BREAKING AND MAKING THE ANCESTORS

PIECING TOGETHER THE URNFIELD MORTUARY PROCESS IN THE LOWER-RHINE-BASIN, CA. 1300 - 400 BC

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“…Cause the person I am, are the parts that I play…”

Savatage – When the crowds are gone (1989)

1

Introduction: Bits and pieces

1.1 A true fact, alternative choices

Death comes for us all. As such, life's one true certainty has ever confronted us with inevitable choices of how to deal with the mortal shell of our late beloved ones. Choices motivated by religious beliefs, (age-old) traditions, practical constraints, personal preferences or perhaps all of the above. Some of the choices made eventually fossilise in the final resting place of the dead person: *the grave*. It is therefore that graves from illiterate past societies are an important source for gaining insight in their perception of the world around them. In this sense prehistoric people can still speak from beyond the grave (Parker Pearson 1999, 1). Present day Europe, for that matter, is spoken to in many different languages since it has witnessed countless prehistoric societies come and go, all with their own distinct burial customs (*e.g.* Cunliffe 2001; 2008).

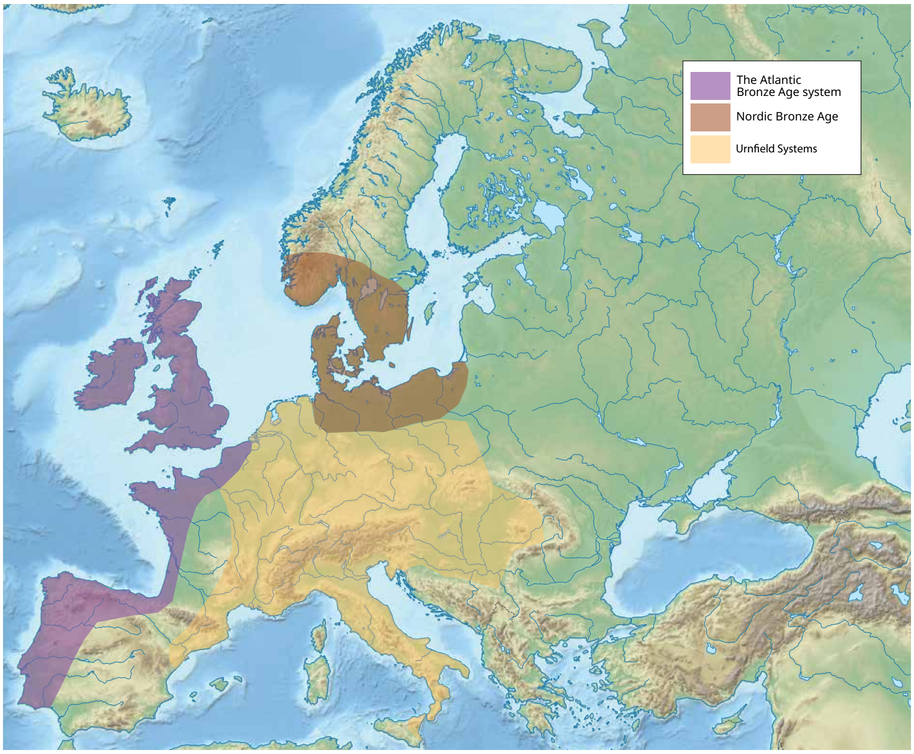

Fig. 1.1: Map of Late Bronze Age Europe and associated cultural traditions. (After: Cunliffe 2008, fig. 8.2).

Perhaps the most numerous and ubiquitous of these funerary legacies are the tens of thousands of cremation graves found in urnfields. These collective and often extensive cemeteries occurred towards the capstone of the European Bronze age in an area stretching from the Carpathians in the east, the North Sea in the northwest and the Mediterranean in the south (Kristiansen 1998, 63; Cunliffe 2008, fig. 8.2; Fig. 1.1). Even though local and regional variations existed in artefact styles, the organisation of the living environment and subsistence economy, people living in this area are seen to be bound by common social, ritual and symbolic practices (Kristiansen 1998, 70). The habit of cremating the dead and the interment of their ashes in collective cemeteries are probably the two most remarkable examples of these common practices. Both practices were not new and occurred much earlier in prehistory (Harding 2000, 77, tab. 3.1), but clearly gained momentum towards the thirteenth century BC (*ibid.*; Cunliffe 2008). The period between 1300 and 700 BC is even being referred to as a time of *spiritual revolution* in Europe (Harding 2001, 318-325), the practice of cremation being one of the major expressions of this revolution of the mind (*ibid.*, 318-319). It has even been suggested that the common root of Celtic languages arose with the spread of the urnfields in the Late Bronze Age (Chadwick 1970, 28-33; Cunliffe 1997). Also, urnfield graves are generally believed to reflect a strongly egalitarian ideology in which individual status positions seem deliberately minimalised (Childe 1950, 200; Roymans 1991, 73; Kristiansen 1998, 113). For more than a century have archaeologists debated the causes that might have fuelled the widespread distribution of the urnfields across Europe and the funerary practices that came with them (*e.g.* Reinecke 1900; Kossinna 1911; Childe 1930; 1950; Müller-Karpe 1959; Kimmig 1964; Kristiansen 1998; Harding 2000; 2001). This dissertation means to add to the debate by focussing on the very fabric of these funerary practices themselves in a corner of Europe that was once dotted with these collective cremation grave cemeteries: *The Lower-Rhine-Basin*.

1.2 Urnfields on the edge of the continent: The Lower-Rhine-Basin

The Lower-Rhine-Basin sits on the very edge of the Northwest European Plain and comprises the whole of the Netherlands, North Belgium and parts of Northwest Germany (Fig. 1.2). In the north and west this flat stretch of the European continent meets the North Sea, while in the east, southeast and south it is kept in a natural embrace by the Lower Saxon Hills[1] and the mountainous area of the Rhenish Massif.[2] As the name already suggests, the geography of the Lower-Rhine-Basin is characterised by only very slight differences in relief. Some undulation in the landscape was created in the Pleistocene with the forming of the ice-pushed ridges and the sedimentation of cover-sands and loess (Berendsen 2004, 159-161; 190). In the course of the Holocene major rivers like the Scheldt, Meuse, Rhine, Ems and Weser have cut up the landscape into a patchwork of meanders, stream valleys and cover-sand islands and plateaus. Under the influence of the rising sea level, especially in the west, peat growth had covered almost half the Lower-Rhine-Basin at the time the urnfields first emerged.

Urnfields in the Lower-Rhine-Basin are generally characterised by collections of small funerary monuments under which the cremated remains of the deceased were buried in urns or deposited in small pits without an urn (Fig. 1.3). Here the urnfields are commonly dated to the period between the Late Bronze Age and the beginning of the Middle Iron Age, roughly between 1100 and 400 BC (Hessing/Kooi 2005, 632-633; Gerritsen 2003, fig. 1.2).

1 The German Westerwald, Sauerland and Teutoburger Wald.

2 The French-Belgium Ardennes and German Eifel.

Fig. 1.2: Map of the Lower-Rhine-Basin (After: Roymans 1991, fig. 1).

While the cremation rite is absolutely dominant inhumation graves incidentally occur as well (Van den Broeke 2014). Grave gifts are scarce and when they are present, they mostly concern pieces of accessory pottery and occasionally a burnt or broken piece of metal jewellery. The funerary monuments themselves predominantly consist out of small burial mounds, generally measuring between two and eight metres in diameter, built-up from sods of heather or just sand extracted from the circular ditches that often surrounded these small monuments. Long mounds also occur in urnfields and are thought to represent an older or even founding phase of the cemeteries they are located in (Roymans/Kortlang 1999, 49). Sizes of urnfields vary between as little as five graves and as many as 500 and a comparable degree of variation can be observed in the lifespan of urnfields. Some clear examples exist of cemeteries used for only a few successive generations (*e.g.* Roymans/Hoogland 1999) while other urnfields are part of funerary landscapes where all archaeological periods dating between the Middle Bronze Age and Roman Period seem represented (*e.g.* Blom/Van der Velde 2015).

Though the urnfields might also have played pivotal roles in more recent discussions concerning the social organisation of Late Bronze Age and Early Iron Age societies (Roymans 1991; Fokkens 1997; Roymans/Kortlang 1999; Gerritsen 2003) a strong emphasis on charting cultural groups and traditions is still prevalent in urnfield research (*e.g.* Verlinde/Hulst 2010). Predominantly based on differences in artefact styles, house-

Fig. 1.3: Impression of an urnfield in the Lower-Rhine-Basin. Excavation of Oosterhout-De Contreie, The Netherlands, province of North Brabant (After: Roessingh *et al.* 2012, figs. 5.14; 5.23; 5.24).

building traditions and specific types of funerary monuments, the Lower-Rhine-Basin has been divided up into two major urnfield groups with the '*Niederrheinische Grabhügel Kultur*' (Kersten 1948) in the south and the '*Ems Kultur*' or '*Ems Group*' in the north (*e.g.* Kooi 1979; Verlinde 1987). Even smaller differences in pottery styles and forms of funerary monuments have subsequently been wielded to divide these regions into even smaller subgroups (*e.g.* Dessitere 1968; Verlinde/Hulst 2010, fig. 41; also see Fig. 1.4). Additionally, urnfields in the southwestern part of the Lower-Rhine-Basin are believed to fall under different cultural spheres of influence: The so-called *'Atlantic Group'* orientated on the Belgian, French and English coast (Cunliffe 2008, Fig. 8.2; De Mulder 2015, 139) and the '*groupe Rhin-Suisse-France orientale*' that shows some cultural influences of Central European urnfield groups (Brun/Mordant 1988; De Mulder 2015, 139). Clearly, the Lower-Rhine-Basin at the time of the urnfields is considered to have been a patchwork of small cultural entities (Fig. 1.4). However, as will be argued in the following, it is exactly this traditional cultural approach to urnfields that seems to have literally stopped urnfield research dead in its tracks.

1.3 A historiographical circle

The label '*urnfield*' was probably applied for the first time by the German prehistorian Otto Tischler in 1886 (Probst 1996, 258) when he used the phrase '*Urnenfelder der Bronzezeit'* in a short comment on Ernst Wagner's *'Hügelgräber und Urnen-friedhöfe*

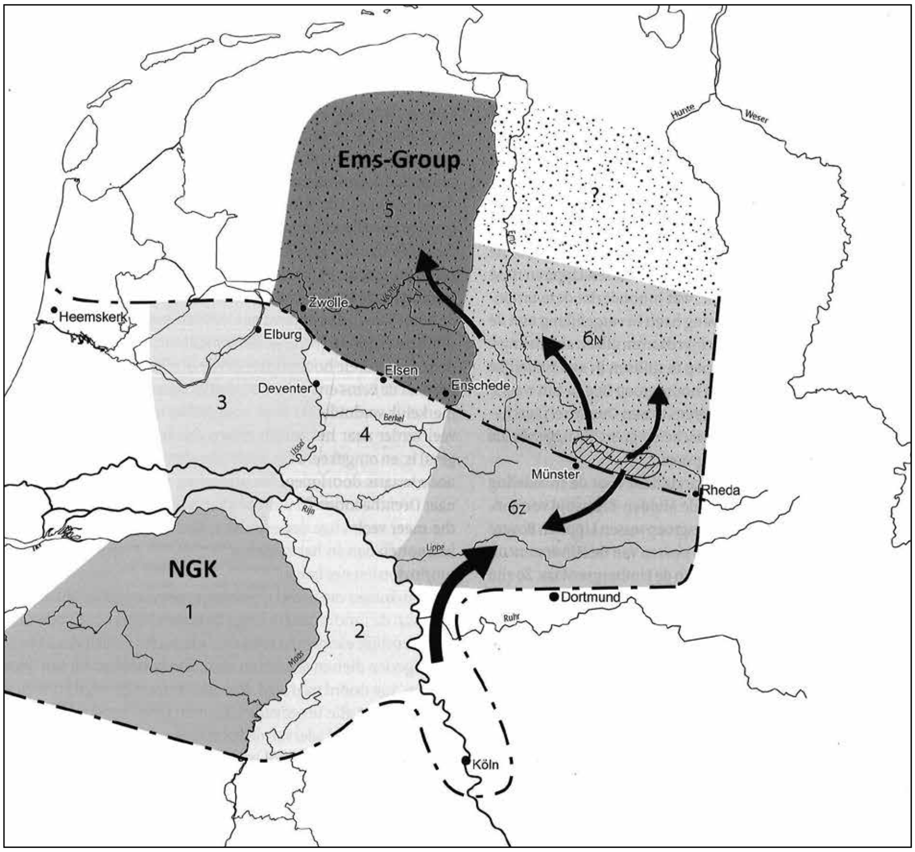

Fig. 1.4: Map showing the distribution areas of the so-called 'Ems-Group' (North) and the 'Niederrheinische Grabhügel Kultur' (South) and their division into subgroups according to Verlinde and Hulst (2010). The arrows represent the 'cultural spread' of the urnfields from the presumed core areas near Münster and Rhineland in modern Germany. 1.) 'Brabant-group'; 2.) 'Niers-group'; 3.) 'Veluwe-Utrecht-Gooi-group'; 4.) 'Achterhoek-group'; 5.) 'North-Netherlands-group'; 6z+n.) 'Ems-group' North (n) and South (z). (After: Verlinde/Hulst 2010, fig. 41.)

in Baden' (Wagner 1885). Urnfield graves had however sparked archaeological interest much earlier than 1886. Already at the beginning of the eighteenth century AD it appeared to early researchers that the many urns collected from fields and heathlands across Northwest- and Central Europe represented a specific burial practice (*e.g.* Nunningh 1713) and by the end of the nineteenth century the *'Urnenfelderzeit'* had been widely accepted as representing the latest phase of the Bronze Age (Jockenhövel 1994, 11; Cunliffe 2008, 234). In the century that followed the urnfields have become inextricably linked with concepts of *time* and *culture* as already appears by terminology still applied in modern archaeological literature like *'Urnfield Period*' (*e.g.* Gerritsen 2003, 15) and *'Urnfield Culture(s)'* (*e.g.* Harding 2001, 319).

It is even argued that the phenomenon of urnfields has become a chronological and cultural concept in itself (Sørensen/Rebay 2008, 57-58). Sørensen and Rebay-Salisbury point at the nationalistic ideologies of the late nineteenth and early twentieth century and the contemporary concern with the demarcation of distinct scientific disciplines as important causes for, as they put it, the variety of meanings and understandings of the urnfield concept (*ibid.*, 58). At the time, scholars from different corners of Europe came up with different approaches to the same archaeological phenomena. While researchers from North Europe kept a strong focus on principles like stratigraphy and typology in establishing chronological schemes (*e.g.* Montelius 1903), researchers from Central Europe were more interested in concepts of peoples and cultural groups (*e.g.* Reinecke 1900; Kossina 1911). As at the time the urnfields had already earned their place on the archaeological agenda, interpretative paradigms from both "schools" over time got deeply rooted in urnfield research as well. Herein already lies an important cause why at present it proves so difficult to disconnect the urnfields from certain interpretative expectations aimed at the relations between people, time and geography (Sørensen/Rebay 2008, 65).

From the 1950's onwards archaeology as a science developed rapidly which led to a process of intensified specialisations. Whereas Vere Gordon Childe at the time also delivered what probably still is the most comprehensible study on urnfields from a European perspective with his *"Prehistoric migrations in Europe"* (Childe 1950), in the decades following the Second World War the general focus of urnfield studies gradually shifted towards the regional level. This shifting focus is also apparent in urnfield studies on the Lower-Rhine-Basin where like in the rest of Europe a strong emphasis on typological analysis of material culture retrieved from the urnfields developed (*e.g.* Aschemeyer 1966; Desittere 1968; Meex 1972; 1976; Kooi 1979; Verlinde 1987; Ruppel 1990; Schoenfelder 1992; Verlinde/Hulst 2010). Eventually, the availability of detailed regional syntheses on urnfields created an awareness among scholars of the apparent regional variation in cultural traditions associated with these cemeteries (Gerritsen 2003, 237). Clearly, in the Lower-Rhine-Basin too, urnfield research did indeed not manage to free itself entirely from old concepts of time and culture (Sørensen/Rebay 2008, 65).

This regional introversion in urnfield research probably also played in important part in extending the urnfield jargon in the late twentieth century with terminology like *'Urnfield Phenomenon'* (Harding 2001, 319; Kristiansen 1998, 63) or *'Urnfield Complex'* (Kristiansen 1998, 70). Especially the latter term not only seems to refer to a system consisting of different parts (= complex), but maybe even more so to the complexity archaeologists experience when discussing urnfields. But if we keep seeing urnfield graves as static representations of presumed cultural groups bound to a specific time and place, is this not a complexity of our own making? With this same question in mind Sørensen and Rebay-Salisbury conclude their article with a plea for a new interpretative paradigm (Sørensen/Rebay 2008, 65). But what should such a new interpretative paradigm entail?

1.4 From pots to people 2.0

1.4.1 Crossing lines

The notion that the dead do not bury themselves has been around for quite some time already (*e.g.* Hertz 1907), or as Oestigaard and Goldhahn more recently put it: *"…Death is a problem of the living. Dead people have no problems…"* (Oestigaard/Goldhahn 2006, 45). Another often cited principle is that the passing of one of its members creates a temporary disorder to a given society and that the liminal phase between death and burial (Van Gennep 1909) is crucial to such a society to renegotiate a certain social order (Oestigaard/Goldhahn 2006). Since the initial works of Robert Hertz and Arnold van Gennep, scholars from both anthropology as archaeology have contemplated this particular liminal phase extensively (*e.g.* Binford 1971; Bloch/Parry 1982; Metcalf/Huntington 1991) as a result of which today a large corpus of theoretical approaches to archaeological grave contexts exists (*e.g.* Parker Pearson 1999; Stutz/Tarlow 2013). Graves encountered in archaeological excavations are no longer considered as static entities, but as the material and physical remnants of a long series of meaningful actions and decisions conducted in the time between death and burial. As these actions and choices, or *funerary practices* as they are more commonly called, were aimed at the social wellbeing of a community they logically involved an active partaking of members of that same community. And as such, graves not simply serve as a location for the disposal of a dead body or maybe even the portraying of the dead person as a future ancestor, but also as a modest reflection of a community's ideas about social and cosmologic order (Oestigaard/Goldhahn 2006). Urnfield graves too, should therefore be considered as *meaningful composite artefacts*.

