something that is puzzling is that these wristguards were made of *stone*. Although bracers of organic materials would not have survived in the archaeological record, it is of interest why *stone* bracers were made at all. Archery had been around for thousands of years before the start of the BB complex. Especially up until the Middle Neolithic archery must have played a pivotal role in daily subsistence, as hunting was still an important strategy to obtain animal proteins. None of these communities, however, found it necessary to produce *stone* implements for protection of the wrist. Also in later times – as well as in the ethnographic record – no evidence could be found for the use of stone wrist protectors (Fokkens *et al.* 2008, 119). If wristguards are used, they are in fact often made of organic materials, the most basic being just a leather cuff which is more than suitable for the task and is even still used today by modern archers (Van der Vaart 2009a, 45). It can thus be argued that as an object, the *stone* wristguard – whether practical or not – was, strictly speaking, quite unnecessary.

Although it might be argued that *stone* wristguards are unnecessary, this does of course not mean that they were unpractical. Van der Vaart (2009a; 2009b) performed several experiments where modern archers used replicas of the BB stone wristguards. The conclusion of the archers involved in the experiment was that as far as wrist protection was concerned, the stone replicas served their role perfectly well. Although making stone wristguards might thus be considered a form of 'overdoing it' – especially

the beautifully crafted concave specimens – the fact remains that if used they appear perfectly suited for their task.

6.3.2.1 Production

As is the case with most stone tools, the efforts needed and the skill required for their production are often overestimated by modern researchers. Experiments have shown that they are in fact quite easy to make. Van der Vaart (2009a, 29; 2009b) produced various wristguards (both flat and concave ones) with production times ranging from only 1.5 to 4 hours for a simple flat one, to 21 hours for a concave wristguard with 4 perforations. Although the concave specimen took more time to produce, it did not require a lot of skill. It was mainly a matter of investing more time to peck, saw and grind (Van der Vaart 2009b, 7) (as was the case with the production of stone battle axes discussed in Section 5.6.4). It must be noted that the majority of the archaeological finds concern simple straight wristguards with two perforations. The concave wristguards are in fact very rare in the Netherlands. Only three specimens are known, two of which come from graves.[155] Although the production of wristguards might be considered time consuming from a modern perspective, it would be no more time consuming than the production of most items present in a common Neolithic household, such as pottery vessels, various wooden objects, ropes, items made from leather, not to mention the notoriously time-consuming textiles.

Various raw materials were used for the Dutch wristguards, varying from very fine sandstones to slates and lydite. The stone types, however, have not been studied in great detail, which is therefore something that might prove useful in future research. The main reason for this is the fact that most of the stones used as raw materials occur naturally in the Netherlands. They can be found in the glacial sediments from Scandinavia, deposited by the ice sheets that covered the northern half of the Netherlands in the Saalian Ice Age, or they have been brought here by the rivers Rhine and Meuse whose deposits – apart from the river beds themselves – are found in the ice-pushed ridges of the central Netherlands. Stone types from all over northern and western Europe can thus be found in the Netherlands. It therefore will prove very difficult to trace specific provenance patterns.[156]

Although the Dutch wristguards were produced from different types of stone, they appear to have one thing in common, the fact that most of them were black or dark grey (Roe 2011, 112). Some of the weathered specimens are now a dull grey but most of these would originally have been black in colour – as can be seen at one specimen in the cross section of a post-excavation break. There, however, are three clear excep-

155 AMP0432, barrow near Stroe (Veluwe); AMP0404, barrow near Ede (Ginkelse Heide, Veluwe); stray find from Noorderheide (Elspeet, Veluwe) (see also Roe 2011, 112).

156 That such patterns may exist is clearly illustrated by the British wristguards that were produced from the very special greenish tuff found in Great Langdale (Lake District) (Woodward *et al.* 2006; Woodward and Hunter 2011; 2015). This specific stone type, found at a difficult to reach mountain top, was used throughout the Neolithic for stone axe production, the products of which circulated throughout the British mainland and even reached Ireland (Bradley and Edmonds 1993). It cannot be a coincidence that these wristguards were made of this specific stone type that must have had a great significance in prehistoric Britain. This also suggests that even though the wristguards – as objects – may have been 'new Beaker paraphernalia,' their significance must at least in part also have been connected to the stone type used, which was deeply rooted in British prehistory.

Fig. 6.10 Light-brown/beige stone wristguards, scale ca. 2:3: (top) the concave wristguard from a grave near Ede-Ginkelse Heide (Veluwe, AMP0404, collection: National Museum of Antiquities, Leiden), with detail showing a broken corner with part of an old perforation and the new perforation; (bottom) the wristguard from a grave near Nijmegen (Gelderland, AMP0120, collection: Valkhof Museum, Nijmegen).

tions. Two of these are the concave wristguards from Stroe[157] (Veluwe, see Fig. 6.9) and Ede-Ginkelse Heide[158] (Veluwe, see Fig 6.10). While the latter is made of a very fine-grained light-brown or beige rock, the former is made of a fine-grained sandstone with a clear reddish colour. Both thus deviate in type (these are the only specimens of this type from graves) and in colour. It is therefore interesting to note that although the narrow wristguards with one perforation at either end appear to occur throughout Europe, the broad concave specimens with perforations on all four corners occur predominantly in Central Europe (Sangmeister 1964; 1974)[159] but they are also well represented in Britain (Woodward and Hunter 2011). The third exception is a very large wristguard (over 15 cm long) from Nijmegen[160] (Gelderland) made from a banded

157 AMP0432.

158 AMP0404.

159 Three highly similar wristguards (in type and colour) as the red specimen from Stoe were found in Sachsen-Anhalt (central Germany), in Nebra-Wangen, Halle-Trotha and Wansleben am See (photograph available at https://st.museum-digital.de/index.php?t=objekt&oges=14983).

160 AMP0120.

Fig. 6.11 Wristguard from a barrow near Speuld (Veluwe, AMP0238), scale ca. 2:1; (left) the smooth surface of the outer face; (right) the production scratches clearly visible on the inner face (collection: National Museum of Antiquities, Leiden).

light-brown sandstone (see Fig. 6.10).[161] Louwe Kooijmans (1973, 101) classified this rather peculiar wristguard as being of type 3 (Sangmeister 1964) which has its primary distribution in the south of the Iberian Peninsula, with only a few finds north of the Alps. It therefore would be tempting to see these three wristguards as imported items obtained from afar.[162]

Most stone wristguards found in the Netherlands consist of flat slabs of stone with one perforation on either end. The exact production time required is difficult to estimate as it would be greatly influenced by the shape and form of the raw materials selected. The sawing and thinning of a natural flat pebble would be much easier than carving a wristguard out of a relatively larger stone. Unfortunately, there is little evidence to reconstruct the *chaîne opératoire* as the evidence is limited to the production traces found on the finished wristguards themselves. These traces indicate that the wristguards were shaped by both sawing, scraping and grinding, probably by means of grindstones and flint implements. Also, the hourglass shaped perforations indicate the use of solid (flint?) drills. All examined wristguards showed extensive traces of scraping on one side, while the other side was usually nicely ground and polished. Grinding and scraping must have been the primary techniques used in thinning the wristguards. Interestingly these traces were only removed through grinding/polishing on what may be assumed to be the outside face providing a clear smooth surface, while on the inside, which faced the arm, production traces were still clearly visible (see Fig. 6.11). It was also this rough backside from which the main part of the perforations were drilled. After the perforation had almost reached the other side, the wristguard was turned

161 Determination A. van Gijn (pers. comm. based on discussions with Fiona Roe). However, Louwe Kooijmans (1973, 99) lists this wristguard as having been made of slate.

162 In addition to the concave wristguard of Ede-Ginkelse Heide (Veluwe, AMP0404) that suggests a Central European origin, this grave also contained a copper tanged dagger with a relatively high tin component (XRF research performed in the context of this thesis by Restaura). Tin-rich coppers are common in Bell Beaker metals from central Europe, also known as *fahlore*-copper (Merkl 2010, 23). Similar metal signatures were also found in the Lech-valley project where all metal finds from graves were analysed (Stockhammer pers. comm. 2017).

around and a small perforation was made from the polished face. By doing so only a small perforation could be seen from the polished side, with the much larger side of the hourglass shaped perforation being located on the rough backside. Interestingly, Woodward *et al*. (2005; see also Hunter 2011, 61) report exactly the same production traces/techniques for the British wristguards, indicating that these objects were produced in virtually identical manners over large parts of Europe. This indicates that these objects too were not only produced in a style that had a large distribution across Europe, but also involved specific techniques and technical choices that were adopted over vast areas that even spanned across the North Sea.

The concave wristguards that follow the curvature of the wrist obviously must have taken considerably more production time. First of all, they are usually twice as wide as the straight wristguards and have a total of four instead of two perforations. The most time-consuming aspect, however, is no doubt the fact that they are concave, meaning that a nodule or slab of stone had to be 'hollowed out' so to say. Even though this might have taken considerably more time, the production traces visible on these objects are identical to those on the other wristguards: grinding and scraping marks on the concave side, polishing on the convex side and perforations applied for the most part from the concave side as to minimize the perforation diameter when observed from the convex, polished side (for detailed description of wristguard manufacturing also, see Hunter 2011; Van der Vaart 2009b).

I argue that wristguards were made to 'look good'. The outside face was ground and polished to remove traces of production and the perforation was applied in such a manner as to create the smallest hole possible on the outside face. This suggests that at least part of their function or meaning had to do with display. This seems to be confirmed by various examples from Britain. Here several wristguards have been found containing small gold caps over the perforations (see Fig. 6.12), this indicates that irrespective of any functional significance, at least part of their function was related to

Fig. 6.12 Wristguard of Langdale tuff with gold-capped copper rivets from Culduthel, Inverness, Highland, Scotland (NMS X.EQ 844), dated to 2280-2020 cal BCE, scale ca. 1:1, length ca. 11.7 cm (collection and photography: National Museums Scotland).

contextcode	site	perforations	cross-section	length	traces of use	remarks
AMP0120	Nijmegen-Hunerberg, grave 5	2	straight	155	-	
AMP0134	Maarsbergen, mound 1	2	straight	88	++	
AMP0238	Speuld-Houtdorperveld, mound 1	2	straight	73	-	
AMP0245	Bennekom-Oostereng, mound 12	2	straight	94	+	
AMP0248	Ede-Harskamp	2	straight	88	-	
AMP0404	Ede-Ginkelse Heide	4	concave	145	++	repaired
AMP0407	Lunteren-De Vlooienpol	2	straight	79	+	repaired/reworked
AMP0408	Lunteren-De Valk (grave 1)	4	straight	broken	-	burnt unfinished?
AMP0408	Lunteren-De Valk (grave 2)	2	straight	86	+	
AMP0412	Lunteren-Goorsteeg	2	straight	broken	+	recent break
AMP0412	Lunteren-Goorsteeg	2	straight	64	-	
AMP0432	Stroe-Korte Struiken	4	concave	97	++	

Tab. 6.6 Overview of the number of perforations, cross-section, and presence of wear traces on wristguards subjected to functional analysis: (-) absent; (+) lightly worn; (++) heavily worn.

display (see Woodward and Hunter 2011 for full catalogue and photographs). This, of course, does not imply that these objects were merely ornaments or decorations of some sort, but it does indicate that they must have been worn in such a way that they were seen and, moreover, were intended to *be seen*! Gold-capped wristguards do not occur in the Dutch dataset. However, there is one specimen that was reportedly found in a barrow near Epe (Veluwe)[163] with copper wire still present in its perforations (Van Giffen 1930, 74-76). This too could be interpreted as a manner of fastening using a rare raw material – copper – that was used probably more for its display function rather than its qualities as a binding material.

6.3.2.2 Use life

That wristguards were actually worn can be concluded from the presence of clear wear traces. The research database contains records of 21 wristguards from BB graves. Of these, twelve could be studied for traces of use (see Table 6.6). The wear traces that could be observed were mostly limited to the perforations where the presence or absence of rounding and polish revealed whether they had been worn. Although five appeared to be in mint and unworn condition, the remaining seven had clear traces of wear, albeit in varying degrees (see also Van der Vaart 2009a). The concave wristguard from Ede-Ginkelse heide (mentioned above; see Fig. 6.10), moreover, showed obvious signs of repair as one of the corners had broken off right at the location of the perforation. Both the remains of the original perforation as well as a new perforation showed signs of rounding and polish, indicating that the object had been worn both before and after it was repaired. The wear traces thus show these

163 AMP0259.

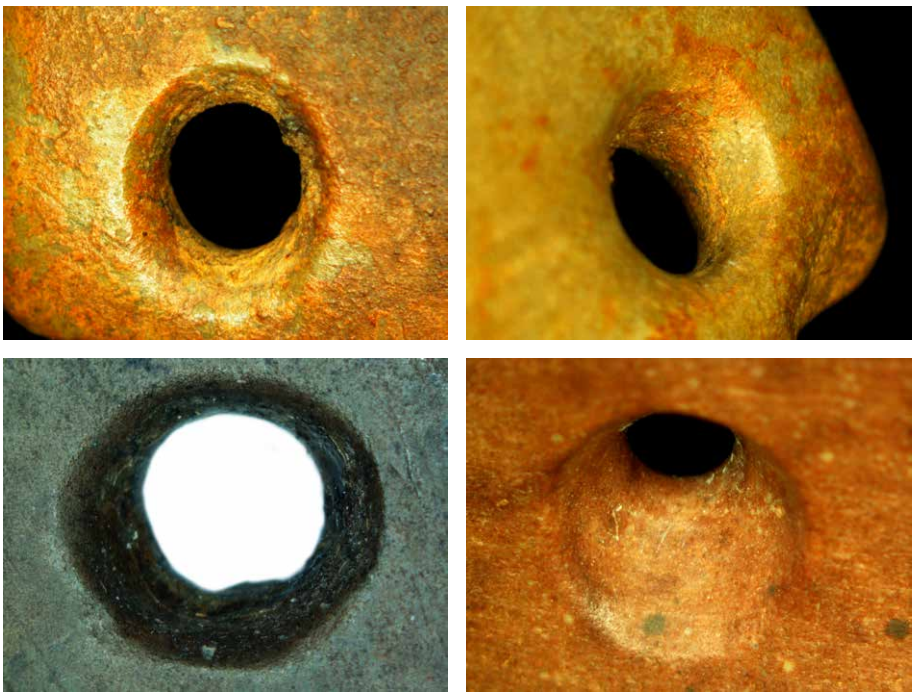

Fig. 6.13 Photos taken with a stereomicroscope of the perforations on various wristguards showing rounding/wear from usage: (top left and right) wristguard of Ede-Ginkelse Heide (AMP0404); (bottom left) wristguard of Lunteren (AMP0412); (bottom right) wristguard of Stroe (AMP0432), all from the Veluwe, all photos cover ca. 1 cm².

objects were worn (see Fig. 6.13). However, it could not be established – based on the functional analysis – whether the bracers had indeed been used to protect the wrist from a bowstring.

It cannot be excluded that some wristguards that lacked (extensive) signs of wear were specially produced for the grave, but the majority show clear traces of wear. Their wear and tear indicate an (extensive) use life before being deposited in the grave. Whether they were worn as protective devices during archery or merely as decorative items associated with this activity cannot be answered based on these results.

6.3.2.3 Placement in graves

The location of wristguards in the grave in relation to the body played an important part in the argument of Fokkens *et al.* (2008) against a purely functional interpretation as an object for protecting the archer's wrist. Based on a European wide inventory they showed that throughout Europe wristguards are found both on the inside (functional?) as well as the outside of the wrist (decorative?). Unfortunately, the Dutch data cannot add much to this debate (see Table 6.7). Only two specimens were found near the arms of the deceased. However, as we are merely dealing with body silhouettes it cannot be established whether they were lying on the inside or the outside of the wrist. One wristguard was found behind the back of an individual and another was located near the pelvic region. Three additional finds came from the centre of the grave pit, suggesting their original

location	n	%
arm	2	9,5%
back	1	4,8%
pelvis	1	4,8%
torso	1	4,8%
unknown	16	76,2%
total	21	100,0%

Tab. 6.7 Location of wristguards in relation to the body.

placement to have been near the pelvic region. This, however, does not exclude the possibility that they were fastened to the arm as the position of the arms could not be determined in these occasions. A final find was reported from the western edge of a grave pit.

The evidence shows that, apart from near the arms, wristguards were found in other locations as well. This, however, does not indicate that an object was unused or did not function as a wristguard. It merely illustrates the fact that "the dead do not bury themselves".[164] Objects are placed in the grave by the mourners and their location in the grave therefore does not necessarily reflect how they were worn in life. The same applies to the observation of Fokkens *et al*. (2008) concerning the fact that, throughout Europe, many wristguards were found on the outside of the wrist. Although it can be argued that wearing it in that position did not serve a practical purpose, it must be stressed that we are dealing with graves and not with *in situ* fossilized archers. Objects, and the placement of these objects, could have been manipulated in various ways in the context of the funerary ritual.[165]

6.3.3 Arrow shaft smoothers

Although typically associated with BB graves, arrow shaft smoothers are actually extremely rare in Dutch graves. The research database contains records of only two graves containing a total of three arrow shaft smoothers. As described in the introduction, arrow shaft smoothers are fist-size (sand)stones with a flat side and a central groove (see Fig. 6.14). When used as a pair, these objects are believed to function as a grinding implement used for the production of arrow shafts. One such stone could be subjected to functional analysis. However, this did not reveal any characteristic wear traces. The stone in question was made of a rather coarse-grained sandstone. When used for grinding, tools of such a course-grained stone-type generally wear easily as the sand particles become loose and act as a grinding medium. Although highly useful, this also means that actual use wear traces will not develop as the sand particles on the tool's surface continually become loose. Based on this research it is thus not possible to connect these objects unambiguously to archery. However, there is also no reason to question their traditional interpretation.

164 The phrase "the dead do not bury themselves" is rather popular in archaeological literature because it is one of the few certainties we have when dealing with archaeological funerary remains. A quick survey, however, indicated that even though the quote is often attributed to Parker Pearson (1993, 203; 2006), its first use must be credited to the anthropologist Leach (1979). Although there are no doubt earlier uses of the phrase that have escaped indexation by Google.

165 Perhaps the wristguard was put on the outside of the wrist by some communities to symbolize that the deceased would no longer be performing archery.

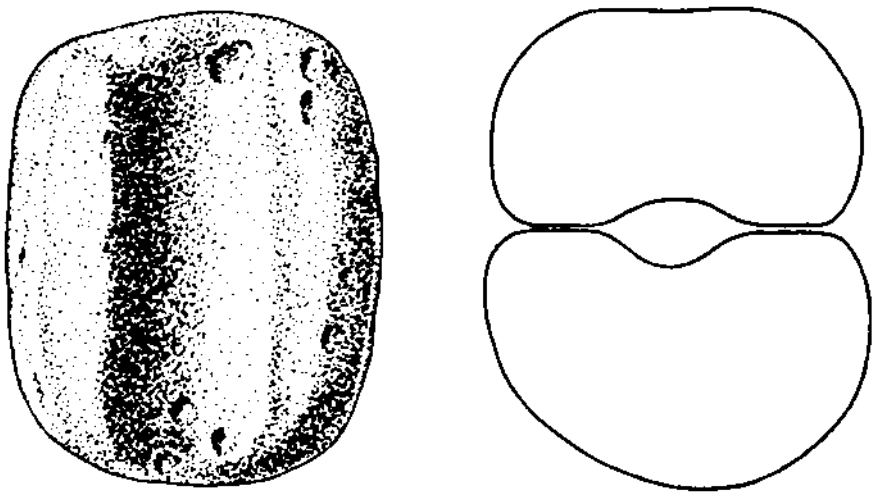

Fig. 6.14 Set of arrow shaft smoothers from a barrow near Meerlo (Noord-Brabant, AMP0081), scale 1:1 (after Verwers 1964, fig. 4).

6.3.4 Archery, do it in style!

Archery items are often connected to either hunting or warfare. Although their connection to both is obvious, it is not a given that these items were placed in graves to represent either of these activities. Fokkens *et al.* (2008, 122), for example, stress that archery – as an activity – has many, often far more complex, connotations in many societies. The bow, and the art of archery is often seen as an activity related to personal, social and spiritual health. The most extreme example might be its role in traditional Japanese society, where archery in particular holds a highly important ritual significance (Onuma *et al*. 1993).

Rather than offensive activities such as hunting or warfare, archery can also be related to one's ability to defend and protect. This can relate to protection in life (or in the afterlife) of both the deceased themselves and the community the deceased was part of (or would become part of). Perhaps the role of archery equipment in the grave was not so much focussed on the idealization of fierce warriors, but was rather intended to emphasize the deceased's role as protector and caretaker.

In any case it must be emphasized that the role of these items in the grave is likely to have been highly variable throughout prehistoric Europe. Different regions, occupied by different peoples with different subsistence systems would also have attributed different meanings to archery as an activity (*cf.* Cohen 1985, 73). Nonetheless, for whichever reason, archery was widely recognized as an important symbolic activity and as such it could be easily shared between communities.

Even though the specific meaning attributed to archery may have been (highly) variable from place to place, the fact remains that throughout Europe these items *looked* the same. As with the beakers, most archery equipment appears to have been locally produced, but in a highly international style. Apart from the fact that these arrowheads and wristguards would have functioned perfectly well from a practical point of view,

Fig. 6.15 Selection of V-perforated buttons from Hattemerbroek-Bedrijventerrein grave 2 (just north of the Veluwe, AMP0500), scale 1:1 (after Van Gijn 2011, fig 5.25).

their purpose must – at least in part – have been related to display. Just as the beakers, these items were made to be seen, to display a very particular, widely shared and recognizable style.

6.4 Amber ornaments: beads, buttons and pendants

Ornaments are a relatively common occurrence in Middle Neolithic Funnel Beaker culture graves, (Verschoof 2011; 2013; Van Gijn 2017; 2015). Typically, these involve well-made amber beads, although on occasion also other materials are found, such as jet or a pendant made from a small ammonite fossil found in tomb D43 in Emmen (Drenthe) (Bakker 1979, 110). By the start of the CW culture, as presented in the previous chapter, ornaments had largely disappeared from the grave set. Settlements from this period, however, revealed various examples of well-made beads of various sorts and types. This indicates that even though these objects were not used to adorn the dead, they were, apparently, worn by the living (Piena and Drenth 2001).

It was not until the final stage of the LNA that ornaments re-emerged in a few graves associated with AOO pottery and/or French daggers. These few occurrences can be seen as a prelude to the full manifestation of the BB complex, where ornaments once again take in a prominent role in the funerary ritual. All beads, buttons and pendants found in LNB graves were made of amber. Other non-perishable raw materials – most notably jet – are lacking.[166] The absence of jet in LNB graves is noteworthy because it is quite common as a raw material used for ornaments in the Middle Neolithic in the Dutch wetlands (Van Gijn 2006, 195; 2008, 277), but also occurs in the Funnel Beaker culture (Bakker 1979, 108; Verschoof 2011; 2013). Materials such as bone are also lacking, which is likely due to bad preservation in the Dutch soils.[167]

The LNB graves in the research database contained a total of 85 amber ornaments, coming from 19 different graves. As such, 13.3% out of the total of 143 graves contained ornaments. In an absolute sense, the occurrence of ornaments in graves is thus relatively rare. Nonetheless, ornaments are the fourth most common type of object

166 Various objects made of gold are discussed below. Although these are arguably ornaments, this section only includes beads, buttons and pendants.

167 In one grave a set of boar tusks were found (AMP0414, see below), it is not clear however if these should be interpreted as 'ornaments'.

category occurring in BB graves, following beakers, flint tools and archery equipment. Although various types of amber ornaments occur, there is one specific type that is of special importance: the V-perforated button (round/conical button with a V-shaped perforation). This type of ornament has a wide distribution throughout Europe and is part of the BB package (see Section 3.4).

6.4.1 The origins of amber

At least since the end of the last Ice Age (see Grimaldi 2009), until the present day, amber has been used for the production of ornaments, most notably beads, buttons and pendants. Even today amber, as a raw material, is a valuable commodity and we may assume that this would also have applied to some degree to its significance in prehistory. Its widespread occurrence in prehistoric contexts certainly indicates that it was a culturally valuable raw material that was much sought after. There are several factors that contribute to the potential cultural appreciation of amber. First of all, amber – as a raw material – is beautiful. It has a bright yellow, orange or reddish colour. It can be opaque or has a translucency that does not naturally occur in many other raw materials. Secondly, with a bit of practice, it is relatively easy to work and can be used to produce various types of ornaments. Thirdly, the occurrence of amber is localized (see Butler 1990, 51), making it a rare raw material for most parts of the world, meaning that in most communities amber items – by definition – represented objects that were obtained from faraway places either through special expeditions or via (gift) exchange contacts with other people/communities.

The fossilized tree resin we know today as amber occurs in various places in Europe and elsewhere in the world. The most likely place of origin of the Dutch amber would be the Baltic region where the material is quite abundant. Due to erosion and glacial processes this material can, however, also be found washed up on the beaches of the northern Netherlands, which makes this the closest source for the amber ornaments found in the Dutch graves (Butler 1990, 51; Van Gijn 2010, 219; Verschoof 2013, 34; Waterbolk and Waterbolk 1991). However, the possibility that the Dutch amber was – at least in part – also a product of long-distance exchange with communities in northern Germany and southern Scandinavia cannot be excluded. With the exception of three graves[168], all burials containing amber ornaments were located on the Veluwe. As amber does not locally occur on the Veluwe, this means it had to be acquired either via exchange with neighbouring (BB) communities in the northern Netherlands (or potentially even further away), or it had to be collected on the beaches some 100-200 kilometres away.[169]

6.4.2 Production

The production, wear and repair of amber ornaments has been one of the research interests of Annelou van Gijn on whose analyses and experiments most of the following

168 Two graves in the northern Netherlands: AMP0269, Haren (Groningen) and AMP0346, Exloo (Drenthe) and one grave in the Nijmegen area just south-east of the Veluwe : AMP0410, Beers-Gassel, Cuijk.

169 Although possible this is unlikely, amber only washes up on the beach in certain situations depending on wind, tide and currents (local knowledge is required). This is why tourists visiting the Wadden Islands rarely find amber (personal experience).

is based.[170] Amber can be worked in a variety of ways using different tools and techniques. Many of these techniques leave distinctive production traces on the ornaments themselves. Amber is a rather soft material that can be easily sawn using flint tools or a string saw, but it is also quite brittle and isotropic, allowing it to be knapped into shape using the same basic principles that apply to knapping flint. Cutting traces, as well as flake scars indicate that both techniques were used during the LNB. Apart from flint tools, it is possible that copper tools were also used for shaping amber ornaments. Van Gijn (2011, 220) found evidence for this on various beads and buttons retrieved from two recently excavated BB graves in the north of the Veluwe near the town of Hattemerbroek.[171] Some of the cutting traces observed on these ornaments showed a clear U-shaped profile, while a V-shaped profile is more characteristic of flint tools. This observation led her to postulate that perhaps copper tools were used for the manufacture of these beads.

After having been sawn or knapped in shape, the ornaments were ground, probably using a grind stone, and polished. The perforations in many of the BB ornaments were probably slightly more complex procedures for which several different methods could be used. Although hourglass-shaped perforations (indicative of the use of solid flint drills) still occurred, the majority of BB ornaments show very narrow and straight (cylindrical) perforations. These were probably made by using a special drill bow. Such a bow could be fitted with a hollow drill, such as a piece of reed or a small birds' bone, but many of the perforations are in fact extremely narrow (ø < 2mm) suggesting a very small solid drill was used instead (Van Gijn 2011, 221). Especially with the larger beads and pendants that have a perforation that can span several centimetres, it is possible to see that the perforation changes angle half way through, indicating it has been drilled through from two sides, very precise, to meet up in the middle with the perforation from the other side. A similar technique was used for the V-perforated buttons where two perforations were made under an angle to meet up in the centre of the button. An altogether different technique that might have been used according to Van Gijn (2011, 221) was by using a heated copper wire to melt through the amber. Whether or not this technique was used in the LNB is difficult to tell as clear traces indicative of this technique (irregular surface at start of perforation and blackened perforation surface) would have been removed by subsequent polishing, cleaning and general wear.

The production of amber ornaments thus involved various techniques. However, most of these – knapping, sawing, grinding and polishing – would have come quite natural to most Neolithic agents. Drilling the perforations would probably be the most complex part of the process. Overall, the production of amber ornaments involved a variety of techniques that would have been readily available to most people, or if not, could be easily acquired. Apart from the more regular and common beads and pendants, the BB ornaments are sometimes crafted in quite complex shapes such as horse-shoe-shaped pendants or the perfectly conical buttons with V-shaped perforations. These

170 Van Gijn studied amber ornaments from various contexts from the Neolithic and Bronze Age. Not all results of this research have been published (but see Van Gijn 2017; 2015; 2011) but raw research data was made available to the author in addition to extensive personal communications.

171 AMP0500, Hattemerbroek-Bedrijventerrein grave 2 containing 22 amber ornaments; AMP0497, Hattemerbroek-Hanzelijn grave 1 containing 16 amber ornaments.

Fig. 6.16 Several types of amber ornaments from LNB graves: (top right) two barrel shaped beads from a barrow near Ede-Ginkelse Heide (AMP0419); (bottom right) two bow/horse-shoe-shaped pendants and a V-perforated button from a barrow near Vaassen (AMP0132); (top left) two horse-shoe-shaped pendants (note elevated segment parallel to perforation) from a barrow near Apeldoorn-Houtdorper Veld (AMP0439); (bottom left) square button with V-shaped perforation and irregular (perhaps broken bow/horse-shoe-shaped ornament) pendant from barrow near Vaassen (AMP0133); all from the Veluwe (collection: National Museum of Antiquities, Leiden).

objects are well-made, have a quite elaborate design and represent rather complex types of ornaments when compared to many of the other ornaments in prehistory, which mostly consist of rounded, disc-shaped or tubular beads. They are usually well-polished and sometimes even fitted with small details such as slightly raised segments in some of the horse-shoe-shaped pendants (see Fig. 6.16 for different types of ornaments). Such details would only be apparent upon close visual inspection and therefore indicate that people took pride in their work and produced ornaments as well as they could. The level of detail observed in these ornaments indicates that they were intended to look good. Ornaments such as the conical V-perforated buttons are very characteristic for the BB complex across Europe. They were clearly produced in an international style or fashion, indicating a belonging to, and the sharing of elements or identities with, a wider community. At the same time there are also beads/pendants of types not found elsewhere and are probably of a local (unique?) design, such as an H-shaped button from Beers-Gassel[172] or the horseshoe-shaped pendants from Vaassen[173] and Apeldoorn-Houtdorper Veld[174] (see Fig. 6.16) (see also Butler 1990, 52).

172 AMP0410, (Noord-Brabant).
173 AMP0132, mound 2 (Veluwe).
174 AMP0439, (Veluwe).

6.4.3 Wear and tear

Through usage, distinctive wear patterns develop that frequently can even be seen with the naked eye. The highly polished and worn surfaces indicate where strings ran through perforations or where one bead made contact with another bead. Unfortunately, many amber artefacts have developed an oxidized outer surface. The severity of this oxidation determines to what extent an amber artefact is suitable for wear analysis. In the worst cases an ornament can be completely un-interpretable. In most cases, however, enough traces can still be observed, despite the presence of oxidation, to answer at least basic questions concerning the overall intensity of wear.

Out of the dataset of 85 amber ornaments, a total of 67 were subjected to wear trace analysis (see Table 6.8). This thesis includes results of wear trace analyses performed by Van Gijn as part of various published and ongoing research projects focussing on amber and jet ornaments (see Van Gijn 2017; 2015; 2011). Her findings concerning the BB amber ornaments were gratefully incorporated. Of the 67 ornaments studied, the vast majority showed traces of wear (n=56) with only a minority showing no apparent signs of wear (n=6), the remainder (n=5) being not interpretable due to bad preservation. The traces observed generally consist of signs of wear around the perforation in the form of in a highly polished surface as a result of contact with the string or cord used for fastening or suspension of the ornament.

The ornaments found in graves display a variety of wear-intensities indicating that some are heavily worn and may represent items that were in use for many years whereas others show significantly less wear. The latter may represent ornaments that were only worn for a relatively short duration of time. This could be because they were rather new, or they may have been part of a particular outfit or dress that was only worn on special occasions, which would not result in much wear even though they were 'in use' for many years. What is of particular interest, however, is that ornaments with various levels of wear are quite regularly found together in a single grave. Although all part of the same costume/grave set, they do not appear to have had the same use lives. Van Gijn (2011, 252) suggested that some of the ornaments could represent heirlooms that were included in the dress-ornaments of a person perhaps to symbolically make a connection with past generations.[175] Alternatively, it could be that the ornaments in the grave were brought together by different mourners as gifts to the dead (similar perhaps to the different types of arrowheads in the same grave, see Section 6.3.1.3). In such a scenario the different ornaments naturally would have had different life-histories. A third equally plausible option would be that the individual ornaments were part of a bigger whole, such as a necklace or an integral part of a specific type of clothing. As the individual beads or buttons would wear and get damaged, they could have been repaired or replaced by new ornaments. In the end, this would also result in a collection of amber ornaments displaying different levels of wear. It is not possible to exclude any of the possibilities presented above, nor are they mutually exclusive.[176]

175 For more examples see the various contributions of Alison Sheridan in Woodward and Hunter (2015).
176 Also see Sheridan's (2015) research on different life histories of buttons found together in closed contexts.

contextcode	object No.	site	type	perforation	wear traces	degree of wear
AMP0132	02	Vaassen-mound 2	round-conical button	V-shaped	+	+
AMP0132	03	Vaassen-mound 2	bow/horse-shoe-shaped pendant	cylindrical from 2 sides	?	?
AMP0132	04	Vaassen-mound 2	bow/horse-shoe-shaped pendant	cylindrical from 2 sides	-	-
AMP0133	06	Vaassen-mound 3	square button	V-shaped	+	+
AMP0133	07	Vaassen-mound 3	pendant indet	cylindrical	+	+
AMP0210	01	Hilversum-'t Bluk-mound 2	round-conical button	V-shaped	+	+++
AMP0210	02	Hilversum-'t Bluk-mound 2	round-conical button	V-shaped	+	++
AMP0210	03	Hilversum-'t Bluk-mound 2	round-conical button	V-shaped	+	+++
AMP0210	04	Hilversum-'t Bluk-mound 2	round-conical button	V-shaped	+	+
AMP0226	03	Wageningen-Oranje Nassau's oord-mound 1	round-conical button	V-shaped	-	-
AMP0260	02	Wageningen-Oranje Nassau's oord-mound 1	round-conical button	V-shaped	+	+++
AMP0260	03	Ermelo-Driesche Berg	lozenge-shaped bead	indet	+	+++
AMP0260	04	Ermelo-Driesche Berg	pendant indet	unknown	+	+
AMP0418	02	Ede-Letterse Berg	conical bead	cylindrical	-	-
AMP0418	03	Ede-Letterse Berg	conical bead	indet	?	
AMP0419	03	Ede-Ginkelse Heide 5	cylindrical bead	cylindrical	+	+
AMP0419	04	Ede-Ginkelse Heide 5	cylindrical bead	cylindrical	+	+
AMP0419	08	Ede-Ginkelse Heide 5	round-conical button	V-shaped	+	+++
AMP0419	09	Ede-Ginkelse Heide 5	round-conical button	indet	?	?
AMP0419	10	Ede-Ginkelse Heide 5	round-conical button	V-shaped	+	++
AMP0419	11	Ede-Ginkelse Heide 5	round-conical button	V-shaped	+	+
AMP0419	12	Ede-Ginkelse Heide 5	round-conical button	V-shaped	+	+
AMP0419	13	Ede-Ginkelse Heide 5	round-conical button	V-shaped	+	+
AMP0419	14	Ede-Ginkelse Heide 5	round-conical button	V-shaped	+	+
AMP0439	02	Apeldoorn-Houtdorper Veld	bow/horse-shoe-shaped pendant	cylindrical	+	+
AMP0439	03	Apeldoorn-Houtdorper Veld	bow/horse-shoe-shaped pendant	cylindrical	+	+
AMP0440	02	Ermelo-Erve Danelaar	biconical bead	cylindrical	-	-
AMP0440	03	Ermelo-Erve Danelaar	biconical bead	cylindrical	-	-
AMP0440	04	Ermelo-Erve Danelaar	biconical bead	cylindrical	-	-
AMP0440	05	Ermelo-Erve Danelaar	triangular pendant	V-shaped	+	+++
AMP0497	02	Hattemerbroek-Hanzelijn 1	round-conical button	cylindrical	+	++
AMP0497	03	Hattemerbroek-Hanzelijn 1	round-conical button	cylindrical	+	++
AMP0497	04	Hattemerbroek-Hanzelijn 1	round-conical button	cylindrical	+	+++
AMP0497	05	Hattemerbroek-Hanzelijn 1	cylindrical bead	cylindrical	+	++
AMP0497	06	Hattemerbroek-Hanzelijn 1	square button	V-shaped	+	++
AMP0497	07	Hattemerbroek-Hanzelijn 1	lozenge-shaped bead	cylindrical	?	?

contextcode	object No.	site	type	perforation	wear traces	degree of wear
AMP0497	08	Hattemerbroek-Hanzelijn 1	button indet	cylindrical from 2 sides	+	+
AMP0497	09	Hattemerbroek-Hanzelijn 1	triangular pendant	cylindrical from 1 side	+	+
AMP0497	10	Hattemerbroek-Hanzelijn 1	discular bead	cylindrical from 2 sides	+	+
AMP0497	11	Hattemerbroek-Hanzelijn 1	discular bead	cylindrical from 2 sides	+	+
AMP0497	12	Hattemerbroek-Hanzelijn 1	biconical bead	cylindrical	+	+
AMP0497	14	Hattemerbroek-Hanzelijn 1	biconical bead	cylindrical from 2 sides	+	+
AMP0497	15	Hattemerbroek-Hanzelijn 1	button indet	cylindrical	+	++
AMP0497	16	Hattemerbroek-Hanzelijn 1	discular bead	cylindrical from 2 sides	+	+++
AMP0497	17	Hattemerbroek-Hanzelijn 1	biconical bead	cylindrical from 2 sides	+	
AMP0500	01	Hattemerbroek-Bedrijv.ter. 2	round-conical button	V-shaped	+	++
AMP0500	02	Hattemerbroek-Bedrijv.ter. 2	round-conical button	V-shaped	+	+
AMP0500	03	Hattemerbroek-Bedrijv.ter. 2	round-conical button	V-shaped	+	+
AMP0500	04	Hattemerbroek-Bedrijv.ter. 2	round-conical button	V-shaped	+	+++
AMP0500	05	Hattemerbroek-Bedrijv.ter. 2	round-conical button	V-shaped	+	+++
AMP0500	06	Hattemerbroek-Bedrijv.ter. 2	round-conical button	V-shaped	+	+
AMP0500	07	Hattemerbroek-Bedrijv.ter. 2	round-conical button	V-shaped	+	+
AMP0500	08	Hattemerbroek-Bedrijv.ter. 2	round-conical button	V-shaped	+	+
AMP0500	09	Hattemerbroek-Bedrijv.ter. 2	round-conical button	V-shaped	+	++
AMP0500	10	Hattemerbroek-Bedrijv.ter. 2	round-conical button	V-shaped	+	+++
AMP0500	11	Hattemerbroek-Bedrijv.ter. 2	round-conical button	V-shaped	+	+
AMP0500	12	Hattemerbroek-Bedrijv.ter. 2	round-conical button	V-shaped	+	+
AMP0500	13	Hattemerbroek-Bedrijv.ter. 2	pendant indet	cylindrical	+	+
AMP0500	14	Hattemerbroek-Bedrijv.ter. 2	triangular pendant	cylindrical	+	+
AMP0500	15	Hattemerbroek-Bedrijv.ter. 2	triangular pendant	cylindrical	?	?
AMP0500	16	Hattemerbroek-Bedrijv.ter. 2	round-conical button	V-shaped	+	++
AMP0500	17	Hattemerbroek-Bedrijv.ter. 2	round-conical button	V-shaped	+	+++
AMP0500	18	Hattemerbroek-Bedrijv.ter. 2	round-conical button	V-shaped	+	+
AMP0500	19	Hattemerbroek-Bedrijv.ter. 2	pendant indet	cylindrical	+	++
AMP0500	20	Hattemerbroek-Bedrijv.ter. 2	round-conical button	V-shaped	+	++
AMP0500	21	Hattemerbroek-Bedrijv.ter. 2	round-conical button	V-shaped	+	++
AMP0500	22	Hattemerbroek-Bedrijv.ter. 2	round-conical button	V-shaped	+	++

Tab. 6.8 Overview of type, perforation and degree of wear on amber ornaments subjected to functional analysis: (-) absent; (+) lightly worn; (++) medium worn; (+++); heavily worn.