1.4.2 Funerary practices at the barrow landscape of Oss-Zevenbergen

As an illustration of the variety of funerary practices that can still be distilled from urnfield graves, in the following a short overview will be presented of the archaeological findings at the site of Oss-Zevenbergen in the south of the Netherlands. This particular site has been chosen as an example since it has only recently been excavated and extensively published. Moreover, the site is illustrative for a number of funerary practices that seem reflected in urnfield graves all over the Lower-Rhine-Basin (*e.g.* Hessing/Kooi 2005; De Mulder 2011). Thereby, as will appear later on, some of the results obtained at the excavations at Oss-Zevenbergen find themselves at the heart of the current debate concerning the meaning of urnfield graves.

Only a stone's throw east of what probably is the most extravagant urnfield grave of the Low Countries, the '*Chieftain's grave of Oss*' (Holwerda 1934; Jansen/Fokkens 2007; Van der Vaart-Verschoof 2017a, 103-108), the site of Oss-Zevenbergen sits on the northernmost edge of a tectonically uplifted ridge called the 'Peel Blok' or 'Maashorst.' Here a group of prehistoric barrows is located that was excavated in episodic campaigns between 1964 and 2007: 1964-65 (Verwers 1966b); 2004 (Fokkens *et al.* 2009) and 2007 (Fontijn *et al.* 2013a). The site's lay-out (Fig. 1.5) consists of a line of six barrows running slightly northeast-southwest. A seventh barrow ('Mound 3') was erected directly north of this line. The excavations revealed that at least three of these barrows ('Mound 4,' '2' and '8')[3] were built, re-used for burial and heightened several times already in the period between 1800 and 1400 BC (Fontijn *et al.* 2013c, 285). The two long mounds ('Mound 1' and '6') were constructed at the very end of that same period or perhaps as late as the Late Bronze Age (Valentijn 2013, 67). As a result, at the threshold of what is usually seen as the heyday of the urnfields in Europe (Harding 2001, 319) at the site of Oss-Zevenbergen a funerary landscape had been in use as such for centuries already.

In the Early Iron Age[4] some striking additions were made to this old funerary site. At that time, in between 'Mound 1' and '6,' a sixth but natural elevation in the local relief seems to have been perceived as a place of significance, perhaps even as a barrow of old (Fontijn *et al.* 2013c, 291; 293). On top of this natural elevation, somewhere between 780 and 520 BC (Fontijn *et al.* 2013b, 116), a pyre was built and the dead body of a male in his

3 Originally, eight elevations in the local relief were observed that all received a number ('Mound 1-8'). However, 'Mound 5' turned out to be a natural dune instead of a prehistoric burial mound.

4 The Early Iron Age in the Netherlands is the period between 800 and 500 BC (Van den Broeke 2005b, 480).

Fig. 1.5: Map showing the Oss-Zevenbergen barrow landscape at the time of the Early Iron Age. The numbers indicate the original mound/monument numbers. (After: Fontijn *et al.* 2013a, fig. 16.6).

twenties or thirties (Smits 2013, 259) was placed on top of it. His body was accompanied by what most probably were the dismantled pieces of a yoke and other pieces of horse tack consisting of leather panels and wooden knobs that were decorated with hundreds of little bronze studs (Figs. 1.6c and 1.6f; Fontijn/Van der Vaart 2013). The pyre was then lit and soon must have reached temperatures of around 800 °C (Smits 2013, 260), consuming all soft tissue of the dead body and most of the yoke and horse tack. After the pyre debris had cooled down, people sifted through the small heap of charred wood, picking out almost all cremated remains but leaving most of the burnt bronze studs and rings in place (*ibid.*, 297). However, it seems that some sections of the pyre-debris, including remnants of the yoke and horse tacks, were slightly displaced and it is even argued that some of the bronze artefacts were deliberately broken (*ibid.*, 298). Some 640 grams of cremated remains were put in a *Schräghals*-urn (Fig. 1.6e) that was subsequently buried close to the pyre. Probably not much later, four layers of sods cut from heather were carefully placed horizontally over the location of the pyre (*ibid.*, 300). After that, the builders proceeded by stacking sods against and over the pyre-location until they had created a round, slightly flat-topped barrow with a radius of 36 metres and the height of at least 1.5 metres (Fontijn *et al.* 2013b, 69).

'Mound 7' was not the only barrow to be built in the Early Iron Age: It meets its equal in size (30-metre radius) and age in 'Mound 3' (Fig. 1.5). This particular mound concerns the only monument outside the original line of barrows. When it was excavated in 2004

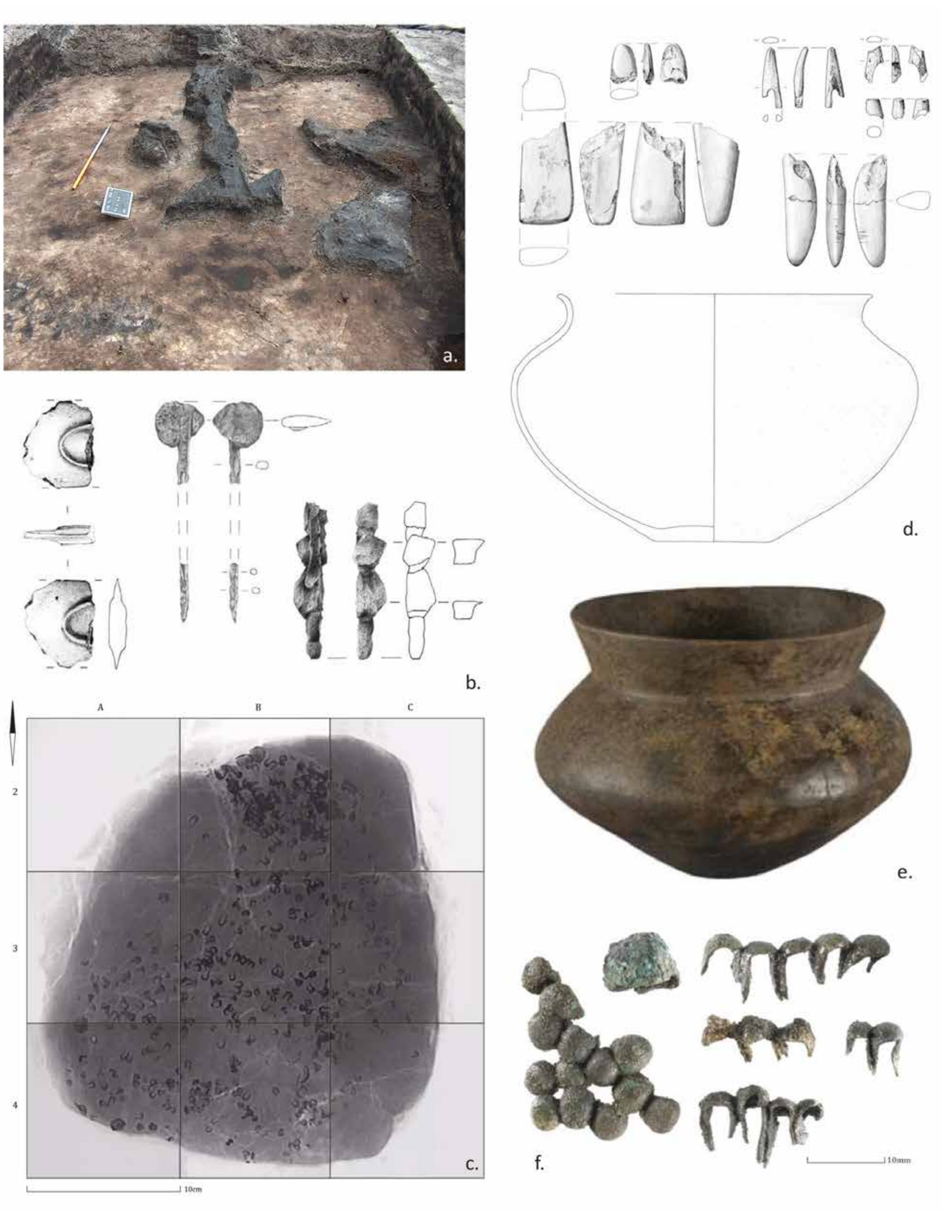

Fig. 1.6: Selection of finds from the Oss-Zevenbergen site: a.) charred oak in the centre of 'Mound 3' (Photo: Archol Bv.); b.) Metal objects found associated with the burnt oak in the centre of 'Mound 3' (After: Fokkens *et al.* 2009, fig. 6.16; scale 1:5); c.) Rontgen scan of part of the pyre found underneath 'Mound 7,' showing several hundreds of individual bronze studs (After: Fontijn *et al.* 2013a, fig. 7.15); d.) Urn and associated finds found in top Mound 2 (After: Fokkens *et al.* 2009, fig. 6.11; scale 1:4); e.) Urn 'Mound 7' (After: Fontijn *et al*. 2013a, fig. 6.6; scale: 1:5); f.) Selection of bronze studs found on the pyre of 'Mound 7' (After: Fontijn *et al*. 2013a, fig. 7.16).

it caused quite some confusion among the excavators as instead of a grave “only” the remnants of a large, charred oak were found underneath the centre of this monumental barrow (Fig. 1.6a; Van Wijk *et al.* 2009, 92). Amidst the trunks of charred wood four tiny fragments of undeterminable bronze and iron objects were collected (Fig. 1.6b), as was one piece of a cremated human long bone. All objects had been deliberately destroyed, and at least one of the bronze objects had also been burnt (*ibid.*, 93-96). Clearly, despite the absence of a complete body, this location was still considered worth monumentalizing by building a barrow. Its unique position in relation to the other barrows is also emphasized by an alignment of widely spaced posts (Fig. 1.5), 116 metres in length and running southwest-northeast, separating the location of ‘Mound 3’ from the eastern section of the barrow alignment. Four much shorter post alignments were located elsewhere, running in between the barrows (Fig. 1.5). Even though their original function remains debatable, the fact that these five alignments take into account the locations of all seven barrows suggests that they should be dated to the youngest phase of this funerary landscape (Van Wijk *et al.* 2009, 137).

At least seven other cremation graves dating to the Early Iron Age form the last prehistoric additions to the Oss-Zevenbergen site. The first one was found northeast of the barrow alignment in 1933 and concerns a *Schräghals*-urn with cremated remains (Fontijn/Jansen 2013, 20). In 2004 the remnants of four circular ditches were found that once encircled small burial mounds (‘Mound 9-12’). They were discovered in the area in between ‘Mound 3’ and the other six barrows (Fig. 1.5). In two of them (‘Mound 10’ and ‘11’) urn burials had been preserved. The remaining two graves concern secondary burials in ‘Mound 2’ and ‘8.’ Especially the example from ‘Mound 2’ is worth mentioning here. The *Schräghals*-urn (Fig. 1.6d), containing the cremated remains of an adult female (Smits 2009, 198), was dug into the top of the mound. The total weight of the cremated remains was no less than 2,014 grams and mixed with it the burnt fragments of a whetstone and several pieces of decorated animal bone were discovered (Fig. 1.6d). Finally, on top of the cremated remains, against the rim of the urn, a second whetstone was placed that showed traces of red ochre (Van Wijk *et al.* 2009, 84-85).

As derives from the above, the Early Iron Age phase of the Oss-Zevenbergen site represents quite a variety of funerary practices that on their turn represent different stages in the time between death and burial. In summary, at least the following acts can be reconstructed from the archaeological data at hand:

- The embedding of the dead in a funerary landscape that existed for centuries already
- The building of (a) pyre(s) in specific locations within this much older funerary landscape
- The cremation rite itself
- The collection of cremated remains
- The selection of specific objects (the yoke, horse tack, decorated animal bone, whetstones)
- The manipulation of some of those objects by burning and breaking
- The specific placement of those objects on both the pyre (or not) as well as later in the grave
- The burial of the cremated remains in different capacities in carefully selected locations
- The building of (monumental) burial mounds

The apparent variety in funerary practices is not only due to the fact that some of them represent different stages in the mortuary process as a whole. It also seems that the death of different individuals set in motion different series of decision making. While one individual was buried in an urn next to the pyre accompanied with a shiny yoke and horse tack underneath a monumental burial mound, other individuals were buried without grave gifts underneath small heaps of earth that can hardly be called "mounds." Yet other individuals were assigned a final resting place in much older barrows that belonged to people that had been dead for centuries already. And finally, one person whose physical presence itself was reduced to a tiny fragment of burnt long bone is represented by one of the largest Early Iron Age mounds in the Low Countries. Clearly, the specific *situatedness* of the last physical remains of decedents was deemed important. Still all these people were assigned a place in the very same cemetery. Also, the outlay of the Oss-Zevenbergen cemetery hardly reflects the "classical" picture of an urnfield consisting of dozens, if not hundreds of cremation graves.

1.4.3 The urnfield burial spectrum

Examples of graves that show the elaborate series of funerary practices and a certain "richness" in objects like 'Mound 7' at Oss-Zevenbergen and the neighbouring 'Chieftain's grave of Oss' (Fig. 1.7), belong to a very select group of elite burials that occur in urnfields in the Lower-Rhine-Basin only from the eight century BC onwards. They are perhaps better known as '*Hallstatt-C/D Fürstengräber*' or '*chieftains' graves*' and as their name suggests, bear reference to the Central European '*Hallstatt Culture*' where chieftains living in royal residences are believed to have wielded power over local groups of people (Fernández-Götz/Krausse 2016). (Early) Iron Age graves in the Lower-Rhine-Basin that are counted under this select group of elite burials, contain objects like bronze cauldrons, wagon(part)s, horse gear, weaponry, jewellery and articles for personal hygiene and are often retrieved from underneath monumental burial mounds. Since these objects are more commonly found on display in the burial chambers of the Hallstatt Culture in the area north of the Alps, some form of contact between the Lower-Rhine-Basin and the circum-Alpine region is presumed (Van der Vaart-Verschoof 2017a, 17). Even more so, since many of the objects found in Dutch and Belgian excavations, actually concern imports from that same area (*ibid.*, 17). Even though the exact nature of this connection is debated (Schumann/Van der Vaart-Verschoof 2017) as is the presence of an elite in the Lower-Rhine-Basin that resembles an Iron Age ruling class north of the Alps (Van der Vaart-Verschoof 2017a, 19) the study of this select group of graves has recently provided some interesting insights in the funerary practices reflected in urnfield graves.

Objects like the bronze cauldron (*situla*) and the sword from the 'Chieftain's grave of Oss' (Fig. 1.7) indeed seem to resemble categories of objects present in the Hallstatt princely graves north of the Alps. It is however the way these objects are treated in the Lower-Rhine-Basin that is completely different from what is usually seen in these princely burial chambers. Where in the Hallstatt-tombs the cauldrons are often prominently displayed and believed to represent a symposium or drinking bout (Diepeveen-Jansen 2001, 39-44; 47-51; Fontijn/Fokkens 2007, 362-363), in the Lower-Rhine-Basin they are used as urns. Weapons like swords, that in the Lower-Rhine-Basin usually ended their life-paths in other places than graves (Fontijn 2002), seem now allowed in graves by the highest of exceptions and only after they first had been manipulated in such a fashion that they could never be used again (Fig. 1.7). Also, some notable objects in the Hallstatt princely graves as ceremonial

Fig. 1.7: The find assemblage of the 'Chieftain's grave of Oss' (Photo: Rijksmuseum van Oudheden, Leiden).

Fig. 1.8: Cremation grave dating to the nineth century BC at the site of Apeldoorn-Uddeler Heegde in the Central Netherlands (Louwen *et al.* 2014). In between the cremated remains one piece of a bronze saw-like object was found (photo on the right). Since the grave had been completely preserved, it is evident the rest of the object was deliberately kept out of the grave (Photos: Arjan Louwen).

wagons seem absent in graves in the Lower-Rhine-Basin, but when examined more closely they are represented indeed by objects like the pair of horse-bits in the Chieftain's grave of Oss (Fig. 1.7) and the lion-headed wheel caps in the grave found at Wijchen (Pare 1992; Van der Vaart-Verschoof 2017a, 63-66). What appears from these few examples is (1) that people in the Lower-Rhine-Basin clearly knew about which objects were usually present in elite burials hundreds of kilometres away from home, (2) that they too could get a hold of these objects, and moreover, (3) that these objects were re-contextualized in a fashion that made sense to *them*. Even more so, both the male in the 'Chieftain's grave of Oss' as the male in 'Mound 7' of Oss-Zevenbergen clearly did not bury themselves, suggesting that (4) the above mentioned knowledge of "foreign" burial customs was generally known among the people these presumed chieftains once ruled, regardless of their social status.

It is argued that the "Hallstatt-C/D chiefly burial set" was incorporated into local burial customs involving *pars pro toto* symbology (Fontijn/Fokkens 2007, 363) and the deliberate destruction and transformation of objects (Fontijn/Fokkens 2007, 367; Fontijn *et al.* 2013a). The cremation rite itself, that also involved a certain destruction and transformation of the dead body by fire can also be seen in this light (Fontijn *et al.* 2013c, 299). The recent PhD-research by Sasja van der Vaart-Verschoof, who looked into some 70 graves from the Lower-Rhine-Basin that are marked as elite- or rich Early Iron Age graves, confirms that many of the objects in these graves indeed underwent different forms of manipulation like burning, bending, breaking and occasionally wrapping them in textile (Van der Vaart-Verschoof 2017a, tab. 5.5). However, only a handful of the graves she studied really qualified as truly exceptional graves. These were *par excellence* the graves that contained wagon components or references to wagons like pairs of horse bits. The death of persons associated with these objects seems to have triggered an exaggerated form of destructive funerary rituals (Van der Vaart-Verschoof 2017a, 157). Even though the manipulation of objects occurred in almost every grave she studied, for the majority of her dataset she had great difficulty determining which graves should be considered as "exceptional" and which ones as "normal" since many of these graves only contained one item of the Hallstatt-set. It would therefore seem more appropriate to speak of an urnfield *burial spectrum* rather than a distinct group of elite graves and the rest of the urnfield graves (*ibid.*, 160). In fact, the manipulation of objects and *pars pro toto* symbology do not seem privileged to only a select group of graves reflecting a presumed higher social rank, but has been attested for more common urnfield graves in the Lower-Rhine-Basin as well (Fig. 1.8). Also, some practices like the manipulation of objects in urnfield graves already happened in the Late Bronze Age, long before the first graves with the Hallstatt-set occurred in the Lower-Rhine-Basin (*e.g.* Desittere 1968, 14; Fig. 5). Presumed differences in social rank thus not explain *all* variety in funerary practices reflected in the urnfield graves. But how must this burial spectrum and the associated practices then be explained?