Fig. 6.17 Photos taken with a stereomicroscope displaying wear and production traces observed on amber ornaments:

(a) heavily worn V-perforated button from a barrow near Hilversum (mound 2, Utrecht, AMP0210, diameter 15 mm), note that the 'bridge' between the two perforations is almost worn through;

(b) heavily worn V-perforated button from a barrow near Ede (Ginkelse Heide 5, Veluwe, AMP0419, diameter 24 mm), note the wear on the outside of the perforation (left and right of the perforations) and the fact that the 'bridge' in between is almost worn through;

(c) V-perforated button (also from Ginkelse Heide 5, Veluwe, AMP0419, diameter 15 mm) with clear signs of wear on the outside (left and right) of the perforations;

(d) clearly visible production traces (grooves from cutting/sawing) on a triangular pendant from a barrow near Ermelo (Veluwe, AMP0440, diameter 26 mm).

location	n	%
head	37	43,5%
back	4	4,7%
pelvis	3	3,5%
unknown	41	48,2%
total	85	100,0%

Tab. 6.9 Location of amber ornaments in relation to the body.

6.4.4 Type of wear and location in the grave

To answer questions on how certain ornaments were worn, two types of evidence can be taken into account. First of all, the wear patterns on the individual ornaments themselves can indicate how they were fastened or suspended. Secondly in some rare instances there is detailed information on the find location of the ornaments in relation to the human body (see Table 6.9).

Wear traces indicate that most beads and pendants had indeed been suspended as might be assumed, on a cord or string. Whether these were worn as a necklace around the neck or elsewhere on the body cannot be determined on wear traces alone. The V-perforated buttons invariably showed clear traces of wear indicating they had been attached, presumably to some sort of dress-element, thus justifying the term button. In only one grave the location of these buttons could be directly related to the position of the body.[177] A total of 18 V-perforated buttons were found situated directly on the forehead of the deceased. The wear traces on the buttons are primarily located on the outside of the perforations and on the inside of the bridge formed by the V-shaped perforation. According to Van Gijn (2011, 264), this indicates that these buttons were attached in sequence, with one string running through multiple buttons. This makes it likely that they were attached to a headband or cap of some sort, rather than for example having been individually braided into the hair. Four additional amber pendants from the same grave were also found near the head. A total of 16 amber ornaments were discovered in a second grave excavated at the same site.[178] Three were located near the pelvis, one behind the back of the individual and eleven ornaments of various types were found situated on/near the head. One button was found in the sieve, therefore no location in relation to the body could be recorded. For the ornaments found near the head it is likely that these were originally attached to some sort of headdress.

Apart from the well-documented graves from Hattemerbroek, the evidence concerning the location of ornaments in graves is scarce. An early 20th century excavation of a barrow near Hilversum (Veluwe) revealed four V-perforated amber buttons.[179] These were found near the head, supposedly in the neck area. These buttons too showed clear differences in wear intensity.

In one of the two graves in the northern Netherlands containing amber ornaments, these had been placed behind the back of the deceased.[180] In fact, in addition to the two amber beads and a V-perforated button, all other grave goods (which included a wrist-guard, flint flakes, a strike-a-light and an arrowhead) were also found together, having

177 AMP0500, Hattemerbroek-Bedrijventerrein grave 2 (just north of the Veluwe) containing 22 amber ornaments.
178 AMP0497, Hattemerbroek-Hanzelijn grave 1.
179 AMP0210, Hilversum 't Bluk mound 2.
180 AMP0269, Harenermolen (Groningen).

been placed together behind the back of the deceased. Clearly, these objects were not worn by the deceased when buried, but had been placed in the grave pit separately. For only two other graves it was recorded that one bead was found along the southern edge of a grave pit, whereas another barrow contained two ornaments located in the south-western part of the grave pit.

The wear on the ornaments indicates that the amber ornaments were not merely gifts to the dead. They were worn by the living. Their locations in the graves suggest that they were worn in a highly visible manner such as on or around the head.

6.4.5 Ornaments to be seen

The V-perforated buttons are produced in a pan-European style. However, the other amber ornaments consist of various (local) types and shapes. Although it can be argued that such 'types' are not 'typical' for the BB complex, it is perhaps not so much their 'type' that made them 'typical' but rather the fact that they were made of *amber*. In other periods and regions various raw materials were used for adorning both the living and the dead. Sheridan *et al.* (2017) argue that the appeal of the Bronze Age 'composite' necklaces often found in Wessex (UK) actually comes from the fact that they are made of different raw materials. The different colours, textures and raw materials from different sources in both space and time was what made these necklaces special (Sheridan *et al.* 2017). This is clearly not the case in the Dutch LNB. Here, it was all about amber. It was this particular raw material that was used to adorn the dead, whether some of the bead types themselves were 'typical' or not, the selection of raw materials was. This in itself forms a sharp contrast with the UK where the use of amber, prior to 2000 BCE, is actually quite rare (Woodward *et al.* 2015, 381).

It was presented above that both the bell beakers themselves and the archery equipment found in graves had at least in part a function related to display. They were produced in a supra-regional style and it was argued that although they could very well have fulfilled practical functions, they also were used as devices to signal a belonging to a particular wider community or identity.

Such an interpretation also applies to the amber ornaments. In part, these items were produced in a supra-regional style (part of the pan-European Bell Beaker package). They were also worn in such a manner that they would have been clearly visible. From the finds with known location in relation to the body, it is apparent that most of the ornaments were found near the heads of the deceased. As was clear from the evidence of the Hattemerbroek graves, the V-perforated buttons were even worn on the forehead. Depending on the context in which these buttons were worn, they would thus have been well visible to all those attending. Like the Veluvian bell beakers, the Dutch LNB amber ornaments thus embodied elements that were shared across Bell Beaker Europe, but also had characteristics that were distinctly regional.

6.5 Metalwork and metalworking

Metals already appear in the 4th millennium BCE in Scandinavia and northern Germany (Klassen 2000), while in the Netherlands the LNB is the period during which the first metalwork is introduced (see Fig. 6.18 for various examples). The only

Fig. 6.18 Several metal artefacts from LNB graves, scale ca. 1:1: (left) gold ornament from Barneveld (AMP0130, collection: Valkhof Museum, Nijmegen), now broken into two parts but originally this was a neck ring or diadem; (centre) copper tanged dagger from a barrow near Lunteren-De Vlooienpol (AMP0407, collection: Valkhof Museum, Nijmegen); (right) copper awl from barrow near Lunteren-De Valk (AMP0408, collection: National Museum of Antiquities, Leiden), all finds from the Veluwe.

metal finds that possibly pre-date the LNB are two copper spirals and some scraps[181] found in two of the megalithic tombs known as *hunebedden* (Bakker 1979, 127-131; 1992, 57) and another small piece of copper in a LNA grave.[182] In the LNB, metalwork became more common with standardized object types which, moreover, were treated and deposited in a standardized manner. This indicates that by this time metal objects were not merely freak occurrences, but instead had rapidly become part of the 'material world'. They were embedded in a widely shared cultural practice, which included selective deposition (see Fontijn 2002, 60).[183]

Childe (1925) introduced the theory of itinerant smiths that roamed the earth trying to sell their craft and products. This practice was linked to the rapid spread of the BB complex itself, whose members were believed to be traveling metalworking craftsmen and metal prospectors. However, already in the mid-20th century these

181 The scraps (from D19) have not been analyzed, the spirals (from D28) show different metal signatures, one could be Funnel Beaker culture in date, the other is more likely Early Bronze Age (Butler and Van der Waals 1966, 76).

182 AMP0535, Tumulus 4 near Borger (Drenthe), see Section 5.7.4.

183 This embeddedness of metal objects in these very specific cultural (depositional) practices indicates that metal in general must have been much more common and abundant than its scarcity in the archaeological records leads us to believe. Singular objects/materials cannot be subject to standardized cultural practices.

context-code	site	objectcode	type	raw material	metal/ stone type*
AMP0346	Exloo-doppelkreisgrabenhugel	04	awl	copper	Singen metal
AMP0408	Lunteren-De Valk grave 1	08	awl	copper	BB metal
AMP0410	Cuijk-Beers-Gassel	06	hairclip	gold	-
AMP0410	Cuijk-Beers-Gassel	07	hairclip	gold	-
AMP0548	Eelde	02	hairclips? With round ends	gold	-
AMP0548	Eelde	01	hairclips? With round ends	gold	-
AMP0130	Bennekom-Oostereng	01	diadem, oar-shaped ends	gold	-
AMP0346	Exloo-doppelkreisgrabenhugel	05	ornament	gold	-
AMP0346	Exloo-doppelkreisgrabenhugel	06	ornament	gold	-
AMP0161	Hilversum-mound 9	01	ring	copper?	-
AMP0478	Emmen-Angelslo-mound XII	01	ring	copper?	-
AMP0346	Exloo-doppelkreisgrabenhugel	03	spiral	copper	-
AMP0133	Vaassen-mound 3	09	tanged dagger	copper	BB metal
AMP0153	Hilversum-mound 1	01	tanged dagger	copper	As copper
AMP0218	Hilversum-'t Bluk-mound 10	01	tanged dagger	copper	-
AMP0346	Exloo-doppelkreisgrabenhugel	01	tanged dagger	copper	BB metal
AMP0404	Ede-Ginkelse Heide	10	tanged dagger	copper	XRF: high Sn**
AMP0407	Lunteren-De Vlooienpol	03	tanged dagger	copper	-
AMP0411	Ede-De Kweekerij	01	tanged dagger	copper	BB metal
AMP0412	Lunteren-Goorsteeg	05	tanged dagger	copper	BB metal
AMP0413	Nieuw-Milligen-De Mottenkuil	02	tanged dagger	copper	-
AMP0418	Ede-Letterse Berg	01	tanged dagger	copper	A deviant
AMP0432	Stroe-Korte Struiken	01	tanged dagger	copper	BB metal
AMP0259	Epe-Emst-doppelhugel	02	wire	copper?	-
AMP0410	Cuijk-Beers-Gassel	05	cushionstone anvil	stone	-
AMP0408	Lunteren-De Valk grave 1	11	cushionstone anvil	stone	zement-quartzite
AMP0408	Lunteren-De Valk grave 1	10	cushionstone anvil	stone	zement-quartzite
AMP0408	Lunteren-De Valk grave 1	12	cushionstone hammer	stone	helleflint
AMP0414	Zeist-Vliegveld Soesterberg	01	cushionstone anvil	stone	quartzite
AMP0414	Zeist-Vliegveld Soesterberg	03	cushionstone hammer	stone	quartzite/sandstone
AMP0414	Zeist-Vliegveld Soesterberg	02	cushionstone hammer	stone	quartzite

*Tab. 6.10 Overview of metal objects and artefacts related to metalworking in Dutch LNB graves. * Metal analyses: Butler and Van der Waals 1966; ** Not analysed by Butler and Van der Waals, observation based on XRF research performed by the author. Since the sampled surface was corroded the actual percentages are not reliable, however Sn proved to be the main 'impurity'.*

Definition of metal types (Butler and Van der Waals 1966):
Singen metal: Cu + moderate to high As, Sb, Ag, Ni
BB metal: Cu + high As, moderate to high Ni
As copper: Cu + high As
A deviant metal: Cu + high As, Ni, moderate Pb, Sb, Fe

high: 1-10%; moderate 0.1-1%; low < 0.1%

length (mm)	functional analysis	remarks
39		awl with diamond-shaped centre part; Fig 6.21 (right)
78		Fig 6.18 (right); Fig 6.24b
		Fig 6.22 (top right)
		Fig 6.22 (top right)
		small tear, two repair holes; Fig 6.22 (bottom right); Fig 6.24
		Fig 6.22 (bottom right)
		diadem or neckring; wire made of sheetgold; Fig 6.18 (left); Fig 6.22 (top left)
		flat "ring" made of sheetgold, two perforations; Fig 6.22 (bottom left)
		flat "ring" made of sheetgold, two perforations; Fig 6.22 (bottom left)
		supposedly 'several bronze rings' were found
		supposedly found, unsure.
		Fig 6.21 (left)
55	+	impression of hilt; with 3 rivet-notches; Fig 6.19e
81		on the tang two rivet-notches, also a rivet was found
50	+	found with wood remains of hilt, only tang and fragment of blade present; Fig 6.19g
206		found with wood remains of hilt, found vertical in ground, tip pointing down; Fig 6.19h
90	+	clear impression of hilt; Fig 6.19a
50	+	clear impression of hilt; Fig 6.18 (centre)
171	+	clear impression of hilt; Fig 6.19b
82	+	impression of hilt; Fig 6.19f
58		tip is missing
92	+	impression of hilt; rivet hole in centre tang, rivet is also present; Fig 6.19d
132	+	clear impression of hilt; possible imprint of textile in corrosion; Fig 6.19c
		bronze/copper wire in perforation holes of wristguard
	+	stone type acc. To Butler & Van der Waals 1966; Fig 6.25
	+	stone type acc. To Butler & Van der Waals 1966; Fig 6.25
	+	stone type acc. To Butler & Van der Waals 1966; Fig 6.25
		Fig 6.25
		made from stone axe; Fig 6.25
		Fig 6.25

theories were questioned when it was argued that metalwork showed distinct regional patterns, both in metal composition and typology of objects (Butler and Van der Waals 1966). Butler and Van der Waals (1966, 42) already stated in 1966 that "one might, in short, seriously wonder if the whole story of pioneer Bell Beaker prospecting and metallurgizing was not a pure and unadulterated myth". Recent studies also indicate that although for north-west Europe the introduction of metallurgy appears to coincide with the spread of the BB complex, the evidence strongly indicates that metalworking took place locally and was not the result of itinerant smiths (Fontijn 2002; Kuijpers 2008; Rowlands 1971). In addition to this, it was demonstrated that for other parts of Europe, metallurgy has its own developmental history. One that in Central Europe,

for example, even starts well over 1000 years before the start of the BB complex (Merkl 2010). For eastern Europe the first metals date to the mid-5th millennium BCE, while in the south-east of Europe the first copper objects appear already in the late 6th millennium BCE (Pare 2000, 5).[184] Moreover, metal analyses revealed that the metal compositions used in Central Europe during the Bell Beaker period did not differ significantly from the metalwork from previous and even contemporaneous cultural groups (Merkl 2010). For Central Europe there is thus no reason to suppose that the BB complex had a particular influence on the metalworking tradition itself.

Although smiths may not necessarily have travelled after all, the metals themselves obviously must have, because neither copper nor the later added tin (to form bronze) naturally occurs in the Netherlands. For the Netherlands all non-ferrous metal must have been imported from distant sources whether through far-reaching (gift) exchange networks or travels/expeditions.

Apart from metal itself, some graves also revealed so-called cushion stones, ground and polished stone anvils and hammers believed to have been used for hammering both copper and gold. The inclusion of these objects in graves both illustrates the apparent importance of metalworking as an activity in the LNB, as well as the fact that metalworking took place in the Netherlands (Butler and Van der Waals 1966). Although the occurrence of these objects is rare, in graves but also in general, they also occur in BB graves in Germany and Central Europe (Freudenberg 2006; 2009) and Britain. The most famous example is no doubt the Amesbury Archer, a 'rich' BB grave found near Stonehenge that – among many other finds – contained a cushion stone, three copper daggers and a set of gold ornaments (Fitzpatrick 2003; 2011). These metalworking tools therefore appear to have been part of the Bell Beaker package. Although the spread of metallurgy itself may not have been inextricably bound to the BB complex as such, it did apparently play an important role in BB communities.

Metal and objects used for metalworking are very rare in LNB graves when considering absolute numbers. Nonetheless, this group of items should be considered an integral part of the Bell Beaker package. In particular the copper tanged dagger is a type of object that is found in BB graves throughout Europe.

This section focuses on a total of 31 items from 19 different graves, comprising 24 metal objects and seven stone tools related to metalworking (see Table 6.10). This means that 13.3% of the LNB graves in the research database contained either metal objects or items related to metalworking. Apart from these finds, there is also other metalwork that can be dated to the LNB, most notably the copper flat axes. Although these items must have been equally 'rare' and 'valuable', they were systematically kept out of graves (this is discussed further in Chapter 8).

6.5.1 The origins of copper

Extensive research programs were set up already in the mid-20th century to analyse the metal composition and crystalline structure of early metalwork to learn more about the techniques used in their manufacture, but predominantly in an attempt to pinpoint their places of origin.[185] Apart from copper itself, these items also contained trace

184 Also see Schnurbein (2009, 89) for a map showing the first introduction of metallurgy throughout Europe.
185 For the Netherlands the excellent research of Butler and Van der Waals (1966) has to be mentioned.

amounts of other metals such as arsenic, nickel, lead, iron, antimony, silver, tin, and many more. It was long believed that these compositional 'metal signatures' could work as a sort of metallic fingerprint to pinpoint specific metal sources in Europe, and hence be used to create distribution maps of items throughout Europe in relation to their source of origin. Various objects were indeed found to be made of highly similar metal compositions. Most of the Dutch Bell Beaker coppers showed a distinct composition labelled 'Dutch Bell Beaker Metal' by Butler and Van der Waals (1966).[186] However, relating this metal type to a specific source proved very difficult.

The lack of success in pinpointing specific metal sources can be attributed to several factors that were not fully realised by the pioneer archaeo-metallurgists. First of all, it appears that the composition of trace elements in the copper ores at the various copper sources in Europe can be highly variable. This results in various different metal signatures, instead of one uniform signature for that specific source (Merkl 2010). A second problem is the melting, mixing and re-casting of copper objects. Blending and mixing items of various sources obscures the original signature of the metal. Originally it was assumed that the melting and re-casting of metal objects would not have been common until at least the Bronze Age. Recent studies, however, showed that already in the late 3rd millennium BCE copper items must have been melted, mixed and recast repeatedly, thus obscuring the original metal compositions (Needham 2002; Northover 1982). In addition, secondary treatments such as cold hammering and annealing, both of which occurred in Bell Beaker times (Butler and Van der Waals 1966), can also change metal compositions. It is therefore doubtful that chemical analysis alone can ever be used to link archaeological objects to specific copper sources (Friedman *et al.* 1966; McKerell and Tylecote 1972; Merkl 2010, 21).

The fact remains, however, that several objects were found to display highly similar metal compositions, which moreover could be contrasted to other groups of metal objects with markedly different compositions. Although some of the Dutch copper objects showed metal compositions highly similar to a group of objects from southern Germany (Singen metal, see Table 6.10), the majority of Dutch finds were shown to have a rather different metal signature that initially was thought to be unique for the Dutch copper finds, hence called 'Dutch Bell Beaker Metal' (Butler and Van der Waals 1966). Since then, many new discoveries have been made and additional analyses have been performed showing that this 'uniquely Dutch metal' in fact has a much wider distribution. It can be found throughout Atlantic Europe, with finds coming from the coastal parts of western France and southern Britain (Needham 2002). Needham (2002, 99) therefore suggested to change the name of this metal type to 'Bell Beaker Metal'. He argues that this similarity in metal signature is not the result of these objects all coming from the same source, but rather that these items circulated in a metal-pool. Within which the objects were repeatedly reworked, mixed, melted and recast (Needham 2002, 99). This process of mixing, recycling and, most importantly, *exchanging* thus resulted in a group of objects sharing a highly similar metal signature

186 Most notable characteristics of the (Dutch) Bell Beaker metal are (apart from copper) high levels of arsenic and moderate levels of nickel with other elements being either absent or occurring in low levels. For details and percentages, see Butler and Van der Waals 1966, 59 (also summarized in the caption of Table 6.10 above).

because they circulated in the same spatio-temporal metal-pool – or metal circulation zone – which spanned across Atlantic Europe and included western France, southern Britain and the Netherlands.

Although it may not prove possible to pinpoint the exact source of the 'Bell Beaker Metal', the idea of a metal-pool in which objects circulate and are mixed/recycled is actually extremely interesting from a social point of view. Instead of being able to pinpoint the exact geographic origins of an object, as can be done for example with blades made of Grand-Pressigny flint, the network itself *is* the origin. The metal composition known as 'Bell Beaker Metal' was not the result of a specific geological formation, but rather the result of a specific socio-cultural interaction network in a specific spatio-temporal setting in which people exchanged and recycled copper objects.[187] As Needham (2002) proposes it is even well possible that several copper sources throughout Atlantic Europe and perhaps even northern Spain contributed to this metal-pool. Ultimately, after repeated mixing, recycling and exchanging resulting in the 'blend' that is now labelled 'Bell Beaker Metal'.

Although it is thus not possible to precisely determine the exact source(s) of the ores used to produce the copper that made up the Bell Beaker Metal, it is clear this metal was derived from an exchange network spanning a large area of Atlantic Europe and even included overseas contacts in Britain. Based on the results of the research performed by Butler and Van der Waals (1966), the majority of the Dutch Bell Beaker copper finds belong to this group.[188] Interestingly, however, some of the analysed items were found to have a different metal signature that more closely matched metals found in Central Europe or southern Germany (Merkl 2010; 2011) (see Table 6.10).[189] As finds of these types of Central European metals are rare or even absent in Atlantic Europe (Needham 2002), it follows that the Netherlands must have been connected both to the Atlantic coastal network as well as a Central European network. Although the former may have involved transport along the coast and even overseas, the river Rhine would undoubtedly have been the main connecting element to the Central European network.

In both regions – Atlantic Europe and Central Europe – similar metal items such as tanged daggers and flat axes were in use. The metal signatures, however, indicate that these objects, although stylistically similar, must have been locally produced somewhere within the region of the respective metal-circulation zone. Although Bell Beaker Europe may thus seem like a uniform whole from a typological point of view, the metal types indicate that underneath this stylistically uniform front, different exchange and interaction networks operated.

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187 For bronze Needham (2007, 286) coins the term '*social currency*' since the dependence on this metal necessitated inter-dependence on others for the supply of metal. This holds true for copper as well.

188 The (Dutch) Bell Beaker metal items included five out of seven tanged daggers, a copper awl and a copper flat axe. Apart from the latter, these all concern grave finds.

189 Finds include a metal awl of Singen metal (high antimony and nickel, and moderate arsenic and silver), most of the copper flat axes and several of the objects in the Wageningen hoard which includes scraps of metal, halberd, axe, dagger, ingot rod, awl, bracelet. See Butler and Van der Waals 1966 for detailed description and analysis results.

6.5.2 Copper daggers

The tanged daggers all vary in shape to some degree, but in general they all adhere to a basic outline, central of which is the tang. The main characteristic that is used to classify these objects – the tang – is not so much a stylistic element, but rather a technological element related to how the blade was hafted. Hence, in prehistory, the tang was actually obscured from sight as this part was inserted into the hilt.

Although the blades may differ in size, generally they are of a triangular or elongated triangular shape, which, combined with the tang, makes them easily recognizable as LNB tanged daggers (also see Fig. 6.19).[190] Although only eleven finds are known from the Netherlands, their role as part of the BB funerary package becomes especially clear when we consider the find contexts of these first metal items. The copper tanged daggers are exclusively known from graves, whereas other copper objects such as axes or halberds are never found in Dutch graves. This pattern can moreover be found in other regions in Europe as well (see Fontijn 2002, 73), indicating that these items were subjected to selective deposition either as part of the grave set or as part of depositions elsewhere in the landscape.

6.5.2.1 Production and use life

It was presented above that the early copper items in circulation during the LNB show distinct metal signatures that according to Needham (2002) indicate they had been part of a specific metal-pool, or metal circulation zone. Although it is therefore not possible to pinpoint the origins of the ore used, this does have implications for the life-history of the objects in circulation. Not only does this imply that metalworking and circulation must have taken place on a regular level, it also implies that inclusion of objects in either hoards or graves must have been rather rare occurrences. For this metal-pool to exist objects could not merely be extracted from it, but rather had to *return* to it, to be recycled, mixed, recast and exchanged (Needham 2002, 113; pers. comm. 2018). This implies that the life-history of any Late Neolithic copper axe or dagger was more likely to end in the melting pot and/or as an object of exchange than in any other context. It follows that copper daggers therefore were in all likelihood much more common and numerous than the burial record lets us believe.

Apart from compositional analysis, Butler and Van der Waals (1966, 59) also performed metal-technological analysis of several of the Dutch finds, including five of the copper tanged daggers.[191] Their research showed that all five were made of cast blanks that were subsequently hammered into their final shape. Three of the daggers showed indications of cold working[192], and all five displayed traces of annealing. The presence of metalworking tools in the Netherlands suggests that at least the cold hammering and annealing may have taken place locally. However, the cushion stones do not provide unambiguous evidence of dagger production themselves. The cushion stones may also have been preferentially used for the working of gold ornaments, or were perhaps merely used for the maintenance of copper tools. Although the relatively high arsenic

190 Later metalwork was usually produced using moulds. However, the tanged-daggers are largely shaped through hammering, hence none are exactly the same.

191 AMP0133 (Vaassen mound 3), AMP0346 (Exloo doppelkreisgrabenhugel), AMP0418 (Ede- Letterse Berg), AMP0412 (Lunteren-Gooisteeg), AMP0411 (Ede-De Kweekerij), AMP0432 (Stroe- Korte Struiken).

192 AMP0133 (Vaassen mound 3), AMP0346 (Exloo doppelkreisgrabenhugel) and AMP0412 (Lunteren-Gooisteeg).

Fig. 6.19 Selection of tanged daggers from various graves in the Netherlands, note that the hilt impressions are often visible in the corrosion on the tang and lower parts of the blades, scale 2:3:
(a) Ede-Ginkelse Heide (AMP0404);
(b) Ede-De Kweekerij (AMP0411);
(c) Stroe (AMP0432);
(d) Ede-Roekelsche Zand (with rivet, AMP0418);
(e) dagger fragment from Vaassen mound 3 (AMP0133);
(f) Lunteren-Gooisteeg (AMP0412);
(g) dagger fragment from Hilversem-'t Bluk mound 10 (Utrechtse Heuvelrug, AMP0218);
(h) Exloo doppelkreisgrabenhugel (Drenthe, AMP0346, collection and photography: Drents Museum, Assen).

All finds are from the Veluwe, except (g) and (h). With exception of (h), all are collection: National Museum of Antiquities, Leiden.

content of the Bell Beaker metal would have had a positive effect on the hardness of the metal when compared to pure copper (Merkl 2010), these copper tools would still have been relatively soft (compared to bronze). When used in various practical activities, both copper daggers and axes would have worn relatively easy. Cushion stones therefore would have been a set of items required for simple tool maintenance. According to both Dick van Heusden and Jeroen Zuiderwijk (experimental archaeological metalworkers, pers. comm. 2010), the hammering and grinding of copper tools is a process that should be regularly performed to repair and maintain the cutting edge of either axe or knife. As such, cushion stones are not necessarily indications of smiths or metalworkers, but perhaps rather of metal users. Just as a flint tool would be retouched when damaged or ground on a grindstone when dull, the maintenance of metal tools involved hammering of the edge using a stone hammer and anvil.

Made from a cast blank, the copper daggers are shaped primarily by hammering. They typically have a tang where the blade was hafted in a hilt (see Fig. 6.19). The tangs themselves have very small hammered-up flanges, which probably allows for better hafting (see Fig. 6.20b). The use of rivets, as is common with Bronze Age swords and daggers, is rather rare in the Late Neolithic. One specimen found in the Netherlands had a single rivet in the centre of the tang, two other specimens had rivet-notches in each shoulder, but with only one of these also an actual rivet was found.[193] Most of the daggers have a concave hammered zone along the cutting-edge (in cross-section). Even though the edges themselves usually have broken off (see below), this zone indicates more or less the maximum dimensions of the dagger.[194] Although there are three specimens of considerable size (132, 171 and the largest 206 mm), the others are in fact all quite small, ranging in size from a mere 50 mm to 90 mm (all measurements include the tang). This means that when hafted, many only had a blade of perhaps 30-70 mm in length. Although all Dutch tanged daggers are unique, they adhere to the basic style of BB tanged daggers that can be found throughout Europe, both Atlantic Europe and Central Europe (Butler and Van der Waals 1966, 58-63; Needham 2002, 119; Woodward and Hunter 2015, 23).

In the context of the present research eight of the eleven tanged daggers from the Dutch graves were subjected to functional analysis (see Table 6.10). However, without exception this proved to be rather futile as the cutting edges of the daggers had not survived. All daggers were covered with a layer of rather brittle corrosion which had caused the edges of the daggers to break away over a width of a few millimetres. Although it was thus not possible to see any direct traces of use, the corrosion did reveal some other interesting features. On all daggers inspected, a clear imprint could be seen in the corrosion caused by the hilt (see Fig. 6.19, and 6.20 for details). Although some showed a straight impression, several showed a concave/arc-shaped impression indicating the presence of a well-made hilt at the time of deposition. Moreover, a clear imprint of wood-texture could be seen in the corrosion indicating the presence of a wooden hilt on two of the daggers (see Fig. 6.20 and Table 6.9 for details). Although

193 AMP0133 Vaassen mound 3 has rivet-notches (Veluwe); AMP0153 Hilversum mound 1 (Utrechtse Heuvelrug) has one possibly two rivet-notches and one rivet was found; AMP0418, Ede-Roekelsche Zand (Veluwe) has central perforation in the tang and one rivet (determinations by Butler and Van der Waals 1966, 58).

194 At least in its final life-stage when deposited.

Fig. 6.20 Details visible on copper tanged daggers with stereomicroscope: (left) clearly visible the hammered up edge on the tang of this copper dagger from a barrow near Ede-Ginkelse Heide (AMP0404, Veluwe); (right) the hilt has left a clear impression on this copper dagger from mound 10 in Hilversum-'t Bluk (Utrechtse Heuvelrug, AMP0218).

the hilts and pommels have not been preserved, it is known from finds elsewhere that these objects may have been highly significant. This is evidenced, for example, by the inclusion of part of a pommel in an Early Bronze Age grave in Britain. Neither the other parts of the hilt nor the metal blade itself was among the grave goods (Brück 2006, 79; Lynch 1971), indicating that pommels were valued items in their own right. In addition to this Hardaker (1974, 49) also lists eight graves that contained pommels but where no indications were found of metal blades. The special character of at least some of these pommels becomes even more apparent when considering some of the raw materials they consist of. Apart from more mundane types of materials such as (decorated) wood, bone and horn, these also include highly exotic materials such as marine ivory (teeth of sperm whales), amber, bronze and gold (see catalogue Hardaker 1974; Woodward and Hunter 2015, 45).[195] In these cases the dagger/knife should be seen as a composite artefact made up of different (exotic) materials that each may have had a different life-history and significance, and which apparently also could be included in graves as either separate autonomous objects or *pars pro toto*.

6.5.2.1 Placement in graves

Only little is known about the location of these copper knives in relation to the body. Of only one specimen was it noted that it lay behind the back of the deceased.[196] For one other find it is recorded it came from the centre of the grave pit, suggesting that it was placed near the pelvic region. One copper knife was retrieved from the north-east edge of the grave pit, whereas another was found in the south-eastern edge of a grave. Depending on the position of the body, these would thus have been located either near the head or the feet. Again, the evidence does not allow any particular patterns to be recognized.

195 These publications deal with both Chalcolithic (Beaker) material and slightly later Early Bronze Age finds.
196 AMP0407, Lunteren de Vlooienpol (Veluwe).

6.5.2.2 Weapons or knives, objects from afar?

These objects are usually referred to as tanged daggers (*tongdolken* in Dutch), a term which more-or-less implies that they are weapons (*i.e.* an object *designed* to inflict bodily harm).[197] Apart from its name, these items are indeed often interpreted in the archaeological literature as weapons and, being the first metal 'daggers', in turn are seen as the precursor of the Bronze Age sword (for an overview see Skak-Nielsen 2009, 351).[198] For the largest specimen found in the Netherlands an interpretation as 'dagger/weapon' is not implausible (measuring over 20 cm in length),[199] but the other copper 'daggers' found in the Netherlands are actually very small, ranging in length between 4 and 9 centimetres (including the tang). This means that most of these 'weapons' had blades of only 2 to 7 centimetres. I would argue that a dagger with a 2 centimetre blade can hardly be seen as a weapon. Also Hardaker (1974, 49) notes that many of the Early Bronze Age daggers must have been very small: "*Similar in size perhaps to a modern table knife. It is difficult to image the function of these knives, unless they belonged to women or were children's toys, which judging from the burials does not seem to be the case*".

This presents therefore a bit of a problem. If we agree that a 2 centimetre blade can hardly be interpreted as a weapon, we must accept that either *none* of these objects were weapons, or alternatively that only *some* of them were. This would mean that these eleven objects grouped together under the label 'tanged dagger', could in fact represent different types of objects, with different functions and different social significances.

A copper knife with a blade of just 2-3 centimetres would not have been suitable as an offensive, or even defensive, weapon. Such an object would perhaps be more suited to a variety of tasks involving small craft activities or food preparation. Such an object is perhaps better seen as something comparable to a modern pocket knife. A small copper knife may have had a function not unlike that of a flint flake, with the difference being that the copper knife would have been a more durable and permanent object, whereas the flint flake would probably have been knapped in an *ad hoc* fashion as the need for it arose only to be disposed of after the task at hand was completed.

It cannot be dismissed, however, that at least some would have been used as weapons or in the context of violence. Even if not used directly for combat, knives or daggers could have had a role in combat, for example for the collection of certain body parts as war trophies or performing a *coup de grâce* (Case 2004b, 200; Vandkilde 2006, 394). The latter function could however equally well apply in the context of such an item as part of a hunting kit. Although the bow and arrow may be successful in wounding an animal from quite a distance, the knife may have been used to finish the job if the shot did not kill but merely wounded and disabled the prey (as suggested by Vandkilde

197 The term 'weapon' specifically applies to objects "*designed or used for inflicting bodily harm or physical damage*" (Oxford English Dictionary). Although anything can be *used* as a weapon (even a ballpoint pen), in order to a-priori *be* a weapon it has to be *designed* as one.

198 Both a Grand-Pressigny dagger and several copper tanged daggers were included in the 2016 exhibit on "swords" in the Dutch National Museum of Antiquities to illustrate the historical context of the Bronze Age sword, as if the LNA flint blade slowly evolved into a bronze sword. Both Drenth (1990, 108) and Lohof (1993, 6) suggested that LNA battle axes were replaced by French daggers, which evolved into copper daggers, which led to bronze swords.

199 But also see discussion of Skak-Nielsen (2009, 352) who argues against an interpretation of daggers as weapons altogether.

2006, 394 but also by Case 2004b, 200). As such, the knife or dagger should perhaps be seen as part of the hunting/archery kit rather than as a separate class of object.

From the finds of similar knives or daggers in Britain, albeit slightly later in date, we know at least some were fitted with highly elaborate hilts and pommels made of exotic materials such as marine ivory and even gold. It is therefore perhaps unlikely that such raw materials would have been used to embellish a mundane tool merely intended to slice the occasional apple. It is reasonable to assume that these items must have had a rather important social significance. However, even if these British items were fitted with gold and ivory and represented prestigious items used by a local elite, this need not reflect the social reality of the Netherlands in the second half of the 3rd millennium BCE.

With regards to the possible function of these tanged knifes or daggers there are thus multiple and equally plausible options. Although traditionally interpreted as weapons, this need not be the case. Despite the unclear function of these objects, there are a number of observations that can help with evaluating their potential significance in the grave ritual. Most importantly, they are items obtained from afar. As such they embody social relations with exchange partners and thus indicate a person's or group's involvement with distant others (see Mauss 2002 [1950]). The fact that many of these items display a distinct metal composition, as argued above, indicates that these items circulated in a vast network and were continually recycled, melted and recast (Butler and Van der Waals 1966; Needham 2002).

Throughout this network, copper objects needed to be recycled to give rise to this this metal-pool. This implies that copper daggers were not produced at a single place (as was the case with for example the LNA Grand-Pressigny daggers), but instead must have been locally produced throughout the network, perhaps even in the Netherlands. Although the presence of cushion stones – as argued above – is not conclusive evidence for local dagger production, it does at least suggest that locally some form of metal-working/maintenance was performed. What is interesting in this respect is that the daggers or knives are produced in a rather uniform style throughout Europe. Like the flint arrowheads, ceramic beakers and amber ornaments, they were produced locally but in a supra-local style. Although it is thus unclear whether these objects represented tools, weapons or hunting paraphernalia, it is at least clear that they were made to adhere to a specific style and hence embody/signal a belonging to a particular wider community or identity. Whether this happened consciously or unconsciously, by carrying objects in a specific style the wearer or user would have signalled a belonging to (distant) others with whom – given the existence of the metal-pool and the absence of copper sources in the Netherlands – these items themselves and the knowledge of how to produce and maintain them must have been shared.

6.5.3 Copper ornaments and awls

Apart from copper tanged daggers, only few other copper items are known from LNB graves. These include two small copper awls (one awl depicted in Fig. 6.18, the other in Fig. 6.21), a copper spiral bracelet (Fig. 6.21), a fragment of copper wire in the perforation of a wristguard and two reports of small 'rings' that were supposedly found in LNB graves (see Table 6.10). Both awls were analysed by Butler and Van der Waals (1966). One showed a metal signature highly similar to the southern German 'Singen-

Fig. 6.21 Copper awl and bracelet from a burial mound near Exloo (Drenthe, AMP0346), scale ca. 1:1 (collection and photography: Drents Museum, Assen).

metal',[200] while the other appeared to be made of 'Bell Beaker metal', suggesting an origin from the Atlantic metal circulation zone.[201] For the two finds of 'rings', no further information is available and it should in fact be questioned whether these finds actually exist.[202] As for the copper spiral bracelet found in the famous grave of Exloo (Drenthe), no real parallels are known from the Netherlands or adjacent areas. Butler and Van der Waals (1966) found some similar finds in Central Europe, but the origin of this ornament remains uncertain.

A final copper/bronze item that might be mentioned is the occurrence of a so-called *Schleifennadel* in a grave near Overasselt (Gelderland).[203] This ornament was found below the chin of an individual buried in a secondary grave in a barrow that itself dated to the LNB. The ^{14}C-date[204] as well as the object type itself indicate that this burial must date to either the middle/late BB phase, or the beginning of the Early Bronze Age, just after 2000 BCE (Butler 1990, 71; Lanting and Van der Plicht 2000, 40). Because the date of this grave is uncertain, it was not included in the overview above that only contains objects that with certainty date to the LNB. Similar finds are known from central Germany (Butler 1990, 71; Butler and Van der Waals 1966, 87).

Several cremation burials were discovered by chance during excavations near Zutphen (Gelderland). ^{14}C-dating revealed that they were LNB in date (Bouwmeester *et al.* 2000). In one of these burials green discolouration was observed on the cremated remains. Samples were chemically tested and showed that they consisted of copper,

200 AMP0346, Exloo (Drenthe).

201 AMP0408, Lunteren de Valk (Veluwe).

202 AMP0161, mound 9 Hilversum (Utrechtse Heuvelrug) supposedly revealed several 'bronze rings'. AMP0478, mound XII Emmen-Angelslo (Drenthe) for which Lanting (2008) reports to have witnessed the retrieval of a copper/bronze ring during the excavation. The find, however, was not published and could not later be traced.

203 AMP0125.

204 GrA-12387: 3740 ± 65BP (Lanting and Van der plicht 2000, 40), 2397-1950 cal BCE (Intcal 13).

which according to the researchers was most likely the result of a copper item having accompanied the deceased on the funeral pyre.

With regards to the function of these objects there is not much to say. The copper awls or pins are quite corroded and wear traces could not be observed. These items could have functioned in a variety of manners, for example as tools related to textile production or leather working. However, they could also have been used perhaps as retouchers for applying the surface retouch present on the flint barbed-and-tanged arrowheads. As for the copper bracelet and possible rings, these should be seen in the context of personal ornaments, not unlike the amber ornaments presented above. Although these items are rare or perhaps even unique in these parts, the raw material – copper – would have certainly signalled the wearer as being part of the BB metal circulation network.

6.5.4 Bell Beaker gold

A small number of the Dutch LNB graves contained ornaments made of gold, representing the earliest gold finds from the Netherlands. A total of seven gold objects were retrieved from four different graves (see Fig. 6.22; Table 6.9). Two small bead-like ornaments made of rolled-up fragments of sheet-gold were found in the already mentioned grave of Exloo (Drenthe).[205] Two gold ornaments with oar-shaped ends were found by an amateur archaeologist near Beers-Gassel (Noord-Brabant).[206] Based on the other objects that were retrieved at this location, this in all likelihood must represent a BB grave.[207] Two similar golden ornaments (with round ends) were recently found with the cremated remains of a female in Eelde (Drenthe).[208] Both the Beers-Gassel and Eelde finds have coiled 'tails' that are probably some sort of hairclips that have close parallels in Central Europe (see Fig. 6.23), but are also related to the gold basket-shaped ornaments[209] known from Britain (*cf.* Needham and Sheridan 2014, 906).[210] The seventh gold object, found near Bennekom (Veluwe) [211] in what was probably a grave, is a diadem or neck ring consisting of a very thin gold wire – made of rolled up sheet-gold – with two decorated oar-shaped ends (Butler and Van der Waals 1966, 62). Similar ornaments, probably representing arm or neck rings, with oar-shaped ends occur in Denmark (Vandkilde 1996, 184). The location in relation to the body is known for none of the Dutch gold finds.

It is clear from the lack of gold sources in the Netherlands that all these objects, or at least the gold they were made of, must have been imported from distant places. Where

205 AMP0346.
206 AMP0410.
207 AMP0410, other finds include a Bell Beaker, an amber H-shaped button, two flint flakes and a cushion stone.
208 AMP0548, (pers. comm. Elma Schrijer, De Steekproef BV).
209 The notion that the basket-shaped ornaments were earrings was first postulated by Gordon Childe who compared them with the ornaments from Troy II as worn by Sophie Schliemann in the famous photograph (Sherratt 1986, 61). Sherratt (1986), however, argued that they were likely to have been worn as hair-ornaments. Needham (2011b, 138) suggests they were worn as part of clothing, such as headdresses or collars.
210 Finds are also known from Ireland, Brittany and Portugal, see overview in Needham 2011b, 132.
211 AMP0130, Bennekom (Veluwe), found in 1891 at a depth of six 'feet' together with a Veluvian Bell Beaker and a piece of 'resin' that is now lost. The 'resin' probably was an amber bead of some sort. Given the depth of the finds it is likely that they represent the grave goods from a barrow (Butler 1956; Glasbergen 1956).

Fig. 6.22 All seven of the Dutch LNB gold ornaments, scale ca. 1:1:

(top left) diadem/neck ring (broken in the middle) with oar-shaped ends from Bennekom (Veluwe, AMP0130, collection: Valkhof Museum, Nijmegen); (top right) pair of hairclips with oar-shaped ends from Beers-Gassel (Noord-Brabant, AMP0410, private ownership); (bottom left) small rings of sheet-gold from Exloo (Drenthe, AMP0346, collection: Drents Museum, Assen); (bottom right) pair of hairclips with round ends from Eelde (Drenthe, AMP0548, collection: Drents Museum, Assen).

This is a compilation of photographs provided by the Valkhof Museum (Bennekom and Beers-Gassel), the Drents Museum (Exloo) and De Steekproef BV (Eelde).

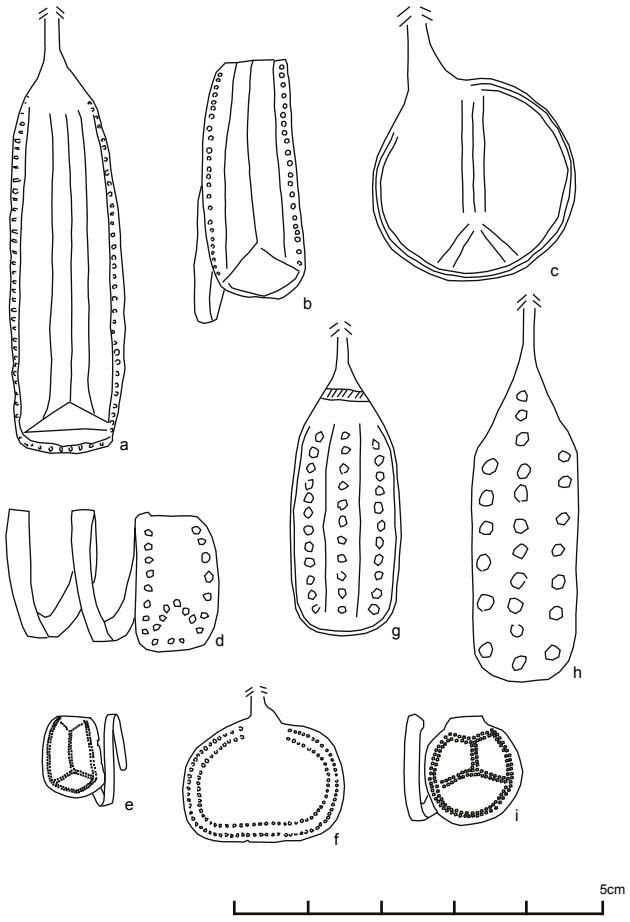

Fig. 6.23 Schematic drawings of a selection of Bell Beaker gold ornaments from the Netherlands and various locations in Europe to illustrate the wide-spread similarity in style, scale 1:1. Note the highly similar shapes (thin 'tails' ending in round or oar-shaped decorated ends) and types of decoration:*

(a) Bennekom (The Netherlands, AMP0130);
(b) Beers-Gassel (The Netherlands, AMP0410);
(c) Eelde (The Netherlands, AMP0548);
(d) Předmostí (eastern Czech Republic, after Hásek 1989, abb. 2.5);
(e) Apfelstadt, made of electrum (gold-silver alloy) (central Germany, after Küßner 2006);
(f) Amesbury (Britain, after Needham 2011b, fig 43);
(g and h) Sărata-Monteoru (eastern Romania, after Zaharia 1959 abb. 9-10);
(i) Borkovany, made of silver-copper alloy (eastern Czech Republic, after Hásek 1989, abb. 2.3).

** For (e) and (i) no scale was indicated in the publication, depicted here in same scale as in Hásek 1989 assuming the scale was 1:1.*

Note that in these drawings the 'tails' of (a),(c), (g), (h) and (f) have been shortened. Ornament (a) is one of the ends of a neck ring, ornament (h) has a short straight 'tail' all the others represent hairclips with wrapped-up tails. The round ends of (c) and (f) were found rolled-up to form a semi-cylindrical body, but are depicted here as flat in order to illustrate their shape and decoration.

those sources were situated is uncertain, although a source in Western Europe is often assumed (Butler and Van der Waals 1966, 63; Fontijn 2002, 67; but see Lehrberger 1995 for an overview of gold sources in Europe). Gold ornaments occur throughout Bell Beaker Europe and especially for the oar-shaped ornaments Butler and Van der Waals (1966, 62) list various parallels in Poland, Portugal, Brittany and the British Isles (also see Fig. 6.23). Although the round-ended ornaments found in Eelde have parallels in Central Europe (see Hásek 1989, abb. 2; Needham 2011b, fig. 44), they also closely resemble the Bell Beaker gold ornaments found in Britain. See for example those found with the *Amesbury Archer* and the *Companion* (Fitzpatrick 2011; also see Fig. 6.23f). A highly similar set of basket ornaments was recently found in Tremelo-Baal, Belgium (Van Impe 2018).

Not only do these ornament types occur elsewhere in Europe, the decoration applied to the round or oar-shaped ends is also very typical and variations of the same basic design occur throughout Europe (see Fig. 6.23). Even though the number of finds from the Netherlands is low, these objects do clearly adhere to a very particular international style. Needham (2011b, 134) rightly points out that there is regional variation in BB gold ornament types indicating that the different BB regions in Europe to some degree followed their own tradition. However, given the fact that, using gold, people could essentially produce an unlimited range of ornament types and decorative motifs, it is all the more striking that throughout Europe these ornaments are so similar to one-another. For some ornaments found in Central Europe it is even believed that they were imports from Britain or Ireland (various examples discussed in O'Conner 2004, 208).

These ornaments were manufactured from hammered-out sheet gold in which decorative motifs were impressed (pointillé and grooves/ridges). The cushion stones found in the Netherlands could very well have been used to shape or repair these ornaments, making local production a feasible option (Fontijn 2002, 67). A clue against local production can be found in the Eelde hair ornaments, one of which was broken in antiquity. Instead of having been expertly repaired by an experienced gold-worker, the tear was instead repaired by means of two small perforations on either side of the tear, probably originally bound together with an organic bit of string (see Fig. 6.24). This 'stitching' technique is also used to repair cracked pottery and suggests an absence of expert gold-working knowledge.

What remains most curious is that despite their rare occurrence, the gold ornaments adhere to such a distinct and almost standardized style, albeit with regional variations. It is difficult to imagine how this is possible. If locally produced, did the gold nuggets used for their production reach the Netherlands together with a clear instruction manual prescribing what to make out of them? This seems unlikely. Instead, I would suggest that both gold and copper objects were far more plentiful than the archaeological record leads us to believe. This is first of all indicated by both the existence of a copper metal-pool, indicating that the 'normal' biography of a metal item involved recycling rather than discard or deposition. Secondly, the gold ornaments were made and decorated in a standardized style. Thirdly, both copper and gold items were subjected to highly structured and selective deposition. Objects that are extremely rare or even singular cannot be treated or produced in standardized manners. Both these practices indicate the existence of a well-established and widely shared framework of knowledge that prescribed how to make, use, recycle and deposit metalwork. The

Fig. 6.24 The Eelde hairclips, scale ca. 1:1 (Drenthe, AMP0548, collection: Drents Museum, Assen; photography: the author); (right) detail of a tear and repair holes on one of the hairclips, photo covering about 1 cm² (photography: De Steekproef BV).

rare occurrence of these objects is therefore not a reflection of the number of objects in circulation. Instead it reflects that only in rare circumstances were objects removed from circulation through means of selective deposition.[212]

Shiny gold ornaments, probably worn in the hair or at least on the head, would have been clearly visible. Like the many Bell Beaker items described above, these gold ornaments were obviously meant to be seen and signalled a belonging to the Bell Beaker social identity. Their wearers must have been connected to distant others from which either the ornaments themselves or the raw material and knowledge used for their production was obtained.

6.5.5 Cushion stones

Despite the fact that they occur in BB graves throughout northern Europe (see Needham 2011a, 114-117), cushion stones are in fact extremely rare. In the Dutch graves their occurrence is limited to only three graves (see Fig. 6.25 for two examples). They were first described as metalworking implements by Butler and Van der Waals (1966), who named these objects after their resemblance to sofa cushions. Butler and Van der Waals convincingly argued for their interpretation as metalworking tools, an interpretation that stands to this day and can be substantiated by the identification of both copper and gold residues on various specimens found across Europe (Freudenberg 2006; 2009).[213] Apart from objects from graves, several cush-

212 Parker Pearson (2019, 100) also notes that the scarcity of gold and copper items may be reflective of them being deposited in graves only on rare occasions, the majority of such items being inherited or recycled.

213 In the context of the current research project the cushion stones of the grave of Lunteren (AMP0408, Veluwe) were analysed using XRF, this however did not reveal any traces of metal unfortunately (XRF analysis performed by Hans Huisman of the Netherlands Cultural Heritage Agency). A previous attempt by Butler and Van der Waals (1966) also did not reveal any metal traces. Analysis of a cushion stone found in the grave of the Amesbury Archer too revealed no traces of gold or copper (Cowel and Middleton 2011, 117).

Fig. 6.25 Grave goods from two of the graves that contained cushion stones: (top) the grave from Soesterberg which includes one anvil and two hammers, one of which is made of an old stone axe, also note the only two boar tusks found in a Dutch BB grave, as well as a worn/broken and repaired wristguard and what appears to be an unmodified natural stone (Utrechtse Heuvelrug, AMP0414, collection and photography: Centraal Museum, Utrecht); (bottom) the grave from Lunteren which includes two anvils, a hammer and a grindstone, also included are a Veluvian bell beaker, a copper awl, four flint arrowheads, a small flint axe and a broken/burnt wirstguard (Veluwe, AMP0408 collection and photography: National Museum of Antiquities, Leiden).

Fig. 6.26 The hammer and one of the anvils from Lunteren (Veluwe, AMP0408) as they would have been handled during use.

ion stones were found as single finds and recently even as part of what probably was a hoard near Hengelo (Gelderland).[214]

The cushion stones are made of various types of stone, varying from fine grained quartzite (termed zement-quartzit by Butler and Van der Waals 1966) to rather course granites.[215] On occasion old stone axes also appear to have been reworked, as was the case with one of the metalworking stones (hammer) from Soesterberg (Utrechtse heuvelrug).[216] The metalworking-stones can be divided between cubically shaped anvil stones (cushion stones) and the smaller hammers that were probably hand-held (see Fig. 6.26). Especially the fine-grained quartzite specimens show distinctive traces of manufacturing which involved them being pecked into shape, after which they were ground and polished. The edges of the anvils are usually rounded or facetted. According to both Dick van Heusden and Jeroen Zuiderwijk (experimental archaeological met-

214 Several cushion stones found in a pit together with various other stone tools including a set of arrow shaft smoothers, several grinding stones and a large quern (Drenth, Freudenberg and Hartz 2009).

215 The latter in the case of one of the cushion stones of the Hengelo hoard mentioned above.

216 AMP0414, collection of finds that probably are part of a Bell Beaker grave found during work on the Soesterberg military airport (found during WWII). Finds included three cushion stones, wristguard, a very rare find of two boar tusks (although a typical part of the Bell Beaker package, they are rarely found in the Netherlands due to bad preservation conditions) and a Bell Beaker.

alworkers, pers. comm. 2010) this feature is to be expected if they are indeed tools for working metal. Straight edges are quite 'dangerous' because when a mistake is made during hammering, such an edge will cause a deep indentation in the metal that is difficult to repair. Using tools with rounded or facetted edges may thus be a way of minimizing the risk of such mistakes.

Although several cushion stones were examined for traces of use under both low- and high-power microscopes, this provided no clear evidence for metalworking (see Table 6.10). The only traces observable could be attributed to the manufacture and/or maintenance of the stone tools themselves (traces of pecking and grinding). However, Zuiderwijk was so kind as to display several stone tools he used himself for hammering-out copper and bronze. Interestingly, his tools showed the presence of a thick layer of copper/bronze residue that had formed on the tool's working surface. This layer of copper residue is likely to 'protect' the stone underneath from the formation of use wear. He furthermore argued that if wear damage did occur, he would instantly repair his stone tools by re-grinding the damaged surface, before continuing his activities of hammering-out metal. Otherwise the damage in the hammerstone would leave an indentation in the metal with each blow of the hammer. If prehistoric metalworkers equally valued their tools and products, which can be expected, this could account for the lack of clear wear traces on the archaeological finds.

To understand the role and function of the cushion stones, it is important to understand how copper tools are made and, more importantly, used. Hammering was not only used for the shaping/production of copper objects, it also played an important role in maintaining copper tools. As was argued above, copper tools will wear out relatively quickly and frequent rejuvenation and repair are part of basic tool maintenance. For example, every person using a copper axe to chop wood would also have employed stone tools to repair and maintain the axe's cutting edge. Likewise, copper daggers too would have required a touch-up every now and then. Although cushion stones are generally related to metalworking and the production of metal objects, it should not be forgotten that they are probably even more important as objects used in tool maintenance. As such, they do not necessarily indicate metal *producers* (smiths), but perhaps rather metal *users* (woodworkers).

Despite the functional link between cushion stones and metal tools, there actually is not a very strong correlation between these two in graves. None of the graves with a tanged dagger for example contained cushion stones. Of the three graves with cushion stones one contained a small copper awl[217] and another two gold, oar-shaped hairclips.[218] The third grave contained no metal finds at all.[219] Apparently, the inclusion of actual metal items was not a condition for the inclusion of metalworking tools. A similar pattern could be seen with regards to the co-occurrence of arrowheads, wristguards and arrow shaft smoothers. As was argued above, no grave contained all of these items, instead of a full set, graves only contained 'some' of the objects that were part of the archery kit. If likewise metal and metalworking are seen as two elements of the same sphere of activity (metal object production and maintenance), it seems that the

217 AMP0408, Lunteren (Veluwe).
218 AMP0410, Beers-Gassel (Noord-Brabant).
219 AMP0414, Soesterberg (Utrechtse heuvelrug).

focus lies on the inclusion of 'some' rather than 'all' items associated with this activity (also see Section 8.2). The objects included in the grave may refer to a specific activity, perhaps on a symbolic level, rather than that the entire smithy and associated products were incorporated in the grave.

For none of the Dutch graves it is known where the cushion stones were placed in the grave in relation to the body.

6.6 Axes, daggers, strike-a-lights and other grave finds

6.6.1 Battle axes

In total eight so-called battle axes have been found in six LNB graves (see Table 6.11). With one exception (Mound D, Apeldoorn-Uddelermeer, Veluwe[220]), all of these were found in the province of Drenthe. Like their CW predecessors, they are mostly made of diabase or gabbro/diorite (see Beuker *et al*. 1992, 132) and are in all likelihood locally produced, most clearly illustrated by the fact that one of these grave finds concerns an unfinished specimen.[221] For one battle axe of the so-called 'Zuidvelde-type' it is said (Lanting 2008) that it was made of a non-local type of stone (see Fig. 6.27). If this is indeed the case, it is interesting that it concerns an object that was apparently made in a local style, as 'Zuidvelde-type' refers to the type-site of Zuidvelde (a BB grave in Drenthe).[222]

Two battle axes were subjected to functional analysis. One was found in 1899 in a grave near Emmen (Drenthe)[223] and showed clear traces of heavy use. It was worn both on the cutting edge – showing distinct traces and damage resulting from usage – as well as in the shaft hole showing clear traces of rounding resulting from a wooden shaft. Like the LNA battle axes described in the previous chapter this object must have been intensively used. Especially the shaft hole showed very clear traces of wear. The cutting edge, however, although clearly used, was probably resharpened prior to deposition. The other concerned the above-mentioned battle axe of Zuidvelde. This object showed hardly any traces of wear. It seemed to be in mint condition and was also perfectly preserved. Only in the shaft hole minor traces of rounding could be observed suggesting that at least at one point in its use life it had been hafted.

In Chapter 3 it was argued that the beakers of the Dutch North-East Group seemed to refer to pre-existing CW decorative patterns. Perhaps the occurrence of these battle-axes must be seen in the same light as the presence of such items that are not typically part of the Bell Beaker package. These items too seem to echo the customs of a previous era.

6.6.2 Flint and stone axes

Only three flint axes and one stone axe were found in a total of only three LNB graves (see Table 6.11). This rarity is remarkable as both in the Funnel Beaker culture and

220 AMP0173.
221 AMP0327, Eext (Drenthe).
222 AMP0459.
223 AMP0456.

context-code	site	object type	raw material	length	funct. analysis	wear traces	traces of use	remarks
AMP0173	Uddelermeer, mound D	battle axe	stone		-	n/a	n/a	
AMP0288	Hijken-Laaghalerveld mound 1	battle axe	stone	139	-	n/a	n/a	
AMP0327	Eext-Kerkweg 3	battle axe	stone	121	-	n/a	n/a	unfinished
AMP0327	Eext-Kerkweg 3	battle axe	stone	130	-	n/a	n/a	
AMP0456	Emmen 1899	battle axe	stone	122	+	+	+	
AMP0459	Emmen 1899	battle axe	stone	174	+	-	-	
AMP0455	Emmen	battle axe	stone	136	-	n/a	n/a	
AMP0469	Kerkenbos mound 1954-I	battle axe	stone	154	-	n/a	n/a	
AMP0447	Fochteloo flatgrave	axe	stone	68	-	n/a	n/a	
AMP0447	Fochteloo flatgrave	axe	flint	72	-	n/a	n/a	
AMP0408	Lunteren-De Valk grave 1	axe	flint	75	+	+	+	
AMP0408	Lunteren-De Valk grave 2	chisel	flint	70	+	+	+	
AMP0151	Epe-Klokbekerweg	dagger	flint		-	n/a	n/a	
AMP0455	Emmen	dagger	flint	196	-	n/a	n/a	
AVG0009	Nolde	dagger	flint	201	+	?	?	context uncertain
AMP0151	Epe-Klokbekerweg	strike-a-light	flint		-	n/a	n/a	
AMP0204	Ermelo-Elspeter heide mound 5	strike-a-light	flint	53	+	+	+	
AMP0269	Haren-Harenermolen	strike-a-light	flint	60	-	n/a	n/a	
AMP0404	Ede-Ginkelse Heide	strike-a-light	flint	65	+	+	+	
AMP0404	Ede-Ginkelse Heide	strike-a-light	flint	70	-	n/a	n/a	
AMP0407	Lunteren-De Vlooienpol	strike-a-light	flint	42	+	+	+	
AMP0439	Apeldoorn-Houtdorper Veld	strike-a-light	flint	69	+	+	+	
AMP0536	Baarn-De drie Eiken	strike-a-light	flint		-	n/a	n/a	
AMP0151	Epe-Klokbekerweg	nodule	limonite		-	n/a	n/a	
AMP0407	Lunteren-De Vlooienpol	nodule	pyrite	40	-	n/a	n/a	
AMP0151	Epe-Klokbekerweg	nodule	limonite		-	n/a	n/a	
AMP0414	Zeist-Vliegveld Soesterberg	boar's tusk	bone	79	-	n/a	n/a	
AMP0414	Zeist-Vliegveld Soesterberg	boar's tusk	bone	77	-	n/a	n/a	
AMP0079	Mol-Grenspaal	fossil. object	unknown		-	n/a	n/a	
AMP0270	Zuidlaren-Annertol mound 3	nodule	amber		-	n/a	n/a	number unknown
AMP0500	Hattemerbroek-Bedrijv.ter. 2	nodule	red ochre		-	n/a	n/a	
AMP0500	Hattemerbroek-Bedrijv.ter. 2	nodule	stone		-	n/a	n/a	
AMP0428	Ede-Koeweg	block	flint		-	n/a	n/a	
AMP0428	Ede-Koeweg	block	flint		-	n/a	n/a	
AMP0428	Ede-Koeweg	block	flint		-	n/a	n/a	
AMP0428	Ede-Koeweg	block	flint		-	n/a	n/a	
AMP0504	Molenaarsgraaf grave 2	fish-hook	bone	43	-	n/a	n/a	date: LNB / EBA
AMP0504	Molenaarsgraaf grave 2	fish-hook	bone	30	-	n/a	n/a	date: LNB / EBA
AMP0504	Molenaarsgraaf grave 2	fish-hook	bone	26	-	n/a	n/a	date: LNB / EBA
AMP0504	Molenaarsgraaf grave 2	antler tine	antler	450	-	n/a	n/a	date: LNB / EBA
AMP0504	Molenaarsgraaf grave 2	awl	bone		-	n/a	n/a	date: LNB / EBA

Tab. 6.11 Overview of battle axes, axes, strike-a-lights and other grave goods in LNB graves.

Fig. 6.27 LNB 'Zuidvelde-type' battle axe (with groove/ridge decoration on top and bottom plane) from a barrow near Zuidvelde (Drenthe, AMP0459), length 174 mm, scale ca. 2:3 (collection: Drents Museum, Assen).

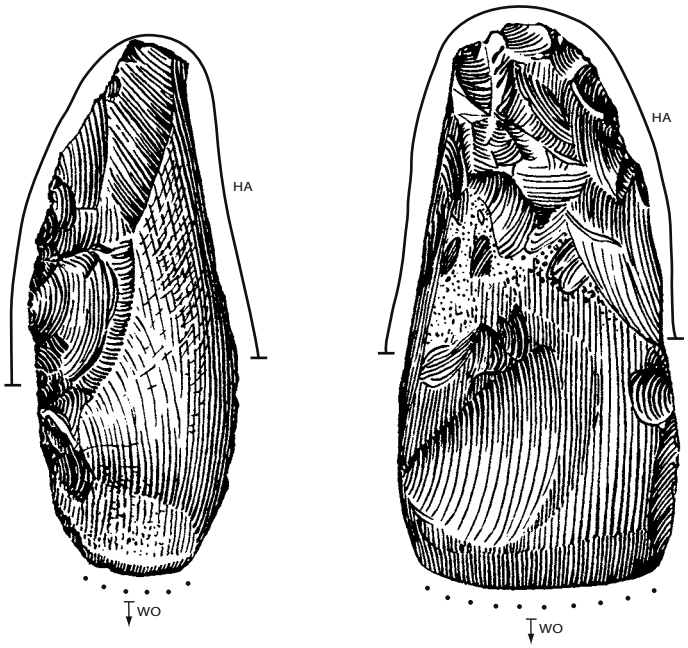

Fig. 6.28 Two flint axes from two graves in the barrow of Lunteren-De Valk (AMP0408) with indicated traces of use (scale 1:1); (left) the axe from the 'smiths grave' (see Fig. 6.25); (right) the axe from the grave with the wristguard and seven arrowheads, microscope image (magnification 100x) displaying edge damage, polish from usage as well as two distinct grinding facets resulting from repeated resharpening of this axe (drawings after Butler and Van der Waals 1966, figs. 13b and 46).

LNA the stone/flint axe was a frequently occurring type of grave good that was argued to owe its symbolic value to the importance of woodworking in prehistory. Although the first copper axes appear in this period, the bulk of woodworking must still have been performed with flint and stone tools. The role of flint and stone axes in everyday life thus must have been comparable to that of the preceding LNA. The fact that no copper and hardly any flint/stone axes were included in LNB graves is thus a striking break with tradition.[224]

A flat grave in Fochteloo (Drenthe)[225] revealed both a small flint and stone axe (Lanting 2008, 126-7). In addition, this grave also contained a flint blade and a 'true' maritime Bell Beaker. This grave thus contains a set of items that is more in line with the LNA grave set. Next to this flat grave a second flat grave was discovered which – due to its proximity and highly similar grave set – could be argued to be more or less contemporary.[226] This grave contained a flint and a stone axe, a hammerstone and a CW beaker. As such, it is perhaps likely that this grave should be dated right at the transition between the LNA and LNB.

The only two unambiguous Bell Beaker graves to contain flint axes/chisels were found in the barrow of Lunteren-De Valk (Veluwe, see Fig. 6.28).[227] This barrow contained two graves, one of which is the famous 'smithy's' grave containing several cushion stones (two anvils and in addition also a hammer- and a grindstone, see Fig. 6.25b and 6.27 left). Apart from the cushion stones and a flint axe this grave also contained six arrowheads, two beakers, a copper awl and part of a burnt stone archer's wristguard. This axe is relative slender/narrow, somewhat resembling a chisel, but this is probably the result of extensive repair after use damage had occurred. The other grave contained a flint axe, a stone archer's wristguard and seven arrowheads. Both the axe and the chisel appear to have been locally produced tools and showed traces resulting from chopping wood and hafting, indicating they were intensively used before deposition in the grave.

6.6.3 Flint daggers

Around 2300 BCE an intensive production of flint daggers started in various production centres in Jutland, Denmark (Apel 2007; Vandkilde 2005, 11). These skilfully crafted objects also found their way to the Netherlands, where well over a hundred of them have been found (see Fig 6.29). Interestingly, however, almost none of these were found in graves. Instead they appear to have been selected for deposition in waterlogged places (Van Gijn 2011). This is particularly interesting because in Denmark flint daggers are often found in graves (see Sarauw 2006), indicating that these objects were treated quite differently in the Netherlands.

Only three flint daggers in the research database were said to be found in LNB graves (see Table 6.11). A beautifully worked type-I dagger was found together with

224 This pattern is also noted elsewhere in Europe. Turek (2003, 195; 2004, 151) for example notes that stone axes (as well as battle-axes) that were once so important in CW burials in Central Europe have disappeared from BB burials.

225 AMP0447.

226 AMP0448.

227 AMP0408.

a BB-type battle axe in a stone cist near Emmen in 1847 (Lanting 2008, 181).[228] Although the description of the find as coming from a grave is clear, we must be cautious with accepting the interpretation of the excavator, Janssen who was the curator of the National Museum of Antiquities in Leiden.[229] A Scandinavian dagger of type-I was supposedly found in a barrow near Nolde (Drenthe).[230] However, this find is very uncertain and Lanting (2008) rightly questions whether this object was really found inside the actual grave. A possible third flint dagger was found behind the back of a body silhouette in a barrow near Epe (Veluwe).[231] This, however, did not concern a typical Scandinavian dagger. Instead, based on the publication drawings, it looks more like a flint version, or skeuomorf, of a copper tanged dagger. Unfortunately, the find itself could not be located.

The 'presence' of only three of these flint daggers in LNB graves actually highlights their general absence in graves. While the copper daggers are exclusively known from graves, the Scandinavian flint daggers are notably absent. This illustrates that the LNB grave set did not simply include all *special* objects in circulation (that required special skill to make, were produced of rare raw materials and/or were obtained from far-away-places). While some things were meant to enter graves, others were not.

6.6.4 Strike-a-lights

In contrast to the flint daggers and axes, strike-a-lights are a type of object that are 'relatively well-represented' in BB graves, being present in seven graves (5%; see Table 6.11). These types of flint tools are used for striking sparks by hitting a nodule of pyrite.[232] They are found in graves throughout prehistory, from Early Neolithic Linear Pottery culture graves and Middle Neolithic megaliths of the Funnel Beaker culture or flat graves of the Hazendonk Group, to their inclusion in both Bell Beaker and Bronze Age barrows (see Van Gijn 2010). However, these objects were entirely absent from LNA graves. It, therefore, is all the more interesting that strike-a-lights re-emerge as grave goods in the LNB. Although clearly present, it must be said that numbers are still relatively low. From the graves in the research database only seven graves contained in total eight strike-a-lights. Two of these were subjected to functional analysis, which revealed that they indeed showed characteristic traces of contact with pyrite (or similar minerals). This results in a heavily rounded tip that shows clear streaks of a bright polish when looked at with an incident-light microscope (high-power). Apart from the strike-a-lights themselves, three graves moreover contained nodules of limonite or pyrite/marcasite (minerals that can be used to strike sparks; see Table 6.11 and Fig. 6.30). In addition, a wristguard of one of the graves with two strike-a-lights contained a strange residue that was analysed using

228 AMP0455.

229 Janssen was not trained as a field archaeologist and famously published the extraordinary find of 'megalithic structures' dating to the Roman period which were in fact fakes created by one of his workers, see Arentzen 2009.

230 Collection Drents Museum, Assen (1926-XI-1), since the find context is unclear, this site was not included as a grave in the research database.

231 AMP0151. Apart from the flint dagger, a flint knife, a strike-a-light, and a nodule of limonite were found all behind the back of a body silhouette (Modderman and Montforts 1991).

232 Or a similar iron-rich minerals such as marcasite or limonite.

Fig. 6.29 Example of a Scandinavian flint dagger (Bloemers type I) found during work in the field near Erica (Drenthe) located just south of the Hondsrug in what used to be the edge of the Bourtanger veen, length 156 mm, scale 1:1 (collection: Drents Museum, Assen (1936-I-7); photography: Q. Bourgeois).

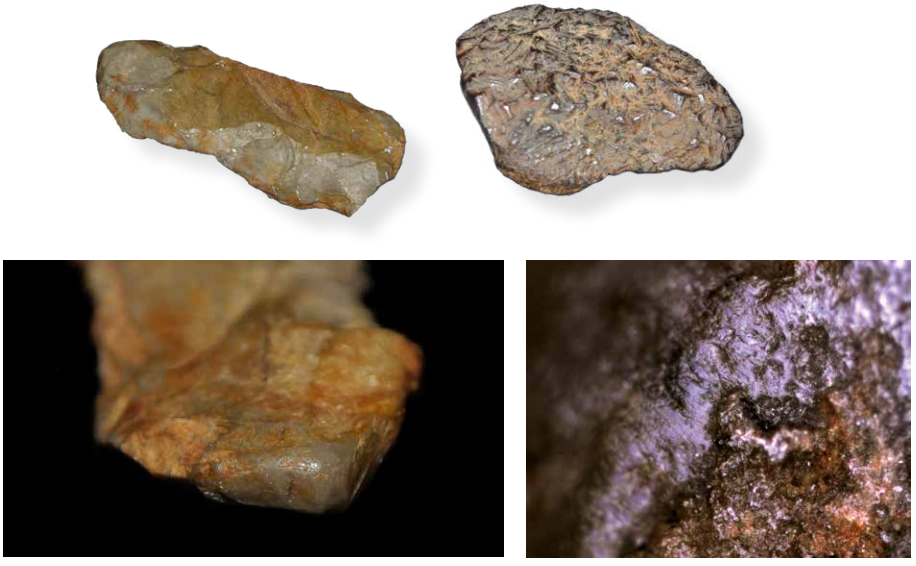

Fig. 6.30 Strike-a-light (top left) and a fragment of a nodule of marcasite (top right) from the barrow of Lunteren-De Vlooienpol (Veluwe, AMP0407); (bottom left) macro photo of the heavily worn and rounded tip of the strike-a-light; (bottom right) microscope picture (magnification 200×) of the wear traces showing clear bright polish and striations (collection: Valkhof Museum, Nijmegen).

XRF which revealed high levels of sulphur.[233] This could very well be the remains of a completely weathered nodule of pyrite or marcasite (mineral forms of iron sufide, FeS_2) that had originally been part of the grave set.[234]

The strike-a-lights usually concern relatively long (60-70 mm long) and narrow pick-shaped flint artefacts (see Fig. 6.30). In all likelihood these tools were produced from locally available raw materials. Unfortunately for only two strike-a-lights the location in the grave in relation to the human body was recorded. One was found near the pelvis, another was found behind the back of the deceased.

6.6.5 Other grave goods

By far most of the finds from graves have been described in the sections above, however a few types of artefacts have been retrieved from graves that could not be included in any of the above sections (see Table 6.11). These include various objects for which we only have somewhat vague descriptions from old publications, such as "some nodules of amber"[235] that could possibly have been amber beads, but also the enigmatic description of a "fossilized object made of bone".[236] However, as the finds in question could not be traced, the nature of these artefacts must, for the time being, remain obscured.

A very interesting, albeit unique find in the Netherlands are two boar tusks from a grave near Soesterberg (Utrechtse Heuvelrug, see Fig. 6.25a and 6.31).[237] Although boar tusks are a regular find in BB graves in Central Europe (Ruzickova 2009) and some are known from Britain (Parker Pearson *et al*. 2019b, 193), they are absent (apart from this pair) in the Netherlands. This absence is probably due to unfavourable preservation conditions.

A grave in Hattemerbroek[238] (just north of the Veluwe) contained – in addition to 22 amber ornaments – a small nodule of ochre that was placed near the head of the deceased. An apparently unmodified stone was placed on the upper left arm. Similarly, a grave in a barrow near Ede[239] was reported to contain a Veluvian Bell Beaker and four unmodified nodules or blocks of flint.

Finally, a flat grave excavated near Molenaarsgraaf (wetland site in western Rhine/Meuze river aria, Zuid-Holland) can be mentioned (Louwe Kooijmans 1974, 250). Since it is not entirely clear whether this grave should be dated to the end of the LNB or to the Early Bronze Age[240], it was not included in the dataset used for this thesis. However, given the remarkable grave finds it does deserve at least to be mentioned.

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233 Wristguard from Ede-Ginkelse Heide (Veluwe, AMP0404, see Fig 6.10). X-ray fluorescence (XRF) analysis performed by Hans Huisman of the Netherlands Cultural Heritage Agency.

234 Lanting (2013, 35) reports that the excavator mentioned the find of an unknown object in a letter which he describes as "a piece of iron". This could very well have been a pyrite or marcasite nodule.

235 AMP0270, Zuidlaren mound 3 (Drenthe).

236 AMP0079, Mol-Grenspaal (border between Noord-Brabant and Belgium).

237 AMP0414, in the museum records is was questioned whether facets on the distal tips were the result of human usage, these facets however are the result of normal dental wear and not anthropogenic in origin (comparison with reference collection archaeo-zoological Laboratory Leiden University and pers. comm. dr. J. Zeiler 2012, archaeo-zoologist).

238 AMP0500, Hattemerbroek-Bedrijventerrein, grave 2.

239 AMP0428.

240 The calibrated range of the ^{14}C-date of 3630 ± 30 spans a period of 2140-1900 cal BCE (GrN 5566: sample from right *femur*).

Fig. 6.31 (left) Boar tusks from a LNB grave near Soesterberg (Veluwe, AMP0414), scale 1:1 (collection: Centraal Museum, Utrecht).

Fig. 6.32 (right) Three bone fish-hooks from a flat grave near Molenaarsgraaf (Zuid-Holland), scale 1:1 (collection: National Museum of Antiquities, Leiden; photography: Q. Bourgeois).

At the site a grave pit with wickerwork lining was found to contain the remains of an adult male. The grave goods consisted of three bone fishhooks (see Fig. 6.32), an antler artefact possibly used as a hoe or fish trap lifter, a bone awl, a flint scraper and three flint flakes (Louwe Kooijmans 1974).

6.7 Concluding remarks

As was the case in the LNA, the Dutch LNB graves contain objects that are part of a specific set. Apart from the beaker, which continued to be a favoured item, there are clear changes in this set. The items that were predominant in the LNA (axes, flint blades/daggers, battle axes) are largely absent in LNB graves. Instead the LNB graves contain several items that, in contrast, were notably absent in LNA graves (archery equipment and ornaments). Hence the practice of adorning the dead with a highly specific set of items continues, but the items in that set (apart from the beaker) are radically different.