1.4.4 Relational identities as a way of understanding the urnfield burial spectrum?

Objects, even the absence of them, play central roles in our interpretation of archaeological grave contexts. And often a relation between the objects and the social role or status of the person in the grave is presumed. For instance, the arrowheads found in an Early Bronze Age grave at Amesbury near Stonehenge, soon resulted in the nickname *"The Amesbury Archer"* (Fitzpatrick 2011) and it did not take long for the press to call the man buried here *"The King of Stonehenge"* since he was buried with such an elaborate set of objects. In another example from the Netherlands, the cushion stones and copper awl found in a Bell Beaker burial at Lunteren made the person buried here enter the prehistoric annals as *"The Smith of Lunteren"* (Butler/Fokkens 2005, 384; Pl 25a). Urnfield graves, on their turn, are often regarded as representing simple and non-hierarchical societies because of the minimal number and simple nature of grave gifts:

> *"…On the whole, the great urnfields give the impression of rather democratic peasant societies. The grave furniture sometimes illustrates differences of wealth but none so extreme as to suggest a contrast between chiefs and commoners…"* Childe 1950, 200.

> *"…The ritual of urnfields signals egalitarian village societies, and differentiation in grave goods is normally minimal…"* Kristiansen 1998, 113.

There are however other ways of looking at the relation between the dead person and the objects that do (or do not) accompany him or her in the grave. One of them has already been mentioned in the introduction of this section by making the distinction between the one who he *is being buried* and the ones *doing the burying*. Perhaps the funerary practices observed in urnfield graves reflect even more upon the latter than the former (Hertz 1907; Van Gennep 1909; Metcalf/Huntingon 1991). Another perspective stems from this same assumption and concerns a more fluid perception of both the dead body as the objects encountered in prehistoric grave contexts. On the surface, in modern western society people are very much used to the idea of looking at themselves as undividable entities or individual persons while objects are mostly perceived as soulless creations made by human beings (*e.g.* Strathern 1988; Fowler 2004). The nuances of "on the surface" and "mostly" are made here, since in modern western society too, the division between persons and objects is sometimes less strict than often presumed. The 1975 *Queen*-song *"I'm in love with my car"* might be seen as a sarcastic joke by drummer Roger Taylor about preferring an obedient car over a talkative girlfriend, the sexual attraction of people to machines called *mechanophilia* is a phenomenon that is taken seriously by modern psychologists. This might be an extreme example, but it shows that even today, the human mind seems to recognise something *animate* in the *in*animate.

Brück and Fontijn recently argued that the perception of objects as animate and *inalienable* was in fact substantial to people living in Northwest Europe at the time of the Bronze Age (Brück/Fontijn 2013). By pointing at the selective deposition of certain types of objects in specific locations, like swords in rivers (Fontijn 2002), they emphasize that these objects were not simply a static symbol of power or wealth but that these objects were invested with specific meanings and qualities themselves (Brück/Fontijn 2013, 205). As such, these objects were active agents that through their specific life-paths (*cf.* Kopytoff 1986) and constant re-negotiation among different people could help constitute a person (*cf.* Mauss 1990). In other words, it was not the *possession* of certain objects that marked a person's identity, but the *interplay* between persons, objects and places (Brück/Fontijn 2013, 209). In this kind of relationship, boundaries between people and things are less fixed. Not only objects would have been ascribed certain human qualities, but also the other way around, people could in a sense be objectified (*cf.* Brück 2004, 325). This abstract notion becomes very explicit in the dominant funerary rite of the Bronze Age where a human body of flesh and blood is transformed by fire into a few kilograms (or less) of calcined matter that could be handled, stored and distributed over as many locations as one would have liked. Token deposits of human remains in settlement contexts and *pars pro toto* representation of certain objects in grave contexts could be seen as indications for a meaningful triangle between people, objects and places and hint at the relational character of one's identity in the Bronze Age world (Brück 2004; 2006; Brück/Fontijn 2013). Funerals in a sense form the perfect occasion for the (re-) negotiation of such a relational identity because they tend to draw in an audience and mark a point in time of shifting social roles (*cf.* Oestigaard/Goldhahn 2006) while they also bring together people, objects and place (*cf.* Brück/Fontijn 2013).

1.5 Research questions

It is in this Bronze Age world, where ideas about fluid and relational identities seem prevalent, that the first urnfield graves once emerged and in which the meaning of the practices they reflect must be sought. Interpretative paradigms stemming from the traditional cultural approach to urnfields very much revolved around how *we* as archaeologists define the people who once did the burying. New perspectives can be gained when the tables are turned and focus shifts towards (1) how these people defined *themselves* in death and (2) how they did this in relation to others and the world around them. In this approach it are the funerary practices that become the central point of focus and the key to understand the widespread emergence of the collective cremation grave cemeteries we came to call *'urnfields.'*

This dissertation therefore aims *to understand the broad spectrum of funerary practices reflected in Late Bronze Age and Early Iron Age cremation grave cemeteries.* It will reason from the assumption that (urnfield) graves should indeed be seen as *meaningful composite artefacts* that hold clues of contemporary soci(et)al and cosmologic values. And it will do so by making use of the wealth of archaeological evidence already present in our museums and repositories by subjecting the excavational data to the following four basic and solvable questions:

1. *Which objects were selected for burial?*
2. *How were bones and objects treated prior to burial?*
3. *How were bones and objects positioned inside a grave?*
4. *How were graves positioned in relation to other graves?*

Subsequently, the answers to these four questions will form the required basis for any further research into the meaning behind the funerary practices observed and an important stepping stone in understanding the processes that kickstarted the emergence of urnfields in the northwest corner of Europe.

1.6 Dataset and methodology

The Lower-Rhine-Basin was chosen as a research area for various reasons. First of all, this particular area has a long and rich research tradition when it comes to urnfields. As a result of which a large corpus of research data is available (*e.g.* Aschemeyer 1966; Desittere 1968; Meex 1972; 1976; Kooi 1979; Verlinde 1987; Ruppel 1990; Schoenfelder 1992; Gerritsen 2003; Verlinde/Hulst 2010). Not only is there an abundance of cemeteries in the Lower-Rhine-Basin that date to the period between the Late Bronze Age and Early Iron Age, but a fair amount of the generated excavational data is still assessable and useable for more detailed research into the reconstruction of funerary practices. Especially since the implementation of the Valletta Treaty in 1992, the corpus of urnfield data has been substantially enriched (see Fig. 3.15) and much of the potential of these new data has not been unlocked yet. As most of the available literature on urnfields from the Lower-Rhine-Basin has either been written in German or Dutch, this dissertation also aims to open up this potential to a wider international audience.

Within the Lower-Rhine-Basin, the present day Netherlands were finally picked as a point of entry and the primary source for the research data to be consulted in this dissertation. This decision too, was made because of various reasons. With regards to feasibility, the initial estimation of some 700 sites in the Lower-Rhine-Basin turned out to be way too modest. The Netherlands alone already yielded 689 sites (Fig. 1.9; Appendix I); in North Belgium another 200 cemeteries are known (De Mulder 2011; Gerritsen 2003) and a quick-scan of West Germany produced another 220 sites. At this point, especially the wealth of data in both Nordrhein-Westfalen as Niedersachsen had only slightly been touched upon and it turned out that making an inventory for the entire region of the Lower-Rhine-Basin was simply too time-

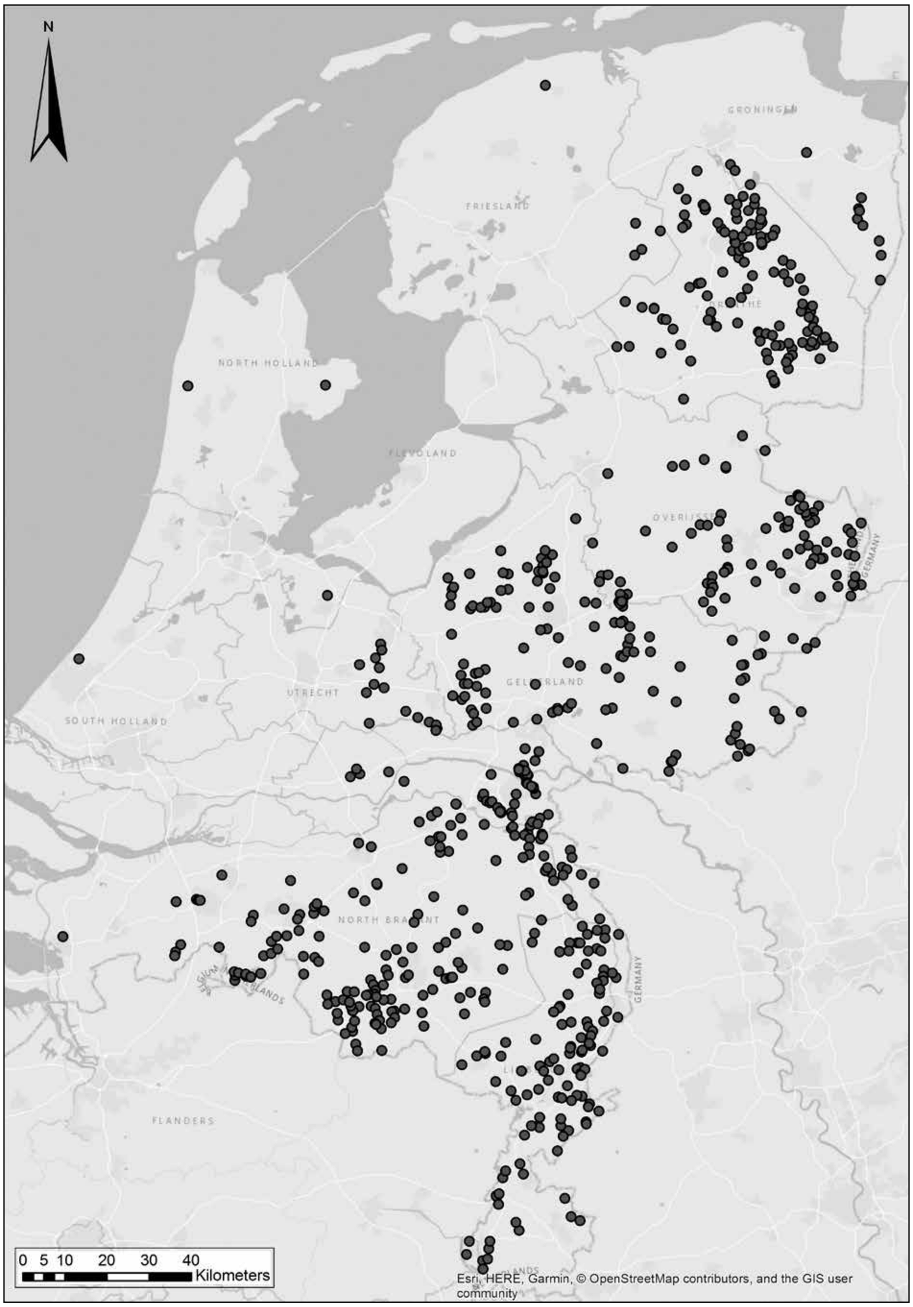

Fig. 1.9: Inventory of sites in the Netherlands that produced graves dating to the Late Bronze Age and/or Early Iron Age (Own work; Background: Esri, HERE, Garmin; Copyright Open StreetMap contributors, and GIS user community).

consuming. Additionally, the Belgian sites have only recently been subjected to a research encumbered with funerary practices by the extensive work of Guy de Mulder (2011). Finally, the present author had already gained experience in working with both the potential as the pitfalls involved with the available data from the Netherlands (Louwen 2008; 2010; Van Beek/Louwen 2012; 2013) and is familiar with the various biases in the data from this particular stretch of the Lower-Rhine-Basin (Chapter 3).

By combining the various regional inventories of urnfields available for the Netherlands (Desittere 1968; Kooi 1979; Verlinde 1987; Gerritsen 2003; Verlinde/Hulst 2010) with the national online database [Archis II and Archis 3] and online repository of research reports [DansEasy] an extensive overview of Late Bronze Age/Early Iron Age burial sites was created for the Netherlands (Fig. 1.9; Appendix I). All sites have then been labelled according to the quality of the available data (Chapter 3). Finally, 75 sites with the highest degree of data-quality were handpicked from the total of 689 sites recorded for the Netherlands. Together these 75 sites produced 3,182 published graves that have all been entered individually in a database [Microsoft Access]. For each grave some 45 variables have been recorded concerning the actions and choices involved in the creation of these particular graves (Chapter 3). As such, the database functioned as the basis for answering the questions posed in the above and the subsequent discussion as to the meaning behind the funerary practices observed. The available radiocarbon dates have all been (re-)calibrated [OxCal v4.3.2] using the most recent atmospheric curve available at the time [IntCal13].

1.7 Research outline

After this introduction a theoretical framework (Chapter 2) will be established that lays the groundwork for a more in depth study of the funerary practices associated with the urnfields in the Lower-Rhine-Basin. It will make use of various sociological approaches that exist in relation to *practice* in general and more specifically in relation to the social significance of death and burial. This theoretical framework will then be used to dissect the urnfield funeral in more detail and establish a methodology suited for the study of funerary practices reflected in urnfield graves (Chapter 3). In this chapter the quality and the representativity of the available data will also be evaluated and a definitive selection of sites will be presented. Chapters 4, 5 and 6 comprise the results section of the present research. In these chapters we will follow the decedent (Chapter 4) and the objects accompanying her/him (Chapter 5) throughout the mortuary process, to see them finally joined up in the context of the grave (Chapter 6). The last three chapters will be dedicated to the interpretation of the urnfield mortuary process. First (Chapter 7), the results obtained will be evaluated in the light of the theoretical framework established in Chapter 2. Here the mortuary process will be explored by use of concepts such as communities- and constellations of practice as well as by notions about relational identities and the role of ancestors. In Chapter 8 will be zoomed out in order to discuss the role of urnfields and ancestors in relation to the social organisation of the Late Bronze Age/Early Iron Age landscape. Chapter 9 will summarise the most important conclusions of the present study and directions for future research will be suggested. The appendices contain an up-to-date overview of all the urnfield sites in the Netherlands (Appendix I) as well as a list of the available radiocarbon dates (Appendix II). The central database and a series of maps (Appendix III) will all be made available online.[5]

5 Link to dataset: https://doi.org/10.17026/dans-xvn-8bph

2

The whole is more than the sum of its parts

2.1 Introduction

Apart from anthropologists and archaeologists, there are probably not many people around who once found themselves standing next to a bier consciously contemplating the meaning behind their own behaviour as related to the dead person in the room. However deranged such a professional deformity might look, death, as life's one true certainty, affects and intrigues people of all walks of life and as such seems to be the one arena where universalities in human behaviour may be detected. As death is often a highly emotional event that with the last blink of the eye literally turns people's lives upside-down, it has been at the centre of many a discussion concerning the human psyche, perceptions of the *self* and the social structure of communities. Clearly, death is not just a dramatic end to a life-history and the way it is perceived and dealt with by the mourners might even shed light on what people deem important in life. This chapter means to dive into the wealth of approaches that exist to the sociological aspects of death and dying in order to establish a theoretical framework that will help discern which aspects of urnfield graves should be studied to get a grip on the people behind the practices reflected in these graves.

2.2 Practice in practice: more than a habit

While the terminology of *funerary*- or *mortuary practices* is primarily aimed at the series of actions set in motion by the event of death, the word *"practice"* on itself stands for a field of study that exceeds the boundaries of thanatology substantially. The study encumbered with the relationship between *all* forms of human action and the world in which these actions take place is called *Practice Theory* (*cf.* Ortner 2006) and its aim is to unravel the mechanisms and motivations behind human action in general. Since it closely touches upon the very core of human beings in the search for these mechanisms and motivations, the works written on *Practice Theory* have a strong philosophical character. Its champions often celebrated in archaeological literature (*e.g.* Barret 2001; Robb 2010) are Pierre Bourdieu (1977; 1990) and Anthony Giddens (1979; 1984). Michel Foucault (1977) and Theodore Schatzki (1996; 2002) also regularly come about. For their works these scholars relied upon late nineteenth/early twentieth century sociologists like Émile Durkheim (1858-1917) and philosophers as Martin Heidegger (1889-1976) and Ludwig Wittgenstein (1889-1951). As the approaches to practice theory by the above mentioned scholars vary substantially, summarising this entire intellectual heritage is well beyond the scope of

Fig. 2.1: *"Charon and Psyche"* painted by John Roddam Spencer Stanhope (1883).

this research. Notwithstanding, Bourdieu's work on one of the core-principles of Practice Theory, the *"Habitus,"* is indispensable when it comes to understanding practice in general. In the following an attempt shall be made to grasp the essence of Bourdieu's essay on this largely subconscious motivator of all actions performed by human agents, since it also provides some valuable insights in the way we should perceive funerary practices fossilised in the archaeological record.

Habitus, as a sociological and philosophical principle, may best be defined as a set or system of embodied dispositions which is used consciously and subconsciously by human individuals to both perceive as to react on the (social) world around them. It is derived from Aristotle's *hexis* (state) and found its way to modern sociology via the Medieval *scholastics* (Wacquant 2007, 64). Marcel Mauss was one of the first modern scholars to employ the term again in his *"Les techniques du corps"* (Mauss 1936, 7) but it was Pierre Bourdieu who elaborated on its deeper meaning and reworked its definition to the one now so often cited in sociological (and archaeological) literature (Bourdieu 1977; 1990). Bourdieu himself defines *habitus* as follows:

> *"…The conditionings associated with a particular class of conditions of existence produce* ***habitus****, systems of durable, transposable dispositions, structured structures predisposed to function as structuring structures, that is, as principles which generate and organize practices and representations that can be objectively adapted to their outcomes without presupposing a conscious aiming at ends or an express mastery of the operations necessary to attain them. Objectively 'regulated' and 'regular' without being in any way the product of obedience to rules, they can be collectively orchestrated without being the product of the organizing action of a conductor…"* Bourdieu 1990, 53.

Especially the dialectic between the conscious and the subconscious is apparent in this definition of the *habitus* as is its generative power to *act*. Bourdieu adds that *habitus* must be considered as a product of history that produces both individual as collective practice (Bourdieu 1990, 54). One could state on basis of Bourdieu's notion of the *habitus* that the motivations behind the actions performed by human agents stem from *all* personal experiences by an individual learnt in the past and as a consequence that this set of defining experiences grows and alters by every day that is added to a person's life (*cf.* Durkheim 1977, 11; Bourdieu 1990, 56).[6] Its generative power thus not only consist of the ability to generate action, but also to learn new information all the time.

This latter observation also makes the *habitus* a very personal affair since no one's history is exactly the same. Still there is a thing as *group-* or *class habitus* as it derives from:

> *"...a homogeneity of conditions of existence that enables practices to be objectively harmonized without any calculation or conscious reference to a norm and is mutually adjusted in the absence of any direct interaction or, a-fortiori, explicit co-ordination..."* Bourdieu 1990, 58-59.

In essence Bourdieu here describes what in more recent literature would be considered as *emergent behaviour* (*e.g.* Ball 2004). Bourdieu however warns not to *"...conceive collective actions by analogy with individual action..."* (Bourdieu 1990, 59) since these collective actions are merely a (sub)conscious consensus between individual agents with different life-histories and thus different *habitus*. In other words, collective actions can only take place as long as the actions concerned are in tune to an agreeable level with the *habitus* of all participants. As he puts it, the early experiences that already shaped one's *habitus* cause it to carefully weigh all forms of new information and reject or avoid this information when it calls into question the information already gathered and might endanger its constancy (*ibid.*, 60). Also, when it comes to *group habitus*, not all who take part in collective practice would have had access to the same amount of information or even possess the skills to acquire this information in the first place. When the different life-paths behind the *habitus* of individuals and the varying access to information by these individuals are considered, clearly motivations of individual agents behind the same collective practice may vary significantly.

As an example, one could think of Church leaders who studied the scriptures for years while the majority of their congregation does probably not possess the same knowledge about the stories in the Bible nor the rituals performed on Sunday morning. Yet they all take part in and agree upon the same collective practices during Mass. When asked, individual churchgoers will probably give different motivations for taking part in rituals like Communion. Some might experience deep reverence or redemption when breaking bread and sharing wine as symbols for Christ's body and blood while for others the sense of belonging is more important. Noting the different motivations generated by personal *habitus* behind collective practice, Bourdieu concludes that models presupposing pure

6 The quote by Émile Durkheim that Bourdieu uses to stress his point that habitus is perpetually subject to change is in fact too apt not to include: *"...In each one of us, in differing degrees, is contained the person we were yesterday, and indeed, in the nature of things it is even true that our past personae predominate in us, since the present is necessarily insignificant when compared with the long period of the past because of which we have emerged in the form of today..."* Durkheim 1977 [1938], 11.

rational action in collective practice and an equal access to information by all participants that in fact can only exist in the viewpoint of the scientist, can never be regarded as valid anthropological descriptions of practice (*ibid.*, 63):

> *"…Only in imaginary experience (in the folk tale, for example), which neutralizes the sense of social realities, does the social world take the form of a universe of possibles equally possible for any possibly subject…"* Bourdieu 1990, 64.

When Bourdieu's notion of the *habitus* is projected on the urnfield graves central to the research at hand, it provides some interesting perspectives on the practices reflected in these graves. First, the practices concerned can represent both *individual* as *collective* practices at the same time. The two are very hard to distinguish from one another within the archaeological record and will in many occasions have been inextricably linked. The act of cremating a dead body, for instance, will probably have been an event where multiple people were present and may as such be considered a collective practice. What we however encounter in the archaeological record is just the final deposition of the cremated remains. A representation of a practice that is in fact at least three steps beyond the actual act of cremating the corpse: (1) The cremated remains have been collected from the pyre, (2) transported to the location of the grave and (3) have finally been deposited in the grave. In the meantime, the cremated remains could have been stored for an unspecified period of time and have been the subject of many a performance invisible to the archaeological eye (Section 3.2.5). All the actions concerned could have been carried out both collectively or more privately, involving both group as individual practice. The end result however is the same: a small heap of burnt bones in an urn or little shaft in the ground.

Second, both individual as collective practices are products of *habitus* and as such deeply rooted in history. The funerary practices reflected in urnfield graves thus not only represent the Late Bronze Age/Early Iron Age *present* in the act of burying someone or the *future* by taking certain precautions for the hereafter: they as much, be it subconsciously, refer to the *past* of the community the deceased was part of. The treatment of both body and objects as encountered in urnfield graves is the result of a critical and largely *sub*conscious evaluation within the minds of Late Bronze Age/Early Iron Age people where all possibilities of treatment have been weighed against the accumulated information of a lifetime. As such, the funerary practices concerned may indeed hold clues of social values that were important in life during the Late Bronze Age and Early Iron Age.

A third insight Bourdieu's notion of the *habitus* provides is the point he makes about the varying access to information and individual *habitus*. Even though the general practices of cremating the dead, collecting their ashes in urns and burying them together in collective cemeteries does seem to have made sense to all people counted under the urnfield cultures, one must be aware that motivations behind these similar practices may in fact be variate. Someone living in the Balkans in the Late Bronze Age will most probably not have known why someone living in the Lower-Rhine-Basin was cremating the dead too. And that is if these people were aware of each other's existence in the first place. Yet judged from their mutual *habitus*, cremating the dead was something that made sense to them both. This in fact also counts for groups of people living practically next door to each other, and, as in the Church example in the above, even between individuals within these specific groups since their accumulated information is never the same.

As to oppose a mechanistic theory of practice, in his essay Bourdieu cites Harris (1964) who describes his observations of someone working in the kitchen for just 20 minutes. In this limited time-window Harris's counted no less than 480 individual actions or *episodes* as he calls them, all driven by individual *habitus* (Bourdieu 1990, 62). When we extend this example a bit, the person Harris observed[7] might have been baking something like a chocolate cake, a product fabricated in kitchens all over the world. The reasons why chocolate cakes come into being are however highly variate: birthday parties, jubilees, broken hearts or just a liking of chocolate. Also, even though the cake will have to be baked in the end, the steps involved in baking a chocolate cake will differ in every kitchen. Still, after the cake is finally baked, people all over the world end up with the same end result: an edible substance we would probably recognise as a chocolate cake. When this example is projected on the archaeological context of an urnfield grave, the end result of cremated remains put in an urn and deposited in a small hole in the ground may from an archaeological point of view indeed look the same for a geographical area of a given size, the series of actions that led up to that end result may in fact be unimaginably variate.

To conclude, for the funerary practices central to this research, the main point that can be distilled from Bourdieu's essay on the *habitus*, is the room it offers for variation in both the meaning of- as the motivation behind certain practices that, from an archaeological point of view, in the end will still lead up to the same end product. As archaeologists we are often searching for that bigger picture, looking for patterns and repetition. Yet when we excavate an urnfield grave, what we are looking at is in fact a reflection of a unique sequence of events that as a whole can never be repeated. The apt aspect of Bourdieu's notion of the *habitus* is that it leaves room for both perspectives, just as long as certain steps leading up to that specific end product, be it consciously or subconsciously, make sense to the agents performing them. The interesting thing herein is, that towards the end of the Bronze Age people living in a geographical area almost as large as present day Europe all seem to have been susceptible to a way of treating a dead body that time and time again led to the same archaeological footprint we have come to perceive as urnfield graves.

2.3 The liminality of death

2.3.1 Dying in phases

Modern sociological approaches to death and burial are in fact very much shaped by two Parisian papers published in the first decade of the twentieth century. Before the turn of the nineteenth century, the study of funerary practices in non-Western societies was deemed more or less irrelevant by anthropologists in the sense that many of the practices concerned were considered symptomatic for religious belief systems that, in the light of the at the time new evolutionistic perspective on science, could only reflect upon a society's past and not lead to a better understanding of that same society in the present (Metcalf/Huntington 1991, 31). Robert Hertz's essay *"Contribution à une étude sur la representation collective de la morte"* (1907)[8] and Arnold van Gennep's *"Rites de passage"* (1909) would however change this perspective drastically. Following his tutor Émile Durkheim, Hertz

7 In a modern world where gender roles find themselves in the centre of public debate it was decided to leave out the fact that the person Harris was observing in the kitchen was his own wife…

8 Reissued in English in 1960 as "*A contribution to the study of the collective representations of death*" (Hertz, 1960).

saw the series of actions performed at the occasion of death as something important to the social cohesion of a society in the present. Van Gennep, on his turn, pointed at the relevance of ritual practice (rites of passage) in helping an individual from one state of being to another such as reaching adulthood and marriage but also death or being dead. Central to both their approaches is that death clearly is a transitional phase that is of great importance to a society's social well-being. The strength of Hertz's and Van Gennep's efforts not only lies with this fresh perspective on funerary practices in general, they also provided such a universal and elaborate theoretical framework, that until this day their work has hardly been improved (Metcalf/Huntington 1991, xi).

2.3.2 Triangulating death: Hertz's three explanations why the dead body is feared

To begin with the oldest of the two essays, Hertz's argument has been thoroughly re-examined and made even more assessable by Peter Metcalf and Richard Huntington for their often-cited *"Celebrations of Death. The anthropology of mortuary ritual"* (Huntington/Metcalf 1979; Metcalf/Huntington 1991). In short, Metcalf and Huntington read three explanations in Hertz's essay (*cf.* Evans-Pritchard 1960) why the dead body is feared and invokes certain actions by those left behind. Subsequently, they linked these explanations to the *dramatis personae* brought to the fore by Hertz in relation to funerary practices: the *corpse*, the *mourners* and the *soul* (Hertz 1907). By doing so, a schematic triangle is created showing the vivid dialogue that takes place between these three following one's death (Fig. 2.2).

The three explanations along the different sides of the triangle can in a way also be regarded as (an explanation of) specific sets of practice set in motion by the death of a person. The set of actions involved in the interplay between the mourners and the corpse, for instance, revolves around the social role and status of the deceased and is in fact already aimed at a certain restoration of the social order within the group. Fear of the dead body along this side of the triangle comes from the sudden social chaos a society is confronted with when one of its members dies. In a sense, the vacant seat at the table painfully lays bare the social foundations of such a society for a short moment of time and causes its living members to reflect upon their social structure now that one of its essential parts is suddenly missing. As a consequence, the corpse must be dealt with in accordance to the former social status of the deceased. Variety in this set of funerary practices is dependent on the social role of the deceased: the death of a leader will generally evoke more elaborate funerary practices than the death of a slave since the death of a leader has more impact on the social order of the group.

From an archaeological viewpoint it is important to note here that the elaborateness of the funerary practices in this explanation is *not* measured in grave goods: it really is about the practices themselves. Just think of 'Mound 3' in the Oss-Zevenbergen example from Chapter 1 (Section 1.4.2). With its diameter of 30 metres 'Mound 3' is one of the largest Early Iron Age barrows in the Netherlands. Yet the decedent her/himself is only represented by one single piece of long bone and the four objects accompanying her/him can hardly be called objects. Still, when the efforts are considered that form the basis of the archaeological precipitation as witnessed underneath this particular mound, these are indeed elaborate: The charred oak that was found here, had to be burnt first in a substantial fire. The piece of long bone was selected from a cremation performed

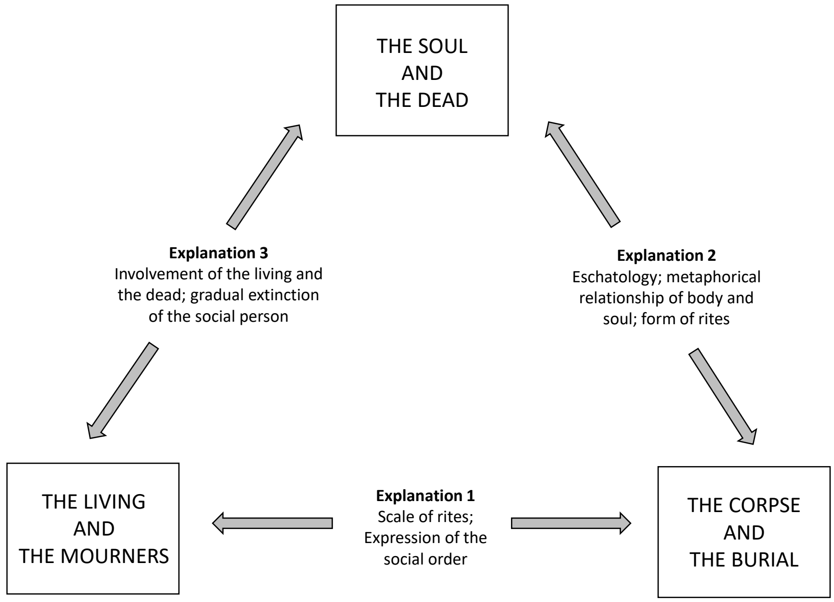

Fig.2.2: Schematic diagram crafted by Metcalf and Huntington (1991) based on Hertz's arguments (1907) why the dead body is feared and how the three *dramatis personae* in a given mortuary process interact (After: Metcalf/Huntington 1991, fig. 3).

elsewhere and the objects had been manipulated by burning and breaking, finally to be deposited together underneath a burial mound that would have usurped quite some time to construct. It are the elaborate *practices* in this example that indicate the person buried here had to be treated differently than the rest of her/his contemporaries, not the grave goods that were found with her/him.

The second explanation offered by Hertz concerns the relation between the mortal shell of the dead person and that part of him/her that is transcendent: the soul. This transcendency must be read in the broadest sense of the word and includes all notions of the dead person, even the ones that do not involve the existence of a soul or spirit. Something that struck Hertz in his study of secondary burials on the island of Borneo, was the metaphorical relation between the state of the corpse and the soul. Until the bones of the corpse had become completely "dry," like the decaying body the soul was considered to be in a "wet-phase" too, lingering in the world of the living. Here the fear of the corpse central to Hertz's essay surfaces again, since as long as its constitution in the hereafter has not been completed fully, the soul or spirit may linger in the world of the living, haunting them with the threat of further death. Putting the soul to rest and help it to smoothly make the transition from this world to the next also requires specific funerary practices. One might think of Classical Greece where the placing of a coin in the mouth of the corpse was to ensure a safe crossing of the soul over the river Styx that was believed to separate the world of the living from the world of the dead (Fig. 2.1). Not paying the ferryman Charon was to risk the soul to linger on the banks of the Styx for more than a hundred years.

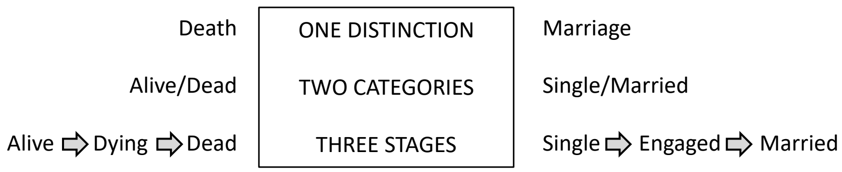

Fig. 2.3: Schematic overview of a *rite of passage* according to Van Gennep (After: Metcalf/Huntington 1991, fig. 1).

The third explanation, or set of actions, takes place in relation to the interplay between the soul of the deceased and the mourners. Like with the first set of practices, the third explanation is very much aimed at the social order of the group. However, whereas the first set of actions revolves around the mortal shell of the dead person and all the decorum in the disposal thereof, the third explanation is concerned with the gradual disentanglement of the living and the deceased (Metcalf/Huntington 1991, 84). As a former social being, the dead person leaves open a node in the complex network of social relations that a society is. The emotional detachment in the minds of people that follows after the loss of a father, mother, brother, sister, friend and even foe is just one aspect of extricating the ties between the living and the dead. Objects and places related to the dead person like personal belongings and farmland need to be dealt with. The same applies to the former social relations of the deceased: they need to be dissolved or redistributed.

Despite the fact that Hertz originally operated from the viewpoint of the so-called *special case*, the theoretical framework that stems from it is very much applicable to death in general. One might argue that his first explanation involving the interplay between mourners and the corpse is the most prominent one, but the other two explanations are both indispensable as well. In every given group of people that is struck by death has to be dealt with the dead person's belongings and the empty seat at the table (explanation 3). Also, it would hardly be appropriate to dispose of a dead person's ashes by putting them outside with the rest of the garbage (explanation 2).

2.3.3 Binary oppositions in death: Van Gennep's last rite(s) of passage

Where Hertz was specifically working on the subject of death and the rituals revolving around it, Van Gennep came up with a theoretical framework that applied to *all* forms of social transformation taking place in the course of a person's life. Initiation and marriage are clear examples of such transitions but like Hertz, Van Gennep also saw death as a prominent occasion whereby a person is transferred from one state of being to another. The works by Hertz and Van Gennep thus seem in tune, only the scope of Van Gennep's work is much broader. Also, in the framework created by Van Gennep, the symbology of death and dying is not only confined to the event of death itself but it occurs in other transitional phases between different social states of being as well.

Van Gennep works from the thesis that all changes of social status occurring in a person's life share a certain tripartite structure. This tripartite structure is based on the binary opposition that exists between one state of being and the other like for instance 'child/adult,' 'single/married' but also 'alive/dead' (see Fig. 2.3). The transformation from one of these social statuses to the other involves three steps that seem universal to all forms of social transition: (1) separation from one status followed by (2) a liminal period or a state of transition where a person is "betwixt and

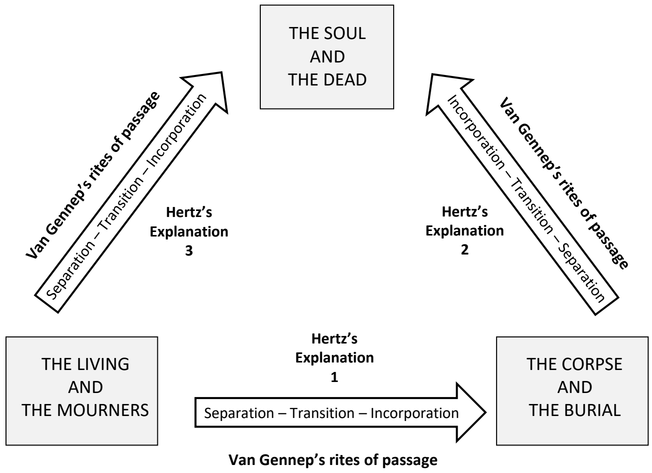

Fig. 2.4: Hertz's three explanations why the dead body is feared (Fig. 2.2) combined with Van Gennep's rites of passage (Fig. 2.3).

between" (*cf.* Turner 1967) and finally (3) a reincorporation in the new social status. In each transition one old *self* disappears while a new *self* emerges. The actions deemed necessary to perform in the liminal phase in between two social statuses are called *rites of passage*. It is in this liminal phase where *birth* and *death* serve as the perfect metaphors for the transition of one social status to the other, only in reversed order: the old self dies while at the end of the rites concerned a new self is born. Rebirth as a dead person may sound contradictory at first but like with the process of giving birth, both the dead person[9] as the group of people that he or she was part of must go through great lengths of pain before things are set in order again. Van Gennep emphasises that especially in the liminal phase between being alive and being "properly" dead the transitional rites are often of such a complexity that they could be granted a sort of autonomy compared to the other rites of passage in a person's life (Van Gennep 1960, 146).