While part of the focus in the LNA seems to have been on particular craft activities, most notably related to wood-working or land-clearance, the LNB grave goods signal very different activity spheres, most common are archery and personal adornments. One of the key characteristics of many of the items found in BB graves was that they were either derived from distant sources and reached the Netherlands as items of exchange, or were locally produced but in an international style clearly indicating knowledge of, and a relatedness to a wider BB community (*cf.* Carlin 2018, 209). These objects were made to be seen and many were worn on the human body such

as the archer's wristguard, the gold ornaments or the amber buttons. These items in particular must have been part of a type of dress that clearly signalled a particular identity. Woodward and Hunter (2015, 559) come to a similar conclusion stating that "a large proportion of the items buried with individuals during the Chalcolithic and Early Bronze Age periods were objects associated with special costumes". Carlin (2018, 211) even speaks of a 'cosmologically-charged' outfit. Although the meaning and significance of such an identity would have been different in time and space, the objects used to signal this identity were widely shared and recognized throughout Bell Beaker Europe (see also Carlin 2018, 211).

It is important to note, however, that not all exotic objects ended up in graves. Scandinavian daggers were beautifully crafted items, obtained from afar and must certainly have had the potential to be used for displaying relations with distant places (*cf.* Carlin 2018, 193). The first copper axes likewise must have been exotic and precious. These items, however, were not included in graves. Instead, they were deposited elsewhere in the landscape. The Bell Beaker set therefore was not simply the result of adorning the dead with exotic items: *specific* objects were deposited in *specific* places. Being part of the BB complex was thus not simply a matter of obtaining BB-style items, it apparently was also important to know what to do with them.

7

Late Neolithic graves

Nothing new under the sun

7.1 Introduction

The previous chapters have shown that in both the LNA and LNB people selected very particular types of objects to be included in graves. Although different objects were selected in each period, the common practice for both periods was that the grave goods consisted of a highly particular *set* of objects. In both the LNA and LNB there was a clear understanding of which things could be included in graves and which things should not. The grave should therefore be seen as a context for highly selective deposition. This chapter therefore aims to briefly look at the physical layout of these graves to come to a better understanding of the context in which this deposition – of both objects and bodies – took place.

As the focus of this study lies on the objects in graves, this excursion is of necessity a brief one. It must be stressed that a more thorough analysis of the construction of these graves and the barrows of which they were part of would definitely be a welcome avenue for additional future research. The barrows themselves, and particularly their placement in the wider landscape, has already been studied in detail by Bourgeois (2013) while Doorenbosch (2013) presented a comprehensive analysis of the vegetational development of barrow landscapes.

This chapter provides a summarized overview of different types of graves constructed in the Dutch Late Neolithic. Despite the apparent variety, it is argued that there in fact are very strong underlying elements structuring the layout of graves in both the LNA and LNB.

7.2 Pits, beehives, coffins and burial chambers

In some parts of the Netherlands, Neolithic burial mounds can still be seen, dotting the landscape as small hills on the heathlands of the Veluwe, or hidden in the (current) forests.[241] In size and shape they are remarkably similar and all seem to blend in as

241 Doorenbosch (2013) showed (based on both new data and pollen data from old research) that barrows had been constructed on heathlands, more importantly, locations that had often already been heathlands for centuries (and thus not newly reclaimed forests that only recently became heaths/pastures), stressing the importance of these locations in the landscape, hence the title of her thesis "Ancestral Heaths".

part of the wider barrow landscape.[242] Barrow excavations, however, have revealed a wide variety of different types of grave constructions. In this section I briefly discus these constructions and mention a few examples in more detail. This should provide the reader with a general impression of the types of graves occurring in Late Neolithic burial mounds.

For most of the Dutch Late Neolithic graves, only little is known about the structure of the grave or the body (or bodies) buried in it. This can be attributed to the often poor state of conservation combined with the fact that many graves were excavated in the early 20th century where unfortunately the focus lay more on the retrieval of the grave goods than on documenting their contexts.[243] For many graves we therefore know little more than that it was a simple oval or rectangular 'grave pit'. In some cases, discolorations in the soil or bands of charcoal indicated the presence of wooden planks that might either have been the lining of the grave pit or remains of some sort of coffin. Pollen analysis of a recently excavated LNA grave in Hattemerbroek indicated a high percentage (75%) of fern spores in a sample taken underneath the sherds of a beaker (Drenth *et al.* 2011).[244] This indicated that plant material was used to line the grave pit before the deceased and grave goods were placed there, remains of such a practice would normally not have been detected.[245] These observations indicate that the dead were not simply put in a pit to be covered in sand. Apparently, some sort of space was created to shield the dead from the sand and sods in which they were buried.

This is especially apparent in a few LNA graves where remains of wickerwork indicate the presence of some sort of beehive-like structures or even small burial chambers. The classic example of the beehive grave is an alleged flat grave excavated by Van Giffen (1930, 124) in 1927 near Onnen (Groningen).[246] Here Van Giffen found a small oval pit of about 80 × 50 centimetres which was probably well over 100 centimetres deep (the old surface level was missing). The edges of the pit were at the bottom deepened further by about 50 centimetres. Here a deep circular ditch was found at the edge of the grave pit that contained traces of stakes or posts and possibly wickerwork. Also in the cross-section of the grave, soil discolorations could be seen that indicated the presence of a decayed construction. Due to the small size of the grave pit, Van Giffen suggested that the grave had contained an upright-sitting individual (see Fig. 7.1). This interpretation may have been influenced by earlier observations by Holwerda who in his capacity of curator of the National Museum of Antiquities in Leiden, had conducted barrow excavations in the first decade of the 20th century at the Royal Estate on the Veluwe. In one of the mounds he excavated, he found a small pit that contained heavily degraded remains of human bones including a pelvis.[247] This led him to believe that the deceased in question had been buried in an upright sitting position, an interpretation

242 The graph presented by Bourgeois (2011, 263) shows the diameters of Late Neolithic barrows (based on the dataset collected by both Bourgeois and the present author), which forms a perfect bell-curve with its peak at around 10 m (smallest is 5 m, the largest 15 m, the average coincides with the peak of the bell-curve at 10,18 m).

243 See for example Bourgeois *et al.* (2009) for an detailed attempt at reconstructing the LN Niersen burial, excavated by Holwerda in 1907.

244 AMP0499.

245 An example of a similar find is the barrow in Oostwoud (Noord-Holland) where underneath an Early Bronze Age skeleton (no. 232) remains were found of a mat or basket made of bulrush (Fokkens *et al.* 2017, 105).

246 AMP0349.

247 AMP0397, Hertenkamp Tumulus 5 in Vaassen (Veluwe).

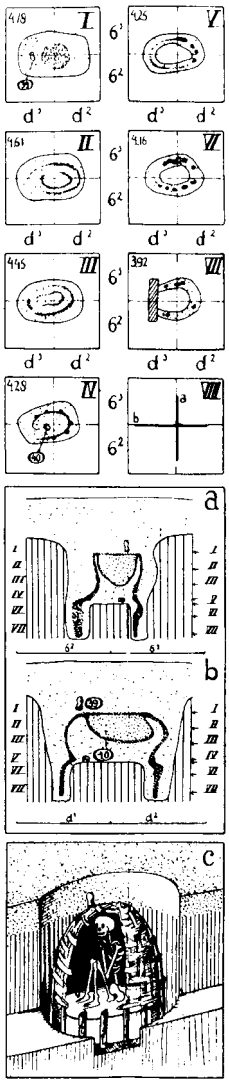

Fig. 7.1 Drawing of the LNA 'beehive' grave of Onnen (Groningen, AMP0349), as published by Van Giffen (1930, 124).

that was backed up by a physician who investigated the remains in the field (Holwerda 1910).[248]

In addition to the grave from Onnen, several other graves have been excavated that consisted of relatively deep, round to oval pits that at the edges were deepened further and contained posts that in all likelihood had been part of a construction that formed a small burial chamber. There, however, are also several graves with a similar construction but that are much shallower, perhaps not more that 20-30 centimetres deep, but these too are encircled by a palisaded ditch. Some of these, however, can be considerably larger than the classic Onnen beehive. A barrow in Putten (Veluwe) [249] for example contained in its centre a circular ditch with an outer diameter of about 4 metres and a depth of well over a metre (Van Giffen *et al.* 1971) (see Fig. 7.2). The ditch contained clear traces of posts and even traces could be observed of what supposedly was wickerwork. The grave pit enclosed by this ditch measured about 2 × 2.75 m, was about 50 centimetres deep and contained the body silhouette of an individual lying on its left side with its head in the south-east looking south. In addition, the grave contained a French dagger, a flint axe, a battle axe, a beaker and several flint flakes. With exception of the battle axe, which was found near the head of the body silhouette, all the grave goods had been placed along the south and south-west edge of the grave pit and were basically placed near or against the post/wickerwork wall of the construction that had encircled the grave. It is clear that the ditch around the grave formed the foundation of a post/wickerwork structure that must have been part of some sort of burial chamber in which the deceased and the grave goods had been placed. The burial chamber was subsequently covered by a barrow, which itself was surrounded by a second palisaded ditch (diameter of 14 m) that perhaps – as suggested by Modderman (1984) – acted as a revetment to support a flat, disc-shaped barrow.

These 'palisade trenches' found underneath barrows are much discussed in archaeological literature (for a more detailed discussion see Bourgeois 2013, 121). Some are found near the edge of the barrow and appear to be peripheral structures, while others are found closely encircling the grave. Especially when the interior of these latter trenches was deepened (as in the examples of Putten or Onnen, mentioned above) it is clear that these should be seen as the remains of some sort of burial chambers. However, apart from trenches either encircling the grave or the entire barrow, there are also palisade trenches found in between the

248 It must be noted however that since these early observations no new excavations have ever revealed additional evidence of graves with upright-sitting individuals. It must therefore be questioned if these early observations were correct. A similar upright-sitting individual was supposedly found in Parsley Hay (UK), published by Thomas Bateman in 1861 (see Parker Pearson *et al.* 2019b, fig. 4.17, 147), perhaps this publication inspired both Holwerda and Van Giffen?

249 AMP0229.

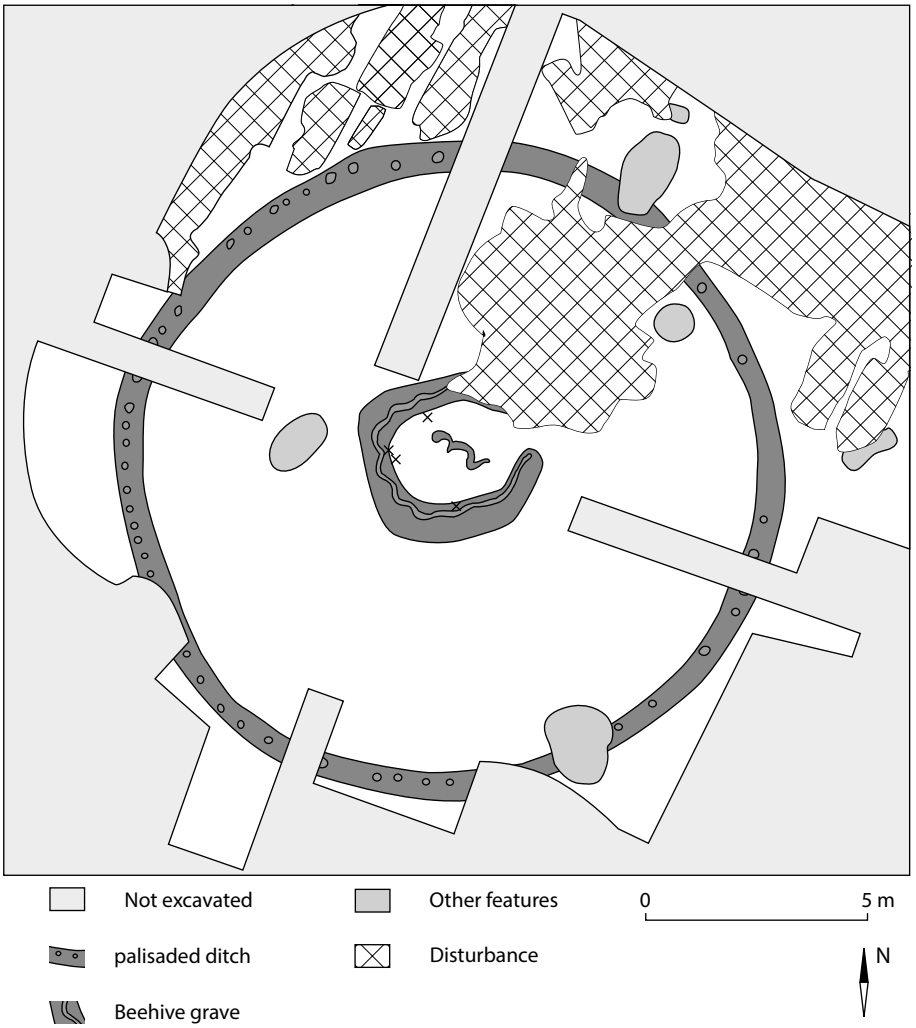

Fig. 7.2 Excavation plan of the Putten barrow (Veluwe, AMP0229), the 'beehive' surrounding the body silhouette contained traces of what appeared to be wickerwork (redrawn by Bourgeois (2013, fig. 6.7) after Van Giffen et al. 1971, fig. 2).

foot of the barrow and the actual grave (intermediary trenches). Van Giffen (1947) believed these trenches to be intermediary structures that encircled the grave at some distance, to be later covered entirely by the mound.[250] Perhaps it was some sort of temporary fence shielding the grave from the outside world (Drenth and Lohof 2005). This interpretation formulated by Van Giffen (Groningen) in the early 20th century, however, was challenged by prof. P.J.R. Modderman (Leiden) who argued that these trenches had originally stood at the foot of the mounds and should be interpreted as peripheral structures instead (Modderman 1984). He argued that these palisades at the foot of the mound had acted as revetments that supported flat, disc-shaped mounds.

250 According to Van Giffen (1947) first a primary mound was constructed inside the perimeter of the intermediary palisade, which was subsequently removed to be covered by the final mound.

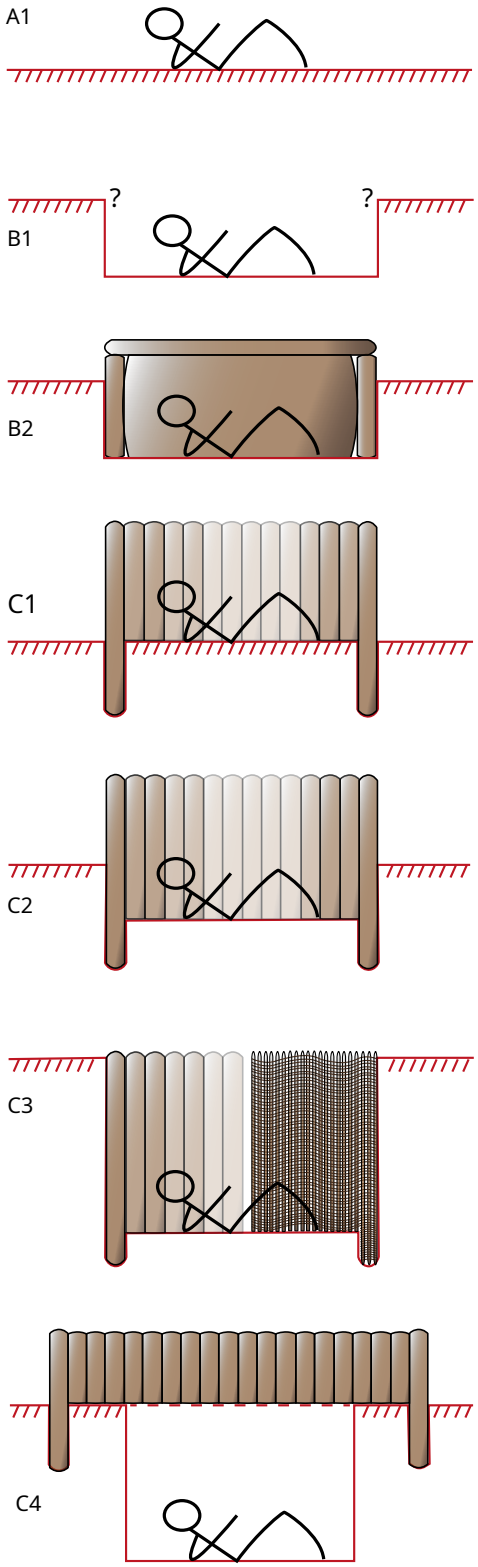

Fig. 7.3 Schematic drawing of the different types of Late Neolithic graves:

(A1) Interment on the old surface, no traces of grave-structure visible;

(B1) Interment in oval or rectangular pit, no traces of grave-structure visible;

(B2) Interment in plank-lined rectangular pit;

(C1) Interment on the old surface, enclosed by post-build circular structure;

(C2) Interment in round pit, circular post-build structure inside grave pit;

(C3) Interment in a deep round pit, with subterraneous circular wickerwork or post-build grave structure (so-called 'beehive' grave);

(C4) Interment in pit, encircled by round post-build structure.

Graves and grave structures are all covered by a barrow. Note that human figures are only intended to represent scale, for correct body postures, see Fig 7.4.

It is not the intention of the current chapter to resolve this discussion, merely to illustrate the complexity that exists with respect to these palisaded ditches.[251] In any case it is clear that at least some of these ditches are part of the foundation of what must have been small burial chambers in which both the dead and the grave goods were placed.[252]

This excursion can conclude by noting that various types of graves were constructed in the Late Neolithic (see Fig. 7.3). Interestingly, however, no clear (exclusive) patterns could be found that separate the LNA and LNB. Plank-lined pits occur throughout the Late Neolithic, as do palisaded ditches (although the latter appear to be more numerous in the LNA). The various types of graves have in common that throughout the Late Neolithic a space was carefully created to house both the deceased and the grave goods. A space that was subsequently covered with sand and sods to form a barrow, marking the grave in the landscape for all eternity.[253]

7.3 The orientation of bodies

The occurrence of a specific set of grave goods is not the only element that binds the LNA and LNB graves. In fact, throughout Europe, very specific patterns are observed with respect to how bodies were placed in graves (see below; Vander Linden 2002, 85; 2007a). Both in CW and BB graves, bodies were placed in a very particular posture and a very particular orientation (see Fig. 7.4). Bodies were placed in the grave lying on their sides in a crouched or semi-flexed position on either their right or left side. Depending on region and period, bodies/graves were oriented either N-S or E-W. In either of these orientations, bodies could be placed on their right or left side. For the N-S oriented graves, the bodies were always facing east. Hence bodies lying on their right side had their heads in the south while facing east, and bodies lying on their left side had their heads in the north while facing east. The same pattern exists for the E-W graves, where the bodies are always facing south. Hence, bodies lying on their right side have their heads in the west while facing south, and bodies lying on their left have their heads in the east while facing south.

These patterns can be observed throughout Europe, although it varies from place to place whether graves are oriented N-S or E-W. While in the CW graves are oriented N-S in Eastern/Central Europe (Krut'ová 2003, 213; Neugebauer and Neugebauer-Maresch 2001, 430; Przemyslaw 2003, 143; Struve 1955), the prevalent orientation in north-west Europe (including the Netherlands) was E-W (Furholt 2003, 121; Hübner 2005, 538; Lanting and Van der Waals 1976, 44). This pattern continues in the LNB where BB graves in Eastern/Central Europe continue to be oriented N-S, while in Denmark and the Netherlands the orientation remained E-W. Interestingly, in northern Britain the BB graves are also oriented E-W (in line with Denmark and the Netherlands) but in southern Britain the BB graves are oriented N-S (Clarke 1970,

251 For an excellent overview and reconstructions, see Bourgeois 2013, 117.

252 Highly similar grave constructions with chambers and ditches occur in Central Europe (*cf.* Turek 2006).

253 Not all graves were covered with barrows. Some graves that were found without evidence of a covering barrow are interpreted as flat graves. It, however, is very difficult to prove that such graves were never covered by a barrow. Bourgeois (2011, 261) presents several taphonomic examples that show how many of such sites could very well have originally been covered by barrows, even though evidence for them is now lacking.

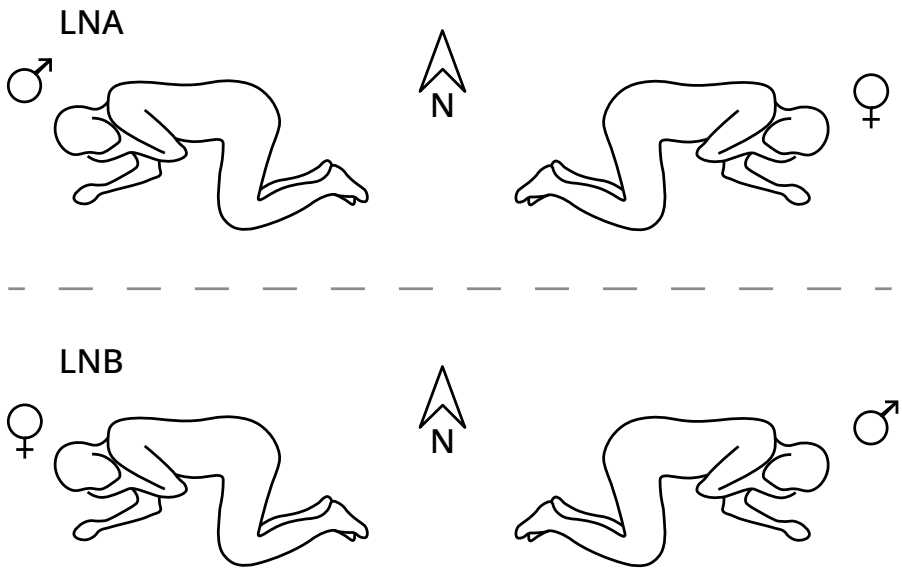

Fig. 7.4 Schematic overview of body orientations in the LNA and LNB in the Netherlands (drawing after Bourgeois and Kroon 2017, fig. 5).

455; Needham 2005, 179; Vander Linden 2002; 2007a). South of the original CW distribution-zone the BB graves also mostly seem to be oriented N-S (for an overview of BB practices across Europe see Vander Linden 2002).[254]

Whether the prevalent orientation was N-S or E-W in both situation bodies could be placed on the right or left side, either with the heads to the north or south (while facing east) or with their heads to the east or west (while facing south). This dichotomy is generally connected with the sex of the individual. Although for the Netherlands there is not much empirical evidence, it is generally assumed that for the CW males were placed on their right sides with their heads in the west, while females were placed on their left sides with their heads in the east (Lanting and Van der Waals 1976, 44). It is added, however, that (for the Netherlands) this male-female dichotomy in body-orientation possibly only applies to the early phase of the LNA (apparently associated with the 1a cord-decorated beaker). Moreover, this 'pattern' is inversed in the LNB when it is the men who are placed with their heads in the east and females with their heads in the west (Lanting 2008, 59).[255] It is moreover claimed by various authors that in the northern Netherlands the orientation of LNB graves is actually N-S instead of E-W (Drenth and Lohof 2005, 436; Lanting and

254 The BB funerary practices in southern Europe (France, Italy, Iberian Peninsula) appear to be much more varied and include the widespread use of megalithic tombs (France and Iberian Peninsula), burial in caves (Italy and Iberian Peninsula) as well as individual inhumation oriented in various ways (Vander Linden 2002).

255 None of these patterns are based on empirical data. They are based on traditional interpretation and attribution of grave good (battle axe = weapon = male) and traditional typochronology.

Van der Waals 1976, 45[256]). This claim, however, became rather questionable when Lanting (2008, 59) reported that actually only nine of the 38 graves (in his research database) in the north-eastern Netherlands were oriented N-S. This, however, means that apparently 76% of the graves were oriented E-W, and the N-S oriented graves are actually a minority.

It is at this point that I can understand that the reader is starting to become rather confused. From the offset the E-W orientation of graves seemed quite clear-cut, but now this 'pattern' is becoming more and more complex and confusing. When dealing with BB grave orientations, Vander Linden (2007a, 183) simply stated "the evidence in the Netherlands is difficult to appraise" and left it at that. The problem, I think, lies not so much in the evidence itself, but in the attempt of researchers to try to squeeze it into ill-fitting boxes. The problem lies in the categorization of 'east-west' and 'north-south', which are essentially two opposing categories like horizontal and vertical; binary. However, the evidence in reality is not binary. Lanting and Van der Waals (1976, 44) already pointed out that many graves are not exactly aligned E-W. In fact, they report that there is a deviation to either side of the E-W axis of 45° (both to the north and the south). Hence, the problem becomes obvious: if the categories used to describe them are labelled horizontal *or* vertical, what do we do with the diagonals? If we want to fit graves in either an E-W *or* a N-S box, what do we do with graves that are aligned NE-SW or NW-SE? Or graves that slightly cross over this 45° deviation margin? I argue that we should get rid of these boxes!

The claim that people aligned their graves E-W but with a 45° 'deviation' suggests that the goal was to create an E-W aligned grave and the 45° 'deviation' was some sort of 'margin of error'. However, is that really the case? Why, if people obeyed all sorts of rules when placing a body and objects in a grave, was there so much variation on this E-W axis? If it was only the intention to have the deceased face south, this surely would not have been that difficult to achieve, one merely has to observe the position of the sun during mid-day. Sites such as Newgrange in Ireland and Stonehenge in England clearly show that throughout the Neolithic people had no problems orienting even enormous megalithic monuments on the rising or setting sun, even marking specific days in the year. It might thus prove useful to see this '45° deviation to either side' as the result of intentional choices, rather than some sort of inability to identify the cardinal points.

Most authors reduce/summarize the orientation of graves to a somewhat inaccurate text-based description. For example, graves are described as being oriented 'east-west', or 'north-east-south-west'. For the purpose of this study however, the actual orientation of all graves in the research database was systematically recorded in degrees, based on published field drawings (see Fig. 7.5). When present, the actual orientation of the body (silhouette) itself was used, and if not, the orientation of the grave pit. It must be noted, however, with regards to the following that these measurements were based on the published field drawings. Many of these measurements are based on field drawings dating to the first part of the 20th century in which case it is not always entirely clear

256 Drenth and Lohof (2005, 436) claim that north of the river IJssel graves were oriented N-S and "some" E-W. However, Drenth (2005, 357) claims in a different publication of the same year that both LNA and LNB graves are oriented E-W with a 45° deviation, so one is left to wonder what happened to the supposed N-S oriented LNB graves of the northern Netherlands.

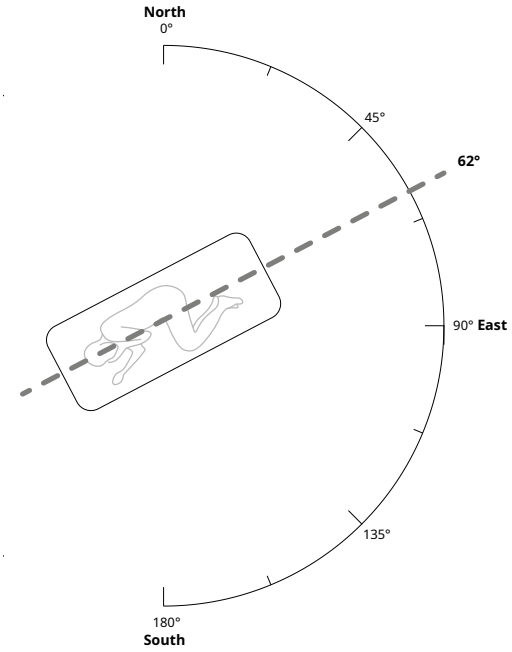

Fig. 7.5 Illustration of how the orientation of grave pits was measured. The orientation of the eastern end of the grave pit was measured and recorded, in the case of this example the orientation is 62°. Using this value the orientation of the western end of the grave pit can be easily extrapolated by simply adding 180°, in this case the western end of this grave pit is oriented at 62+180=242°.

where precisely north is, or if it is clear, whether this is true north or magnetic north. It would thus not be unwise to apply at least a 5-10° margin of error to the results. Also, in case of round/oval grave pits (including the beehive-like constructions), the longitudinal axis of the grave may not have been aligned exactly with the body placed in such a structure. Hence the recorded orientation may simply be entirely wrong in some occasions. However, individual errors or outliers should not greatly affect the overall trend.

7.4 The sky is the limit

Measurements could be recorded for a total of 139 Late Neolithic graves.[257] The eastern side of the long-axis of the grave was recorded, hence all values are between 0° (north) and 180° (south) (see Fig. 7.5). A perfectly aligned E-W grave would have the value 90° (east).[258] Assuming the observation of Lanting and Van der Waals (1976, 44) is correct (graves being oriented E-W with a 45° deviation to either side), the recorded values should all fall in the range of 45°-135°.

As can be seen in Figure 7.6 indeed the vast majority (82%) of graves fall within this 45-135° range.[259] However, when we speak of an E-W orientation with a 'deviation' of 45° to either side, one gets the impression that E-W is the norm and occasionally some graves deviate. But the graph in Figure 7.6, I argue, tells a much more nuanced story. Although the peak of the graph indeed lies at 90° (E-W), we are not dealing with an

257 68 LNA graves and 71 LNB graves.

258 The western-end can easily be calculated by simply adding 180° to the recorded value (for example: 90° (= east) + 180° = 270° (= west)).

259 114 graves out of 139 measured.

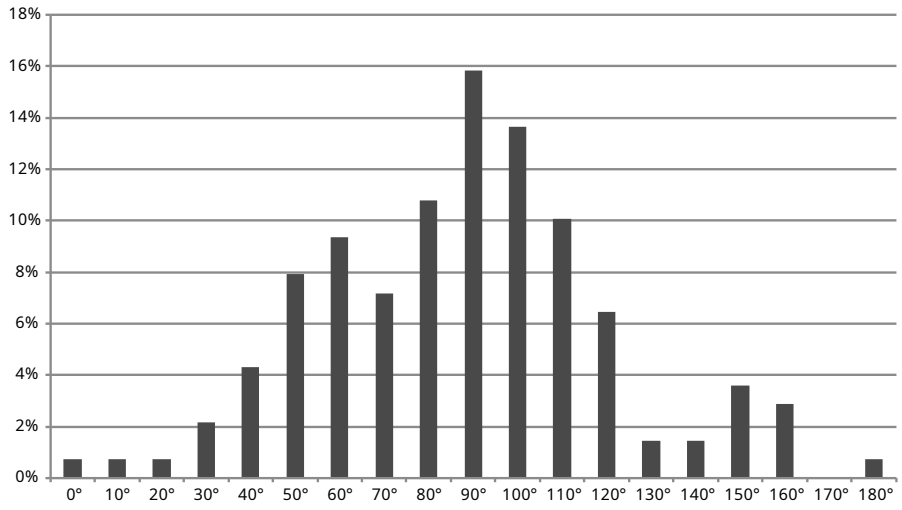

Fig. 7.6 Graph displaying the orientation of LN graves (in percentages) in bins of 10° based on the measurements of 139 Late Neolithic graves.

occasionally 'deviating' grave. If east-west (90°) was the goal, this means over 84% of the graves 'got it wrong'. Why is there so much 'deviation'?

Rather than describing this 45°-135° range as the result of a 'margin of error', let us instead assume that this *range* was the intended result. Other aspects of the funeral ritual (types of objects selected, posture of the body, location and size of burial mounds) are all highly structured – almost rigidly so – so what can explain people orienting their graves on this *range*? There is in fact a very simple explanation, and one only has to look up to see it. Every day the sun rises in the east and sets in the west. However, due to the axial tilt of the earth, the point on the horizon where the sun rises, slowly shifts and moves with the seasons. In midsummer when the days are longest, the sun rises in the Netherlands[260] at about 47°, and as the summer changes to autumn and on to winter the point of sunrise moves along the horizon to 130° at midwinter (see Fig. 7.7). As the year and the seasons pass, the point of sunrise slowly transgresses between these two points. This means that this range of 'deviation' actually coincides perfectly with the natural cycle of the rising sun.[261] If throughout the year, graves would be oriented on the rising sun, this would account for the observed distribution-range in grave orientations.[262]

260 At 52° north, being the average for the Netherlands, and calibrated for 2500 BCE with help of dr. Marco Langbroek. It must be noted that the points of sunset and sunrise have only shifted by 1.5-2° over the past 5000 years. Although this is thus taken into account, given the margin of error of the grave measurements, it should not really make any difference.

261 Carlin (2018, 210) also connected the alignment of BB graves with the daily movement of the sun, also in connection to the find of gold 'sun discs' in Ireland.

262 The same principle would apply to the point of sunset. In theory this could also have been the focus for aligning these graves and would create the same pattern. However, since the N-S oriented graves are all facing east, I argue that sunrise is the more likely option.

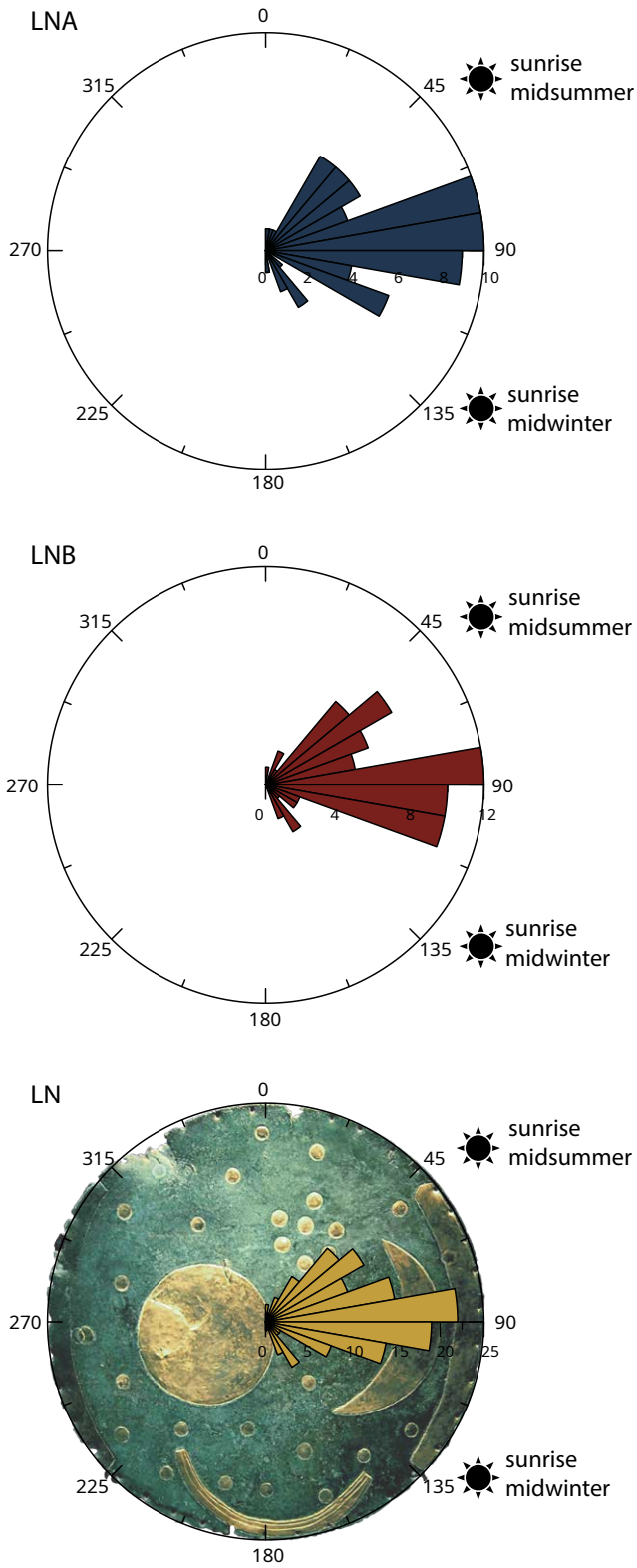

Fig. 7.7 Graphs displaying the orientation of LNA and LNB graves, plotted in wind charts; (bottom) a graph that includes all Late Neolithic graves projected over an image of the Nebra sky disc, note how the gold 'horizon' on the right is positioned perfectly to indicate the range between sunrise in midsummer and midwinter (photography: D. Bachmann, Wikimedia Commons).

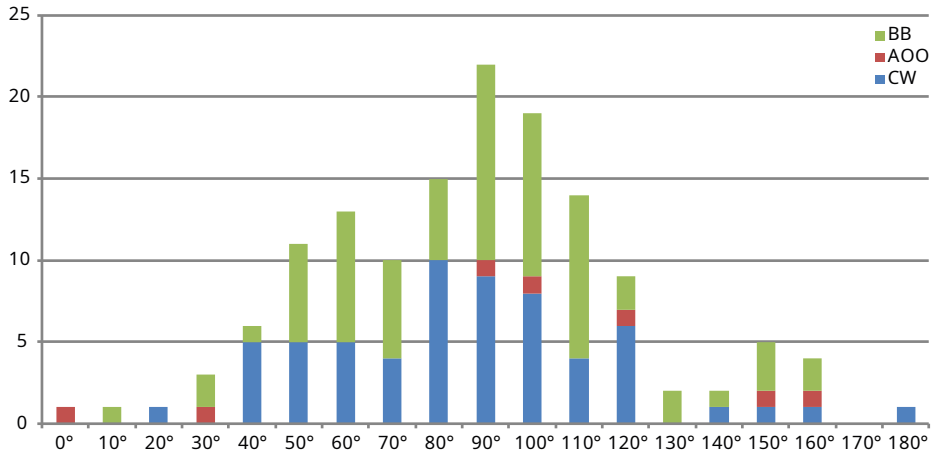

Fig. 7.8 Graph displaying the orientation of CW, AOO and BB graves (in absolute numbers) in bins of 10° based on the measurements of 139 Late Neolithic graves.

There is no clear difference observable between the LNA and LNB (see both Figs 7.7 and 7.8). In Figure 7.8 a distinction has been made between CW [263], AOO and BB graves. It can be seen that CW and BB graves are evenly distributed, only AOO stands out. Although there are only seven AOO graves for which an orientation is recorded, four of those fall outside the 'solar-range'. Interestingly, it was argued in the previous chapters that during the AOO suddenly 'southern' contacts are expressed in the LNA graves (such as the appearance of French daggers). As mentioned above, the prevalent orientation of Beaker graves south of the original CW distribution zone was north-south. Perhaps the 'deviant' orientation of these AOO graves can also be seen as a 'southern' influence. It is, however, important to mention at this point that although N-S seems to be the opposite of E-W, this in fact might not be the case. Although it did not fall within the scope of the current research I noted while looking at published CW and BB graves elsewhere in Europe with a 'north-south' orientation that these graves too have a '45° deviation', ranging between 315° and 45° (see also Vander Linden 2002). As the bodies in these graves face east, it might be that, instead of aligning the grave pit on the rising sun, these graves are actually aligned to have the deceased face the rising sun. Hence, in a grave oriented at 315°, the deceased lying in the grave, facing east, would be looking at roughly 45° (sunrise at midsummer). Similarly in a grave oriented at 45°, the deceased would be looking at a point on the horizon at 135° (sunrise at midwinter).[264] Hence, if CW and BB graves are oriented on the sunrise, the dichotomy between the N-S oriented graves versus the E-W oriented graves might simply be a nuanced difference in practice: whether the grave pit was aligned on the rising sun, or wheth-

263 Including those LNA graves that could not be positively categorized as either AOO or CW.

264 The optical points of sunset/rise can be influenced by local relief. If for example the sun rises at 47° at midsummer but there is a high hill, tree line or mountain on the north-eastern horizon, optically the sun will rise several degrees more to the south. As far as the Low Countries are concerned, the effects of this should be negligible, but if this theory is used for data elsewhere in Europe, local relief should be taken into account.

er the grave pit was aligned so that the *deceased* would be facing the rising sun.[265] Although this is seemingly a difference in practice, both could express the same basic cosmological understanding of the role of graves, death and the movement of the sun across the sky. The alignment of graves – or the dead themselves – on the rising sun would thus explain the observed variability in orientations.

It is of course impossible to reconstruct exactly why the sun was a focal point with respect to the layout of the grave and the positioning of the body. However, the sun – its movement across the sky, its disappearance at one side of the horizon and its daily reappearance at the opposing side – has a powerful symbolic potential and was of great significance in many of the world's cosmologies. In ancient Egypt, for example, the sun was believed to travel through the underworld associated with death during the night to be reborn at dawn, thus creating an eternal cycle of life, death and rebirth (see Goelet 2008, 143). Flemming Kaul (1998) suggested a similar cosmology existed in Bronze Age Scandinavia where the sun travelled with the aid of ships through the sky and netherworld. A more direct parallel for the importance of the sun in funerary rituals is undoubtedly the already mentioned monument of Stonehenge. According to Parker Pearson *et al.* (2006) Stonehenge – which is oriented at the sunrise on the midsummer solstice – was part of an extensive ritual landscape and functioned in annual funerary or ancestral rituals. Whether one agrees with the interpretation of Parker Pearson *et al.* or not, it is clear from the alignment of this site that the sun must have played a highly significant role in the cosmologies of the 3rd millennium BCE, at least in this part of north-west Europe (see also Carlin 2018, 210).

It, moreover, is becoming increasingly apparent – especially with recent discoveries in the fields of aDNA and linguistics – that the Beaker cultures are not only linked with material innovations such as the wheel, but also with large-scale migrations (Allentoft *et al.* 2015; Haak *et al.* 2015; Kristiansen *et al.* 2017) and the introduction in Europe of the Indo-European languages. Apart from being able to reconstruct the words for such things as wagons and horses, linguists have also ascertained that the speakers of Proto-Indo-European recognized a male sky deity (Anthony 2007, 15). The role of the sun and its movement across the sky is also expressed in the Nebra sky disc dating to the 17th century BCE which displays, apart from the moon and the sun, two arcs on either side (the left/west one is missing but its imprint can still be seen) that mark the 82° range from midsummer to midwinter sunrise and sunset, as well as what appears to be a ship sailing between the two horizon arcs (Schlosser 2004, 44; see Fig. 7.7).

Based on the fact that the vast majority of graves are aligned within the margins of the midwinter and midsummer sunrise, as well as the large amount and varied types of evidence that support the importance of the sun and its movement across the sky, I suggest that the sunrise was the structuring element for the alignment of both LNA and LNB graves.

265 For example, both the 'Amesbury Archer' (see Fitzpatrick 2011, fig. 28) and his 'Companion' (see Fitzpatrick 2011, figs 22-26) found near Stonehenge are facing 45° and are hence facing the point of sunrise at midsummer.

7.5 Those outside the range

The fact that not all graves fall within this range (18%) can be partly attributed to inaccuracies by archaeologists in the recording and interpretation of graves (especially in the beginning of the 20th century). One of these graves, for example, was some sort of stone-packing grave, but the beaker was found *outside* of what was interpreted as the 'grave' so it is unclear if this 'stone-packing' really was the grave.[266] Some are large or irregular grave pits, or roundish beehive-like structures, for example, for a BB grave pit of 3 × 2 metres the longitudinal axis was measured, but given the large size of this pit a body could have been oriented in any which way.[267] Among the 'deviant' graves is also the previously mentioned grave with the reportedly "upright sitting body".[268] But these cannot account for all 'deviant' graves and some most definitely reflect prehistoric realities.

Some graves, for example the AOO graves mentioned earlier, may be aligned in the N-S tradition, but this too does not account for all 'deviant' graves. For whatever reason, some graves may simply not comply with the norm intentionally. An interesting parallel for such a practice can be found in the Linear Pottery culture (Early Neolithic) cemetery of Elsoo in the southern Netherlands. Here graves are oriented NW-SE, identical to the orientation of the houses. Three graves, however, were oriented NE-SW. According to the excavator such a complete opposition in orientation by a small number of graves also occurs in other Linear Pottery culture cemeteries. A possible interpretation for this phenomenon might be that the persons being buried in such a deviating orientation played a liminal role in society, such as perhaps strangers, shamans/ritual specialists or even criminals (Modderman 1970, 66).

For most graves there is no way of knowing why they are different. However, there are two graves with a very clear 'deviant' orientation and even bodily remains that can help explain their 'deviance'. Both graves were found underneath Late Neolithic barrows. The first was an LNA grave excavated near Garderen (Veluwe)[269] which was oriented at 150° and the second was a LNB grave near Emmen-Angelslo (Drenthe)[270] oriented at 25°. In both graves the individuals buried were lying on their right side and were looking north. These graves thus seem inversions of 'normal' graves. Their 'deviance', however, did not only manifest itself in their orientation and posture. Instead of humans both graves contained the remains of animals. The Emmen-Angelslo was in fact a bovine burial (Lanting 2008, 317).[271] The Garderen grave was excavated and published by Bursch (1933) as a horse burial, but there is reason to question this. Bursch's interpretation was perhaps coloured by the popular notion of the 'horse riding tribes' conquering Europe. The same may have been the case, for example, with the 'horse' found by Holwerda and Evelein (1911) in the LNA burial mound of Emst-Hanendorp (Veluwe).[272] Re-examination, however, of photos of this find clearly showed this was

266 AMP0304, mound 2, Anloo (Drenthe), LNA, measured at 180°.
267 AMP0194, Ermelose Heide (Veluwe), early 20th century excavation, measured at 160°.
268 AMP0397, Vaassen mound 5 (Veluwe), early 20th century excavation, measured at 15°.
269 AMP0002, Garderen Solsche Berg mound 3 (Veluwe).
270 AMP0478, Emmen-Angelso mound XII (Drenthe).
271 Remains of tooth enamel could be identified as cattle (Lanting 2008, 317).
272 AMP0163.

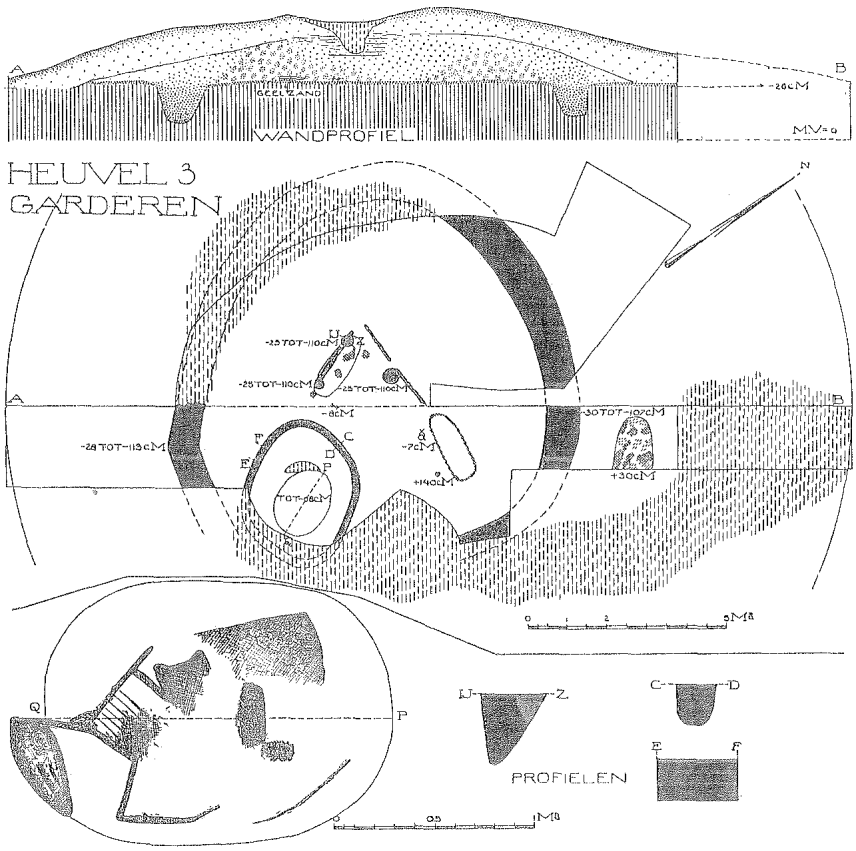

Fig. 7.9 Excavation plan of the Garderen barrow as published by Bursch (1933, 69; fig 66; AMP0002). The horse/cow itself was oriented about 120° with its head in the east facing north. One of the human graves has the same alignment as the horse/cow, the other human grave is oriented east-west.

in fact a cow.[273] Also in Molenaarsgraaf (Zuid-Holland)[274] a bovine burial was found. Since evidence of Late Neolithic horse burials is lacking in the Netherlands, while several examples of cattle burials exist, I would argue that it is likely that the Garderen 'horse' too was in fact a cow.[275]

The Garderen grave (Fig. 7.9) consisted of a large beehive-like burial chamber about 3 metres in diameter (Bursch 1933). Although the longitudinal axis was aligned at 150°, the horse/cow itself was oriented about 120° with its head in the

273 Remains of a skull were found together with a human burial, an AOO beaker, CW beaker, a flint flake and a French dagger. The skull was published as a horse (Holwerda and Evelein 1911), but re-examination of the photos shows molars of a cow (I. van der Jagt, zoologist, pers. comm.). For this grave the orientation was not recorded.

274 In Molenaarsgraaf a cattle grave was also found (Louwe Kooijmans 1974, 264) but it is not sure whether this burial is Late Neolithic or Early Bronze Age. It is therefore not included in the current dataset. The cattle was buried in an N-S orientation and both phalanxes of the forefeet were missing (intentionally?).

275 Burials of cattle dating to the 3rd millennium BCE also occur in Jutland and Central Europe, see Johannsen and Laursen (2010) .

east. Instead of looking south, as humans would, the animal was placed on its left side facing north. In Emmen-Angelslo too, the cow was found with its head in the north-east (25°) and facing north-west (Lanting 2008, 315), hence an inversion of a human burial. Apparently, animals could be included in the funerary ritual, even buried in burial mounds, but their grave pits and body orientation did not follow the same alignments as humans.

It is probably impossible to reconstruct why people subjected cattle to such formal burials. But perhaps linguistics can provide us with a clue. Anthony (2007, 15) mentions that the speakers of Proto-Indo-European practised ritual sacrifices of cattle and horses. In fact, cattle also feature in Proto-Indo-European myth:

> "At the beginning of time there were two brothers, twins, one named Man and the other Twin. They travelled through the cosmos accompanied by a great cow. Eventually Man had to sacrifice Twin (or, in some versions, the cow). From the parts of this sacrificed body, with the help of the sky gods (Sky Father, Storm God of War, Divine Twins), Man made the wind, the sun, the moon, the sea, earth, fire and finally all the various kinds of people. Man became the first priest, the creator of the ritual of sacrifice that was the root of world order." (Anthony 2007, 134)

This is one of the myths fundamental to the Proto-Indo-European system of religious belief, reflected in creation myths preserved in many Indo-European branches (Anthony 2007, 134; see also Kristiansen 2010). Although it might be conjecture and anecdotal at best, it is interesting to note that this myth features two humans (twins) and a cow. The burial mound of Garderen[276] covered, apart from the grave pit with the animal remains, two other grave pits, presumably for humans. One was oriented at 95° and contained various grave goods such as a French dagger, a flint axe and amber beads. The other grave (lined with charred wooden planks) was oriented at 150° (following the alignment of the bovine burial) and contained a flint axe.[277] All three graves were covered by the primary burial mound and are therefore likely contemporaneous. Perhaps the inclusion of cattle in some burial mounds was part of creating reference to a specific cosmological narrative.

7.6 Concluding remarks

When focussing solely on grave goods one might have the impression that there is a strong break between the LNA and the LNB: with exception of the beaker, the entire grave set changes. The most notable connection between the LNA and LNB from the perspective of the grave goods is the fact that in both periods graves contain standardized sets of objects and that in both periods these seem to refer to some cultural ideal, rather than that they reflect the deceased's unique identity or particular life-history.

276 AMP0002, Garderen Solsche Berg mound 3 (Veluwe).

277 The heavily disturbed burial of Emmen-Angelso contained a cattle burial overcut by at least one second burial of a human, AMP0478, Emmen-Angelso mound XII (Drenthe).

The grave, as a context of deposition, however tells a very different story, one that focuses on continuity and cultural cohesion. Although different types of graves were in use in the Late Neolithic, no particular type of grave is exclusively found in any one period. In all cases it seems that people tried to create a space – a coffin, or even a chamber – for the dead and the grave goods. This could consist of a grave pit lined with ferns, wooden planks or even wickerwork constructions resembling beehives. Bodies were placed in a highly specific and standardized position: crouched or semi-flexed, facing south. The grave pits themselves were oriented to be aligned with the rising sun. This practice starts in the LNA and continues during the LNB.

The orientation of the graves indicates that the movement of celestial bodies (*i.e.* the sun) were used as a basis for the alignment of both grave pits and human bodies. Perhaps by doing so, the dead were connected with elements that had a higher cosmological significance and connected the world of the living to the world of the dead, or at least transcended the here and now and placed the dead in the context of the eternal cycle of the sun and the seasons (see also Carlin 2018, 211). The continuity between the LNA and LNB indicates that while people may have been equipped with different grave goods, perhaps indicative of different identities or statuses, they were nonetheless buried according to this wider and overarching cosmological understanding.

This could be taken to indicate that the BB complex went hand-in-hand with the introduction of new identities, new statuses, or at least with new ways of indicating these by means of certain types of objects. But apparently these did not greatly influence the core understanding of how the dead should be treated with respect to the construction of graves or the orientation of bodies. As a context for deposition, the grave itself and the manner in which the deceased were placed therein, remained largely the same. As such, the grave and position of the body should perhaps be disconnected from the objects that adorned the body. Although the former clearly shows a strong line of continuity with the past – perhaps indicative of a continued cosmological understanding of life and death – the latter apparently was open for adaptation and incorporation of new elements, perhaps indicative of new/different identities or statuses.

Perhaps both practices were not causally linked to one another, but rather represented the outcome of choices made on different levels. One related to the deceased individual and the display of a certain type of identity, and the other with a deeper understanding of how the world of the living is structurally connected with the world of the dead. Or in other words, perhaps the route to be taken to the afterlife was not necessarily connected with the luggage one would take along on this journey.

8

Grave sets and object categories

8.1 Introduction

The previous chapters discussed what objects occur in Late Neolithic graves and the patterns that can be observed when studying their life-histories. It was shown that in both the LNA and LNB only a select range of objects was deemed appropriate to be included in graves, which is why we often speak of a 'grave set'. This chapter explores the possibilities of detecting sub-sets both in relation to other grave goods or in relation to the graves/bodies themselves. If any such patterns exist, they could for example reflect differences in sex, status, age group, persona, etc. It will further be explored what the structuring principles are behind making the selection of objects that eventually ended up in a grave together.

8.2 Categorizing apples and oranges

Whether there are any sub-sets may seem like a rather straight-forward research question, but answering it is actually very complex and prone to a myriad of problems. Although I do not want to appear overly pessimistic, in the following I present a few potential problems and include some examples to indicate how these relate to the dataset.

The first, most basic problem lies directly at the level of what we are actually comparing: the object-categories themselves. What exactly *is* an object-category? It would be easy enough to compare the occurrence of objects we have labelled 'bell beaker knives' versus objects we have labelled 'arrowheads'. However, these are labels *we* put on these objects. There is no way of knowing whether these categories were meaningful or recognized as such in prehistory (Parker Pearson 2006, 9). In Chapter 5, for example, the co-occurrence of large and small axes in some LNA graves was discussed. It was argued that these objects may have been used for different types of activities. The heavy axes for felling trees, the smaller ones for finer carpentry. These objects may have reflected very different activities and could have had very different connotations, each perhaps linked to different identities (carpenters versus land workers). By grouping them together and comparing 'axes' with other object-categories, we are thus at risk of missing patterns. Likewise, it could be possible that beakers with different types of decoration had different connotations, that

flint tools were used for different things and that some types of arrowheads indicated warfare while others may have been exclusively intended for hunting. An apparent lack of patterns may thus simply be related to a lack of classificatory resolution on our behalf (*cf.* Brück 1999; Fontijn 2002, 20).

Apart from the fact that *our* categories likely do not (fully) overlap with prehistoric categories, there is the added problem that physically identical objects may reflect different meanings depending on their context. Let us for example consider ornaments. While all may be classified as 'ornament', the type of ornament or the manner in which it was worn may have indicated different or even opposing types of identity (see also Sørensen 1997; Parker Pearson 2006, 9). A particular ornament worn in a particular place may have signalled a status of 'married women' whereas a similar ornament worn in a different manner could have signalled 'adolescent male'.[278] So, even though our analysis may show that 'ornaments' co-occur with various other types of objects, specific and even exclusive sets may still remain hidden in an apparent lack of patterns. Bourgeois and Kroon (2017) demonstrated that this is a real problem by performing relational analyses of CW graves (using pan-European data). Clear patterns emerge in their results, but these are not so much related to particular objects coming from particular graves, but particular objects *coming from particular locations in relation to the body* in particular graves. Hence, similar or even identical objects may have conveyed very different meanings depending on their contexts (for example, in our society a ring is only recognized as a *wedding* ring if it is worn on a specific finger).

To make things even more complicated, we can also assume that the inverse is true: objects that are seemingly different in type, shape or material, might have had a very similar or even identical significance. *We* classify things in a particular way, according to *our* logic, but other people may use a very different rationale to categorize things. Doing research in the remote regions of Uzbekistan and Kirghizia, the Sovjet psychologist A.R. Luria found that informants that had been educated in schools had a very different way of classifying objects than his 'uneducated' informants that had been raised in a traditional lifestyle (cited in Lindholm 2007, 91). The manner in which his 'uneducated' informants classified objects was based on which things co-occurred in daily life. In this 'relational' way of classifying objects his informants would for example put together an axe and a block of wood, as they would be used together (what good is an axe of you have no wood?), rather than putting an axe and a screwdriver together for both being tools. The latter is an abstract way of categorizing which is most commonly used by Western (or Soviet for that matter) people who have already as children been trained in using abstract logic. Relational classification focusses much more on which objects co-occur in daily life. As such a wristguard, arrowheads and a bow might all reflect more or less the same values and could possibly be interchangeable. The same could also apply to certain types of objects or ornaments associated with particular types of personhood. This creates a sort of circularity in the sense that you already need to know which objects belong together in order to recognize sets of objects in first place.

278 See for example the Irish Claddagh-ring, both the position of the ring and the hand it is worn on is used to signal the relationship status of its wearer.

There is reason to assume that such *relational* grouping applies to our grave sets. In the LNB, for example, archery equipment occurs frequently in the form of wristguards, arrowheads and the occasional arrow shaft smoother. Interestingly, however, there is not a single grave that contained all three of these items. Of the 20 graves containing wristguards, only ten also contained arrowheads, leaving another ten graves with arrowheads but without wristguards.[279] It is therefore clear that these people were not buried with a 'full set' of archery equipment. Instead only some items associated with archery were included. This again makes our analysis more complex because apart from the relational grouping, where different objects may represent/are part of the same value, we are also dealing with a *pars pro toto* practice. An added difficulty to this is that of course only very few items survived in the archaeological record. Most objects, by far, would have been made of organic materials such as wood, bone, textiles, etc. In case of the archery set this would have involved for example, leather cuffs, a quiver, arrow shafts and of course the bow itself. This means that any of these objects, either in sets or as individual elements, could be used to indicate and represent 'archery'. An absence of arrowheads or a stone wristguard therefore does not mean the grave was devoid of archery equipment. Labelling a grave as an 'archer's grave' is thus not particularly helpful if we accept that all other graves without arrowheads or wristguards might equally well have been 'archer's' graves.

These are just some of the problems we have to deal with when trying to find patterns in the selection of objects that were deposited in graves. It follows that making a simple cross-table of object-categories is not likely to answer all our questions. To find patterns, we have to use innovative and ingenious methods of finding them, something that is clearly illustrated by the excellent research of Bourgeois and Kroon (2017). At the same time, we must be aware that a multitude of patterns might have been present, but are – frustratingly – for ever out of our reach.

8.3 East versus west; left versus right

The previous chapter discussed the orientation of graves and the posture of the dead. During both the LNA and LNB, graves were oriented mainly E-W (probably aligned with the rising sun). Bodies were placed in a crouched or flexed position, either with their heads in the west or in the east. In either case looking south and lying on their left or right sides. As was presented in the previous chapter, the prevalent assumption is that in the LNA females were buried with their heads in the east, lying on their left side and males were buried with their heads in the west lying on their right side. There appears to be a switch in the LNB and it is believed that men are now buried with their heads in the east (lying on their left side) and women with their heads in the west (lying on their right side), hence mirroring the situation of the LNA (see Chapter 7).

Although empirical data from the Netherlands is largely absent, in other places in Europe there is strong evidence that indicates that this male-female dichotomy is real, see for example the Eulau graves (Meyer *et al.* 2009), or the graves from the Lech River

279 This pattern is also observed in Britain. Parker Pearson *et al.* (2019b, 180) mention that only few graves actually contain both wristguards and arrowheads (see also Woodward *et al.* 2006, 540; Woodward and Hunter 2011, 103).

Position body: Orientation head:	Left-flexed East	Right-flexed West	total
LNA			
Number of graves	10	14	24
No. of graves containing:			
Beaker	6	10	16
Blade	4	11	15
French dagger	3	0	3
(blade or dagger)	7	11	18
Axe	2	7	9
Battle axe	2	4	6
LNB			
Number of graves	19	7	26
No. of graves containing:			
Beaker	16	4	20
Flakes/flint tools	10	3	13
Arrowheads	3	0	3
Beads	1	3	4
Wristguards	5	0	5
Tanged dagger	1	0	1
Copper ring	0	1	1
Strike a light	4	0	4

Tab. 8.1 Grave goods in Dutch Late Neolithic graves with a known body orientation for both the LNA and LNB; quantities reflect the number of graves containing one or more of these objects (e.g. a grave with multiple beads therefore counts as 1). Pink and blue indicate what are typically believed to be respectively the female and male burials.*
** This is based on 20 LNA graves and 21 LNB graves with a known body orientation, and added are four LNA graves and five LNB graves for which we only know the position of the head (for example based on silhouette of the skull or a few dental remains). For those additional graves the posture was not known, but it was assumed that all bodies positioned with their heads in the east were lying on their left side and vice versa.*

valley (Knipper *et al.* 2017) (both from Germany) for which also aDNA results are published. However, as Turek (2004; 2017) rightly points out, there are also notable exceptions. Research carried out by Bourgeois and Kroon (2017) indicates that the location of grave goods in relation to the body in particular appears to be very important. For example, both males and females were buried with beakers and flint blades, but there is a clear difference where in the grave these objects were placed depending on whether it was a male or female burial (Bourgeois and Kroon 2017, 5).

Unfortunately, for the Netherlands there are far too few data. There is hardly any anthropological information, and for only few graves is the body orientation known (based for example on body silhouettes or fragments of dental remains indicating the position of the head in a grave). Table 8.1 provides an overview of the objects from graves with a known body orientation in the dataset for this thesis. It can be seen that for most object categories numbers are in single digits. Any trend we think we see, can

thus easily be distorted by just one or two yet to be excavated graves where things are different. The Dutch data (alone) is therefore not suitable for these types of analyses and incorporation of a wider European dataset would be necessary as Bourgeois and Kroon (2017) have done for the CW culture.

8.4 Status and prestige: standing out or blending in?

Grave goods are often connected with status and prestige. Those graves with the most or rarest grave goods are thought to have been of prestigious high status individuals. These are the types of interpretations we often find in general media, resulting in such headlines as "The King of Stonehenge".[280] Also in academic archaeology the notion that 'rich' graves belonged to high status individuals prevails (see Section 1.3).[281] In some contexts, such an interpretation might be entirely accurate, we only need to think of the treasure-packed tomb of Tutankhamun. But do these principles also relate to European prehistory and in particular the Dutch Late Neolithic? Irrespective of how we should interpret 'rich' graves, to what degree do we actually have 'rich' graves and in what terms should we define 'rich' and 'poor'?

From a Western point of view, it might be obvious to state that wealth is obtained by the accumulation of valuables and defined in quantity. It does not appear, however, that the concepts of accumulation and quantity played a role of significance in Late Neolithic graves. In the Middle Bronze Age there are a number of exceptional graves in which accumulation seems to have been important: graves such as Helmsdorf or Leubingen (containing many bronzes and multiple objects of the same type, *e.g.* three daggers, two axes, three chisels, etc.) for which Hansen (2002) opted the term 'Überausstattung' (meaning literally *over-equipped*). However, even in the Bronze Age these are the exceptions and in my opinion any form of 'Überausttatung' is absent in the Dutch Late Neolithic. Of the 34 LNA graves that contained a battle axe, not one had two or more. French daggers obtained from afar must have been very special objects but of the 19 graves that contained one, the emphasis should be on *one*. No grave contained two, and even more astonishing, if a grave contained a French dagger, it did not contain a northern flint blade or vice versa. One blade, irrespective of where it came from, was enough. The same applies to objects such as the eleven copper daggers in the LNB, which came from eleven different graves. Likewise, the 21 wristguards were found in 20 different graves, only one grave contained two (one worn/used and broken, the other likely new and unworn[282]). For those objects that do occur in larger numbers, it is not apparent that their quantity was important. A collection of beads was probably part of a single necklace and a set of arrowheads was perhaps contained in a single quiver. There thus seems to be no evidence to indicate that accumulation in quantitative terms was deemed important.[283]

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280 British press referring to the find of the Amesbury Archer, a particularly 'rich' Bell Beaker grave found in Amesbury, near Stonehenge (Fitzpatrick 2011).

281 For an analysis and critique on the prestige goods model, see Barrett (2012); Brück and Fontijn (2013).

282 AMP0412, Lunterse Heide-Gooisteeg (Veluwe). The broken wristguard was probably broken during excavation based on the lack of patina in the fractured surface

283 This makes the find of the earlier mentioned Amesbury Archer very remarkable indeed as in this case there were multitudes of objects of the same type.

In qualitative terms also there does not seem to be a focus on accumulation. In both the LNA and LNB only a specific *set* of objects was deemed appropriate for deposition in the grave. One could assume that it would hence be desirable to 'collect' the entire set. Although it is true that some graves have more types of objects than others, it does not seem that 'collecting the set' was the goal. If that would have been the case we would expect the easily obtainable items (those that any Neolithic person could easily make themselves) to be present in all graves, and only the graves of the most 'prestigious' individuals would contain the rarer items that are more difficult to obtain. But this is not the case either. In the LNA, for example, various graves only contained a single French dagger, but no axes, battle axe, or even a beaker. Likewise some contained a battle axe but nothing else, or a flint axe and nothing else. There are indeed some graves that contained them all, but also many graves that contained either just one or any other combination of objects *from the set*. The same applies to the LNB where the presence of a copper tanged dagger was no guarantee that the grave would also contain archery equipment or even a beaker. Only about half the graves that contained a wristguard contained arrowheads and vice versa. Amber beads can co-occur with gold ornaments and a copper dagger, but they can also be the only type of object in the grave. There is thus no indication that collecting all the different components of the *set* was deemed important. In fact, some burials that showed great complexity when it comes to the construction of the grave or burial chamber, that were moreover situated in prominent places in the landscape, did not contain any grave goods at all (at least none that survived in the archaeological record, see for example the Niersen burial; Bourgeois *et al*. 2009).

In the previous chapter it was mentioned that all Late Neolithic burial mounds are roughly the same size, their size-distribution forming a perfect bell-curve with its peak around 10 metres in diameter (see Bourgeois 2011, 263). There is no evidence of active competition. The same applies to the objects deposited in the grave. Although it is important to refer and relate to a certain *ideal image*, to show connectedness to certain commonly held believes and values, it apparently was not the goal to stand out.[284] Modesty appears to have been a virtue. Although permanently marked in the landscape, barrows and the graves within are not the context of showing off and standing out. Instead they seem to emphasize very clearly the importance of blending in, to becoming part of something.

8.5 Negotiating the grave set

In both the LNA and LNB people were buried with a very specific set of objects, in very specific locations in the landscape (see Bourgeois 2013), in a very particular posture in grave pits constructed and aligned in a specific way underneath barrows constructed in a very specific manner. When it came to death and burial, people followed a very specific recipe, or in the words of Bourgeois (2013,198), a *choreography*. This in itself is

284 In a way this is not so dissimilar from a modern Christian funeral where it is normal to read a *few verses* from the bible but not the *entire* book. It is in this context also interesting to note that pride or hubris are in many religions not seen as a virtue but as a sin.

not strange, in fact, it is why we call it a funerary *ritual*. Although there are countless definitions of the world ritual, one of the most essential aspects of ritual is repetition.

> "One of the most common characteristics of ritual-like behavior is the quality of invariance, usually seen in a disciplined set of actions marked by precise repetition and physical control. For some theorists, this feature is the prime characteristic of ritual behavior. […] It appears to suppress the significance of the personal and particular moment in favor of the timeless authority of the group, its doctrines, or practices. The component of discipline certainly suggests that one effect of invariance is generally understood to be the molding of persons according to enduring guidelines and conditions." (Bell 1997, 150)

It is through repetition that society re-creates itself. But as Bradley (1991, 211) points out, while paraphrasing the work of Maurice Bloch, this also has a practical reason. Rituals follow a set pattern, their contents are formalized to an extent that allows little modification and is accompanied by prescribed postures, gestures and movements and restricted vocabulary (note that all these aspects are part of what Goffman describes as the *front*). "These are all features by which rituals come to be memorized so that they are transmitted from one generation to the next" (Bradley 1991, 211).

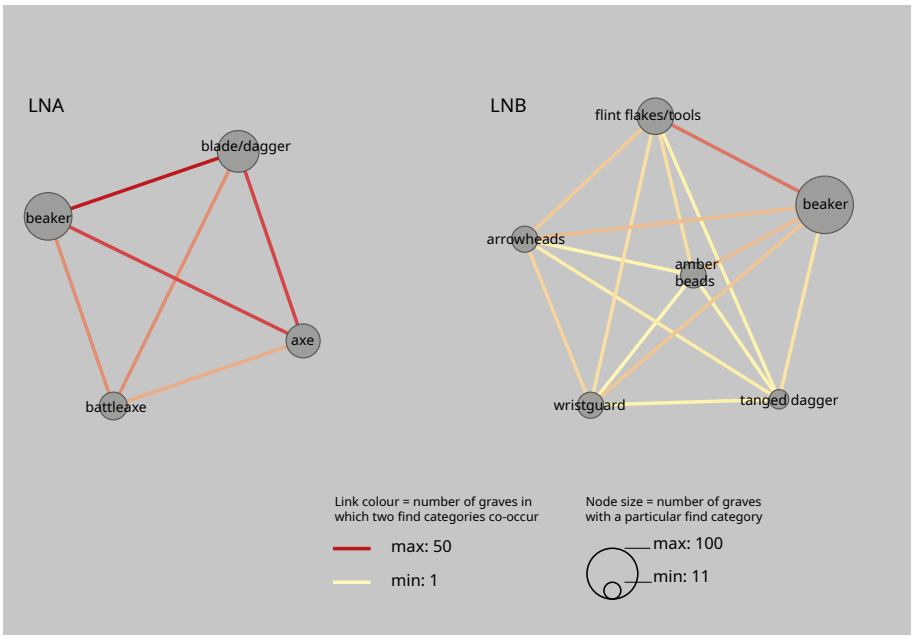

Fig. 8.1 Relational analysis plot (unidirected one-mode network representation based on a count of objects in graves) showing the combinations between the most frequently occurring objects in LNA and LNB graves. The plot shows that in both periods all objects were combined with each other. There is no object or group of objects that excludes other objects. Although some combinations occur more frequently than others, for example in the LNA the beaker and the blade, this is easily explained because these are also the most numerous types of objects in LNA graves. Plot created by Erik Kroon, for more detailed information about these research techniques, see Bourgeois and Kroon (2017).

In this context the rigidity observed in the Late Neolithic funerary ritual is not strange at all. This rigidity is what makes it a funerary *ritual* in the first place. However, when it comes to the grave set itself, there is something peculiar going on. Something that appears to be a fundamental characteristic of the Late Neolithic funerary ritual: within the constraints of the grave set, there is actually a lot of variation.

In the LNA, for example, the grave set consisted of only four main categories of objects: the beaker, the flint blade, the axe and the battle axe. With only four objects to choose from, you could say there is not much room for variation. However, there is. If a grave could contain any combination of these four objects, including the option to omit either of these objects, there are actually 16 different combinations possible.[285] In the context of a repetitive *ritual,* one would expect that over time a fixed cultural practice develops, where the same combination of things is placed in a grave. However, this is not the case. Of the 16 different combination possible, the dataset contains all but one of them (see Figs 8.1 and 8.2). Only the combination *beaker + axe + battle axe* does not occur and there is no reason to assume this void will not be filled by future excavations.

The fact that, within the constraints of the set, we see maximum variation is extraordinary. While gathering the data for this thesis I already noted this 'pattern' and had a note hanging on my wall saying "this randomness cannot be accidental". And although this was intended to be funny, it actually touches upon one of the most fundamental things of the Late Neolithic funerary ritual, because indeed, *this cannot be accidental*. If we translate these observations to actual human practice, we can see that clearly people were *not* buried according to a fully fixed, prescribed ritual. Within certain constraints there is maximum variation which indicates improvisation. Apparently, prior to or during the funeral, the mourners had to decide which objects should accompany the deceased in the grave. People did not simply repeat or recreate a burial the same way they did it last time. For each burial, new negotiations must have taken place. What objects will be included? *Will it be a beaker and a battle axe, or perhaps only a flint blade, or what about an axe and a blade … there are so many options to choose from*!

It is at this point that we touch upon the nature of *fronts* (Goffman 1966). As presented in Chapter 2, people present themselves (or in the case of being the deceased, *are* presented) in accordance with the type of social occasion one is attending. Depending on whether one is at the beach, at work or at a funeral one will wear different clothing, behave differently, adopt different speech patterns, etc. However, it is impor-

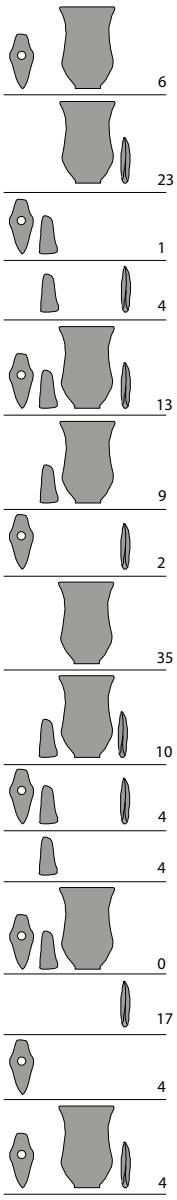

Fig. 8.2 All the possible different combinations in the LNA grave set and the number those combinations occur in the research dataset.

285 Options are either all four items or none (2); only one item (4); any combination of two items (6); any combination of three items (4), bringing the total number of possible combinations to 16, see Fig. 8.2.

tant to remember that, usually, a specific social occasion does not dictate exactly which elements of front must be used. Instead it works the other way around. The type of occasion rather imposes boundaries on what specific elements of front *are* and which *are not* deemed appropriate. I have looked extensively to an existing term to accurately define this practice but without success. I therefore want to propose the term '*negatively defined*'. In the same way *fronts* are composed, the grave set is not composed by rules dictating what should be in a grave, but rather inversely, by rules and conventions excluding things that were not deemed appropriate. These types of categories were *negatively defined*.

From when I was a child, I clearly remember that when my parents were preparing themselves to go to a specific social occasion my father always asked my mother "which shirts can I wear". She subsequently went through his collection of shirts dismissing many for they did not suit the occasion. In the end only a small selection of shirts remained. It was from this selection that my father subsequently 'chose' which one to wear. As everybody knows, there are some people you know only from certain types of occasions. For example, distant relatives you only meet occasionally at funerals or weddings. In the example of my father, such people may have thought that he always wore the same type of clothes, for they only knew him in these specific contexts. Even though my father had the *impression* that – with the help of my mother – he carefully selected his outfit from *all available options*. But actually, most of those options were dismissed as 'inappropriate' for the occasion, and the actual choice was made from *a very select subset* (*cf.* Goffman, 1966, 7).

I think this sidestep may help understand what happened when people were preparing a body for burial 4500 years ago. The variation in the grave set clearly indicates that a similar process of negotiation preceded it. People must have discussed which items would be included in the grave. The fact that there is maximum variation also highlights that this was an important aspect of the funerary ritual, something that had to be carried out each time. They did not simply repeat what they did last time. And although some combinations occur more frequently than others, the outcome of the discussion could be different each time. To the people performing these negotiations, it would not have felt like they buried someone with a 'fixed set of objects' according to almost 'rigid' rules. The burial was the result of perhaps a lengthy discussions about the deceased, about their role in society, about what would be appropriate in this particular case.

The fact that, for example, in the LNB there are no copper axes in graves may be because these objects were not deemed appropriate for burials *by anyone*. These objects apparently had connotations, meanings and functions, that were not socially acceptable in the context of a funeral. To put this in modern terms, it would be unlikely for someone to suggest to bury a friend in a casket made entirely of Legos, or to dress up the deceased in his favourite bathrobe. It is apparent to all that these options (although technically available), are not deemed socially acceptable and appropriate under normal circumstances.[286] Such options would not even be discussed. Likewise, some objects must have had such connotations which disqualified them for inclusion in graves. Nobody in the LNA opted to include arrowheads in a grave because that is something you just do not do!

286 Extravagant burials do take place of course, but these are not the norm.

8.6 Conclusion

To *us* it may seem like these graves all contained the same objects, the same set, reflecting rigid rules. But this is probably not how it was perceived by *them*. Like the distant relative of my father who might assume my father always wears the same outfit, this is not at all how my father perceived the situation. To him there was a closet full of options available and after careful selection he chose to wear a particular outfit. Likewise, by focussing on only the non-perishable items in graves, and looking at them thousands of years later, *we* think they are all the same and lack an expression of individuality. But in reality, individual choices were made each time. Each time someone was buried, a group of people came together to decide which objects should be placed in the grave. *The previous person buried was given a beaker and an axe, but this time we'll do it completely different and give him a battle axe and a blade!*

This closely mirrors the individual expression seen in the Veluvian bell beakers as discussed in Chapter 4. Although the form and decoration conformed to generally upheld principles, within these boundaries, maximum variation of styles and combinations of techniques occurred. This led to a result where you can instantly recognize a Veluvian bell beaker, but when you look in detail, none of them are the same, all are singular but within the confines of the overarching (social) structure.

This also means that to come to a better understanding of the meaning of the grave, it is of crucial importance that we question why certain objects were *not* put in graves. It is very clear that it was not socially acceptable in the LNA to put archery equipment in graves, likewise in the LNB copper axes were out of the question. These objects must have had connotations, meanings, a significance, that precluded them from inclusion in the grave. These were probably not even options that were discussed when people came together to decide what to put in the grave. This does not mean that these objects did not have a special significance. In fact, the objects excluded from graves are often subjected to selective deposition elsewhere in the landscape (*e.g.* Bradley 1990; Carlin 2018; Fontijn 2002; 2019; Wentink 2006a; Wentink *et al.* 2011).

Structurally, there are strong similarities between the CW culture and BB complex in the manner in which people were buried. But there are fundamental differences in the meaning and significance connected with specific types of objects or activities. While archery equipment was not acceptable in the CW graves, it regularly occurred in BB graves. Likewise, axes were normal in CW graves, but not in BB graves, not even the exotic copper ones. Although on a structural level people kept doing the same things, there was a clear change in the cultural appreciation of certain objects.