It is exactly here where the approaches of Hertz and Van Gennep function as complementary to one another and why they go so perfectly hand in hand. Where Van Gennep underpins the importance of the transitional phase between two social statuses in general, Hertz provides the transitional phase following one's death with the necessary social dimensions in which these transitions in fact take place. The three steps Van Gennep discerns for the liminal phase between two states of being, rites of separation, transition and incorporation, on their turn operate along all three sides of the imaginative triangle based on Hertz's *dramatis personae* (Fig. 2.4). It is exactly the combination of these works that provided thanatology with a theoretical framework of such a universal strength, that even today the liminality of death is still often mentioned in the same sentence as the names of Van Gennep and Hertz. The funerary practices reflected in urnfield graves too, happened somewhere along the three sides of the triangle that Metcalf and Huntington created on basis of Hertz's findings and according to the three steps of separation, transition and incorporation taking place between two different *social personae* on either side of the mystic veil between life and death.

9 Comparable to Hertz's image of the dead person's soul being in agony and trapped between two worlds as long as all the proper funerary rites have not been performed.

2.4 Death as a *Narrative*

To acknowledge that funerary practices reflect the transformation from one social status to the other is in fact vital in our interpretation of the archaeological context of the grave. Even though it might be tempting to view the grave as a portrait of a person's former social status or an accumulation of the different social roles obtained in life (*e.g.* Saxe 1970; Binford 1971), that is not simply what a grave represents. Neither can the grave just be seen as the portraying of the deceased as a future ancestor. As Van Gennep already noted, it is the transition between the two states of being that is of equal importance (Van Gennep 1960, 146) and it is here where a modest step can be taken from the final resting place of the deceased to the living community he or she was part of.

Fowler recently argued how past identities may be distilled from the archaeological context of the grave (Fowler 2013). Fowler starts by posing two assumptions. One of them is Van Gennep's thesis that the distinction of death too, involves a transition between two states of being following the tripartite structure of liminality. The other thesis is that identities are negotiated relationally and contextually (Fowler 2013, 511). Without entering the complex debate about what identity entails in its full extent, many aspects of identity are in fact rooted in relationships as they are dependent on the recognition of others (*ibid.*, 512). Here Fowler brings another sociologist to the fore, Ward Goodenough, who developed a theoretical framework to study systems of relationships based on status and the rights and duties attached to a specific status (Goodenough 1965). Goodenough used the term *social identity* to indicate those elements of identity that are based on social interaction with other people. From this point of view an individual can have multiple social identities, depending on who he or she is interacting with. Goodenough refers to a set of social identities that has been selected for a given interaction as the *social persona* (Goodenough 1965, 7). A very fitting term indeed, since the Latin word of '*persona*' means 'mask,' a face that can be switched for any occasion, or in the case of the social persona, the right mask for the right interaction (*cf.* Mauss 1938). Subsequently, Fowler connects this notion of the social persona to Van Gennep's social statuses on both sides of his rites of passage and emphasises the transitional nature of the mortuary process as a whole: not only the social persona of the deceased is transformed but also his or her social relations are (re-)negotiated. Throughout the entire process, as the subject of the rites concerned, the social person of the deceased occurs repeatedly (Fowler 2013, 513) with emphasis on different social identities. The eulogies read by husbands, wives, children, friends and colleagues in modern western funeral services, reflecting on different dimensions of the social life of the deceased, can be seen as an example of this process. As such, what we see in the mortuary context of the grave is not just the display of (pre-)fixed identities at the point of death, but an accumulation of these identities. Also, the funerary practices that can still be reconstructed, not only reflect upon these different *social personae* of the deceased, but as much as the transformation thereof. In this light, the objects that the deceased is provided with in the grave thus not necessarily reflect wealth or status, but they might as well have functioned in the transformation of one social persona to the other. Again, the example of the coin placed in the mouth of the corpse in Ancient Greece applies: a coin, that at any other occasion might be seen as a symbol of wealth, literally functioned as a means to cross over.

Having emphasised the transitional nature of the mortuary process, Fowler states that like within other aspects of life, in funerals too, ideologically charged statements are made (*ibid.*, 514). Statements about the social identities of the deceased that are arranged in, what he calls *"a narrative,"* linking different points in the chain of funerary practices.

When read carefully, these narratives about the transformation of the social persona(e) of the deceased may contain clues about both the social organisation as well as the social ideals of the group the deceased was part of, since the social identities that make up the deceased social persona(e) are about social relations.

Following this train of thought, the community doing the burying comes to live when the liminal phase following one's death is not only seen as a transition of the deceased from one state of being to another, but as a *narrative* in which the community reflects upon the different personal identities of the dead. Personal identities that are in their very core relational and contextual: they can only exist by the recognition of the mourners and as such reflect as much upon them as well. In this view, funerary practices express a community's perception of the different social personae of the deceased: the treatment of the corpse, the selection of specific objects and the organisation of both elements in the context of the grave therefore reflect as much upon a community's social ideals in life as they do in death.

2.5 Piecing together *personhood* in the Bronze- and Iron Age

Last, but certainly not least, the way in which the dead body is treated and provided with certain objects may also hold clues about a community's *self-consciousness*. This is the point where the last concept to be treated in this chapter enters the stage: the concept of *personhood.* The way of seeing ourselves as independent individuals, undividable entities so to speak, is in fact a modern western notion that stems from the eighteenth century AD Enlightenment and cannot simply be projected on prehistoric societies. In a monumental essay, delivered as the *"Huxley Memorial Lecture"* of 1938, Marcel Mauss reflected on this modern notion of the *self* (Mauss 1938). The way he "anatomised" our self-image in this essay, by applying a multifaceted approach of linguistics, philosophy, history, anthropology, law, theology and sociology, has laid the groundwork for every study concerned with the notion of the person or *personhood*. Like with '*identity*' the exact definition of '*personhood*' is heavily debated and the two concepts are often mentioned in the same sentence as they both revolve around those aspects in life (and death) that tell us something about how one is perceived by others or how one reflects upon oneself. Without entering this complex debate, the definition of personhood applied in the research at hand is aimed to cover all angles and concerns *"…the condition or state of being a person, as it is understood in any specific context…"* (Fowler 2004, 4).

As Mauss himself, following the path set out by his uncle Durkheim (Mauss 1985, 2), only meant to explore those elements that make up a person's self-consciousness, he was not yet encumbered with definitional problems, nor was it his aim to come up with a definitive statement about what it means to be a person:

> *"…Who knows what progress the Understanding will yet make on this matter? We do not know what light will be thrown on these recent problems by psychology and sociology both already well advanced, but which must be urged on even more. Who knows even whether this 'category,' which all of us here believe to be well founded, will always be recognised as such?* […] *Yet do not let us speculate too much. Let us say that social anthropology, sociology, history – all teach us to perceive how human thought 'moves on.' Slowly does it succeed in expressing itself, through time, through societies, their contacts and metamorphoses, along ways that seem most perilous. Let us labour to demonstrate how we must become aware of ourselves, in order to perfect our thought and to express it better…"* Mauss 1985 [1938], 22-23.

Noting the *down-to-earth-ness* in this excerpt taken from Mauss's conclusion, going back to Mauss's original essay may very well prove refreshing in an attempt to unravel the complexities underlying the concept of personhood and explore its potential use in the study of the funerary practices central to this research. To begin with the title of Mauss's original essay, *"Une Catégorie de l'Esprit Humain: La Notion de Personne, Celle de "Moi""* (Mauss 1938), [10] Mauss clearly considers the "self" to be one of many categories in the perception of the human mind. However, the use of the word "category" not simply comes from the urge to indicate a certain class or division, but it actually refers back to Aristotle's work of the *"Κατηγορίαι"* (Latin: *Categoriae*) in which he distinguishes ten categories of human apprehension. Mauss's notion of the "self" is therefore in its core highly philosophical, yet by building it up from anthropological and historical examples also tangible and easily assessable. In his essay, Mauss takes his readers by the hand and walks them through world history while showcasing very different notions of the self, affected, or better, *inspired* by religion, Roman nomenclature, politics and law. The ever-altering nature of the notion of the *self* as derives from this journey is also the main message of his essay. As mentioned, seeing ourselves as *un*dividable and largely independent entities, hence the word '*in*dividual,' is in fact a rather recent notion and does not even always apply to non-religious, modern western societies. Also, the idea that a person is in a way composite and constituent of multiple elements like a mind, body and a soul would in fact be attested by the majority of the today's world population.

Sensu stricto, the latter notion of the *self* already falls under the concept of *dividuality*: a state of being where a person is recognised as composite. In the above (Section 2.4) it has been argued that social relations constitute a person's social persona: a selected set of social identities for a specific interaction. In some communities these social relations make up such an important part of their personhood, that people actually owe parts of themselves to others (Fowler 2004, 5). In this context, Mauss brings up old Germanic law where the word of *"Leibeigen"* (whose body is owned) was used to distinguish between slaves and freemen (Mauss 1985 [1938], 17). Christianity in fact provides a multitude of examples for the concept of dividuality: think of the soul that is owed to God and the human body that needs to be cared for as it is the temple where the spirit of God may dwell (1 Corinthians 6:3). Or traditional Christian weddings where a text from the book of Genesis describing the bond between husband and wife is still often recited:

> *"…Therefore, shall a man leave his father and his mother, and shall cleave unto his wife: and they shall be one flesh…"* Genesis 2:24.

The social relations that are deemed elementary in composite forms of personhood not only come about in the metaphorical sense, but in physical forms as well. The state of being where the dividual person can be reconfigured and parts of that person can be extracted and given to other persons is called *'partibility'* (*cf.* Fowler 2004, 5). In this perception of the dividual, objects too can function as extensions or even parts of a person and can be given (or are even owed) to others. The wedding ring is in fact a good modern example of this form of dividual personhood. But not only objects necessarily function as partible extensions of the human

10 English translation: *"A category of the human mind: The notion of the person: The notion of 'self'"* (W.D. Halls, 1985).

person, the human body itself can also be regarded as dividable. The role of relics in Medieval Europe is a typical example of such a form of partibility as the bones, hairs and clothes of saints were believed to have been invested with the holy power of their original owner.

To return to the urnfield graves central to this research, would notions of partibility and dividuality have been familiar to people that once inhabited Bronze Age Europe as well? The idea of relational identities that Joanna Brück and David Fontijn (see section 1.4.4; Brück/Fontijn 2013) bring to the fore as an explanation of the manipulated and distributed state of both bodies and objects in different archaeological contexts, is in fact exactly what partible and dividual personhood seems to entail. Could it be that urnfield graves too echo these ideas of composite persons?

2.6 Conclusion

In retrospect, this chapter is a modest homage to Émile Durkheim and *'L'Année Sociologique,'* the journal he founded at the end of the nineteenth century. At the time this journal brought together a broad range of sociological scholars. Many of the journal's contributors would later become known as the *'French School of Sociology.'* Even though not all French thinkers whose works have been cited throughout this chapter published in *'L'Année Sociologique,'* the efforts of Durkheim in establishing the journal brought together a treasure-trove of sociological theories that today enables us to see death not just as a termination point, but as a vivid dialectic through which social relations and social ideals of the living community are communicated. In appreciation of Pierre Bourdieu, we can now argue that the cremated remains, urns and objects collected from urnfield graves throughout Europe, functioned in practices that in their very core reflect upon people's life histories. Robert Hertz and Arnold van Gennep provided the backdrop against which these practices were once performed and in which direction their meaning must be sought. And finally, Marcel Mauss provided us with the means to see beyond the individual and learn of what constituents persons in Late Bronze Age/Early Iron Age society were made of.

How remarkable it is, as Émile Durkheim would probably have acknowledged himself, that the real groundwork for all the theories put forward in this chapter was in fact laid out by someone who practically was a contemporary of the people that are now part of the dataset to be discussed in the next chapters. His works have been mentioned several times already and a line from his own works parades as the title of this chapter. What better way to conclude this chapter in the man's own words:

"…The whole is more than the sum of its parts…" Aristotle (384 – 322 BC).

3

Dissecting the urnfield funeral

3.1 From practice theory to theory in practice

Sociology might have provided us with ample starting points to understand funerary practices in a broader social context (Chapter 2), the challenge archaeologists face is that the communities under study are no longer there. Whereas Hertz, Van Gennep and Mauss could base themselves on eye-witness accounts of others, all archaeology can do is reason backwards from the tacit bones and objects encountered in (urnfield) graves. Still, as will appear in the following, even the "average" urnfield grave yields clues of a multi-phased mortuary process that could have taken years to complete. Urnfield graves for that matter do not necessarily have to be less informative than the eye-witness accounts on the *'Olo Ngaju'* of Borneo that were central to Hertz's study (Hertz 1960, 29).

The aim of this chapter is to provide an insight into the mortuary process concerned with the urnfields by dissecting the urnfield funeral on basis of the archaeological data already at hand. It will pay attention to what stages of the mortuary process are in fact reflected in the archaeological record and also specifically how much time was involved in every step (Section 3.2). The time-windows obtained will on their turn provide a rough indication of where from an archaeological viewpoint the social personae of the decedent can be expected to surface throughout the funerary narrative (*cf.* Fowler 2013; see Section 2.4). As such, this chapter will lay the groundwork for the research to be presented in chapters 4-6 (Section 3.3). Furthermore, an evaluation of the current state of affairs in urnfield research will be presented: What accents were emphasised in the long research history of the urnfields and what possibilities and restrictions did these accents bring about when the quality of the data is concerned (Section 3.4)? The chapter will conclude with a selection of sites forming the basis for the final research (Tab. 3.2).

3.2 The urnfield mortuary process

3.2.1 Staging the urnfield funeral

When dissecting the urnfield mortuary process, at least three different points in time can already be distilled from even the "simplest" of graves: (1) the death of a person; (2) the cremation of the corpse and (3) the final interment of the cremated remains (Fig. 3.1). With the exception of a small number of inhumation graves (*e.g.* Van den Broeke 2014) all graves dating to the Late Bronze Age and Early Iron Age in the Lower-Rhine-Basin reflect these three main events or stages in the mortuary process. Subsequently, we can use these

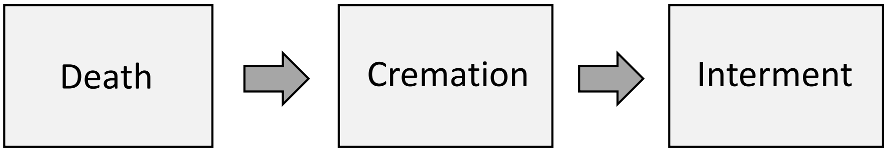

Fig. 3.1: The three mains stages of the mortuary process reflected in cremation graves.

three main stages as the basis for dissecting the urnfield funeral even further by focussing on the two episodes in between them. Clearly, these two episodes, or intermezzo's, appear not as evidently from the archaeological record as the sequence of events in Figure 3.1, but the dead person must have gone through them nevertheless, as probably did some of the objects that finally ended up in the grave. Using these various stages as stepping stones, in this section an attempt shall be made to divide the urnfield funeral into plausible time-slices and explore to what extent the archaeological record can back up the urnfield mortuary process.

3.2.2 Stage 1: Death

The event of death marks the beginning of the mortuary process and can be read from the archaeological record as a single point in time (Fig. 3.7). With the exception of clear trauma or pathologies that might still be present on the cremated remains, the archaeological record tells us little about the way someone died. Osteological analysis may provide a rough indication for the age at which death occurred and some of the bones hold clues about the sex of the subject of study. Other techniques, like strontium-isotope analysis, sometimes allow for a peak further back in time when specific $^{87}Sr/^{86}Sr$ ratios attest to the whereabouts and place of origin of the deceased as related to place of burial (Slovak/Paytan 2011). However, still all that can be stated about the process of dying on basis of just the archaeological record is the simple fact that the person who was buried was no longer breathing and it will take some time before the dead person becomes visible again in the archaeological record beyond the point of dying.

3.2.3 Intermezzo 1: From deathbed to pyre

The first episode in the mortuary process that leaves practically no clues in the archaeological record, comprises the entire time-span between death and cremation. As was demonstrated in the previous chapter, above ground the event of death would have set in motion a whole range of rites concerned with mourning and the preparation for the departure of the dead person from the world of the living (*cf.* Hertz 1907; Van Gennep 1909). Even though from an archaeological viewpoint there is not much to help fill in this "intermezzo," some of its facets can be reasoned backwards up to a plausible degree.

One of these facets is the limited time-span people would have had at their disposal to prepare for cremation since the temperate climate of both the Subboreal (5000-2900 years BP; Berendsen 2004, 293) and the Subatlanticum (2900 years BP-present; Berendsen 2004, 293) did (and does) not allow to store a dead body above ground for a long period of time. Body decay starts as early as approximately four minutes after the heart has stopped beating (Vass 2001, 190) and it is only within a matter of days that the first liquids start oozing out of nose and mouth, unpleasant odours fill the air around the corpse and gases produced in the decaying process will make the body bloat. With the exception of the cold winter months, the imminent decay of the corpse would probably have urged people to arrange for the cremation within days after the event of death itself.