9

The presentation of self in the Late Neolithic

9.1 Introduction

The selection of grave goods, as discussed in the previous chapter, very much follows the *rationale* of the creation of social fronts (Goffman 1959; as described in Chapter 2). In certain social contexts certain types of behaviour, clothing, paraphernalia are deemed appropriate, while others are not. While some things are approved of, and even expected, others are frowned upon or even 'forbidden'. It is by adhering to these generally held cultural norms that persons can express their connectedness and integration within a community, as opposed to strangers and outsiders who do things differently.

As the objects found in graves are obviously carefully selected by the group of people burying the deceased, it is to be expected that these objects are in line with the expectations of that community of what is appropriate and what is not. So in that sense, their selection was structured by the same principles and cultural norms that would apply to an individual preparing their personal *front* for a specific social gathering. While underlying structuring principles might be similar, to what degree can we actually interpret the grave set as part of a *personal front* (Goffman 1959, 23; see Chapter 2). This chapter explores which objects are included in graves for both the LNA and LNB, taking into account their life-histories as presented in Chapters 4-6, but also by briefly looking into some items that were systematically avoided in graves. As the latter were apparently not deemed appropriate in the context of the funeral, their function or meaning might thus reflect values that were to be avoided in graves.

9.2 Presenting the self in the Late Neolithic A

It is an easy assumption to make that the objects in a grave were the possessions of the individual they accompanied. A reconstruction drawing of the 'Amesbury archer', for example, shows a man wearing and holding the key finds retrieved from his grave. It is therefore not a big leap to think that these objects were part of how this person portrayed himself, that these were 'insignia' of a particular type of personhood or *front*. But was that really the case? I will argue in this section that the objects found in Dutch LNA graves were *not* part of a personal front. However, it will be demonstrated that there is a strong connection on a structural level between the grave set and the manner

in which *fronts* are composed. Therefore, as an analytical tool, Goffman's concept of *front* can be very helpful in understanding the choices made when selecting which objects were, and which were not to be included in the grave.

In the terms of Goffman (1959, 23-24; see Chapter 2) the *personal* front is composed of those elements that are an integral part of a performer. This includes facial expressions, body language and speech patterns, but also dress and paraphernalia such as insignia of rank (tokens of personal status). I argue that the objects found in LNA graves signal the importance of specific activities and relations, but are not part of a formal attire or paraphernalia worn by a person in a specific social context. Instead they seem to represent particular core values that were deemed important but were not necessarily representative of activities in daily life.

If the objects in a grave would have been part of a *personal* front, they would comprise objects that would be carried or worn on the body by a person in a specific social occasion. It is in that respect noteworthy that the most obvious type of object to qualify as something that is part of a personal front is notably absent in LNA graves: ornaments. With few exceptions, ornaments are absent in LNA graves. As such the LNA forms a strong contrast with both the earlier Funnel Beaker culture and later BB graves in which ornaments occurred frequently. It is only at the end of the LNA – during the AOO phase – that amber beads start occurring in graves.

Also notably absent are objects related to food processing. Querns or sickle blades were common in the Funnel Beaker culture megalithic tombs (Van Gijn 2010, 129), but absent in the LNA graves, the same applies to hunting gear. Although these would have been objects used in daily life, they were not used to represent persons in death.

The objects found in graves are not part of a particular type of dress, nor do they signal activities from the sphere of daily life. They do not portray the deceased as a farmer, hunter or herder, as someone who prepares food or grows crops. Nor do they represent warfare or violence in my opinion. Battle axes and French daggers are traditionally interpreted as weapons, but although they could be used as such, their wear patterns indicate a very different usage in daily life (see Chapter 5). French daggers do not show signs of a particular use, other than display, and seem to have been late substitutes of the northern flint blades which show no signs of usage at all. The 'battle axes' are heavily worn tools that were most likely used in clearing the land of tree trunks and cutting through roots (see Section 5.6). Moreover, if martiality would have been an important quality, it is curious why archery gear was one of the notably absent categories of objects in LNA graves.

I would interpret the objects in LNA graves as part of three connected core values: inter-group contacts, intra-group contacts and the technology involved in establishing and maintaining those contacts.

The beaker, delicately made and carefully decorated, was an object related to consumption, most likely drinking, probably of alcohol in the form of beer or mead. This is not an activity done in private and alone, this is something done in public with other members of the community or when entertaining guests visiting from afar (see Section 4.8). The beaker and its particular style of decoration showed the connectedness with other groups, most notably in northern Germany and Denmark, part of the CW culture, where virtually identical types of beakers were in use (see Section 4.3.2).

If the beaker was a symbol of receiving guests, the flint blades would represent the gifts they brought. Apart from the beaker, the northern flint blade is the most frequently occurring type of object in Dutch LNA graves. Although during the AOO these exotic flint blades could be substituted for French flint blades, these were nonetheless exotic flint blades, acquired from long-distance contacts. These blades are an echo of previous practices during the Funnel Beaker culture where ceremonial flint objects (axes) were obtained from Scandinavia (see Section 5.4). The connectedness between such flint axes and these blades is illustrated by the find of the Nieuw-Dordrecht hoard consisting of both a large set of these flint blades (at least eleven) and an unfinished Funnel Beaker culture-style ceremonial axe. None of the blades found in graves (or from the Nieuw-Dordrecht hoard for that matter) showed clear signs of wear indicating use as tools. Instead, like the Funnel Beaker culture ceremonial axes, they appear to have been mostly valued as objects of exchange, tokens of inter-group contacts, signalling a connectedness with people far and wide.

The axes and battle axes were tools instrumental in establishing and maintaining such contacts. These were the tools used for clearing the forest, removing tree trunks and preparing land for ploughing but perhaps more importantly, wheeled transport. Several graves contained multiple axes of either a different size or made of a different raw material (stone versus flint). These may have had different functions. While the bigger axes may have been primarily used in heavy duty tasks (cutting down trees for example), the smaller were perhaps used primarily in crafting activities, which included the production of carts[287], wheels and even wooden trackways crossing bog lands in order to connect different communities. We know wheels and trackways must have had a special significance in the Late Neolithic as evidenced by the finds of intentionally deposited wooden disc wheels (some even specially made for deposition) and apparently even 'ritual' trackways.[288] As discussed in Chapter 3, genetic research has shown a close relatedness between CW and peoples living in the Steppes, most notably the Yamnaya culture (originating in eastern Ukraine and adjacent parts of western Russia). Interestingly, remains of wheels (or perhaps even the carts themselves) are a regular occurrence in burials of the Yamnaya culture (and other related Steppe cultures), indicating the importance of wheeled transport and long-distance contact in the ideology of those people whose genetic and linguistic heritage ran through CW Europe (Allentoft *et al.* 2015; Anthony 2007, 362-363; Haak *et al.* 2015; also see Chapter 10).

The objects in LNA graves were carefully selected. Only specific types of objects were deemed appropriate. Deeply personal objects – such as ornaments – or items used in everyday life – such as objects related to food production or preparation – were avoided. Instead a selection was made of items related to establishing and maintaining social relations, both within a community and between communities in the CW influence sphere. Although these graves represent communally held and appreciated values, this did not mean they were devoid of any expression of individuality. For each grave was subjected to negotiations and different decisions were made, which may have reflected

287 Note how graves containing cushion stones are often interpreted as 'smith's graves' but never has a grave containing flint axes been labelled a 'cart builder's grave'.

288 The Nieuw-Dordrecht trackway led into the bog for several kilometers and ended abruptly in the middle, it was hardly worn and around the trackway several depositions were found including a disc wheel and an axe.

the deceased's particular and individual role in this context. One may have been praised for their excellent role in brewing beer and receiving guests, while another was known to be a particularly gifted cart-builder. Based on these attributes it was perhaps decided whether one was buried with a beaker, or a set of axes, or a battle axe and a beaker, or any other combination. In this way the grave did give expression to the deceased's particular individuality, but within the confines of a very particular range of socially accepted spheres of activities that were deemed appropriate to be represented in a grave.

9.3 Presenting the self in the Late Neolithic B

The Bell Beaker graves are structurally very similar to the CW/AOO graves. Not only in the sense of how barrows were constructed or graves and bodies were oriented, but also in the manner in which grave goods were selected. Although the 'Bell Beaker Package' constitutes a very particular set of objects, all made in a very particular pan-European style, no grave seems to have contained the 'full' package, nor does this seem to have been the goal (see Chapter 8). Instead, people were adorned with a *selection* of objects from this set, while clearly avoiding other items that were systematically kept out of graves.

For the LNB graves it is much harder to answer the question whether or not these items belonged to a particular *personal* front. In stark contrast to the LNA, the Bell Beaker graves contain various items that were worn on the body. These include amber ornaments worn as necklaces, on clothing and even on caps or bands on the head, copper and golden ornaments worn on the head, but also items like stone wristguards were worn on the arms. These were things that were worn on the body and were clearly meant to be seen and signal particular statuses or identities. Also the other objects were made in particular styles, where a lot of effort was spent in making things 'look good'. This for example includes the extensively decorated Veluvian bell beakers, but also the skilfully produced barbed-and-tanged arrowheads. Wear traces, moreover, indicate that these objects were not merely produced for the grave, most of these objects showed clear traces of wear, tear and repair. They were worn by the living before they became gifts to the dead. As such it seems they tick all the boxes when evaluating whether or not they were part of a *personal* front.

Especially, the objects that were worn on the body as part of a particular type of dress, in a particular style can be regarded as paraphernalia belonging to a particular type of *personal* front. However, while it may have been the case that these objects once were part of a *personal* front, in the context of the grave it becomes slightly more complicated. As was the case in the LNA, people were not buried with a full set of objects, each grave only contained a few items that were part of the set. For example, only half the graves in the LNB to contain a wristguard also contained arrowheads, and vice versa (hence not a full set of archery equipment). People could be buried with any number of objects and any possible combination of objects from the 'Bell Beaker Package'. Assuming that the Bell Beaker package represented a particular *personal* front, once worn in its entirety by an actual person – fully adorned with amber beads, copper tanged dagger, stone wristguard, a quiver with arrows and a bow, etc. – this is not how that person was buried. In most cased only a (small) selection of these items were included in the grave.

Hence, as was the case in the LNA, a burial was preceded by the mourners negotiating which objects to include in the grave. From a specific range of objects deemed appropriate a selection was made. Structurally this process was thus highly similar to the LNA practice of selecting grave goods. However, where in the LNA objects were selected associated with a specific range of activities (establishing and maintaining social contact) in the LNB the focus shifted instead to objects, many of which were worn or carried on the body and were perhaps once part of a specific front. The individual choices that were made in each grave gave expression to the individuality of each of the individual dead. However, the widespread nature of these objects and their style suggests these were not part of a specific idiosyncratic *personal* front, but rather a generally recognized and widely respected *social* front (Goffman 1959).

9.4 *Being* Bell Beaker

The realization that the LNB graves did not refer to idiosyncratic *personal* fronts but rather a wide-spread *social* front is crucial in interpreting these Bell Beaker graves. The first part of the previous paragraph may have given the impression that the Bell Beaker graves were very different from the LNA graves. Objects that were avoided in the LNA were suddenly common in the LNB and *vice versa*. Since there is so much overlap between the LNA and LNB when we look at the construction of barrows, orientation of graves and even the manner of selecting objects to be included in graves, it is difficult to understand why suddenly these seemingly contrasting choices were made. From a practice where personal ornaments and archery equipment were avoided and woodworking tools were commonplace, a transition was made to practices that celebrate personal ornaments and archery equipment and avoid woodworking tools. Did the meaning of a burial suddenly change entirely without affecting the funerary ritual on a structural level?

It is true that there is a significant shift in focus from particular activities highlighted in LNA graves to referencing a particular social front in the LNB. However, it must be stressed that the function of a particular widespread social front is in fact very similar to the activities highlighted in the LNA graves. If we see the LNA beakers, blades and axes as objects related to establishing and maintaining social ties, the Bell Beaker graves are suddenly a lot less different. As presented in Chapter 2, the purpose of widespread stereotypical fronts is to establish and maintain social relations with others. Even though at heart people can be very different, a widespread understanding and appreciation of a particular stereotypical front helps to facilitate social contact. It is important to remember that these grave goods are merely part of, or even just a proxy for such a front. This front would have consisted of much more, including body language, speech (or even (Indo-European?) language), a set of structured practices or gestures (*e.g.* handshakes, inviting one to come sit by one's fire, offering a drink), etc.

Japanese and Russian businessmen, for example, can meet each other while wearing business suits, greeting each other by extending and shaking hands and talking to each other in English. This front facilitates their interaction without forcing either of them to learn or adopt cultural norms or traditions particular to either Japan or Russia. They can meet on 'culturally neutral grounds' or in a 'social bubble' as it were (see Barth

1969, 15). In this context the LNB graves too may highlight the 'tools' associated with establishing and maintaining social contact.

If the Bell Beaker package was indeed a component in a widespread social front, employed throughout Europe to facilitate social interaction, the evidence should not be limited to the mere occurrence of these objects themselves. First of all (1) we would expect to see evidence of increased widespread interaction between social groups that adopted/recognized this front.[289] At the same time, however, (2) we would also expect to see cultural differences between those groups. A social front does not only help to facilitate contact between groups, it also helps to insulate them and allows them to retain their own cultural identities. As in the example of the Japanese and Russian businessmen, in the context of the meeting they employ a mutually shared and appreciated front, but this allowed them to retain their own cultural identities that lied underneath. The shared front insulates each of their cultures from confrontation and modification (Barth 1969, 15). For both these phenomena there is ample evidence, as shall be demonstrated below.

This also provides an explanation for the apparent paradox noted by Parker Pearson *et al.* (2019c). As part of the British Beaker People Project they performed a comprehensive study that included analyses of stable isotopes, grave goods and osteology. They note that although people were buried with items that are traditionally interpreted as weapons – arrowheads and daggers – they actually found little evidence for violence (Parker Pearson *et al.* 2019a, 433).[290] Moreover, the number of Chalcolithic and Early Bronze Age casualties they found was actually proportionally smaller than for the previous Neolithic period. Both Vander Linden (2006b, 322) and Guilaine and Zammit (2005, 131) report the same pattern for southern France: evidence for violence is decreasing with the start of the BB complex (compared to previous periods).[291] This pattern is actually what should be expected if these items were indeed part of a front instead of tokens of martiality. A standardised and widely adopted front would help to guide and facilitate peaceful contact and thus help to actively prevent violence.

9.4.1 Increased social interaction

In the LNA all 'exotic' objects encountered in CW context are solely coming from other CW regions, most notably north-west Germany and southern Scandinavia (also see Chapter 3). This starts to change with the introduction of the AOO beaker when both ceramic styles and French daggers are indicative of new exchange contacts. With the start of the LNB, however, imports suddenly came from everywhere (see Fig. 9.1; see also Chapter 6). Gold and copper objects come in via both Atlantic Europe (including Britain) and Central Europe. Amber comes in from the north, either from the

289 This does not mean social interaction or exchange of goods and knowledge does not occur between groups that do not share social fronts, it only states that social fronts *help*. They would merely make interaction easier, more efficient and less threatening.

290 This study included a total of 370 individuals dating to 2500-1500 BCE, they found various pathologies that could have equally been the result of violence or accidents, in only three cases violence was attested (one female displayed a healed skull injury likely caused by a blow to the head with an axe; two males were shot dead with arrows) (Parker Pearson *et al.* (2019a, 433). Three cases out of 370 is less than 1 percent, and note that the female had a *healed* injury.

291 See Christensen (2004, 136-137) for a brief European-wide overview of Neolithic graves showing signs of violent deaths.

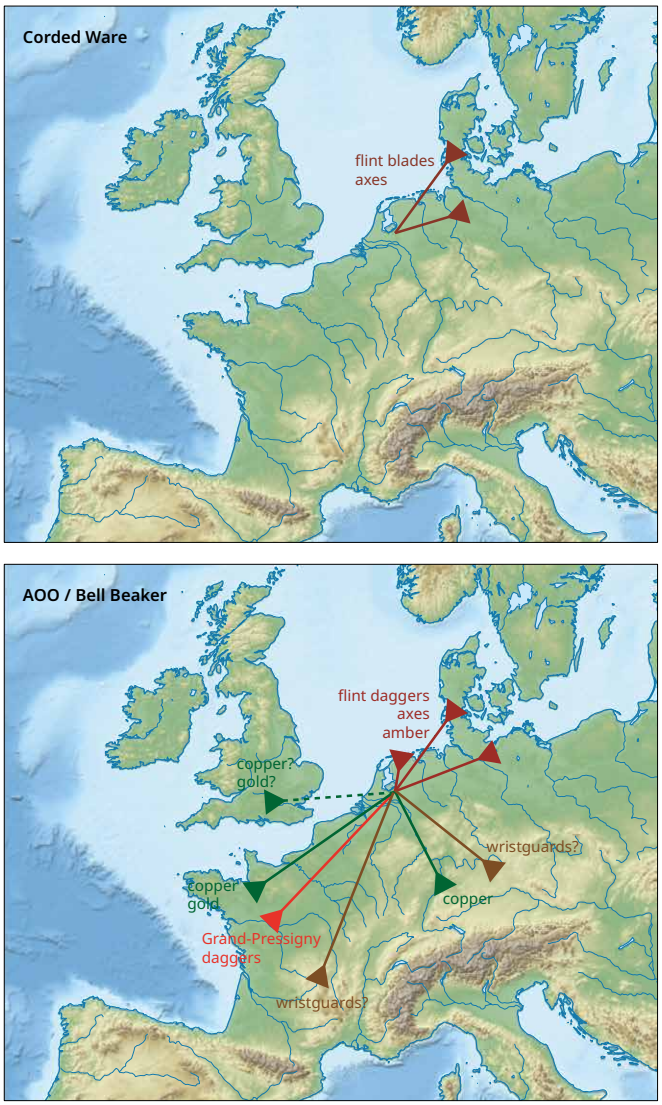

Fig. 9.1 Maps showing the origins of different 'exotic' objects occurring in the CW and AOO/BB (base map: Wikimedia Commons).

northern Netherlands or Baltic coasts. Well over a hundred Scandinavian flint daggers have been found in the Netherlands (see Van Gijn 2010, 189).[292] It is clear that the regions that adopted the Bell Beaker package did not only share burial customs, in fact, the origins of many of the components of this package can be physically traced to the various regions of 'Bell Beaker Europe'. As such, these items are not only indicative of a shared social front but also of the exchange that took place between the agents that adopted these fronts.

Recent genetic research yielded spectacular results indicating large scale and widespread human mobility. Samples from CW individuals indicate a strong genetic relation to Yamnaya populations from the Eurasian Steppe, north of the Black and Caspian seas. The similarities are so strong that researchers currently speak of 'mas-

292 Interestingly not in graves but often deposited in waterlogged locations.

sive-migration' with CW individuals from Central Europe tracing ~75% of their ancestry to the Yamnaya herders (Haak *et al.* 2015). The later Bell Beaker and Bronze Age samples, despite still showing a clear relation to the Steppe peoples, also show evidence of an Early Neolithic ancestry implying intermarriage between the local pre-existing population of Neolithic Europe and the Steppe migrant new-comers (Allentoft *et al.* 2015; Haak *et al.* 2015; Olalde *et al.* 2018).

This implies that during the first half of the 3rd millennium BCE, CW people with an extremely strong genetic link to the Yamnaya Steppe populations must have lived in Europe with only minimal genetic interaction with existing Neolithic populations. This matches with the observations presented in this thesis that in the CW culture all 'exotic' objects[293] came from adjacent CW territories and evidence of interaction/exchange with other regions/cultures is absent.[294]

This changes drastically with the adoption of the Bell Beaker social front when suddenly objects are exchanged over large distances throughout Europe. Genetic evidence moreover indicates that it is not just objects that were exchanged, as Bell Beaker individuals appear to have a genetic signature indicative of both a Steppe and Early Neolithic ancestry.[295] These aDNA results open interpretive doors that have long remained shut: can the beaker phenomenon be simply explained by massive migrations? The data certainly indicates that migrations took place and played an important role in the spread of peoples and cultures. Apart from the CW people (or their direct ancestors) who seem to have migrated to Europe from the Steppes, recent aDNA research indicates a missive transition in Britain during the second half of the 3rd millennium BCE. With the arrival of bell beakers in Britain, new research shows that all of the tested British individuals suddenly have Steppe ancestry, something that was absent among the pre-Bell Beaker Neolithic farmers. This suggests migration from the continent (particular the Lower Rhine area) resulting in a replacement of >90% of Britain's Neolithic gene pool (Olalde *et al.* 2018). Such data clearly indicate that (large-scale) migrations took place and must in some situations be linked to the spread of material culture, language and practices. Interestingly, the same research also clearly demonstrates that this Steppe DNA was virtually absent in Iberian populations, ruling out migration as the cause for the adoption of bell beakers in Spain and Portugal (Olalde *et al.* 2018). In later research it is reported that some Steppe ancestry individuals co-existed with local people in the Iberian Peninsula between 2500-2000 BCE, but it was not until after 2000 BCE that a significant influx of Steppe DNA (~40%; linked to incoming males with Steppe ancestry) took place (Olalde *et al.* 2019).

These new aDNA research projects are currently just getting started and the information they provided so far is nothing less than spectacular. With respect to the BB complex they clearly prove that, although migration took place, the BB package is not linked to a specific genetic group. In fact, it proves that beakers were adopted by

293 This mainly involves the finds from graves in the Netherlands, but the author is also not aware of any such finds from other CW contexts in the Netherlands (also see Chapter 3).

294 It must be stressed that the main research for this thesis was performed between 2008 and 2012. The patterns described in this thesis were thus established before the first of these new aDNA researches was published.

295 This is also corroborated by new – currently not yet published – extensive research on a dataset from southern Germany where over 150 individuals have been subjected to aDNA research (Philipp Stockhammer pers. comm. 2017). Part of this research is currently published, see Knipper *et al.* 2017.

genetically unrelated groups (Central and north-west European groups with Steppe ancestry, but also by Iberian groups without Steppe ancestry) but also coincided with the admixture of different groups (CW populations with Steppe ancestry and pre-existing local Neolithic farmers) resulting in a mixed European/Steppe ancestry in Bell Beaker individuals.

The influx of the Steppe migrants is also related to the spread of the Indo-European languages, the spread of carts, horses, wool sheep and alcoholic drinks (see Chapter 3). According to Anthony (2007), Proto-Indo-European (PIE), the mother language from which all other Indo-European languages derive, was spoken between 4500-2500 BCE. By 2500 BCE PIE was a dead language and all daughter languages had split away. This means that while the CW people may still have been speakers of a late variant of PIE, with the start of the Bell Beaker complex in the second half of the 3rd millennium BCE, PIE was already a dead language. Bell Beaker people therefore must probably have spoken PIE-daughter languages. In case of north-west Europe this would probably have been proto-Germanic (see Anthony 2007). The spread of the Bell Beaker package therefore seems to coincide with the spread and adoption of Indo-European, which may very well have been part of the non-material aspects of the Bell Beaker social front. A common – or at least linguistically related – language would have been an extremely powerful tool in establishing and maintaining long-distance (trade/exchange) contacts.

9.4.2 The differences that remain

Despite all the evidence of increased social contact, migration and exchange in the second half of the 3rd millennium BCE, there is also a lot a variability. In fact, this variability has always led to speculation on the nature of the Bell Beaker 'culture'. Although the bell beakers themselves (particularly the maritime type) and the associated 'package' can be extremely uniform and are found in graves throughout Europe, there is much variation in other forms of material culture. The non-beaker pottery, for example, often has a distinctive local style and is usually referred to as *Begleitkeramik* (see Fokkens and Nicolis 2012 for an entire volume dedicated to regional signatures in Bell Beaker Europe). It is, however, not merely the local pottery that is different. Although people may be adorned in graves with items from the 'Bell Beaker package', the actual graves are varied. They are locally, distinctively different and retain elements of previous local cultures (*e.g.* burial mounds in the Netherlands, rows of flat graves in Central Europe, the use of megalithic tombs in France; see Chapter 3). Likewise, subsistence strategies and settlement patterns are locally different and varied (see Vander Linden 2006b, 323).

From a traditional point of view – where pots equal people and archaeological 'cultures' were explained as the result of migrations – it is impossible to understand and explain all these local differences. How is it possible that you find nearly identical bell beakers throughout Europe while at the same time there are so many regional differences? This, however, is exactly what we would expect if the Bell Beaker package is interpreted as part of a widespread *social front*. As mentioned before, a social front actually helps to insulate local cultures during contact with *others*. In the context of their meeting, the Japanese and Russian businessmen (mentioned in the example above) behave according to strict norms and adopt a specific cross-culturally accepted front, but after they return home, both of them can resume their own ways and traditions.

This also helps to explain the 'popularity' and rapid spread of the 'Bell Beaker phenomenon'. Adopting this particular front in specific social settings (while with *others*, *outsiders*, *travellers*) had clear benefits as it enabled and facilitated social interaction and the exchange of goods and knowledge. However, this social front only needed to be employed in those contexts, allowing local communities to retain their own identities and ways of life that were rooted in their own local histories.

9.5 Conclusion

This chapter set out to investigate whether the objects found in graves should be interpreted as the physical remains of *personal fronts*. Similar to fronts, the objects in graves were carefully selected and arranged for the occasion, where some objects were deemed appropriate but others were avoided time and again.

For the LNA it was argued that the objects in graves were not part of a *personal front*. The objects selected for deposition in graves were not worn or employed by a person in specific social contexts. Instead these objects can all be interpreted as playing a role in establishing and maintaining social contacts. They include objects obtained from afar (flint blades), receiving and entertaining guests (beakers), and the objects needed to maintain those contacts (axes for clearing the land, building trackways and constructing carts). The focus of these contacts was directed towards other CW groups. Although the range of objects deemed appropriate for inclusion in graves was highly restricted, individual choices were made in each burial.

The second half of the 3rd millennium BCE is marked by the widespread adoption of a highly standardized way of personal representation. Although the objects found in Bell Beaker graves may be interpreted as referring to a stereotypical *social front*, they do not represent a *personal* front. As was the case in the LNA, for each grave a selection was made from the range of objects deemed appropriate to be included in a grave. At first glance the objects selected in the LNB seem to indicate a radical break with the LNA. Objects that were avoided in the LNA became common grave goods in the LNB and *vice versa*. This apparent 'break' is all the more curious as all the other aspects of the funerary ritual show so much cohesion and continued tradition.

However, if we accept that the objects in Bell Beaker graves refer to a widespread *social front*, this 'break' can be explained as merely a change in the material idiom used to give expression to the same values. A social front functions to facilitate social interaction and as such the values highlighted in LNB graves are not that different from LNA graves. While a wheeled cart may have been the most important 'tool' to maintain contact between different CW communities, the Bell Beaker social front was a 'tool' to establish and maintain contact on a much wider scale. This is evidenced, for example, by the highly diverse origins of exchanged items. A widespread adopted social front also insulates and protects local cultures, which explains the local variation and diversity between contemporary Bell Beaker communities, as well as the level of continuity in practice that can be observed between Bell Beaker communities and preceding 'cultures'.

10

The traveller

10.1 Introduction

It was warm for the time of the year, September 1991, when hikers in the Italian-Austrian Alps encountered the remains of a frozen human body, half emerging from a tomb of ice where he had lain buried for over five millennia. The years following his discovery led to many more remarkable discoveries. The ice-man, who was named 'Ötzi', had travelled from Italy into the Alps before meeting an unfortunate fate in the form of an arrow lodged in his left shoulder. Although we will never know exactly what events resulted in his death, Ötzi must have been shot and died while trying to get away from his attackers. He died in a mountain pass at an altitude of over 3200 metres and was quickly frozen and covered in ice. The ice, however, did not merely trap Ötzi but also the clothing he wore and the equipment he brought with him. This included a copper axe, a fire-making kit, a bow and quiver with arrows, a flint knife and birch bark containers (for a complete overview of this find and all objects recovered, see Egg and Spindler 2009).

If we ignore the wealth of organic remains (including his clothing and even some sort of back-pack) and focus on those objects that would have normally survived in the archaeological record, there is a remarkable similarity with the Bell Beaker package. Apart from the copper axe, all the items found with the Iceman would fit perfectly well in a typical Beaker burial. Some researchers even listed this collection of finds as one of the reasons why they believe the find of Ötzi may not have been the result of a wounded traveller who died and was frozen *in situ*, but instead represented a formal burial and should be interpreted as a grave (Vanzetti *et al.* 2010). Although this theory did not gain traction (for comments see Zink *et al.* 2010), it is interesting that an 'unfortunate traveller' bears so much resemblance to a carefully arranged grave. I assert that it may actually be the other way around. Ötzi – the traveller – does not resemble a Beaker grave, it is people in Beaker graves that resemble travellers like Ötzi.

10.2 The world of wandering

The objects that are typically part of the Bell Beaker package – archery gear, flint tools, a fire-making set, a knife or dagger, containers with food/drink and various items that were part of a person's (formal) dress – fit surprisingly well with the array of items found with Ötzi. The find of Ötzi confirms that these were the kinds of items one

would take along on a journey.[296] Both the style in which these objects were made, but also the nature of the objects themselves (beads/ornaments as part of a formal type of dress) indicate the importance of personal presentation to *others* along the way, as part of a widely shared and accepted social front. Apart from the similarities with Ötzi's gear, there are, however, also various other lines of evidence pointing to the importance of *travel*, both physically in the real world, but also on a symbolical level.

The various studies recently published on aDNA and stabile isotopes all point to a highly dynamic and mobile society in the 3rd millennium BCE (*e.g.* Allentoft *et al.* 2015; Haak *et al.* 2015; Knipper *et al.* 2017; Olalde *et al.* 2018; Parker Pearson *et al.* 2016; 2019c; Price *et al.* 1998). These studies clearly show both a high mobility of individuals, in part related to the exchange of marriage partners over long distances, but also of 'massive migrations' affecting the DNA make-up of entire populations. This period in time must have been highly dynamic. A period of extremely high mobility where both individuals and larger populations moved across large distances on a fairly regular basis. This is also evidenced by the pan-European distribution of objects, object styles, and raw materials (see Chapter 6; Vander Linden 2007b, 349). To a large extent this will be related to the introduction and widespread acceptance of new innovations in the 3rd millennium BCE, including wheeled carts, horseback riding and the spread of Indo-European languages (Anthony 2007).

The notion of 'travel' also played an important role in the cosmology of both the LNA and LNB. The oldest wheels found in the Netherlands date to the mid-3rd millennium[297] and were deposited in waterlogged locations, some were even specifically produced for deposition (Van der Waals 1964a). One was deposited near a supposedly ceremonial trackway which ended in the middle of the bog (see Chapters 3 and 5). In Yamnaya burials, wheels or carts were even included in the grave (Anthony 2007, 362-363; Kaiser and Winger 2015).

The dispersed distribution of barrows in the landscapes (in the LNA often in alignments that could continue for many kilometres) required one to physically travel through the heathlands in order to visit or commemorate one's ancestors (see Arnoldussen and Drenth 2015; Bourgeois 2013). The graves themselves were aligned with the sun, travelling the sky (see Chapter 7). Throughout the antique world the movement of the sun is linked to the notion of travelling to the afterlife or through the underworld.[298] The objects in LNA graves were either obtained through travel and exchange and/or were needed to maintain or establish long-distance contacts. The

296 While discussing a specific grave that contained a set of possible arrowhead blanks, Turek (2004, 155) also noted a similarity with the find of Ötzi and asserted that perhaps some of the equipment in Bell Beaker graves could be seen as equipment for a long journey.

297 Date ranges span the period between 2900-2200 BCE, based on seven dates published in Lanting and Van der Plicht 2000.

298 Carlin (2018, 213), who investigated the BB complex in Ireland, also relates the BB 'costume' with the notion of travel, whether actual or mythological. Although his interpretation is largely in line with the interpretation presented in this thesis, it must be noted that the Irish dataset is different in the fact that the objects in the BB 'package' are not found in graves but deposited elsewhere in the landscape. The manner in which people interpreted and subsequently dealt with these BB related objects is thus comparable but different. Perhaps this is, in part, related to the fact that Ireland is an island and the notion of travel may thus have had very different connotations. It is also of interest to note that Carlin and I both developed these interpretations independently from each other and only first discussed these during the 2018 EAA conference in Barcelona.

items in LNB graves referred to a specific social front employed in social interaction (see Chapter 9). In both periods they were moreover produced in supra-regional styles. These were not items meant to celebrate or commemorate small, isolated communities. Quite the contrary, they were meant to signal a belonging and relatedness to people far and wide.

10.3 Have a drink

Although Ötzi did bring birch-bark containers, probably containing food, on his travels, he did not bring heavy and fragile ceramic containers. If we interpret the Bell Beaker grave as a set of items related to travelling – as part of a specific social front adopted by travellers to signal a specific identity recognizable by others – the presence of beakers needs further exploration. Throughout the 3rd millennium BCE, the Beaker is the most frequently occurring type of object in Dutch graves. Although produced in international styles, there is no evidence to support the beakers themselves were subject to widespread international exchange (see Chapter 4). Given their fragile nature they furthermore do not seem like practical containers to take along on travels (but see Heitz and Stapfer 2017). So, how does the Beaker fit in this interpretive model?

A few years ago (2011) I was travelling through Morocco with my sister who at the time was an anthropology student. Luck would have it that while we were crossing the Atlas mountain range south-east of Marrakech it began to rain. Being an arid country it hardly ever rains, meaning the infrastructure was poorly prepared for this downpour. The road quickly became covered with mud. Large boulders and rocks, resulting from mudslides, lay scattered across the road. Utility poles had collapsed and electricity cables lay next to and partly on the road. At some points streams of water had obscured the road entirely. Slowly and carefully we drove along, around and through these obstacles until we spotted a car parked on the side of the road with a man and a younger boy waving and signalling us. It appeared their car had broken down in the midst of this turmoil and they asked if we could take the boy with us to the next town in order to get help. We agreed and drove on to the town which by coincidence was also our next planned stop. When approaching the town, the boy directed us to go to a large, apparently luxurious house, on the edge of the town with a large 4×4 parked on the driveway. The boy explained that this was the house of his uncle and summoned us to come along as his uncle would surely like to receive us to thank us for our assistance.

Upon entering the house, we were directed to a room which seemed to have been specially designed for receiving guests. It was a long and narrow rectangular room with nice carpets, benches all along the sides of the wall and in the middle a large, long rectangular table which covered most of the available floor space. Basically, the only thing you could do in this room was walk around the table and sit. After we were seated, we were kept waiting for about 20 minutes, the boy was sitting with us silently, waiting for his uncle to arrive. After a while his uncle appeared, dressed in fine clothing and bringing with him a silver platter with cups and a large elaborately decorated and elegantly styled pot of mint tea. He started with thanking us for helping out his nephew and explained we were expected to share tea with him. As we were not familiar with this ritual, he explained that he would first pour in (from

quite a height increasing the dramatic effect of the whole performance) a half cup for me. I was supposed to try it and approve the quality of the tea, after which also the other cups were filled and mine was topped-up.

Upon finishing the first round our host began explaining that this tea ceremony was their way to formally receive guests. He explained that his family were caravan traders who would cross the Sahara Desert to Timbuktu. After we were formally introduced, we were invited to see the rest of the house, to visit his warehouse and look at his trade goods and we were invited to come back later that evening so he could arrange for us to go see an oasis in the desert. This unexpected experience started with a formal tea ceremony, where we – being the guests – were received by a host wearing formal attire, who used a particular set of material culture and drinks to welcome us in a highly standardized/ritualized manner. And eventually it resulted in the exchange of goods, a decorated ceramic (fruit) bowl that I use to this day and which often serves as the topic of conversation when I am myself hosting guests and tell this story.

It is at this point that we return to our beakers. The aim of our prehistoric travellers was not to go out into the great wide open and to merely camp in nature. The aim was to go meet and visit people in faraway places, to visit relatives who lived far away, to obtain exotic knowledge and goods. This also means that an essential part of travelling was to be *received* by others, to be a *guest* and for others to be a *host*. The concept of a social front does not only mean that the guest would present him/herself in a particular standardized and widely shared and accepted manner, it also means that the host did the same. A social front does not merely relate to one's dress or paraphernalia, it also includes other patterns of behaviour, speech and language, but also setting. Receiving someone in a specially dedicated room and offering tea for example would be part of this.

I propose that the widespread occurrence of these highly standardized beakers is part of just such a practice. They were part of a widespread social front and practice that facilitated and regulated travellers, adorned with widely recognizable symbols, to be received by hosts in a standardized manner.[299] By employing this stereotypical front, the host would know upon seeing a stranger that this stranger adhered to a shared custom, a shared notion and cultural idiom of guest-host relations. The host would know what the stranger expected, a shared beaker with beer or mead[300] (see Chapter 4), and likewise the stranger would know it would be safe to approach a potential host. Even if both persons would have never met before, this custom would structure their first encounter and create a safe environment to start social interaction and exchange.

10.4 Guests and hosts

The main part of this thesis and most of the interpretations presented above were already written down years ago[301], well before the recent discoveries in the field of aDNA. It was not until these papers were published that I started reading about this

299 Sherratt (1987, 379) proposes a similar "convention of hospitality" when discussing the rise of drinking cups in the Carpathian Basin in the 4th millennium BCE.

300 A Proto-Indo-European derivative of the term for honey is **medhu-* referring to mead, a drink that probably played a prominent role in PIE rituals (Anthony 2007, 90).

301 The funding for this research-project ran from 2008 to 2012, after that period the research was largely stalled and was picked up again in 2016 to its completion.

proposed 3rd millennium BCE influx of Steppe peoples that were moreover associated with (Proto-)Indo-European languages. As a result of this I started reading about this subject as well, and it was at this point that some fascinating connections between archaeology and linguistics could be made.

So far, the interpretation of the Beaker as a proxy for a widespread drinking-ceremony linked to a formal, widely shared, social front intended to structure the interaction between people – travellers – who were *strangers* but through this interaction became *guests* and *hosts*, was purely based on archaeological research and data. However, while reading about Proto-Indo-European (PIE) it appeared our colleagues from Comparative Linguistics had reconstructed a PIE word that seems to exactly describe this particular practice: **ghos-ti-*.

David Anthony (2007, 31; 304) explains that the oldest Germanic cognates for the word *guest*[302] are thought to derive from the Proto-Indo-European word **ghos-ti-* which probably meant both *stranger*, *guest*, and *host* and referred to a *system of hospitality* between strangers, rather than referring to one of its roles specifically. As I do not claim to have expert knowledge in this field, I will explain this concept by citing Anthony (2007, 304)[303]:

> "The Yamnaya horizon is the visible archaeological expression of a social adjustment to high mobility – the invention of the political infrastructure to manage larger herds from mobile homes based in the steppes. A linguistic echo of the same event might be preserved in the similarity between English *guest* and *host*. They are cognates, derived from one PIE root (**ghos-ti-*). (A 'ghost' in English was originally a visitor or guest.) The two social roles opposed in English *guest* and *host* were originally two reciprocal aspects of the same relationship. The late PIE guest-host relationship required that 'hospitality' (from the same root through Latin *hospes* 'foreigner, guest') and 'friendship' (**keiwos-*) should be extended by hosts to guests (both **ghos-ti-*), in the knowledge that the receiver and giver of 'hospitality' could later reverse roles. The social meaning of these words was then more demanding than modern customs would suggest. The guest-host relationship was bound by oaths and sacrifices so serious that Homer's warriors, Glaukos and Diomedes, stopped fighting and presented gifts to each other when they learned that their *grandfathers* had shared a guest-host relationship. This mutual obligation to provide 'hospitality' functioned as a bridge between social units (tribes, clans) that had ordinarily restricted these obligations to their kin or co-residents (**h4erós-*). Guest-host relationships would have been very useful in a mobile herding economy, as a way of separating people who were moving through your territory with your assent from those who were unwelcome, unregulated, and therefore unprotected. The guest-host institution might have been among the critical identity-defining innovations that spread with the Yamnaya horizon."