The here proposed time-window could however be disputed when taking into account the possibility that only the 'dry' bones were cremated. This scenario would have prolonged the episode between death and cremation substantially. Following a view where cremation of dry bones would have taken place, separating flesh from bone could have happened along three different paths: (1) the active defleshing of the bones, (2) primary burial in the form of inhumation followed by the digging-up of the dry bones and (3) storing the cadaver above ground and letting it decay under controlled circumstances. To come up with osteological prove for these scenarios is however problematic. To begin with the cremation of dry bones, the specific fracture patterns of burnt bones that are believed to suggest the cremation of dry bones are at least ambiguous (Harvig 2017, 234).[11] Also, cut marks on cremated remains that could suggest the active defleshing of the cadaver are only very rarely encountered (*ibid.*, 234), and (by the present knowledge of the author) have so far not been observed on cremated remains from Late Bronze Age/Early Iron Age grave contexts in the Lower-Rhine-Basin. Archaeologically, there are also some difficulties in proving a prolonged episode between death and cremation. Up till now, no features have been encountered in excavations of a Late Bronze Age/Early Iron Age date that could suggest primary burial in the form of inhumation followed by the digging-up of the dry bones. In such a scenario one would expect to regularly find some 1.5 – 2 metres long "empty" pits that show signs of reopening. These kind of pits have however not been found so far or have at least not been published as such. With regard to the third scenario, this option is even harder to prove archaeologically since it involves the controlled decay of the corpse *above* ground. The small four- or eight-posts structures that are occasionally found associated with Bronze Age barrows and urnfields, have in the past been interpreted as mortuary houses (Theunissen 1993; Lohof 2000; Bourgeois/Fontijn 2012) that could have hosted a decaying body. There are however also other explanations for these structures like granaries or little causeways (Fokkens 2013). Overall, both the archaeological and osteological evidence that could possibly prove the cremation of dry bones is rather thin.

Neither conclusive but a bit more plausible is the osteological evidence that suggests cremation in the flesh. Specific concave fracture patterns regularly observed on cremated remains from urnfield graves are called *'curved transverse fractures'* (Symes *et al.* 2008, 43) or *'thumbnail fractures'* (Gonçalves *et al.* 2011, 1308) and are believed to occur when there is still muscle tissue attached to the bones (Baby 1954; Binford 1963; Etxeberria 1994; Symes *et al.* 2008). Especially the *femur* is known to show these fracture patterns (Fig. 3.2). When trapped in a typical fire, the human body adapts the so-called "pugilistic posture" which is a body pose caused by the shrinking of the muscles. In the pugilistic pose the knees are slightly bent, the elbows are bent even further and the hands are clutched in front of the torso. A burnt body will adapt this pose as it are the joints that will start to burn first when a body is set on fire (Symes *et al.* 2008, pl.2). The kinetic energy that builds up in the muscles around these areas, will finally start to pull muscle tissue towards the joints. In the case of the *femur*, shrinking muscles are pulled towards the knee, slowly exposing the bone in jerky movements and leaving these typical concave fracture patterns (Fig. 3.2).

11 Lise Harvig lists a long row of publications in her article that show the ambiguity of these fracture patterns (Harvig 2017, 234).

Fig. 3.2: "Thumbnail fractures" on a *femur* fragment from 'Grave 4' at Apeldoorn-Uddeler Heegde (Louwen *et al*. 2014).

Recent experiments by the team of David Gonçalves, concerning the cremation of 61 human individuals that had been inhumed first for a period of at least five years, however showed that these typical thumbnail fractures are certainly not only restricted to the cremation of fleshed and green bones (Gonçalves *et al.* 2011) and they presume them to originate from the general loss of collagen in the bone structure caused by burning. After a critical review of the available research on thumbnail fractures they still conclude that these fractures do indeed occur more often on fleshed and green bone but as their own experiment showed, they are not *per se* related to the presence of soft tissue (Gonçalves *et al.* 2011, 1312).

Overall, from both an archaeological as osteological point of view it remains rather difficult to make a definitive statement about the length of the time-frame between death and cremation. The absence of evidence for the cremation of dry bones is notable but can also not be employed to entirely exclude this scenario. And even though the osteological evidence presented for cremation in the flesh tilts the argument slightly in favour of the short time-span, the evidence itself is not entirely conclusive. Either way, the imminent decay of the corpse would have ushered the prehistoric communities concerned to act swiftly as soon as death struck in their midst. The most effortless and straightforward path to take would clearly have been to perform the cremation within a matter of days after death occurred.

Carefully assuming cremation was indeed performed shortly after death, what would the days leading up to the cremation have looked like? Following the scheme of Van Gennep's rites of passage (Section 2.3.3; Van Gennep 1909) the first rites to be performed after one's death, would have been rites of separation. Following Hertz the sight of the dead body alone would in different respects have evoked a sense of fear and urged the mourners to approach the corpse accordingly (Hertz 1960). Perhaps the corpse was displayed and adorned in a separate room or building filled with fragrant herbs to mask the stench of the already decaying body. Perhaps the body was being watched over all the time and provided with food and offerings. Perhaps prayers would have been said and people could come by to pay their last respects. And perhaps this was all simply not the case as these rites of separation would have taken place above ground and we unfortunately have no archaeological record to back up these maybes. It is only in the rites of transition, following on the rites of separation in Van Gennep's scheme (see Section 2.3.3), where we see the dead person re-emerge in the archaeological record.

Fig. 3.3: The remnants of a pyre as discovered in the urnfield of Weert-Boshoverheide (Photo: Amsterdam Archeologisch Centrum; University of Amsterdam; Hissel *et al*. 2012, afb. 7.43).

3.2.4 Stage 2: The cremation process

As cremation is more of a process than a single event, at this stage in the mortuary process both the dead person and the living community become visible for at least several hours as some facets of the cremation process have been fossilised in the archaeological record.

3.2.4.1 The construction and location of the pyre

For start, the cremation rite would have required fuel. Judging from the charcoal particles that are regularly encountered in urnfield graves, wood would have served as the main fuel for the pyre, though indications for the use of turf as fuel have been attested outside the Lower-Rhine-Basin too (Squires 2017, 260). Botanical analysis of the charred wood can help determine which types wood were preferred for the cremation process. The pyre itself had to be assembled in a way that ensured the complete cremation of the corpse, thus providing sufficient fuel, heat and oxygen. In modern India the traditional Hindu cremation may use as much as 550 kilograms of firewood to cremate a single individual (Chakrabarty *et al*. 2014, 45), an amount that would have been no different in later prehistory. The process of collecting fuel and assembling the pyre would at least have taken several hours and was perhaps already arranged for in the days leading up to the cremation.

As cremation would have taken place above ground, not many pyre locations have been recovered from excavations in the Lower-Rhine-Basin. A clear example and exception has been mentioned in the introduction of this dissertation (Section 1.4.2) and concerns the burnt-out pyre that was covered by the monumental barrow ('Mound 7') at Oss-Zevenbergen (Fontijn *et al.* 2013a). Another exceptional case concerns the vast urnfield of Weert-Boshoverheide in the southern Netherlands where parts of the original prehistoric surface were covered up by blow-sands as a result of which also several pyre locations (Fig. 3.3) had been preserved (Hissel *et al.* 2012, fig. 7.43). These two examples suggest that cremation took place in the urnfields themselves or close to the location of burial, but as these are also the only two examples for the Netherlands,[12] some caution is needed in making definitive statements about the general location of pyres related to urnfield graves.

Finally, towards the Middle Iron Age so-called '*cinerary barrows*' [Dutch: '*brandheuvels*'] start to occur in urnfields. In this type of grave the cremated remains are left on the burnt-out pyre and are covered up with a small burial mound that is often surrounded by a quadrangular ditch (Hessing/Kooi 2005, 637). Most examples come from the northern Netherlands (*e.g.* Waterbolk 1965; Kooi 1979, 120) where these graves date to the end of the Early Iron Age and beginning of the Middle Iron Age (Hessing/Kooi 2005, 637).

3.2.4.2 Dressing the dead

Probably around the same time the pyre was assembled, the corpse would have been prepared for cremation too. For the Netherlands, no direct evidence for the washing and shaving of the dead body exists, but the fact that razors and tweezers regularly occur in urnfield graves (Fontijn 2002, 200) at least suggests that body care and a clean appearance were of importance in Late Bronze Age/Early Iron Age society. Evidence from Bronze Age coffin graves in Denmark, where hair and skin have been preserved, shows that males were indeed clean shaven for burial or had a beard of only a day or two's growth (Harding 2008, 191; Broholm 1944, II, 58; 108; 285).

Assessing the dress of the decedent is rather problematic as all pieces of textile would have been completely consumed by the cremation fire. The Early Iron Age inhumation grave found in the urnfield of Uden-Slabroekse Heide (Jansen *et al.* 2011; Jansen/Van der Vaart-Verschoof 2020) is the one exceptional case from the Netherlands[13] where fragments of garment survived in association with a corpse. Due to the corrosion of the bronze bracelets and anklets the decedent was wearing, fragments of at least two (woollen) textiles (Van der Vaart-Verschoof 2017b, 224) made it to our era. A remarkable feature is that the textiles were found on the *out*sides of the bracelets and anklets, suggesting this fine jewellery was sealed from sight when the grave was closed. Whether the cloth represents a shroud or actual clothing can no longer be determined, but it would have been a colourful sight nonetheless as the textile consists of a woven check pattern made of different colours, probably red and blue (Van der Vaart-Verschoof 2017b, 224).

For the remainder, we only have jewellery made of less-perishable materials at our disposal as a testament to the decoration of the corpse. Metal trinkets affected by fire (Fontijn 2002, 198) could suggest these were indeed worn by the decedent on the pyre. It has also been argued that cremated remains showing green stains are indirect evidence for the presence of bronze (copper) objects during cremation (*e.g.* Theunissen 2009, 88; De

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12 In the urnfield of Sittard-Hoogveld an elongated pit was found, measuring 2.5 x 0.9 metres, that was filled with charred trunks and a pottery vessel. The pit has not been interpreted as a pyre but it has been ascribed a ritual function (Tol 2000, 109; 157).

13 A piece of textile made of woollen thread was recovered from an urn found before 1937 at the heath near Nieuwenhagen in the south of the Netherlands (Ypey 1955). The textile does not necessarily represent clothing and might as well have belonged to a woollen sack or cloth to wrap the cremated remains in before depositing them in the urn. Textiles have also been recovered from the 'Chieftain's grave of Oss' where it was used to wrap some of the objects found in the bronze situla, including the bent sword (Van der Vaart-Verschoof 2017b, 194).

Mulder 2011, 281). Though clear examples indeed occur (Kühl 1987), not all green stains on cremated remains automatically represent metal objects since iron, copper and manganese particles present in the soil can, induced by bacterial activity, also leave blueish green traces on the bones (Herrmann 1981, 121; Chadefaux *et al.* 2009, 32; Reiche *et al.* 2000, 636).

3.2.4.3 Cremation

After the body had been placed on the freshly assembled pyre, the decedent was submitted to the consuming qualities of fire. From a scientific viewpoint, the cremation process is in fact a chemical transformation of the substances that make up the human body. Clues about the intensity of this chemical transformation can be read from the cremated remains and modern day equivalents of open-air cremations provide some valuable insights as well.

To begin with the length of the cremation process, in modern cremation ovens, or *retorts* as they are called, it takes on average two hours to fully cremate a human body (Schultz *et al.* 2008, 78). These retorts however concern indoor and sealed-off spaces that are fuelled on gas. For cremation in the open air involving wooden pyres, as would have been the case in prehistory, time-tables varying between two to eight hours have been proposed (McKinley 1989, 67). In modern cremation ovens temperatures may vary between 760 and 982 °C with the highest temperatures occurring when both body and coffin are alight (Schultz *et al.* 2008, 78-79). The cremation of an obese individual, who on average possesses more body fats that can serve as fuel, may even produce temperatures as high as 1093 °C (*ibid.*, 79). When it comes to the temperatures that would have been reached in prehistoric cremation, the grade of combustion can still be deduced from a combination of colour, texture and fracture patterns of the cremated remains (*e.g.* Walker *et al.* 2008). In osteology most often is made use of the scheme developed by Joachim Wahl (1983; 2008) in order to approach the grade of combustion whereby 'I' serves to indicate the lowest grade and 'V' the highest (Wahl 2008, table 9.1).

3.2.5 Intermezzo 2: From pyre to grave

It is the period in between cremation and final interment that is the most elusive episode of the urnfield mortuary process as there is no clear indication for the time-window involved. It is often assumed that the interment of the cremated remains took place only shortly after cremation but that does not necessarily have to be the case. The transformation the corpse underwent in the cremation process from a mass of rotting flesh to a small heap of calcined bones eliminated the urge to quickly dispose of the body. In a sense the cremation process made the decedent durable as the threat of decay was no longer a problem. Also, the decedent became tangible and easily transportable as body mass shrunk substantially in the cremation process. From a conceptual viewpoint one could even state the human body is in a way *objectified* in the cremation process (*cf.* Brück 2004; 2006).

A study performed by McKinley[14] of the cremation process in two modern crematoria provides some insight in what weight classes can be expected in prehistoric open-air cremation (McKinley 1993). Only adult individuals (both sexes) were included in the study. Combined, the two crematoria produced total cremation weights varying between 1,227.4 and 3,001.3 grams. Assuming that in prehistoric times people did not went through the trouble of retrieving bone fragments smaller than two millimetres, this class of bone

14 See Table 4.3 for an overview of comparable studies.

fragments was subsequently excluded from the experiment, reducing the range of total weights between 1,001.5 and 2,422.5 grams with an average weight of 1,625.9 grams (McKinley 1993, 285). Though the experiment by McKinley provides some valuable insights in the amount of burnt bone left after cremation, as will be argued later on (Section 4.4.2), there are several other important factors of influence that need to be considered when approaching cremation weight classes generated in open-air cremations.

After cremation the decedent could practically be stored everywhere for an unspecified period of time. Even today we are quite accustomed to the idea of having the ashes of our deceased beloved ones around us in the house. Some people even create shrines in their living room to accommodate the urn. Not uncommonly are these shrines enriched with candles, photographs and objects associated with the decedent. This present day example is certainly not meant to confuse modern ideas about mourning with later prehistory, but to show that the process of cremation creates the possibility to prolong the period between death and final interment substantially. The final interment taking place within hours or days after cremation to a period of several years, are both scenarios that should be taking into account when dissecting the urnfield mortuary process. Also, the act of cremating could have been something that was not only performed because of certain cosmologic ideas about the transformation of the dead person, but it might as well have been a means to an end. A certain objectification of the human body has already been mentioned in this regard. In addition, as Oestigaard and Goldhahn have argued, funerals create *par excellence* the opportunity to renegotiate social relations on a scale exceeding the boundaries of the local (Oestigaard/Goldhahn 2006). In this view, cremating the dead creates the opportunity to postpone the funeral and allows people living further away to still be present at the funeral. One can also think of scenarios involving only specific days, seasons or maybe even feasts that were deemed suitable for the interment of new decedents in the (ancestral) burial grounds. All in all, however substantial the time in between cremation and interment might have been, the archaeological record does not provide sufficient clues to make an accurate reconstruction for this time-window, making it indeed the most elusive episode of the urnfield mortuary process.

3.2.6 Stage 3: Interment

Whether it were hours, days or perhaps even years after cremation, both the decedent and the living community eventually resurface in the archaeological record at the location of the grave. As illustrated by the Oss-Zevenbergen example from the introduction (Section 1.4.2) people must have had clear ideas about where someone needed to be buried. The fact that cremated remains needed to be buried in the first place already is an interesting observation in itself as there are many ways of disposing of cremated remains. Today we are quite accustomed to scattering the ashes above ground, in rivers or at sea. However, in the Late Bronze Age and Early Iron Age it was clearly deemed important to anchor these last tangible remains of the decedent somewhere within the physical landscape, preferably surrounded by the other dead.

The ways in which this could be achieved were manifold as the shapes and sizes of funerary monuments in urnfields vary substantially (Hessing/Kooi 2005, fig. 28.3a/b), even within the confinements of single cemeteries (Fig. 3.4). In contrast, there are also cemeteries that did not produce a single monument at all (*e.g.* Dyselinck 2013). Variation in the composition of the graves themselves exists in the size and location of the burial

Fig. 3.4: The urnfield of Sleen. Note the variety in the different types and sizes of funerary monuments (After: Hessing/Kooi 2005, fig. 28.9).

pit, the presence of an urn and whether or not the decedent was provided with grave gifts. Most decedents received their own "spot," but multiple burials within the same monument also regularly occurred (Fig. 3.5). Pilot studies of the relation between sex and the age of the decedent and the variation in urns, grave goods, the type of monument and the location of the burial in relation to the monument have so far not yielded any clear patterns (*e.g.* Louwen 2008).

Returning to the time-window concerned with this stage of the mortuary process, the mourners would have spent several moments at the opened burial pit while placing cremated remains and objects inside the grave. Whether these moments involved minutes or hours cannot be deduced from the archaeological record. In the end the pit would have been sealed off and the construction of the monument could begin. Again the archaeological record does not allow for any statements about the time involved between the closing of the burial pit and the construction of the monument. The time required for construction must have depended on the type of monument. The long mound found at the urnfield of Someren-Waterdael, measuring some 145 metres in length (Kortlang 1999) would have taken reasonably more time to construct than the more common and modest round mounds of only several metres in diameter. Also the construction methods would have varied considerably as some monuments partly

Fig. 3.5: A series of keyhole-shaped funerary monuments in the urnfield of Wessinghuizen (Province of Groningen). The example in the front accommodated three urn graves. The photo was taken during the excavation of 1926. (Willems 1935, afb. 23; © University of Groningen, Groningen Institute of Archaeology).

consisted out of wooden structures while others were built up of heather sods or just loose sand. An experiment carried out by the team excavating the urnfield of Geldrop-Genoenhuis involved the digging-out of the ring ditches surrounding the original (now vanished) burial mounds and tossing up the sand in the area surrounded by these ditches. As appeared, the ditches alone provided sufficient sand to build a substantial mound (Hissel *et al.* 2007, 105). Excavations of urnfield barrows carried out before the great heath reclamations in the early twentieth century AD however also show clear examples of urnfield barrows built-up with heather sods (Fig. 3.6). Whatever construction method might have been applied, the efforts of the living community in burying the decedent and building the funerary monument would have taken at least several hours, if not days, providing us with a substantial time-window in which we can follow the living community almost by the minute.

3.2.7 A final Act?

As urnfields often host dozens, sometimes even hundreds of graves, one way or the other, these were places that must have been frequented a lot. For some urnfields the presence of roads has been attested (Holwerda 1914) while for other urnfields the configuration of the monuments and the open spaces in between them point in the same direction (Kooi 1979; Jager 1987; Roymans/Hoogland 1999). Also, the fact that small barrows were erected over the graves suggests that these graves were meant to be seen or at least to be recognised. All this implies that the dead still formed an important part of the world of the living. Perhaps there were even specific days or feasts throughout the year for the commemoration of

Fig. 3.6: Profile-section of urnfield mound in the urnfield of Uden-Slabroekse Heide (Province of Brabant). Clearly visible are the original flat top of the mound and sods that were used to build the mound. Photo was taken during the excavation of 1923 (After: Remouchamps 1924, afb. 8).

the dead. Unless “residues” of these acts of commemoration were deliberately added to the graves or monuments concerned, they will remain forever hidden from archaeology’s reach. Also the exact time-frame for these (presumed) acts of commemoration will be hard to establish on basis of just the archaeological record.

3.2.8 Conclusion

This rough sketch of the different stages involved in the urnfield mortuary process provides a scaffolding that can be used for a more detailed analysis of the associated funerary practices. Clearly the process of cremation (stage 2) and interment (stage 3) present the best opportunities when it comes to keeping track of both the decedent and the living community in the mortuary process. Both stages would have taken at least several hours, if not days, to complete and left ample clues within the archaeological record (Fig. 3.7). However, the “archaeological gap” that exists between the two stages might have been substantial, and above all, of equal importance to the mortuary process as a whole. Though the entire sequence of events could have taken place within just a matter of days, from an archaeological perspective both the decedent as the living community disappear from sight for an unspecified period of time between cremation and interment (Fig. 3.7). Herein lies probably the most difficult challenge when a detailed reconstruction of the urnfield mortuary process is envisioned. Notwithstanding, the next step is to evaluate which practices can still be distilled from the features we encounter in urnfield graves and subsequently upon which stages in the mortuary process these might reflect.

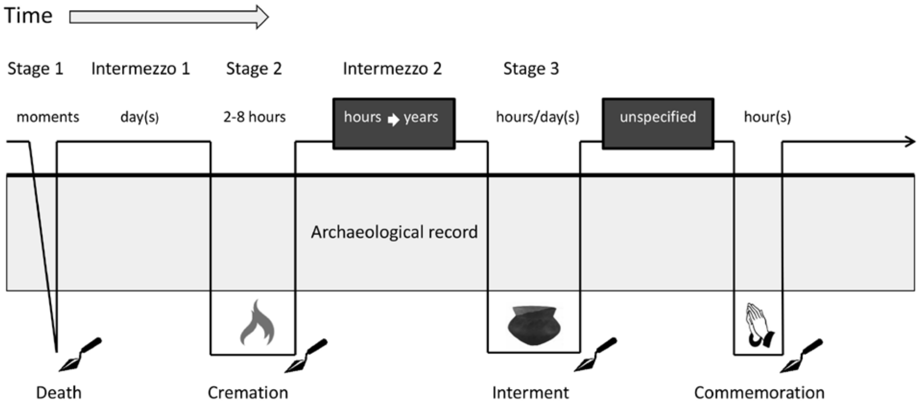

Fig. 3.7: The urnfield mortuary process in stages. The grey baulk represents the archaeological record. As soon as the timeline appears underneath this baulk it means this section of the timeline can be traced archaeologically (hence the trowel) and specific funerary practices can be reconstructed for these respective stages.

3.3 Building the database: the urnfield mortuary process in cells

3.3.1 General structure of the database[15]

Most of the elements that make up an urnfield grave can in fact be grouped according to their relation to the mortuary process. The location of the grave, the type of monument and the furnishing of the grave, for instance, all relate to the stage of interment. There are however other elements that relate to multiple, if not all, stages of the mortuary process. The cremated remains, for one, are prove that someone died (stage 1), was subsequently cremated (stage 2) and was finally interred in a specific way (stage 3). As such, the cremated remains can provide an insight in all three stages of the mortuary process. The same applies to the objects that are occasionally found in urnfield graves, as they too could have functioned in more than just one facet of the mortuary process. Clearly, objects were not only placed in the grave as grave goods (stage 3) but, as their occasional burnt state suggests, could have already accompanied the decedent on the pyre (stage 2).

To create some order in the magnitude of variables that are of interest for the reconstruction of the urnfield mortuary process, a database [Microsoft Access 2007-2010] was constructed that more or less follows the general excavation process (see Fig. 3.8): a cemetery is discovered (level 1) and is excavated grave by grave (level 2) after which the different find categories are sent to specialists for analysis (level 3). An extra fourth level for registering the monuments was finally added to the database structure between Tables 1 (cemetery) and 2 (graves) as one monument can host multiple graves.

15 Special thanks are due to Catalin Popa and Erik Kroon (both Leiden University) for their help and advice in constructing the database.

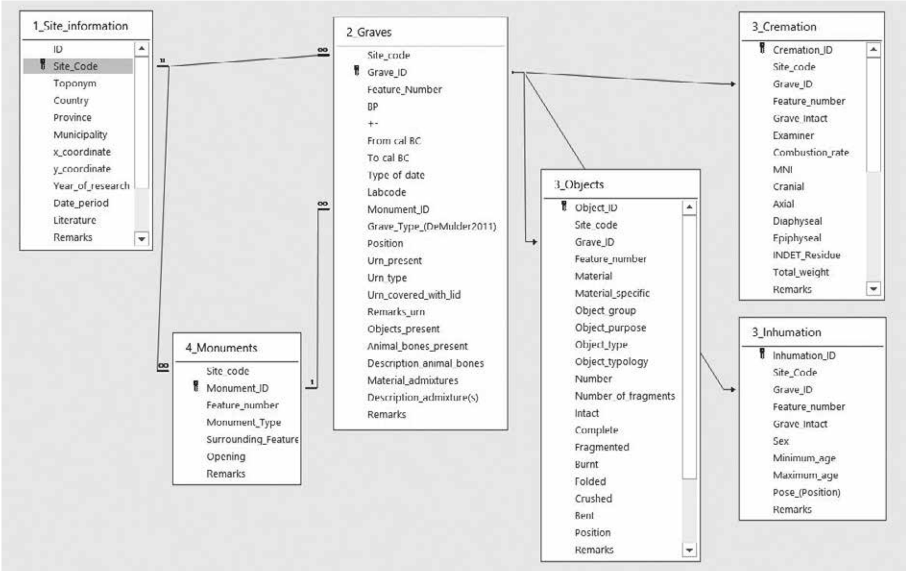

Fig. 3.8: Printscreen of the database structure.

3.3.2 The cemetery

Even though Table 1 (Fig. 3.8) might seem to only contain the necessary site-information, the data stored in this table actually reflect upon an important element of the mortuary process. The numbers forming the x- and y-coordinates of the cemeteries concerned are not just dots on a map but they represent very deliberate choices of Late Bronze Age/Early Iron Age people to bury the dead where they are buried. These must have been places of significance and as some of these burial grounds were used for centuries, the life-, or better, death-histories of these people were deeply rooted in the physical landscape.

Not directly linked to the mortuary process itself, but certainly of interest to the perception of these places throughout the ages are their toponyms. Urnfield toponyms like '*Hunenbelten,*'[16] '*Galgenberg,*'[17] '*Kabouterberg*'[18] and '*Duivelsberg*'[19] refer to fantastic interpretations and the often heathen connotations these places had in the Christian era (Roymans 1995).

3.3.3 Furnishing the grave

Table 2 contains all variables that are somehow concerned with the furnishing of the grave. As a consequence, most variables in Table 2 relate to the stage of interment. Since Table 2 contains all the basic information that is to know about the grave itself, it forms the core of the database. As Figure 3.8 shows, all other tables are directly linked to Table 2. The contents of Table 2 can be grouped in (a) administrative information, (b) age/dating method, (c) type of grave and monument and (d) contents of the grave. In the following these different categories of variables will be explained in further detail.

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16 English translation (by author): 'Mounds of giants.'
17 English translation (by author): 'Gallows' mound.'
18 English translation (by author): 'Goblin's mound.'
19 English translation (by author): 'Devil's mound.'

(a) Administrative information

Table 2 is linked to Table 1 by the unique site-code assigned to all the Late Bronze Age/Early Iron Age cemeteries that were registered in the general inventory for the Netherlands (see Section 3.4.1). The 'grave-ID' is auto-generated by Microsoft-Access and forms the link with all underlying tables. Also, the original 'feature-ID' of the grave is included in this table so that every grave entered in the database can be traced back to the original administration of the excavation concerned. In case no original 'feature-ID' was available or a 'feature-ID' was not included in the publication, a provisional feature-ID has been provided. These provisional 'feature-ID's' have been indicated with an asterisk (*).

(b) Age and dating methods

Determining the exact age of past practice is a difficult and often complex exercise. Especially when prehistory is concerned, we must already be content when the dating range obtained falls within a few generations from the actual event itself. With regards to the urnfields, typo-chronology clearly is the most applied dating method as absolute dating methods like radiocarbon dating only became available after the heyday of urnfield research (see Section 3.4). On the Northwest European continent, the chronology developed by Paul Reinecke (see Fig. 3.9) forms the most important basis for typo-chronological analysis of objects retrieved from urnfields. Typo-chronological schemes like the one created by Reinecke are constructed on basis of co-occurring archaeological phenomena in relation to stratigraphy and have over time been complemented and adjusted by high resolution data from regional studies (*e.g.* Mülller-Karpe 1959; Desittere 1968). As a result, at present an elaborate typo-chronological framework exists that can easily provide a rough indication for the age of urnfield graves as long as the graves concerned contain objects or are surrounded by a specific funerary structure. However, at least for the Lower-Rhine-Basin attempts to back up these typo-chronological schemes with radiocarbon dating are scarce and have only recently begun to develop (Lanting/Van der Plicht 2003; 2005; De Mulder *et al.* 2007). Recent small-scale radiocarbon dating programs in commercial archaeology already show that typo-chronological schemes are not always as accurate as one might hope (*e.g.* Dyselinck 2013, 137).

Since radiocarbon dating concerns a dating method where the age of organic archaeological materials can be *measured*, from a scientific viewpoint it forms the strongest and most objective base for determining the age of past events. Also, it can be applied to almost every archaeological context that contains organic materials and does not require the presence of objects or specific types of monuments. However, radiocarbon dating too is certainly not without its challenges. For start, a flat section in the ^{14}C-calibration curve, called the '*Hallstatt-plateau,*' causes all radiocarbon dates around 2450 BP to calibrate between ca. 800 and 400 BC (Van der Plicht 2004, 45). Unfortunately, this flat area on the calibration curve coincides with the entire Early Iron Age. Another difficulty concerns the so-called 'old-wood-effect.' What is actually determined when charcoal from grave contexts is radiocarbon dated, is not so much the event of cremation but a point in time *before* the tree that produced the fuel for the pyre was felled. With a bit of bad luck, people would have used wood coming from the core of an old oak, pushing the outcome of the ^{14}C-analysis concerned even further back in time. AMS-dating the cremated remains themselves does not solve this problem either as the majority of carbonates[20] present in

20 An estimated 95%.

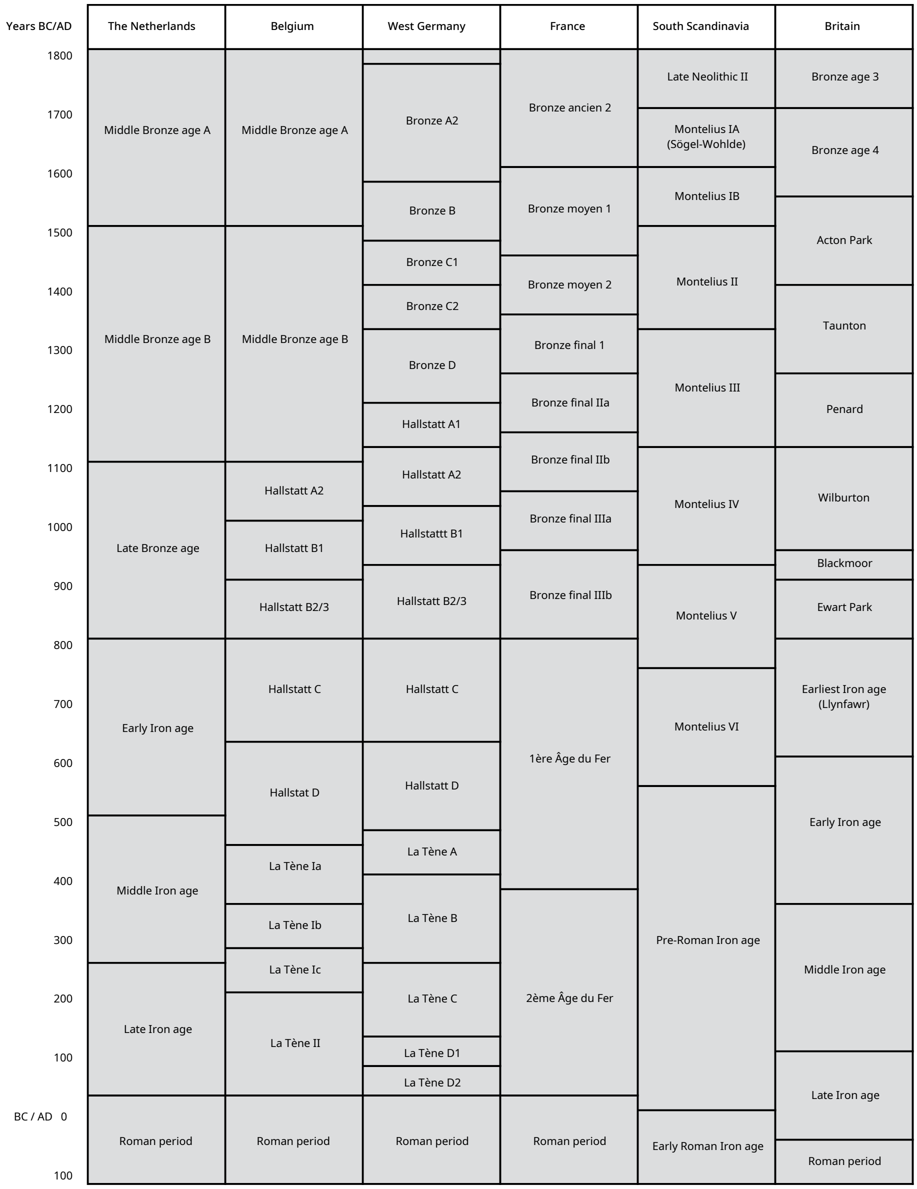

Fig. 3.9: (Typo-)chronological scheme for Northwest Europe from the beginning of the Middle Bronze Age until the start of the Roman Period. Many of the indicated boundaries are open for discussion, but in this context the scheme is merely meant to provide a rough insight in the different (typo-)chronologies used in and around the research area and how these may coincide. The Bronze age section of the scheme is largely based on Fontijn's scheme (Fontijn 2002, fig. 1.4) who made use of Lanting/ Van der Plicht 2003; Needham 1996; Vandkilde 1996 for respectively Britain and South-Scandinavia. The works of Reinecke (1965) and Déchelette (1914) traditionally form an important basis for the (typo-)chronologies of respectively Germany and France (partly Belgium). For the Bronze age section of (West) France has been made use of the recently published scheme by Ducreux (2017, tabl. 10). De Mulder's work (2011, fig. 5.3) has been used as a reference for Belgium. Finally, the scheme produced by Moore/ Armada (2011, fig. 1.7) has been consulted for the Iron age section of Britain.

bone apatite after cremation in fact comes from the fuel used for the pyre (Snoeck *et al.* 2016, 41). Thus, when applying radiocarbon dating in determining the age of cremation graves in general, one must be aware that the outcome will always prove to be a bit older than the actual event of cremation. However, this error-margin will probably in most occasions sooner have concerned decades rather than centuries.

Overall, typo-chronologies allow for a rough indication of the age of certain archaeological phenomena while radiocarbon dating can narrow down certain events within the course of a century. However, one method does certainly not exclude the other and it can even be profitable when both methods are used to complement each other, just as long as the merits and restrictions of both methods are clear. For instance, the 2-sigma ranges of calibrated radiocarbon dates still often span many decades, if not centuries. But as typo-chronologies are based on stratigraphy and seriation they can be used to refine the outcomes of ^{14}C-analyses. This is essentially how *'Bayesian-statistics'* have recently been applied in archaeological radiocarbon dating programs. By adding probabilities of relative age to sequences of radiocarbon dates for graves within the same cemetery, the 2-sigma ranges of calibrated radiocarbon dates can be refined substantially (*e.g.* Bourgeois/Fontijn 2015; Fitzpatrick *et al.* 2017).

Returning to the database structure, given the above, it is useful to register for every individual grave how an indication for its age was obtained. Perhaps even more so because for many of the cremation graves found in urnfields, no direct indication for an age is available. Cremation graves without any objects or accompanying funerary structure have in the past often been "lumped" with the rest of the cemetery. The number of Early Iron Age cemeteries that also produced graves dating to the later Iron Age has however grown substantially in the last couple of years (*e.g.* Hiddink/De Boer 2011; Blom/Van der Velde 2015; Van der Leije 2018). Additionally, again as a result of a more systematic application of radiocarbon dating, graves that turn out to be older than the Late Bronze Age also come to light in advancing numbers in cemeteries that are ranked among the urnfields (De Mulder *et al.* 2007; De Mulder 2011; Dyselinck 2013). Given these recent developments on the field of radiocarbon dating in urnfield research, the lumping of cremation graves without an urn, object or any other typo-chronological marker may in the past have led to a certain condensing of the presumed period of use of the cemeteries concerned. Not only is this observation of influence on the chronology of urnfields, but also on demographic reconstructions that are heavily reliant on the presumed period of use of specific cemeteries (Ascádi/Némeskeri 1970).

To provide the room necessary for making the nuances in time, in the database three types of dating methods have been entered.[21] The most straightforward type concerns 'radiocarbon dating.' For radiocarbon dates several specific columns have been created: one column for entering the 'BP-date,' one column for the 'error-margin' [+/-] and one for the 'lab-code.' The calibrated 2-sigma range is entered in the 'from cal. BC-column' and 'to cal. BC-column.' These latter columns are also available to the other types of dating methods.