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302 Gothic *gasts*, Old Norse *gestre*, Old High German *gast*, Proto-Germanic **gastiz* (Anthony 2007, 31).

303 I have discussed this approach and Anthony's explanation of **ghos-ti-* with Dr. Tijmen Pronk (lecturer in Comparative Indo-European Linguistic at Leiden University).

And he (Anthony 2007, 340) continues to state that:

> "…with the evolution of the Yamnaya horizon, steppe societies must have developed a political infrastructure to manage migratory behavior. […] One of those might have been the creation of mutual obligations of 'hospitality' between guest-hosts (**ghos-ti-*). This institution […] redefined who belonged under the social umbrella, and extended protection to new groups. It would have been very useful as a new way to incorporate outsiders as people with clearly defined rights and protections, as it was used from the *Odyssey* to medieval Europe."

It must be noted that it is unlikely that Bell Beaker people were speakers of Proto-Indo-European, because by 2500 BCE PIE already was a dead language (Anthony 2007, 58). However, also in the Indo-European daughter-languages this concept would have continued to exist. The importance of the Guest-Host relationship and the mutual obligations this created can be found throughout the antique world. In Ancient Greece the term *Xenia* refers to the concept of hospitality where strangers have the right to protection (Herman 2002). This in part came from the belief that strangers/travellers were under the protection of Zeus and could even be *deities in disguise* (Still 2010, 149). Violation of the guest-host relationship is a major theme in the writings of Homer. For example, in the Iliad, the Trojan war was sparked by Paris who betrayed his host Melenaos by stealing his wife Helen. Likewise, in *The Odyssey*, Penelope has to host her many suitors during her husband's absence. The suitors abuse their hosts' hospitality and in the end are killed when Odysseus returns home. Also in Biblical context this theme is well known. For example Lot, who lives in Sodom, receives two guests (who are interestingly *angels in disguise*). The men of the city gather in front of Lot's house and demand that Lot gives over his guests, presumably to rape them. Being a good host, Lot refuses and offers his daughters instead (Genesis 19:8).[304] The notion of hosting guests and offering them protection is also present in the highest levels of modern society where nation states host representatives of other nation states – ambassadors – who, being guests, are granted diplomatic immunity.[305]

It can thus be assumed that the concept of **ghos-ti-* would have been familiar in Bell Beaker times, given the fact that it was a well-established institution among the speakers of Proto-Indo-European (who pre-dated the Bell Beaker period), and also a well-established phenomenon in later times.

It is also interesting to note that in both the example of Lot and the Ancient Greek notion of *Xenia* we find the presence of deities in human form, posing as strangers. Although one could be critical to the use of these two very particular examples, the notion of strangers being related to supernatural beings (*e.g.* Gods, Ancestors) is actually

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304 This is a continuing theme also in modern popular literature, see for example the novels in the Game of Thrones series by George R.R. Martin in which 'guest right' is a sacred ancient custom. An interesting quote from this book series is "*we make peace with our enemies, not our friends*". This underlines that a system of hospitality by no means implies there is no conflict or war. In a Utopia devoid of violence and conflict there would not be a need for diplomats.

305 A similar system existed in Ancient Greece called *proxenia*, where a citizen could live in one city-state while representing the interests of another city-state while enjoying immunity (Jönssen and Hall 2005, 64).

a very common theme in anthropology (Helms 1988, 4; 1998, 37). The concepts of 'long ago' and 'far away' are connected and a geographically distant place can therefore be associated with various superior, ideological or cosmological notions (Helms 1998, 148). According to Helms (1988, 4) horizontal space and distance can be perceived as sacred or supernatural, the home of gods, ancestors or spirits in traditional societies. If that is the case, it follows that strangers coming from afar may indeed have derived from such mythical places and in fact be supernatural beings themselves. These notions are thus not solely present in Indo-European mythology, but are actually a widespread concept found in various traditional societies. There is even reason to believe that these concepts were present in Proto-Indo-European mythology. Kristiansen and Larsson (2005, 264) describe the myth of the Divine Twins quite extensively (paraphrasing Ward 1968). These figures are sons of the sky-god, they are connected to travelling the skies, circling the earth in a day, but are also connected with travelling the sea. They are the gods of light and break open the daylight for their sister the sun-goddess. Apart from their connection to travel and the sunrise, they are also considered to be "close to humans, having wandered among them" (Kristiansen and Larsson 2005, 264). Given the fact that these figures are present in various Indo-European pantheons (*e.g.* the Aśvins in the *Rig-Veda* and the Dioskouroi in Greek mythology) it is considered likely that they have a Proto-Indo-European origin (also see Kristiansen 2010).

The role of the guest-host relationship in Indo-European society, as well as the connection between strangers and gods is perfectly summarized by an early 'ethnographic' description made by Diodorus of Sicily (1st century BCE) when he describes the attitude towards strangers among the – Indo-European – Celtiberians:

> "As to their manners, they are very cruel towards their enemies and other malefactors, but very courteous and civil to strangers; for to all such, from what place soever they come, they readily and freely entertain them, and strive who shall perform the greatest office in kindness and respect. Those who are attended upon by strangers they commend and esteem them as friends of the gods" Diodorus of Sicily (5, 33; cited by Sánchez-Moreno 2001, 392).

10.5 Souvenirs and passports

Today, when you go on a long travel to exotic places, the most important thing to take with you is your passport. An object legitimizing the claim to your identity and origin. Upon returning home your friends and family all want to hear of your adventures and see the photos and souvenirs you collected along the way. Travel is not merely about the movement of people, it is also about the objects they bring along, interact with and take back home again.[306]

The concept of **ghos-ti-* is essentially about the relationship between people, between strangers forging a reciprocal bond. Given that from the offset this thesis fo-

306 Parker Pearson *et al.* (2019a, 452) mention an example of this. A British Bell Beaker burial found close to the Amesbury Archer, known as the Archer's 'Companion'. His isotopic history suggests that he may have travelled some distance but returned over the course of his life and was buried where he grew up.

cussed on the role of objects, I would like to bring this discussion back to these objects and explore what role objects may have played in forging these relationships.

In the first place objects play a role in establishing relationships by being used to construct particular widely recognized fronts. This included items such as amber ornaments, wristguards, particular sets of clothing, but also distinctively styled pottery used for receiving guests. Objects, however, were not merely used to establish relationships, they were also part of the goal, to obtain rare and exotic materials. The most obvious example would probably be metal: gold and copper. As was discussed in Chapter 6, the gold and copper items in LNB graves are extremely rare, but were produced in very particular styles. Copper metal signatures furthermore show that they came from the same 'metal-pool' or metal circulation zone. This all indicates that it was not the metals themselves that were so rare, but rather their inclusion in the grave. Copper knives, axes and gold ornaments must have been much more plentiful than the grave records lead us to believe.

The objects obtained during such exchanges would not only have been desirable for their intrinsic value. The concept of **ghos-ti-* indicates the forging of relationships, of bonds, between guests and hosts, and the objects exchanged captured those relationships. They became the memento of these travels, they served to legitimize the claims of the traveller, both during the journey itself as well as when returning home.

Sánchez-Moreno (2001) presents a fascinating account with respect to the Celtiberians (mentioned above) who used so-called *tesserae hospitalis*. These were small portable tablets of bronze or silver, some of which were engraved with early writing. These tablets could have the form of animals, but some were even in the shape of two hands holding each other (as if they were shaking hands). The engraved writings indicated agreements between strangers: guest and hosts, either representing individuals, families or cities (Sánchez-Moreno 2001, 393-398). From those tablets that mention place names it is clear that these relations spanned distances of up to 400 kilometres, across rivers and mountain chains. Such tokens would perhaps serve to legitimize claims of a traveller – while traveling through the domains of others – that he or she was *en route* to visit a host, which would perhaps invoke some level of protection. Back home it would serve to legitimize claims of the relationships established. But such items would also be transferable in time. For such long journeys it is entirely plausible that any individual would only be able to make such travels a limited number of times during his or her life-time. If these relations were to be maintained during longer timespans it would require others, perhaps sons or daughters, to maintain such relationships after their parents had died. In such a situation a recognizable object could be instrumental to legitimize claims of pre-existing relations and obligations. As mentioned above, Homer's warriors, Glaukos and Diomedes, stopped fighting and presented gifts to each other when they learned that their *grandfathers* had shared a guest-host relationship (Anthony 2007, 304).

Objects thus played a central role in establishing contact between strangers, forging bonds between guests and hosts and perhaps even transferring these relations to future generations in order to maintain such relations through time.

10.6 Conclusions

This chapter set out with the observation that there is a striking resemblance between the objects generally associated with Bell Beaker graves and the objects found scattered around Ötzi, the *in situ* frozen traveller. It was suggested that people buried in Bell Beaker graves were dressed and equipped as travellers and that traveling played a hugely important role in the 3rd millennium BCE. Recent genetic research has shown evidence of large migrations and high levels of mobility associated with genetically distinct groups of people. In addition, the concept of traveling also seems to have played an important role in cosmological terms as evidenced for example by the deposition of disc wheels in peat bogs. The connection between travelling, carts and graves is especially apparent in Yamnaya graves which could include wheels or even complete carts as well as horses (Anthony 2007, 363; Kaiser and Winger 2015).[307]

There are two sides to the importance of travelling. On the one side there is the traveller who sets out from home in search of new relations, goods and knowledge. But on the other side there is also the host who receives the traveller as a guest. The use of a stereotypical front employed throughout Europe indicates a general understanding of how to present oneself to potential hosts and simultaneously how to receive guests. The role of the beaker would have played a pivotal role in the latter, receiving guests by offering drinks. This narrative was entirely constructed based on the interpretation of the archaeological evidence presented in this thesis. This interpretation, however, can be corroborated by the work of our colleagues from the field of Comparative Linguistics who reconstructed a PIE word – **ghos-ti-* – which meant simultaneously *stranger*, *guest* and *host* and referred to a system of hospitality.

Hospitality and the rules structuring it were hugely important and can be found throughout Indo-European cultures and various examples were presented, including the writings of Homer, Ancient Greek culture and mythology, Biblical texts or Roman historians describing practices among the Celtiberians. The importance of receiving guests, offering them protection as a way of forging relations or alliances between people far and wide is moreover still in use today, for example in the form of diplomats who are hosted in foreign countries, treated as guests and are granted diplomatic immunity.

It was posited that the items found in Bell Beaker graves are the material remnants of a standardized and widely shared social front and drinking ceremony that played a central structuring role in this system of hospitality. The role of these objects in life were to connect people over vast distances in space (horizontal axis). By including them in the grave they served a similar purpose connecting the living and the dead and the recently deceased to their ancestors far away in time (vertical axis).

307 In cultures around the world death is associated with the notion of travel or the making of a journey (Van Gennep 2004).

11

Time travel

It was presented in Chapter 2 that there is a difference between the 'use life' of things (*i.e.* the things that happened to an object) and Kopytoff's (2008) concept of 'biography'. The latter refers to the cultural appreciation of a use life, whether or not it adheres to peoples' mental template of what is a 'good life'. In an *idealized biography,* particular life trajectories are deemed desirable, good and something to aim for, while others are the opposite and must be avoided. A good example of this is the recent (2018) event at an auction at Sotheby's (London) where a painting by the artist Banksy self-destructed shortly after the hammer came down.[308] In *our* cultural appreciation of works of art, these constitute things of value that need to be carefully preserved. Therefore, this act of destruction made headlines around the world. This is not what is *supposed* to happen to such an object.

Looking at the objects from graves it is apparent that in some cases these things had very specific use lives. The LNA northern flint blades, for example, came from afar, were involved in travel and exchange, and mostly show no traces of wear. Especially the latter observation is important because there are countless activities that can result in a myriad of wear traces, while there is only a limited range of possible options in an object's life that will result in no observable traces.[309] The fact that *as a group* these objects all share this same trajectory or itinerary indicates that there was a widespread cultural understanding of what was supposed to happen (or actually *not* happen) to these blades. This is where we are no longer dealing with the individual use lives of individual objects, but rather with the cultural biography of a class of objects. As such, there is a strong similarity between these northern blades and the ceremonial northern flint axes of the preceding Funnel Beaker culture. These objects were also never used, never intended to be used, had the same geographic origins, were exchanged over vast distances to be deposited in special contexts (Wentink 2006a; 2008). In a way, their ultimate fate was already determined from the moment they were produced.

This, however, does not apply in the same way to all grave goods. Objects such as axes and wristguards were all used in a particular manner, but this is somewhat self-evident. Although it is important that it could be attested that flint axes were used for chopping wood, it was not a particularly unexpected revelation. These objects

308 See for example the Oct. 6 article in The Guardian by Chris Johnston.

309 Essentially this is thus a low entropy situation (in terms of the second law of thermodynamics), which is hard to maintain as naturally entropy increases. There must thus have been limiting principles preventing the things that *could* happen from happening.

were designed for a specific purpose, so it would be somewhat easy to claim that these objects too had a 'cultural biography' based on their use lives. In fact, it appears that a very different, albeit related, transformation is at play here. This is best illustrated by the metal finds. It has already been argued that despite their overall scarcity in graves, they must have been much more plentiful than is generally assumed. The existence of a 'metal pool' indicates that in, for example, 99 out of 100 times a worn down copper knife or axe would 'end' its life in the melting pot to be recycled (see also Needham 2002; Section 6.5). Hence the 'normal' use life of a copper object would not involve deposition in the ground. Only in rare circumstances was it decided to put such an object in a grave, or in a waterlogged location. This was not the norm. So, is this analogous to the event of Banksy's self-destructing painting?

No, it is not. The example of the Banksy painting was a unique event, something that was unexpected and had never happened before. But this is not the case with the objects in graves (or hoards). Although these events were rare, they were structured! Only rarely was it decided to include copper items in a Bell Beaker grave, but if they were, only *specific types of copper objects* were included, *i.e.* tanged daggers. Copper axes, in contrast, were deposited elsewhere in the landscape. Although deposition was a deviation from the normal itinerary of such an object (recycling), there were apparently events, conditions or circumstances in which a decision was made to deviate. But this happened in accordance to generally upheld rules, we can therefore speak of *structured deviation* (see Fig. 11.1). In that sense Kopytoff's concept of cultural biography does apply but in a sort of dual manner. A copper axe has a normal and expected use life or cultural biography (casting – use and exchange – recycling), but in certain circumstances such an object is torn away from its normal itinerary to follow an alternative, but equally structured path ending in deposition in particular places in the landscape.

In a way, this is not at all dissimilar to the manner in which the dead themselves were treated. Although barrows can still be seen today, dotting the landscape, there are actually far too few of them to account for all the people that must have lived. It is generally assumed that only a (very) small percentage of people were interred in a burial mound (Bourgeois 2013, 11; Lohof 1994, 113). This effectively means that under normal circumstances the dead were treated in such a manner that would leave them invisible to archaeologists.[310] This would have been the norm. Only in exceptional circumstances was a member of the community selected to be treated differently. But if so, this alternative path was guided by the norms and conventions of the barrow-tradition. Hence, the term *structured deviation* applies both to the dead themselves and the objects that accompanied them.

None of these things were 'special' or 'out of the ordinary' in their own right. It was only by selecting them, combining them, and putting them in a different context that something special was created. Actually, by placing them in a grave they literally became *out of the ordinary*. During its use life an axe may have simply been an axe, but by the act of putting it in a grave it was transformed it into a symbol. A type of object

310 This also has implications for the recent aDNA studies. These graves did not simply reflect the average population, instead, specific objects were selected to accompany specific persons to be buried in a specific manner. It would thus be questionable to what degree the aDNA extracted from these exceptional graves can be used to model the genetic make-up of the general population.

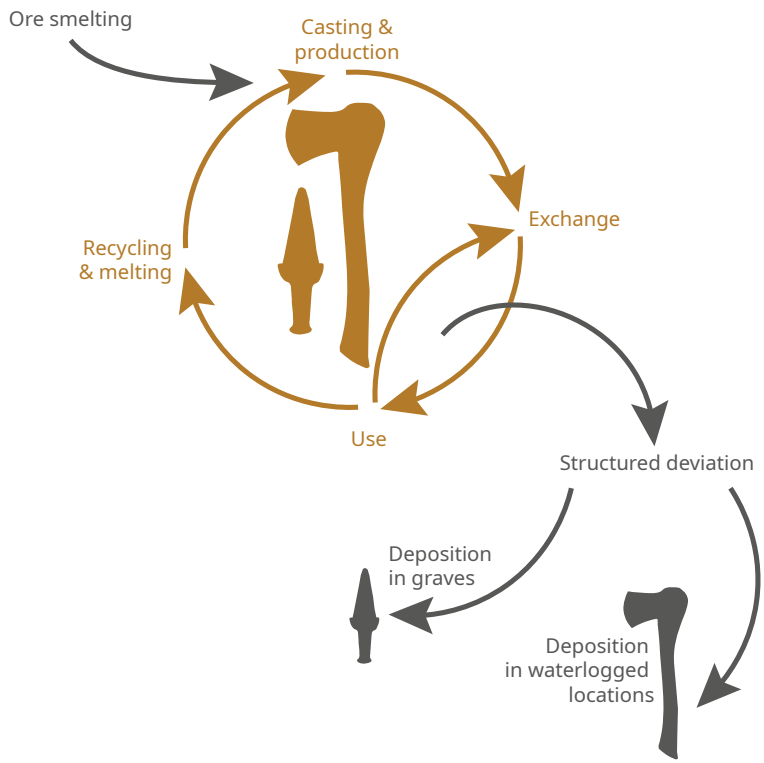

Fig. 11.1 Structured deviation: the normal life-cycle of metal objects is depicted in yellow, under specific circumstances, specific objects could be selected to follow a specific alternative itinerary

that could only be combined with other specific things in that context, but not others. By doing so a new meaning was created. As a practice, this is very much reminiscent of the manner in which fronts are created. As Goffman (1959, 25) stresses, it is never the case that a front suited for a specific situation is solely composed of unique elements that are exclusively used in that situation. Instead, a front is composed of individual elements that can be used in different situations, albeit in different combinations or configurations. This is not to say that graves *are* fronts, but rather that they share a similar cultural logic in how they are composed. Existing elements – objects, persons, places, practices – are brought together in unique and/or exclusive combinations to create something meaningful.

The grave was not simply a place to deposit 'riches' or exotic, rare or otherwise 'prestigious' objects. Only certain things, in certain combinations could be included. From 'a distance' – whether in time or space – this gave the impression of a uniform type of behaviour, of *sets* and a commonly shared cultural practice. As a result of this a Bell Beaker grave is easily recognized by an archaeologist and can be distinguished from a CW grave. But this would have had the same effect in prehistory. People from far and wide would have been able to recognize and appreciate the uniformity of these practices. Stereotypes, just as stereotypical behaviour, are designed to be easily shared, they become a 'collective representation' (Goffman 1959, 27). It results in a perceived

notion of being part of a community that shares symbols and makes sense of things in a similar way (Cohen 1985, 15). But sharing the same symbols is not the same as sharing the same meaning. The power of symbols lies foremost in their ability to represent different meanings to different individuals (Stone 1970, 395). In Chapter 2 the example of a wedding ring was mentioned. Although the concept of 'marriage' is shared widely, the actual definition and appreciation of what a marriage is can vary greatly. People will see a wedding ring on your finger, project their own understanding of the concept and assume you share their values. This is how a sense of community is created (Cohen 1985).

It has been argued in previous chapters that *travel* is a central concept in 3rd millennium BCE ideology. The objects in graves were either involved in long-distance exchanges themselves or were the tools (whether in physical or social sense) to establish and maintain long-distance relations with *others*. Especially the Bell Beaker grave set was argued to refer to travellers, to a system of guests and hosts. But this does not mean that everyone in 3rd millennium BCE Europe was travelling. In fact, the mere observation that we see regional styles in Bell Beaker pottery (for example the Veluvian beakers) indicates that most people stayed at home. This can not only be inferred from regional styles in material culture but also common sense, these people were farmers. They ploughed fields, raised crops, cultivated cereals. *Some people,* however, ventured out. It was through these people that exotic objects, materials and knowledge reached local communities. It is possible that these travels were undertaken by people in specific life phases (for example early adulthood?) or by specific types of persons. Irrespective, however, of *who* was travelling and how often this occurred, as an activity it was hugely important and it was this activity that is reflected in Late Neolithic funerary traditions. Whether it was through adorning the dead with items reflecting a widely shared social front, providing them with the tools to clear the land and built carts, or aligning their grave pits on the sun traveling the skies.

In life, the people that travelled the world were the persons through whom local communities were connected to *distant others in space*. In death, these people were selected to forge and maintain relationships between local communities and the world of the spirits and ancestors, the *distant others in time*. To become time-travellers.

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Appendices

The list below contains a highly summarized description of the graves included in the dataset used for this research. Note that that AMP identifiers can occur multiple times when a barrow contained more than one grave. Also many graves (mostly Bronze Age) were initially included in the database, but were not included in the dataset of the current thesis (see Chapter 1). The full dataset used for this thesis has been deposited in EASY, the online archive of Data Archiving and Networked Services (DANS). It contains both a concise and easy to use excel spreadsheet with basic documentation of the individual finds, as well as csv files for all the tables in the (Access) research database.

It must be noted that there are a myriad of potential problems when working with old published excavation data. It would therefore be recommendable to contact the author/compilor of any such dataset, including this one.

The full dataset is available at https://doi.org/10.17026/dans-227-jtbt

AMP code	site type	period	name	town	province
AMP0001	barrow	LNA CW		Ermelo	Gelderland
AMP0002	barrow	LNA	heuvel 3	Garderen	Gelderland
AMP0002	barrow	LNA	heuvel 3	Garderen	Gelderland
AMP0002	barrow	LNA	heuvel 3	Garderen	Gelderland
AMP0004	barrow	LNB BB	heuvel 3	Schaijk	Noord Brabant
AMP0005	barrow	LNB BB	heuvel 1	Oss	Noord Brabant
AMP0035	barrow	LNA CW	heuvel 1	Swalmen	Limburg
AMP0036	barrow	LNB BB (maritime)	heuvel 2	Swalmen	Limburg
AMP0037	barrow	LNA AOO	heuvel 3	Swalmen	Limburg
AMP0038	barrow	LNA AOO	heuvel 4	Swalmen	Limburg
AMP0039	barrow	LNA AOO	heuvel 6	Swalmen	Limburg
AMP0041	barrow	LNA CW	heuvel 8	Swalmen	Limburg
AMP0079	barrow	LNB BB (maritime)	Mol Grenspaal 194	Mol	Belgium
AMP0081	barrow	LNB BB (Veluvian)	tumulus I	meerlo	Noord Brabant
AMP0082	flatgrave	LNB BB (Veluvian)	vlakgraf haps	haps	Noord Brabant
AMP0094	barrow	LNA AOO	Koningslust Archis: 28568	Helden	Limburg

AMP code	site type	period	name	town	province
AMP0095	barrow	LNA AOO	Weyersberg	Baexem	Limburg
AMP0100	barrow	LNA AOO	Millert	Nederweert	Limburg
AMP0101	barrow	LNA AOO	Archis: 29697	Doorwerth	Gelderland
AMP0117	barrow	LNB BB	graf 2	Nijmegen	Gelderland
AMP0120	barrow	LNB BB (maritime)	graf 5	Nijmegen	Gelderland
AMP0125	barrow	LNB BB (Veluvian)	heuvel 1	Overasselt	Gelderland
AMP0130	barrow	LNB BB (Veluvian)	Gold find Bennerkom	Bennekom	Gelderland
AMP0131	barrow	LNA CW	heuvel 1 (H051)	Vaassen	Gelderland
AMP0132	barrow	LNB BB (Veluvian)	heuvel 2	Vaassen	Gelderland
AMP0133	barrow	LNA CW	heuvel 3	Vaassen	Gelderland
AMP0133	barrow	LNB BB (Veluvian)	heuvel 3	Vaassen	Gelderland
AMP0134	barrow	LNB BB (Veluvian)	heuvel 1	Maarsbergen	Utrecht
AMP0135	barrow	LNB BB (Veluvian)	heuvel 1	Bennekom	Gelderland
AMP0135	barrow	LNB BB (Veluvian)	heuvel 1	Bennekom	Gelderland
AMP0136	barrow	LNB BB (Veluvian)	heuvel 2	Bennekom	Gelderland
AMP0146	barrow	LNA CW	heuvel 3	Soesterberg	Utrecht
AMP0151	barrow	LNB BB	klokbekerweg	Epe	Gelderland
AMP0153	barrow	LNB BB	heuvel 1	Hilversum	Noord Holland
AMP0161	barrow	LNB BB	heuvel 9	Hilversum	Noord Holland
AMP0163	barrow	LNA AOO	heuvel 2	Emst	Gelderland
AMP0164	barrow	LNA	heuvel 3	Emst	Gelderland
AMP0164	barrow	LNA	heuvel 3	Emst	Gelderland
AMP0165	barrow	LNB BB (Veluvian)	heuvel 4	Emst	Gelderland
AMP0168	barrow	LNA AOO	Schenkenshul	Hoenderloo	Gelderland
AMP0168	barrow	LNB BB (maritime)	Schenkenshul	Hoenderloo	Gelderland
AMP0169	barrow	LNB BB	Nieuwelandsweg 35	Amersfoort	Utrecht
AMP0170	flatgrave	LNB BB (Veluvian)	Hoog Buurlo	Apeldoorn	Gelderland
AMP0171	barrow	LNB BB (Veluvian)	heuvel 1	Bennekom	Gelderland
AMP0172	barrow	LNA CW	heuvel E	Uddelermeer	Gelderland
AMP0172	barrow	LNB BB	heuvel E	Uddelermeer	Gelderland
AMP0173	barrow	LNB BB (maritime)	heuvel D	Uddelermeer	Gelderland
AMP0173	barrow	LNB BB (Veluvian)	heuvel D	Uddelermeer	Gelderland
AMP0176	barrow	LNB BB	Harskamp	Ede	Gelderland
AMP0176	barrow	LNB BB	Harskamp	Ede	Gelderland
AMP0177	barrow	LNA	heuvel I	Ermelo	Gelderland
AMP0178	barrow	LNA CW	heuvel II	Ermelo	Gelderland
AMP0179	barrow	LNA CW	heuvel III	Ermelo	Gelderland
AMP0189	barrow	LNB BB	heuvel XX	Ermelo	Gelderland
AMP0192	barrow	LNA CW	heuvel XXVIII	Ermelo	Gelderland
AMP0193	barrow	LNB BB	heuvel 1 Remouchamps	Ermelo	Gelderland
AMP0194	barrow	LNB BB	heuvel 2 Remouchamps	Ermelo	Gelderland
AMP0204	barrow	LNB BB	heuvel V	Ermelo	Gelderland
AMP0210	barrow	LNB BB	heuvel 2	Hilversum	Noord Holland

AMP code	site type	period	name	town	province
AMP0211	barrow	LNA CW	heuvel 3	Hilversum	Noord Holland
AMP0214	barrow	LNA CW	heuvel 6	Hilversum	Noord Holland
AMP0216	barrow	LNA CW	heuvel 8	Hilversum	Noord Holland
AMP0217	barrow	LNB BB	heuvel 9	Hilversum	Noord Holland
AMP0218	barrow	LNB BB	heuvel 10	Hilversum	Noord Holland
AMP0219	barrow	LNA CW	heuvel 1	Ede	Gelderland
AMP0220	barrow	LNA CW	heuvel 1	Heerde	Gelderland
AMP0222	barrow	LNB BB (Veluvian)	heuvel 3	Heerde	Gelderland
AMP0224	barrow	LNA CW	heuvel 5	Heerde	Gelderland
AMP0225	barrow	LNB BB (Veluvian)	heuvel 6	Heerde	Gelderland
AMP0226	barrow	LNB BB (Veluvian)	heuvel 1	Wageningen	Gelderland
AMP0228	barrow	LNA AOO	Archis: 31905	Witrijt	Noord Brabant
AMP0229	barrow	LNA CW	Putten	Putten	Gelderland
AMP0229	barrow	LNB BB	Putten	Putten	Gelderland
AMP0231	barrow	LNA CW	heuvel 2	Soestdijk	Utrecht
AMP0232	barrow	LNA CW	heuvel 1	Lage Vuursche	Utrecht
AMP0233	barrow	LNA CW	heuvel 2	Lage Vuursche	Utrecht
AMP0235	barrow	LNA	heuvel 6	Putten	Gelderland
AMP0238	barrow	LNA CW	heuvel 1	Speuld	Gelderland
AMP0238	barrow	LNB BB (Veluvian)	heuvel 1	Speuld	Gelderland
AMP0240	barrow	LNA CW	heuvel 8	Speuld	Gelderland
AMP0241	barrow	LNB BB (Veluvian)	heuvel 9	Speuld	Gelderland
AMP0242	barrow	LNA	heuvel 1	Ommen	Overijssel
AMP0243	barrow	LNA CW	heuvel 4	Bennekom	Gelderland
AMP0245	barrow	LNB BB (Veluvian)	heuvel 12	Bennekom	Gelderland
AMP0246	barrow	LNA CW	heuvel 22	Bennekom	Gelderland
AMP0248	barrow	LNB BB (Veluvian)	weg naar Harskamp	Ede	Gelderland
AMP0257	barrow	LNA AOO	heuvel 4	Garderen	Gelderland
AMP0259	barrow	LNB BB	doppelhugel	Epe	Gelderland
AMP0260	barrow	LNB BB (Veluvian)	Driesche Berg Heuvel 10?	Ermelo	Gelderland
AMP0261	barrow	LNB BB (Veluvian)	graf 224	Wageningen	Gelderland
AMP0262	barrow	LNA CW	heuvel 8	Steenwijkerwold	Overijssel
AMP0263	barrow	LNA CW	heuvel 4	Steenwijkerwold	Overijssel
AMP0263	barrow	LNB BB (maritime)	heuvel 4	Steenwijkerwold	Overijssel
AMP0264	barrow	LNA CW	heuvel 5	Steenwijkerwold	Overijssel
AMP0264	barrow	LNA CW	heuvel 5	Steenwijkerwold	Overijssel
AMP0265	barrow	LNA CW	LIT: Bloemers 1968, fig.79	Eese	Drenthe
AMP0265	barrow	LNA CW	LIT: Bloemers 1968, fig.79	Eese	Drenthe
AMP0269	barrow	LNB BB	Harenermolen	Haren	Groningen
AMP0270	barrow	LNB BB (maritime)	heuvel 3	Zuidlaren	Drenthe
AMP0273	barrow	LNB BB	Hooghalen tumulus 1	Hijken	Drenthe
AMP0279	barrow	LNA CW	Hooghalen tumulus 8	Hijken	Drenthe
AMP0282	barrow	LNA CW	Hooghalen tumulus 17 / Hijkerveld 43	Hijken	Drenthe

AMP code	site type	period	name	town	province
AMP0288	barrow	LNB BB	Laaghalerveld Tumulus 1 (Lohof 057-2)	Hijken	Drenthe
AMP0289	barrow	LNB BB	Laaghalerveld Tumulus 2	Hijken	Drenthe
AMP0298	barrow	LNA AOO	heuvel 1	Nieuw Roden	Drenthe
AMP0301	barrow	LNA CW	heuvel D	Schipborg	Drenthe
AMP0302	grave	LNA CW	Vlakgraven	Schipborg	Drenthe
AMP0303	grave	LNA CW	Holtkampen	Annen	Drenthe
AMP0304	barrow	LNA CW	heuvel 2	Anloo	Drenthe
AMP0305	barrow	LNA CW	heuvel 1	Anloo	Drenthe
AMP0306	barrow	LNA CW	heuvel z.n. (Jager nr. 11)	Anloo	Drenthe
AMP0307	barrow	LNA CW	heuvel 2 (Jager nr. 12)	Anloo	Drenthe
AMP0315	barrow	LNA CW	Huttenheuvel DMA 1928-IV-2	Eext	Drenthe
AMP0316	barrow	LNA CW	tumulus 2 (Jager nr.22)	Eext	Drenthe
AMP0319	barrow	LNA CW	Eext Visplaats	Eext	Drenthe
AMP0320	barrow	LNA CW	Galgwandenveen 1	Eext	Drenthe
AMP0321	barrow	LNA CW	Galgwandenveen 3	Eext	Drenthe
AMP0322	barrow	LNA CW	Tumulus b Schaapsdijkweg	Eext	Drenthe
AMP0323	barrow	LNA CW	Tumulus c Schaapsdijkweg	Eext	Drenthe
AMP0325	barrow	LNA CW	heuvel 1	Eext	Drenthe
AMP0327	barrow	LNB BB	Kerkweg 3	Eext	Drenthe
AMP0332	barrow	LNA AOO	tumulus Gieterstraat	Eext	Drenthe
AMP0333	barrow	LNA CW	heuvel 1	Eext	Drenthe
AMP0334	barrow	LNA CW	heuvel 2	Eext	Drenthe
AMP0335	barrow	LNB BB	heuvel 3	Eext	Drenthe
AMP0335	barrow	LNB BB	heuvel 3	Eext	Drenthe
AMP0336	barrow	LNA	Eexterhalte grafheuvel nr51	Eext	Drenthe
AMP0337	barrow	LNA CW	Ketenberg	Eext	Drenthe
AMP0337	barrow	LNB BB	Ketenberg	Eext	Drenthe
AMP0340	barrow	LNB BB	heuvel 2	Onstwedde	Groningen
AMP0343	barrow	LNA CW	heuvel 2	Oosterwolde	Friesland
AMP0344	barrow	LNA CW	heuvel 3	Oosterwolde	Friesland
AMP0345	barrow	LNA CW	heuvel 1	Oosterwolde	Friesland
AMP0346	barrow	LNB BB (maritime)	doppelkreisgrabenhugel	Exloo	Drenthe
AMP0347	barrow	LNA CW	Galgenberg	Oosterwolde	Friesland
AMP0349	barrow	LNA CW	Bienenkorbgrab	Onnen	Groningen
AMP0352	barrow	LNA CW	Eppiesbergje	Odoorn	Drenthe
AMP0353	barrow	LNA CW	Tumulus I Borger	Borger	Drenthe
AMP0353	barrow	LNA CW	Tumulus I Borger	Borger	Drenthe
AMP0354	barrow	LNA CW	Tumulus 2 Borger	Borger	Drenthe
AMP0356	barrow	LNA CW	heuvel 2	Borger	Drenthe
AMP0361	flatgrave	LNA CW	Flatgrave Hijken SGC	Hijken	Drenthe
AMP0363	barrow	LNA CW	heuvel 3	Rolde	Drenthe
AMP0365	barrow	LNA CW	heuvel 1	Weerdinge	Drenthe
AMP0376	barrow	LNA CW	drieperiodenheuvel	Zuidvelde	Drenthe

AMP code	site type	period	name	town	province
AMP0379	barrow	LNA	heuvel 3	Emmen	Drenthe
AMP0382	barrow	LNA CW	heuvel 7	Emmen	Drenthe
AMP0384	barrow	LNB BB (Veluvian)	heuvel 9	Emmen	Drenthe
AMP0387	barrow	LNA CW	heuvel 2	Marum	Groningen
AMP0388	barrow	LNA CW	heuvel 3	Marum	Groningen
AMP0393	barrow	LNA CW	heuvel 1	Vaassen	Gelderland
AMP0396	barrow	LNA	heuvel 4	Vaassen	Gelderland
AMP0397	barrow	LNA	heuvel 5	Vaassen	Gelderland
AMP0399	barrow	LNB BB (Veluvian)	heuvel 1	Epe	Gelderland
AMP0400	barrow	LNB BB	heuvel 2	Epe	Gelderland
AMP0400	barrow	LNB BB	heuvel 2	Epe	Gelderland
AMP0401	flatgrave	LNA CW	Vlakgraf Angelso	Angelsloo	Drenthe
AMP0402	flatgrave	LNA CW	Vlakgraf Angelso	Angelsloo	Drenthe
AMP0403	flatgrave	LNA CW	SGC graf ede	Ede	Gelderland
AMP0404	barrow	LNB BB (maritime)	Ede Ginkelse heide	Ede	Gelderland
AMP0406	barrow	LNA	D4	Niersen	Gelderland
AMP0406	barrow	LNA	D4	Niersen	Gelderland
AMP0406	barrow	LNA	D4	Niersen	Gelderland
AMP0407	barrow	LNB BB (Veluvian)	De Vlooienpol	Lunteren	Gelderland
AMP0408	barrow	LNB BB (Veluvian)	Smidsgraf Lunteren	Lunteren	Gelderland
AMP0408	barrow	LNB BB (Veluvian)	Smidsgraf Lunteren	Lunteren	Gelderland
AMP0410	grave	LNB BB (Veluvian)	Beers-Gassel	Gassel	Noord Brabant
AMP0411	barrow	LNA CW	de Kweekerij (ArWn: 42667)	Ede	Gelderland
AMP0411	barrow	LNB BB (maritime)	de Kweekerij (ArWn: 42667)	Ede	Gelderland
AMP0412	barrow	LNB BB (Veluvian)	Gooisteeg Gotu/Hewe	Lunteren	Gelderland
AMP0413	barrow	LNB BB (Veluvian)	de Mottenkuil (ArWn: 41583)	Nieuw-Milligen	Gelderland
AMP0414	grave	LNB BB	Soesterberg	Soesterberg	Gelderland
AMP0418	barrow	LNB BB	Letterse Berg (niet in archis)	Ede	Gelderland
AMP0419	barrow	LNB BB (Veluvian)	Ginkelse Heide 5 (ArWn: 25265)	Ede	Gelderland
AMP0420	barrow	LNB BB (Veluvian)	Wolfheze (ArWn:25442)	Wolfheze	Gelderland
AMP0421	barrow	LNA CW	Renkum (ArWn: 25278)	Renkum	Gelderland
AMP0422	barrow	LNA CW	Renkum (ArWn: 25285)	Renkum	Gelderland
AMP0423	barrow	LNA CW	Renkum (ArWn: 25286)	Renkum	Gelderland
AMP0424	barrow	LNA CW	Renkum (ArWn: 25302)	Renkum	Gelderland
AMP0425	barrow	LNB BB (Veluvian)	Doesburger Heide (ArWn: 41232)	Ede	Gelderland
AMP0426	barrow	LNA CW	Fluitenberg (ArWn: 25376)	Renkum	Gelderland
AMP0427	barrow	LNB BB (Veluvian)	Quadenoord (ArWn: 25294)	Renkum	Gelderland
AMP0428	barrow	LNB BB (Veluvian)	Ede Koeweg (ArWn: 41251)	Ede	Gelderland
AMP0429	barrow	LNA CW	Ginkelse Heide (ArWn: 25271)	Ede	Gelderland
AMP0430	barrow	LNA CW	Ginkelse Heide	Ede	Gelderland
AMP0431	barrow	LNA CW	Ginkelse Heide (ArNr: 25383)	Ede	Gelderland
AMP0432	barrow	LNB BB	Korte Struiken (ArWn:41762)	Stroe	Gelderland
AMP0433	gravpos	LNB BB (Veluvian)	Westendorp	Speuld	Gelderland

AMP code	site type	period	name	town	province
AMP0434	gravpos	LNA CW	Westendorp (ArWn:41936)	Apeldoorn	Gelderland
AMP0434	gravpos	LNB BB	Westendorp (ArWn:41936)	Apeldoorn	Gelderland
AMP0435	grave	LNB BB (Veluvian)	Westendorp (ArWn: 41946)	Gardense Veld	Gelderland
AMP0436	grave	LNB BB (Veluvian)	Westendorp (ArWn: 41951)	Gardense Veld	Gelderland
AMP0438	barrow	LNB BB	Westendorp (Niet in Archis)	Gardense Veld	Gelderland
AMP0439	barrow	LNB BB (Veluvian)	Westendorp (Niet in Archis)	Houtdorper Veld	Gelderland
AMP0440	grave	LNB BB (Veluvian)	Westendorp (ArWn: 41954)		Gelderland
AMP0443	barrow	LNA CW	Westendorp	Gardense Veld	Gelderland
AMP0447	flatgrave	LNB BB (maritime)	BB flatgrave Fochteloo	Fochteloo	Drenthe
AMP0448	flatgrave	LNA CW	SGC flatgrave Fochteloo	Fochteloo	Drenthe
AMP0449	grave	LNB BB	Buinen-Hoornseveld	Buinen	Drenthe
AMP0450	barrow	LNB BB (maritime)	Buinerveld	Buinen	Drenthe
AMP0451	grave	LNB BB		Dalen	Drenthe
AMP0452	gravcis	LNB BB	Steenkist Diever	Diever	Drenthe
AMP0452	gravcis	LNB BB	Steenkist Diever	Diever	Drenthe
AMP0453	barrow	LNB BB	Diever Tumulus II	Diever	Drenthe
AMP0454	grave	LNB BB	DMA 1964-IX-5b	Angelsloo	Drenthe
AMP0455	barrow	LNB BB	LIT: Bloemers 1968, fig.32	Emmen	Drenthe
AMP0456	grave	LNB BB	Emmen 1899	Emmen	Drenthe
AMP0457	flatgrave	LNB BB (maritime)		Noordbarge	Drenthe
AMP0458	barrow	LNB BB		Een	Drenthe
AMP0459	barrow	LNB BB	Tumulus 1937-1	Zuidvelde	Drenthe
AMP0460	flatgrave	LNB BB	Graf A	Rolde	Drenthe
AMP0461	flatgrave	LNB BB	Graf B	Rolde	Drenthe
AMP0462	gravpos	LNB BB		Erm	Drenthe
AMP0463	flatgrave	LNB BB	Grafmonument 1	Holsloot	Drenthe
AMP0464	barrow	LNB BB	Tumulus 13	Oudemolen	Drenthe
AMP0464	barrow	LNB BB	Tumulus 13	Oudemolen	Drenthe
AMP0464	barrow	LNB BB	Tumulus 13	Oudemolen	Drenthe
AMP0466	barrow	LNA CW	Jodenbergje	Zeijerveld	Drenthe
AMP0466	barrow	LNB BB	Jodenbergje	Zeijerveld	Drenthe
AMP0467	barrow	LNB BB	tumulus 1932-I	Elp	Drenthe
AMP0469	barrow	LNB BB	Kerkenbos tumulus 1954-I	Kerkenbos	Drenthe
AMP0470	flatgrave	LNB BB		Oud-Avereest	Overijssel
AMP0471	barrow	LNB BB	tumulus II	Nutterveld	Overijssel
AMP0471	barrow	LNB BB	tumulus II	Nutterveld	Overijssel
AMP0471	barrow	LNB BB	tumulus II	Nutterveld	Overijssel
AMP0472	grave	LNB BB		Zuid-Esmarke	Overijssel
AMP0473	barrow	LNB BB	tumulus IV	Holten	Overijssel
AMP0474	barrow	LNB BB	Kerkedennen	Mander	Overijssel
AMP0475	barrow	LNB BB	heuvel met 'Man van Mander'	Mander	Overijssel
AMP0475	barrow	LNB BB	heuvel met 'Man van Mander'	Mander	Overijssel
AMP0476	barrow	LNB BB	tumulus 1963-71	Mander	Overijssel

AMP code	site type	period	name	town	province
AMP0476	barrow	LNB BB	tumulus 1963-71	Mander	Overijssel
AMP0478	barrow	LNB BB	tumulus XII	Emmen-Angelslo	Drenthe
AMP0478	barrow	LNB BB	tumulus XII	Emmen-Angelslo	Drenthe
AMP0486	barrow	LNB BB	Meteren De Bogen	Meteren	Gelderland
AMP0487	flatgrave	LNB BB (Veluvian)	graf3	Wijchen	Gelderland
AMP0488	flatgrave	LNB BB (Veluvian)	graf2	Wijchen	Gelderland
AMP0489	flatgrave	LNB BB (Veluvian)	graf1	Wijchen	Gelderland
AMP0490	barrow	LNB BB (Veluvian)	Speulderveld Nairac	Speuld	Gelderland
AMP0491	barrow	LNB BB (Veluvian)	Ketsberg/De Lindelaan		Gelderland
AMP0493	grave	LNA AOO	Anlo graf B	Anlo	Drenthe
AMP0494	grave	LNA AOO	Anlo graf C	Anlo	Drenthe
AMP0495	flatgrave	LNA CW	Anlo graf D	Anlo	Drenthe
AMP0496	flatgrave	LNA CW	Anlo graf E	Anlo	Drenthe
AMP0497	flatgrave	LNB BB	Hanzelijn graf 1	Hattemerbroek	Gelderland
AMP0498	flatgrave	LNA CW	Hanzelijn graf 2	Hattemerbroek	Gelderland
AMP0499	flatgrave	LNA CW	Hattemerbroek graf 1	Hattemerbroek	Gelderland
AMP0500	grave	LNB BB	Hattemerbroek graf 2	Hattemerbroek	Gelderland
AMP0501	grave	LNA CW	Hattemerbroek graf 3	Hattemerbroek	Gelderland
AMP0502	flatgrave	LNB BB (Veluvian)	Hattemerbroek graf 4	Hattemerbroek	Gelderland
AMP0503	flatgrave	LNB BB (Veluvian)	Molenaarsgraaf grave 1	Molenaarsgraaf	Zuid Holland
AMP0509	flatgrave	LNA	graf 2	Sleen	Drenthe
AMP0510	flatgrave	LNA CW	graf 3	Sleen	Drenthe
AMP0514	flatgrave	LNA CW	Tumulus X vlakgraf	Emmerhout-Angelslo	Drenthe
AMP0515	flatgrave	LNB BB	vlakgraf 1	Cuijk	Drenthe
AMP0516	flatgrave	LNB BB (Veluvian)	vlakgraf 2	Cuijk	Drenthe
AMP0517	grave	LNB BB	graf	Dalen	Drenthe
AMP0518	flatgrave	LNA CW	graf	Ermelo	Gelderland
AMP0519	flatgrave	LNB BB	grave 1	Ottoland	Zuid Holland
AMP0521	flatgrave	LNA CW	grave 1	Havelte	Drenthe
AMP0522	flatgrave	LNA CW	grave 2	Havelte	Drenthe
AMP0524	flatgrave	LNA CW	grave 4	Havelte	Drenthe
AMP0525	flatgrave	LNA CW	grave 1	Hees	Drenthe
AMP0526	flatgrave	LNA CW	grave 2	Hees	Drenthe
AMP0527	flatgrave	LNA CW	grave	Oosterwolde	Friesland
AMP0528	flatgrave	LNA CW	grave	Putten	Gelderland
AMP0529	flatgrave	LNA CW	grave	Baarn	Utrecht
AMP0530	grave	LNB BB (Veluvian)	grave	Ede	Gelderland
AMP0531	grave	LNA AOO	AOO crematie graf	Vaassen	Gelderland
AMP0532	flatgrave	LNB BB (Veluvian)	BB cremation grave	Beuningen	Gelderland
AMP0533	flatgrave	LNB BB	BB cremation grave	Zutphen	Gelderland
AMP0535	barrow	LNA CW	Tumulus VI Borger	Borger	Drenthe
AMP0536	barrow	LNB BB	grave	Baarn	Utrecht
AMP0538	flatgrave	LNA CW	Vlakgraf Groenlo	Groenlo	Gelderland

AMP code	site type	period	name	town	province
AMP0539	grave	LNA CW	Tumumusbos graf1	Ballo	Drenthe
AMP0540	grave	LNA CW	Tumulusbos graf2	Ballo	Drenthe
AMP0541	barrow	LNA CW	Tumulus 1	Nijlande	Drenthe
AMP0543	barrow	LNA CW	tumulus 4	Holtinge	Drenthe
AMP0546	barrow	LNA CW	Schaarsbergen	Schaarsbergen	Gelderland
AMP0547	barrow	LNA AOO	Aalden III	Aalden	Drenthe
AMP0548	barrow	LNB BB	Klokbekergraf Eelde	Eelde	Drenthe
AMP0549	flatgrave	LNA CW	P14 graf 10	Noordoostpolder	Flevoland
AMP0557	grave	LNB BB (Veluvian)	BB grave Nistelrode	Nistelrode	Noord Brabant
AMP0558	barrow	LNA CW	Graf Lieveren gem Roden	Lieveren	Drenthe
AMP0559	barrow	LNA CW	graf 1	Pesse	Drenthe
AMP0560	barrow	LNA CW	graf 2	Pesse	Drenthe
AVG0009	barrow	LNB BB	DMA 1926-XI-1	Nolde	Drenthe
AVG0011	barrow	LNA	Graf van Buinen; Archis: 214940	Buinen	Drenthe
AVG0023	grave	LNA	DMA 1939-IV-10	Zuidlaren	Drenthe
AVG0094	gravpos	LNA	Archis: 35170	Luyksgestel	Noord Brabant
AVG0121	barrow	LNA	Archis: 17933	Valthermeer	Drenthe
AVG0135	grave	LNA	Archis: 18332	Vlagtwedde	Groningen

Dutch summary

Gedurende het 3de millennium v.Chr. werden in Europa duizenden grafheuvels opgeworpen, die veelal de graven van individueel begraven doden afdekten. Dit staat in sterk contrast met de voorgaande periode waarin de overledenen werden bijgezet in collectieve megalithische graven (in Nederland de hunebedden). Deze overgang naar de begraving van individuele overledenen werd gezien als een aanwijzing voor het ontstaan van sociale ongelijkheid en het opkomen van een elite. De voorwerpen die werden meegegeven in deze graven werden geïnterpreteerd als exotische status-objecten en/of wapens. De nadruk op deze vermeende wapens onderschreef het idee dat strijd/oorlog en sociale ongelijkheid in toenemende mate een belangrijke rol begon te spelen in de ideologie van deze mensen. In recente tijd (begin 2000) begonnen meerdere auteurs deze interpretaties in twijfel te trekken. Onderdeel van de argumentatie was dat de grafgiften in deze graven vaak bestonden uit vaste sets objecten.

Het 3de millennium voor Chr. wordt gekenmerkt door grofweg twee culturele groepen, de Enkelgraf (EGK) (*Corded Ware Culture*, in oudere literatuur soms ook Touwbeker- of Standvoetbeker cultuur genoemd) in de eerste helft van het 3de millennium (ca. 2800-2450 v.Chr.), gevolgd door de Klokbeker (KB) cultuur (*Bell Beaker complex*) in de tweede helft van het 3de millennium (ca. 2450-2000 v.Chr.). In beide periodes werden specifieke sets objecten meegegeven in graven. Hoewel er inderdaad 'exotische' objecten in graven liggen, bevatten de graven vaak ook relatief simpele, lokaal gemaakte voorwerpen, zoals eenvoudige vuurstenen afslagen. Daarnaast lagen niet alle 'exotische' objecten in graven. In beide periodes werden namelijk ook andere exotische en potentieel bijzondere voorwerpen systematisch geweerd uit graven. Deze objecten werden elders in het landschap gedeponeerd. In Hoofdstuk 1 wordt daarom beargumenteerd dat er niet simpelweg een één-op-één relatie is tussen de objecten in een graf en het individu met wie deze begraven liggen. Het plaatsen van objecten in graven lijkt deel uit te maken van bredere depositionele praktijken waarbij specifieke dingen in specifieke plekken in het landschap werden gedeponeerd. De primaire vraag die centraal staat in dit onderzoek richt zich daarom op de betekenis van deze graven. Waarom werden mensen begraven op een ogenschijnlijk gestandaardiseerde manier en wat zegt dit over deze mensen als individuen, hun rol in de samenleving en de mensen die hen ter aarde bestelden?

Om antwoord te krijgen op deze vragen is een omvangrijke database aangelegd met informatie over Laat-Neolithische graven en grafgiften uit Nederland. Vervolgens is een selectie van de grafgiften onderworpen aan een functionele analyse. Met behulp

van gebruikssporenonderzoek en experimenten is de levensloop of biografie van de grafgiften in kaart gebracht: hoe werden ze gemaakt, waar kwamen ze vandaan, hoe werden ze gebruikt en hoe werden ze tenslotte in het graf gedeponeerd?

De theoretische invalshoek van dit onderzoek (besproken in Hoofdstuk 2) rust sterk op het werk van de socioloog Ervin Goffman (*The Presentation of Self*, 1959). Zijn werk richt zich niet zo zeer op de filosofische kant van *zelf* en *identiteit*, maar meer op de praktische aspecten: hoe presenteren mensen zichzelf in het bijzijn van anderen? Afhankelijk van de sociale situatie waarin een actor zich begeeft zal deze zijn 'front' – zoals Goffman dit noemt – aanpassen. Het 'front' omvat alles dat een actor kan manipuleren om een bepaald beeld van zichzelf te creëren: kleding, attributen, insignia, houding, taalgebruik, lichaamstaal, etc. Hoe formeler de sociale setting, des te strakker de richtlijnen waaraan het 'front' moet voldoen. Het 'front' dient vooral voor het vergemakkelijken van sociale interacties. Door het juiste 'front' te kiezen laten actoren zien wat er van hen verwacht wordt, en dat geeft de andere aanwezigen houvast, hoe te reageren. Zelfs als mensen elkaar nooit eerder ontmoet hebben kan een gestandaardiseerd 'front' de sociale houvast bieden om een interactie te reguleren.

Na een korte introductie van de culturele achtergrond in het 3de millennium v.Chr. (Hoofdstuk 3) wordt het empirische deel van het onderzoek besproken. Hoofdstuk 4 behandelt de bekers van beide periodes, aangezien deze technologisch op elkaar lijken en gedurende het 3de millennium v.Chr. de primaire grafgift zijn. Vervolgens worden in respectievelijk de Hoofdstukken 5 en 6 de overige grafgiften besproken van de Enkelgraf en Klokbekercultuur.

In beide periodes komen aardewerken bekers in ongeveer 70% van de graven voor en zijn daarmee het meest voorkomende type voorwerp in een Laat Neolithisch graf. Zowel de enkelgraf- als de klokbekers zijn dunwandig, sierlijk en kundig gemaakt. Hoewel ze lokaal gemaakt werden zijn ze duidelijk vormgegeven in een internationale stijl die in grote delen van Europa voorkomt. De Veluwse klokbekers zijn hierop ten dele een uitzondering omdat het enerzijds vaak uniek versierde bekers betreft, maar anderzijds werden ze wel gevormd en versierd binnen internationaal gerespecteerde kaders, hetgeen ze makkelijk als klokbeker herkenbaar maakte. De bekers belichamen daarmee het unieke en individuele, maar laten tegelijkertijd een verbintenis zien met een grotere, pan-Europese, culturele gemeenschap.

De dunwandigheid en vorm van de bekers doet vermoeden dat zij primair bedoeld zijn als drinkbekers. Hoewel het moeilijk is om te bewijzen wat de inhoud van deze bekers is geweest wordt er aan het eind van Hoofdstuk 4 een overzicht gegeven van zowel direct als indirect bewijs dat wijst op het nuttigen van alcoholische drank, waarschijnlijk in de vorm van bier.

De overige grafgiften in de Enkelgrafcultuur bestaan uit vuurstenen klingen van Scandinavische vuursteen, stenen/vuurstenen bijlen en zogenaamde strijdhamers. Aan het eind van de Enkelgraf periode, bij de overgang naar Klokbeker, komen ook grote vuurstenen messen/dolken voor van Franse vuursteen (Grand-Pressigny en Romigny-Lhéry) die de plaats in lijken te nemen van de Scandinavische klingen.

Zowel de Scandinavische als de latere Franse klingen zijn importen van ver, en beiden laten geen sporen van functioneel gebruikt zien. De Franse klingen bevatten wel sporen van schachting en het in-en-uit een schede halen. Bij gebrek aan sporen die op een functioneel nut wijzen lijkt het in beide gevallen te gaan om voorwerpen die

primair een ceremoniële of 'display' functie hadden; objecten die lange-afstandscontacten belichaamden.

De vuurstenen en stenen bijlen in EGK graven beslaan zowel objecten die lokaal gemaakt zijn als objecten die via uitwisseling verkregen waren. Over het algemeen laten de bijlen duidelijke sporen van gebruik zien. Hoewel er doorgaans slechts één bijl werd meegeven in een graf bevatten sommige er twee. In die gevallen gaat het vaak om bijlen van verschillende groottes (een grote en kleine bijl) of verschillende grondstoffen (steen versus vuursteen). Het is aannemelijk dat in die gevallen deze bijlen een verschillende functie hadden en onderdeel waren van een bredere gereedschap-set (*toolkit*) die te maken had met houtbewerking. Dit kon variëren in het omhakken van bomen tot fijnere houtbewerking, bijvoorbeeld voor het maken van wielen of karren.

De vierde categorie grafgiften die vaak voorkomt in EGK graven betreft de zogenaamde strijdhamers. Deze sierlijk vormgegeven, doorboorde, stenen bijlen worden traditioneel als wapens geïnterpreteerd. Deze voorwerpen vormden bij uitstek de basis voor aannames over de rol van martialiteit en sociale ongelijkheid in de samenleving. Deze interpretatie wordt echter in dit onderzoek in twijfel getrokken op basis van de sporen van gebruik die zichtbaar zijn op deze bijlen. Zelfs met het blote oog is te zien dat deze objecten sterk afgesleten zijn en een leven van intensief en zwaar gebruik achter zich hebben. Een serie experimenten is opgezet in een poging de bestaande interpretatie te falsificeren en de aanwezige sporen te repliceren. Een experiment waarbij een strijdhamer gebruikt werd om dierenhoofden in te slaan (rest-afval van een slachthuis) liet zien dat deze activiteit niet de sporen veroorzaakt die op de archeologische stukken te zien zijn. Een serie vervolgexperimenten werd uitgevoerd (omhakken boom, splijten hout) waarbij een nagenoeg identieke match het resultaat was van het doorhakken van boomwortels. Het lijkt er daarom op dat zowel de strijdhamers als de bijlen in EGK graven te maken hebben met het ontginnen van het land, het transformeren van het landschap en het produceren van houten voorwerpen. We kunnen hierbij denken aan bijvoorbeeld karren en veenwegen.

De Klokbekergraven laten in tegenstelling tot de EGK graven een veel breder scala aan grafgiften zien, die in volgorde van voorkomen besproken zijn in Hoofdstuk 6. Volgend op de klokbekers zelf, zijn dat in de eerste plaatst vuurstenen werktuigen. Het betreft hier veelal eenvoudige vuurstenen afslagen die doorgaans in setjes meegegeven werden. In sommige gevallen betrof het afslagen met retouche, schrabbers of zogenaamde 'klokbeker messen'.

De meest iconische grafgiften uit de KB tijd zijn de boogschuttersparafernalia, primair bestaande uit de kenmerkende vuurstenen pijlpunten met steeltje en weerhaken en de stenen polsbeschermers. In beide gevallen gaat het om voorwerpen, gemaakt in een internationale stijl, waarbij relatief veel energie is gestoken in de vormgeving van deze objecten. Vooral de polsbeschermers zijn praktisch gezien onnodige voorwerpen, en dienden vooral als display-objecten om een bepaalde identiteit uit te drukken.

Datzelfde principe komt ook terug bij de ornamenten van barnsteen. Vooral de conische knopen met V-vormige doorboring hebben een pan-Europese verspreiding. Ze werden duidelijk zichtbaar gedragen op het lichaam, in sommige gevallen zelfs op het voorhoofd.

Hoewel zeldzaam in absolute aantallen, staat de KB tijd vooral bekend als de periode waarin de eerste metalen voorkomen, te weten koperen dolkjes, koperen bijlen, en gouden ornamenten. Het is daarbij interessant om op te merken dat, hoewel de

koperen dolkjes en gouden ornamenten in graven gevonden werden, de koperen bijlen daarentegen elders in het landschap werden gedeponeerd. Het koper waar deze voorwerpen van gemaakt zijn laat vaak een typische metaalsignatuur zien. Vroeger dacht men dat dit indicatief was voor de bron, maar het is inmiddels duidelijk dat dit het gevolg is van herhaaldelijk omsmelten en mixen van metaal. Door dit recyclen ontstonden homogene metaalcomposities die indicatief waren voor metaal-circulatie-zones. Ondanks het feit dat metaalvondsten zelf relatief zeldzaam zijn, kan worden afgeleid uit deze gehomogeniseerde metaalsignaturen dat er in werkelijkheid veel meer koper in omloop geweest moet zijn. De normale levensloop van een koperen bijl of dolk eindigde doorgaans echter in de smeltkroes en slechts in uitzonderlijke omstandigheden in een graf of depositie.

Hetzelfde is waarschijnlijk aan de hand met de eerste gouden ornamenten. Hoewel deze zeer zeldzaam zijn in het archeologische bestand, zijn ze gemaakt in een duidelijke traditie. Door heel Europa werden er gelijkvormige ornamenten van gemaakt die bovendien in een zeer specifieke vorm gedecoreerd werden. Aangezien er geen standaardisatie kan bestaan voor unieke voorwerpen, doet dit logischerwijs vermoeden dat deze ornamenten in werkelijkheid veel vaker voorkwamen. Net als bij de koperen objecten werden deze gouden ornamenten slechts in bijzondere omstandigheden in een graf gedeponeerd en is dit de oorzaak voor hun zeldzaamheid in het archeologische bestand.

Naast objecten van metaal komen ook zogenaamde 'kussenstenen' voor in KB graven. Deze vierkante aambeeldstenen werden gebruikt voor de bewerking van metaal. Hoewel ze relatief zeldzaam zijn, komen ze in een groter deel van Europa voor in KB graven en kunnen daarom gezien worden als onderdeel van de klokbekerset. Hetzelfde geldt voor vuurmaaksets (vuurslagen en knollen markasiet/pyriet).

Hoewel er net als in de EGK ook andere voorwerpen gevonden zijn in KB graven zijn dit vaak unieke vondsten, of komen deze slechts voor in een zeer klein aantal van de graven. Opvallend is dat dit bijvoorbeeld geldt voor (vuur)stenen bijlen. Waar deze in de EGK vaak voorkwamen, lijken bijlen (inclusief de koperen bijlen) geweerd te worden uit de KB graven.

Hoofdstuk 7 behandelt de graven zelf. Hoewel er duidelijke verschillen zichtbaar zijn in de grafsets, lijken de graven zelf in fysieke zin juist erg veel op elkaar. Zowel in de EGK als KB periode kwam een verscheidenheid aan grafvormen voor, variërend van rechthoekige kuilen, kisten, tot rond/ovale kamertjes waarin de dode en de grafgiften werden gedeponeerd alvorens deze werden afgedekt met heuvels. In beide periodes werden mensen ook in dezelfde, zeer specifieke, houding begraven; liggend in hurkhouding op de rechter of linker zijde in min of meer oost-west georiënteerde graven. Eerdere onderzoekers was al opgevallen dat er een behoorlijke spreiding of afwijking kan zijn in deze oost-west oriëntatie. Daarom is de oriëntatie van de graven in de huidige dataset allemaal gemeten en vastgelegd in graden. Hieruit blijkt dat de oriëntatie van de lengte-as van de graven in een range valt van grofweg 45-135°. Deze ogenschijnlijk grote variatie kan echter eenvoudig verklaard worden omdat dit precies de range is waar gedurende het jaar de zon opkomt aan de horizon. Op de kortste dag (21 december, midwinter) komt de zon op in het zuid-oosten op ongeveer 135° en naarmate de dagen langer worden komt de zon iedere ochtend iets noordelijker op tot de langste dag (21 juni, midzomer) wanneer de zon opkomt in het noord-oosten op ongeveer 45°. Wanneer mensen door het jaar heen graven aanlegden en daarbij de lengte-as op de opkomende

zon richtten, kan dit deze range in graf-oriëntaties verklaren. Dit patroon is zichtbaar bij zowel de EGK als KB graven. Deze link tussen graven en het bewegen van de zon is iets dat bij culturen wereldwijd zichtbaar is, bijvoorbeeld de oude Egyptenaren: na zonsondergang reisde de zon door de onderwereld om de volgende dag herboren te worden. Maar er kunnen ook voorbeelden dichter bij huis gevonden worden, zo staat deze 45-135° range namelijk ook centraal op de zonneschijf van Nebra.

Waar de focus tot nu toe lag bij de individuele voorwerpen en de graven zelf, wordt in Hoofdstuk 8 gekeken naar de sets of combinaties aan voorwerpen die in de graven lagen. Er wordt duidelijk gemaakt dat hierbij een groot aantal theoretische problemen spelen die het herkennen en interpreteren van sets bemoeilijken. Door het ontbreken van skeletmateriaal in de Nederlandse graven is het tevens niet mogelijk om het voorkomen van bepaalde objecten te koppelen aan de graven van mannen of vrouwen.

Wat echter wel opvalt is dat alle typen grafgiften met elkaar gecombineerd kunnen worden. Daarnaast bevatten graven doorgaans maar een beperkt aantal objecten. Er zijn nauwelijks graven die een 'volledige set' hadden. Het lijkt daarom niet van belang geweest te zijn om betere/exclusievere of meer objecten te accumuleren. Integendeel, het lijkt eerder het geval geweest te zijn dat het van belang was dat er één of slechts een paar dingen werden meegegeven om aan te geven dat de overledene deel uitmaakte van een bepaalde culturele traditie.

Er is duidelijk sprake van een 'grafset', een bepaalde groep objecten die in graven gedeponeerd werden (versus andere voorwerpen die systematisch uit graven geweerd werden). Tegelijkertijd is er echter heel veel variatie tussen de graven, doordat alle mogelijke combinaties binnen de 'toegestane set' voorkomen. Dit geeft aan dat er overkoepelende regels waren die dicteerden wat wel en niet in graven gedeponeerd mocht worden, maar binnen die regels werden keer op keer individuele keuzes gemaakt.

Maar waarom bestond de grafset nu juist uit deze objecten en niet uit andere? Wat was het 'ideaalbeeld' waaraan gerefereerd werd? Dat zijn de vragen die centraal staan in Hoofdstuk 9. Tevens wordt in dit hoofdstuk een verklaring gegeven waarom op structureel niveau de EGK en KB graven zo op elkaar lijken terwijl de grafgiften in beide periodes juist totaal verschillend lijken te zijn.

De grafgiften in de EGK drukken op verschillende niveaus een verbondenheid uit met andere EGK gemeenschappen. De strijdhamers en bijlen werden gebruikt om een open landschap te creëren waarin men met karren en paarden tussen gemeenschappen kon reizen. De bijlen werden ten dele ook gebruikt om dingen als wagens, wielen en veenwegen te maken: de dingen die fysiek nodig waren om uitwisselingscontacten te onderhouden met naburige EGK gemeenschappen. De belangrijke rol van deze voorwerpen blijkt ook uit bijvoorbeeld de depositie van wagenwielen en in het herkomstgebied van de Steppe volkeren (aan wie de EGK mensen genetisch sterk verwant waren) werden zelfs wielen en wagens meegegeven in graven. Daarnaast zijn de noordelijke vuurstenen klingen voorbeelden van objecten die uitgewisseld werden tussen deze gemeenschappen. De beker, gemaakt in een internationale stijl, werd gebruikt voor het nuttigen van waarschijnlijk alcoholische dranken zowel in samenzijn met leden van de eigen gemeenschap maar ook bij het onderhouden van lange-afstandscontacten met leden van andere EGK gemeenschappen.

Op het eerste gezicht lijkt de 'Klokbekerset' iets heel anders uit te drukken. Het gaat hier veelal om dingen die op het lichaam gedragen werden, die gemaakt/versierd

werden in een internationale stijl, of die gebruikt werden om het lichaam zelf te versieren in een internationale stijl. Het lijkt hier dus meer te gaan om objecten die onderdeel geweest konden zijn van een 'persoonlijk front', objecten die onderdeel waren van een bepaald kostuum. Maar het is belangrijk te benadrukken dat mensen niet simpelweg in een volledig kostuum begraven werden, in graven komen vaak slechts enkele voorwerpen voor. Hoewel er dus wel gerefereerd lijkt te worden aan een bepaald kostuum of uitdossing, werden mensen niet 'in vol ornaat' begraven.

Het is duidelijk dat dit 'kostuum' in grote delen van Europe in gebruik raakte, het gaat hierbij dus niet om een *persoonlijk front* maar om een veel breder gedragen *sociaal front*. Een manier van presenteren die door heel Europe herkend en erkend werd. Een dergelijk gestandaardiseerd, of *stereotiep* front, zorgt ervoor dat mensen zich volgens een gestandaardiseerde manier (etiquette) konden ontmoeten zonder dat zij zich hoefden aan te passen aan de cultuur van de ander. Dergelijke interacties vinden plaats in een soort 'culturele bubbel' zoals tegenwoordig bijvoorbeeld mensen van verschillende culturele achtergronden zaken kunnen doen terwijl ze een zakenpak dragen. Het gevolg hiervan is dat er verwacht kan worden dat er een verhoogde mate van uitwisseling en mobiliteit ontstaat, en tevens dat op lokaal niveau, mensen grotendeels hun eigen cultuur behouden. En dit is precies wat de tweede helft van het 3de millennium v.Chr. kenmerkt. Hoewel deze 'klokbeker set' door heel Europa voorkomt is er een grote diversiteit te zien in nederzettingen en graven. Tegelijkertijd is er een spectaculaire toename in de hoeveelheid en herkomst van exotische objecten, die letterlijk uit alle windrichtingen lijken te komen.

Dit laat ook zien dat de EGK grafset minder van de KB grafset verschilt dat men zou vermoeden. In beide periodes bestaat de grafset uit dingen die centraal stonden in het onderhouden van contacten met andere gemeenschappen. Hoewel bij de EGK de nadruk duidelijk lag op andere EGK gemeenschappen, stelde het sociale front dat opkwam in de KB tijd men in staat om veel bredere, pan-Europese contacten aan te gaan en te onderhouden.

In Hoofdstuk 10 wordt nader gekeken naar de aard van het klokbekerkostuum. Waarom bestond dit nu juist uit deze objecten en niet uit andere? Belangrijke aanwijzingen hiervoor zijn de objecten die gevonden werden samen met het lichaam van Ötzi, de ijsmummie die gevonden werd in de Italiaanse Alpen. Hoewel de datering van Ötzi vroeger is dan die van de KB graven is het relevant omdat hij nagenoeg dezelfde voorwerpen bij zich droeg: vuurstenen werktuigen, pijlen en boog, vuurmaakset, containers met voedsel, vuurstenen mes, een bijl en een uitgebreid assortiment aan kleding/uitrusting. Op basis van deze overeenkomsten wordt gepostuleerd dat de mensen in klokbekergraven lijken op reizigers. De doden werden ten dele aangekleed en uitgerust om op reis te gaan. De rol van de klokbeker zelf was onderdeel van het ontvangen van reizigers middels een drankritueel. Een gestandaardiseerd front bestaat enerzijds uit richtlijnen hoe een actor, in dit geval de reiziger, zich moet presenteren en gedragen. Anderzijds dicteert het ook hoe eventuele gasten ontvangen moeten worden, bijvoorbeeld door het aanbieden van drank in een gestandaardiseerde beker die versierd is in een internationale stijl.

De recente ontwikkelingen op gebied van aDNA laten zien dat er een grote migratie op gang gekomen moet zijn rond 3000 v.Chr. uit het Steppe gebied. Dit is hetzelfde gebied en periode waarvan de linguïsten zeggen dat het Proto-Indo-Europees

(PIE) gesproken moet zijn, de moedertaal waaruit alle latere Indo-Europese talen zijn ontstaan. Eén van de PIE woorden die gereconstrueerd kon worden is **ghos-ti-*. Dit woord vertaalt zich zowel als *vreemdeling*, *gast* en *gastheer*. Het heeft geen eenduidige betekenis, maar verwijst naar een systeem van gastvrijheid dat bestaan moet hebben bij de sprekers van PIE. Een systeem waarbij vreemdelingen, gasten konden worden onder de bescherming van een gastheer. Dit systeem lijkt perfect aan te sluiten op de interpretatie van de klokbekergraven zoals verkregen is op basis van de analyse van de archeologische vondsten.

Tijdens hun leven, waren de mensen die reisden de personen die lokale gemeenschappen verbonden met andere gemeenschappen ver weg in de ruimte. In de dood waren dit de mensen die geselecteerd werden om relaties te smeden tussen lokale gemeenschappen en de wereld van geesten en voorouders die ver weg stonden in tijd.

Curriculum vitae

Karsten Wentink was born in 1981 in Doetinchem. Already at a very young age he developed an interest in archaeology. He attended the Ludger college in Doetinchem from 1994 and graduated VWO in 2001. In the same year he started his studies at the Faculty of Archaeology, Leiden University. He did a combined bachelors in both archaeological sciences (focus on functional analysis at the Laboratory for Artefact studies) and prehistoric archaeology (with a focus on the Neolithic of North-West Europe). In 2004 he obtained a Bachelor of Arts degree and was admitted to the newly established Research Masters Program. He graduated with the judicium *cum laude* in 2006. His Mphil thesis "*Ceci n'est pas une hache*" focussed on Middle Neolithic axe depositions. For his thesis he was awarded the W.A. van Es-prize.

During his studies he worked on various research projects for Synthegra Archeologie B.V. and was involved in various University-led research projects such as the excavation of the Neolithic site at Schipluiden and an archaeological field project in Malawi, Africa. After his studies he was appointed as research assistant and junior lecturer in 2006 (temporarily replacing prof. dr. Annelou van Gijn). Between 2006 and 2008 he worked as a research assistant for both the Laboratory for Artefact studies and the Prehistory department at Leiden University. In 2007 he co-founded the academic publishing house Sidestone Press where he still works today as co-director.

In 2008 he started his PhD research at the Leiden Faculty of Archaeology as part of the NWO-funded *Ancestral Mounds* project. He (co-) authored and edited several papers, chapters and books. When the PhD funding stopped in 2012 he started working full time for Sidestone Press while continuing his PhD research. In addition he is currently also involved in a research project focussing on the Ommerschans sword and aims to continue his research in the future.

Acknowledgements

Writing the acknowledgements to this thesis is surprisingly more difficult than I had anticipated. This is caused in part because of the cunning plan I hatched when I first started my research. Since I was in contact with so many people, colleagues at the faculty, museum curators, other researchers, etc. I kept a folder in my e-mail inbox with copies of all the correspondents that would need to be mentioned in this section. But when my PhD funding ended back in 2012, so did my University e-mail account. So far for my cunning plan. I will do my best to remember, but I am bound to forget to mention some of you. To those I apologize upfront!

The first people that need mentioning are my fellow researchers, Quentin Bourgeois and Marieke Doorenbosch. Together we were the *Ancestral Mounds PhDs.* We shared a room, many good discussions, a lot of laughter, research pains and frustrations, but also breakthroughs. Doing a PhD, where you are laser focused on a highly specialized subject, can be a lonely thing, it is therefore so much better to dive down the rabbit hole together. As it later appeared, these first four years would only be the 'formative years' of my entire PhD journey, but nevertheless I am glad I could share these with you!

Especially given the fact that my journey took much longer than expected, I must give my thanks and gratitude to my team-leaders and supervisors, David Fontijn, Annelou van Gijn, Corrie Bakels and Harry Fokkens. Especially David needs special mentioning for he kept reading texts, coaching me, and encouraging me to continue the work. He kept me focussed and motivated these last few years. Thank you all!

Thank you to Eric Mulder and Annemieke Verbaas at the Leiden Laboratory for Artefact Studies. They often assisted me in my research and shared their thoughts and expertise. Before starting my PhD I worked as a research assistant to Annelou van Gijn. Together we toured the Netherlands hunting for treasure in the form of flint artefacts. We either brought them home to our lab to study them or took the lab with us to do microwear analysis on location. Many of the objects we studied for her book "Flint in Focus" also found their way into this thesis. She taught me the tricks of our trade and has been my mentor and friend for almost 20 years. It has a been a wonderful journey so far, and I hope it will continue far into the future.

A big thanks should go to all the museum curators who gave me access to the wonderful objects this thesis is based on: Luc Amkreutz (Rijksmuseum van Oudheden, Leiden), Wijnand van der Sanden, Vincent van Vilsteren, Bastiaan Steffens and Jaap Beuker (Drents Museum, Assen), Louis Swinkels ('t Valkhof, Nijmegen), Bert Huiskes (Stadsmuseum, Rhenen), Elly van der Velde (Nairac, Barneveld), Joanneke Hees (PUG-collectie).

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Starting my PhD went hand in hand with learning how to sail. Being out on the water is the most wonderful way of clearing your mind. I made so many friends at the Blauwe Schuit but special thanks should go to my main (sailing) buddies: Rutger, Diede, Bas, Marinus, Eric, Johan.

While one part of this thesis was written at my University desk, the other part was written at my desk at Sidestone Press. A very big thank you should go to Corné van Woerdekom with whom I created Sidestone, and who supported me finishing this thesis. Also I want to thank all the people that work with Sidestone, the authors that publish with us and the readers who buy our books. If it was not for your trust, I would have had to get an actual job. I cannot even bear to think of it.

A final and most important thanks goes to my family who kept supporting me and never grew tired of listening to me go on about ancient dead people. Inspiration can be found in the most unexpected of places. Whether it is helping out my sister with her homework (Goffman), watching my grandfather – as a child – organize his tools, crossing the Alps with my brother, watching my parents prep for a party or talking to my grandmother about knitting. She always asked how my work was coming along, and when she would be expected to come to my defence. I am sorry it took too long.

It was Park (1950, 249) who wrote that we enter this world alone, as individuals, but it is through interaction with the people around us that we achieve character and become persons.

STEREOTYPE

Throughout northern Europe, thousands of burial mounds were erected in the third millennium BCE. Starting in the Corded Ware culture, individual people were being buried underneath these mounds, often equipped with an almost rigid set of grave goods. This practice continued in the second half of the third millennium BCE with the start of the Bell Beaker phenomenon. In large parts of Europe, a 'typical' set of objects was placed in graves, known as the 'Bell Beaker package'.

This book focusses on the significance and meaning of these Late Neolithic graves. Why were people buried in a seemingly standardized manner, what did this signify and what does this reveal about these individuals, their role in society, their cultural identity and the people that buried them?

By performing in-depth analyses of all the individual grave goods from Dutch graves, which includes use-wear analysis and experiments, the biography of grave goods is explored. How were they made, used and discarded? Subsequently the nature of these graves themselves are explored as contexts of deposition, and how these are part of a much wider 'sacrificial landscape'.

A novel and comprehensive interpretation is presented that shows how the objects from graves were connected with travel, drinking ceremonies and maintaining long-distance relationships.

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