The second type of dating method involves 'typo-chronology.' When typo-chronological markers were present, the entire time-span that these markers occur was indicated in the 'from-/to cal. BC-columns.' As Reinecke's typo-chronology is not often used as reference in most of Dutch archaeological literature, it has been decided to use the Dutch chronology

21 Special thanks are due to Mette Løvschal (Aarhus University) for helping out with the system for registering the age of the graves.

for the metal ages as a basis for convenience sake (see Fig. 3.9). For example, '*Kerbschnitt*-pottery' is known to only occur in the Late Bronze Age (Desittere 1968, 80), subsequently in the 'From-/to cal. BC-columns' the time-span of the entire Late Bronze Age was entered. For types of pottery that are less clearly confined to a specific sub-phase of the Dutch chronology, the entire time-span of the Late Bronze Age and Early Iron Age was entered. A radiocarbon date is preferred over a typo-chronological indication, but as there is a separate column for registering the type of urn the possibility arises to cross reference typo-chronological indicators with radiocarbon dates.

The third and last dating method concerns the so-called 'frame-date.' This type of date was applied when there were no radiocarbon dates or any (clear) typo-chronological markers present. These graves mostly concerned cremation graves devoid of any other material than cremated remains. In these cases both the very oldest and very youngest dates available for the cemetery concerned were used to provide a rough indication for the age of the grave.

(c) Type of grave and monument

The next challenge was to cover the extensive variety in grave forms that exists for the urnfields in the Lower-Rhine-Basin. Especially because this variety in grave forms originates from a variety in funerary practices. Not only the way the grave itself was composed but also the type of funerary monument seems to have been of importance. The connection between both features is also worth looking into as graves can be positioned either central or peripheral in relation to the monument concerned and even graves that are dug into already existing monuments come about. To avoid any further confusion the terminology of 'grave' is only applied when an archaeological feature contained any human remains. Thus, in contrast to some earlier publications, circular ditches or the areas these might surround have not been documented as a grave but simply as funerary structures accompanying one or sometimes multiple graves (see Fig. 3.11).

Type of grave

To begin with the type of grave, a major distinction can be made between cremation graves and inhumation graves. Despite being reduced to a simple option in a database form, this distinction in fact already reflects a major decision early in the mortuary process that was probably motivated by profound reasons. Details about the treatment of the human remains in either capacity can be found in their separate tables (Sections 3.3.4; 3.3.5).

Following the decision tree down the path of cremation from here, the next choice we encounter would be the choice for a container to put the cremated remains in. Clearly not all urnfield graves actually concern urn graves. In fact, there are even cemeteries ranked among the urnfields that did not produce a single urn at all (*e.g.* Kortlang 1999). In the database several columns have been reserved for registering the different features that are somehow related to the container of the cremated remains like the presence of an urn [yes/no], the type of urn [typo-chronological denomination] and whether the urn was covered with a lid of sorts [yes/no]. Also a column has been reserved for remarks that solely involve the urn like the presence of burn marks or any indications for prior use of the vessel.

After the choice for a container (or not), the decision tree widens substantially as we now arrive at the point where the cremated remains in whatever capacity would have entered the ground. For the Netherlands the work of Henk Hiddink is often cited to distinguish between different forms of interment when cremated remains

Hiddink 2003	De Mulder 2011	Dutch terminology	German terminology	English description
-	Type H	*Bustumgraf met depot*	Not applicable	Bustum grave with separate interment of cremated remains
-	Type I	*Bustumgraf*	*Brandflachengrab*	Bustum grave (sensu stricto)
Type A	Type A	*Urngraf*	*Urngrab*	Urn grave (sensu stricto)
Type A	Type C	*Beenderpakgraf; crematierestendepot*	*Knochenlager*	Concentration of 'clean' cremated remains
Type A	Type F	*Botstrooiing in greppel*	Not applicable	Scatter of cremated remains in fill of surrounding feature
Type A	Type G	*Botstrooiing in vlakgraf*	*Leichenbrandschüttungsgräber*	Scatter of cremated remains in large pit
Type B	Type D	*Type Destelbergen'*	Not applicable	Concentration of 'clean' cremated remains buried separately from pyre-debris
Type C	Type B	*Brandafvalgraf*	*Brandschüttungsgrab*	Urn grave with mixed cremated remains and pyre-debris
Type C	Type E	*Brandrestengraf*	*Brandgrubengrab*	Mixed deposition of cremated remains and pyre-debris in small pit

Tab. 3.1: Grave types as devised by Hiddink (2003) and De Mulder (2011) and the associated terminologies as most commonly applied in archaeological literature.

are concerned (Hiddink 2003). Hiddink divides his graves into three main categories or types of graves whereby 'type A' involves a '*clean*' deposit of cremated remains (see Fig. 3.10 and Tab. 3.1; Hiddink 2003, 23). A clean deposit in fact means that the cremated remains have been carefully separated from the pyre-debris and only a negligible amount (several specks/grams) of charcoal is present in the grave. It is possible that cremated remains in this type of grave have been washed, but at present there is no sound archaeological evidence that could help prove this thesis. 'Type B' includes graves that not only contain cremated remains but also pyre-debris consisting of charcoal and burnt objects. In 'type B graves' cremated remains and pyre-debris are however clearly separated while in 'type C graves,' also known as *Brandgrubengräber*, people buried both substances mixed together (*ibid*., 23).

For the lack of a comparable classification model, people also started to apply 'Methode Hiddink' to Late Bronze Age and Early Iron Age urnfields (*e.g.* Roessingh/Blom 2012; Blom/Van der Velde 2015). The classification model Hiddink devised, was however never intended to include the urnfields as it was originally constructed for the Late Iron Age and Roman Period. The model does for instance pay little attention to the use of urns as they only occasionally come about in the Late Iron Age and Roman Period (Hiddink 2003, 23). Therefore, in the same spirit as Hiddink, Guy de Mulder has more recently come up with a classification model for Late Bronze Age and Early Iron Age cremation grave cemeteries (De Mulder 2011, 215). Based on his research aimed at reconstructing the funerary rituals for the urnfields in the Scheldt-Basin, De Mulder created a scheme involving no less than nine different types of urnfield graves (De Mulder 2011, 215; fig. 8.4). Since this scheme is tailor-made for the urnfields, it was decided to adapt De Mulder's classification in the database. As De Mulder's work was originally published in Dutch, in the following an attempt shall be made to grasp the essence of each type of grave he distinguished for the urnfields in the Scheldt-Basin (Fig. 3.10; Tab. 3.1).

Also following the decision tree via the path of cremation, De Mulder first distinguishes between interment at the site of the pyre and interment elsewhere. His 'type H-' and 'type I graves' both concern grave forms whereby the cremated remains were interred at the location of the pyre. In 'type H graves' the cremated remains are collected from the pyre, but interred at the very same location. The central find-assemblage of 'Mound 7' at Oss-Zevenbergen from the introduction (Section 1.4.2) would for instance qualify as a 'type H grave,' since the cremated remains were deposited in an urn that was placed next to the pyre (Fontijn *et al.* 2013a, 126). In 'type-I graves,' or *Brandflachengräber*, the cremated remains are just left on the pyre-debris. Occasionally a shallow pit has been dug before the pyre was constructed. 'Type H-' and 'I-graves' can both be described as a form of *bustum* graves (De Mulder 2011, 219).

For all grave forms that are not located at the site of the pyre, De Mulder's classification in fact coincides with Hiddink's classification as he too distinguishes three main types of graves involving a clean deposition of the cremated remains (types 'A,' 'C,' 'G' and 'D'), graves where cremated remains and pyre debris have been buried separately ('type D') and grave forms where both features have been buried mixed together (types 'B' and 'E'). Beginning with the types of graves that practically contain no charcoal, De Mulder distinguishes four different forms. The first one concerns the 'classical' urn grave ('type A') consisting of a small, often shaft-like pit in which the urn is carefully placed. 'Type C' very much resembles 'type A' only in 'type C graves' the urn is absent. The often compact distribution of the cremated remains in this type of grave could suggest the cremated remains had originally been wrapped in a container of an organic material like textile or leather but there is no direct archaeological evidence at hand that could back up this hypothesis. 'Type C graves' are also known as *'Knochenlager.'* The third type of grave, 'type G' or '*Leichenbrandschüttungsgrab,'* concerns a somewhat larger pit in which the cremated remains are scattered or placed in small bundles. The backfill of the pit consists of the same clean soil surrounding the burial pit, making this type of grave somewhat hard to recognise in the field. In the Scheldt-Basin this type of grave has so far only been attested at one site. The graves concerned were found associated with Late Bronze Age graves but ^{14}C-analysis of charcoal and cremated remains from two examples of these 'type G' graves produced dates in the Middle Bronze Age (De Mulder 2011, 234). Graves of the same type have recently been excavated in the Netherlands as well, where they too produced radiocarbon dates in the Middle Bronze Age (Louwen/Fontijn 2019, 114). The question is whether this type of grave was still commonplace in the Late Bronze Age. The last type of grave concerning a clean deposition of cremated remains ('type F') has in the Scheldt-Basin only been attested for the Late Iron Age (De Mulder 2011, 233-234). It concerns a form of burial whereby the cremated remains are scattered in the surrounding feature of the funerary monument. In the Netherlands this type of grave has been attested in different capacities. Not only scatters of cremated remains are regularly encountered in the fills of circular ditches but also compact bundles of cremated remains have been found deposited in these surrounding features. To indicate that cremated remains have been retrieved from the surrounding features of funerary monuments, in the database these different forms of graves have all been ranked under 'type F graves,' thus slightly deviating from De Mulder's definition of a 'type F grave' (De Mulder 2011, 218).

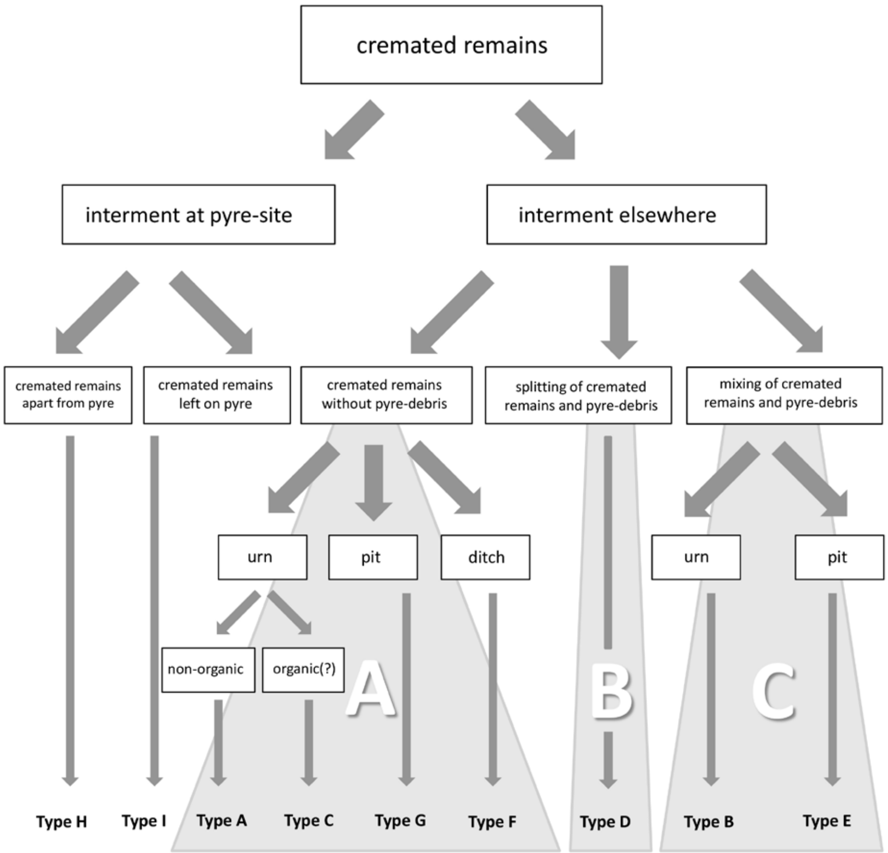

Fig. 3.10: Cremation grave classifications by De Mulder (2011). In this figure the original denominations of De Mulder have been reworked to an English description. The word 'selection' in the original scheme has been left out on purpose as it may cause some confusion with the practice of '*pars pro toto*' deposition of cremated remains. The grey planes with 'A-B-C' indicate where De Mulder's classification coincides with Hiddink's classification. (After: De Mulder 2011, fig. 8.4).

The type of grave De Mulder presents as '*type Destelbergen*' (his 'type D') is in fact the same type of grave as Hiddink's 'type B' as it too involves a clear separation of cremated remains from pyre-debris. Although clearly separated, the two features are deliberately placed within the same pit. The cremated remains are often found on the bottom of the pit while the pyre-debris is used as backfill.

The remaining two types of graves both concern a way of burying whereby cremated remains and pyre-debris are not sorted out. De Mulder's 'type E' is also known as '*Brandgrupengrab*' and is in fact the same type of grave as Hiddink's 'type C' involving the deposition of cremated remains and pyre-debris in a small pit. De Mulder's 'type B,' to conclude, also involves the use of an urn. In 'type B graves' the urn contains both cremated remains as well as pyre-debris and is placed in a small pit. The same mix of cremated remains and pyre-debris is then used to backfill the grave. In the database graves with a backfill consisting out of both cremated remains and pyre-debris but with an urn that only contains cremated remains are also ranked among the 'type B graves' as the presence of pyre-debris in these graves was clearly deemed important.

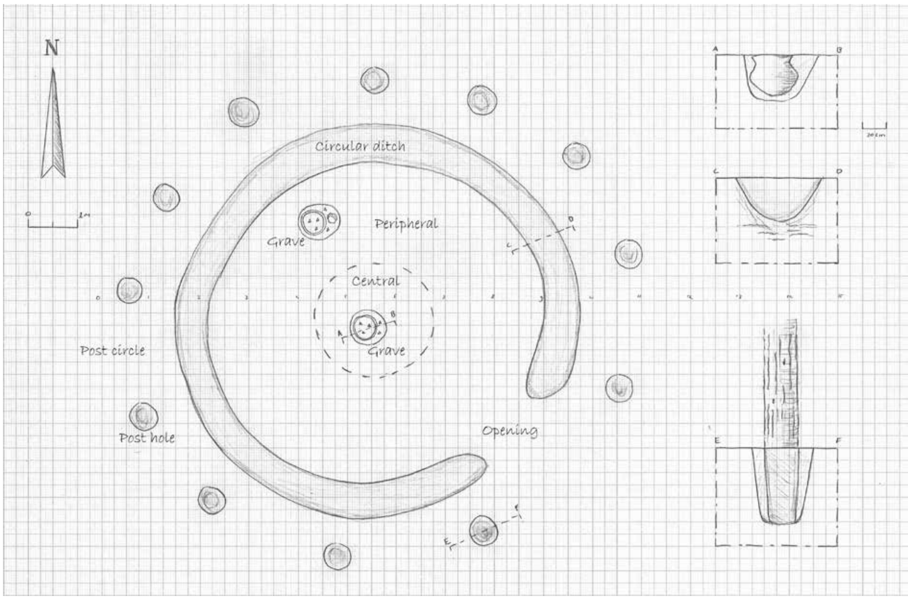

Fig. 3.11: Schematic overview of the types of archaeological features associated with urnfield graves and their terminology. The here presented structure is made up and concerns a compilation of the most typical features found in urnfields in the Lower-Rhine-Basin.

Type of monument

As there seem to have been at least as many ways to monumentalise a grave as there were ways of composing the grave, a separate table [Table 4] has been created in the database to accommodate the basic information about the monuments concerned. The term "monument" may be a bit confusing in this context as the mounds erected over urnfield graves were generally not very large, often only several metres in diameter. Nevertheless, they indicated the locations of specific graves and would have been recognised by the living community as representing a beloved one, an anonymous dead or perhaps even an ancestor.

Originally, most monuments would have consisted out of a (small) mound and accompanying surrounding feature like a post-circle or circular ditch. However, as most of the urnfields have over time been completely levelled, in many occasions the only features that can tell us something about the original monument are the cut features of posts and ditches that once surrounded the original monuments. The general lack of preserved or properly excavated urnfield mounds is also why in the database for the monuments themselves only the rough distinction between 'round mounds' and 'long mounds' could be made. Additional options are formed by 'quadrangular mound,' 'stone cist' and 'stone platform.' Only when the mound itself was still present at the time of excavation the type of monument was noted down without an additional question mark.

For the type of surrounding feature the following options have been distinguished: 'circular ditch,' 'double circular ditch,' 'circular ditch with post-circle,' 'quadrangular ditch,' 'rectangular ditch,' 'keyhole-shaped ditch' and finally 'post-circle.' In an additional field the presence and direction of opening(s) in the surrounding features have been documented as they occur quite often in urnfield funerary structures. The original feature numbers have also been entered and the different monuments are linked to their specific graves by their unique monument-ID. Subsequently, in Table 2 is indicated how a specific grave is related to a specific monument by stating its position in relation to the monument. A grave can either be located ‘central’ or ‘peripheral’ in relation to the monument. As “central” is a rather subjective term and urnfield graves are only rarely located in the exact centre of a monument, the entire area within a third of the radius of the monument concerned is considered as ‘central’ (Fig. 3.11). For long mounds one-third of the distance from the central axis to the outer edges of the monument is considered ‘central.’ Finally, urnfield graves dug into older barrows have been registered as secondary graves.

(d) Contents of the grave

Returning to the graves themselves, in Table 2 also room has been reserved for keeping track of the general contents of specific graves. Apart from the already mentioned urns, cremated remains or preserved bones in inhumation graves, there are many other find categories that are encountered in urnfield graves. Not only an occasional piece of metal jewellery or small drinking cup made of pottery may find themselves among these other find categories, but also pottery sherds, charcoal fragments, flint, animal bones, stones/pebbles, burnt loam and so on. The question then arises which of these materials should be regarded as grave gifts or objects for that matter. For instance, we are probably not quickly inclined to assume the inclusion of pebbles in the backfill of urnfield graves to represent grave gifts. Sooner we would describe them as intrusive. However, the Jewish tradition of putting the same kind of pebbles on the graves of beloved ones is even at present widely known. In Jewish belief these pebbles are not (only) just marking individual visits to the grave, as the much celebrated movie of *Schindler’s list* (1993) might suggest, but they are actually meant to pin down the spirit of the decedent in the grave (Riemer 1995). A comparable idea has been attested for a series of British Medieval graves where ash of domestic hearths was placed in the graves to prevent the spirits of the decedents to return to their home fires (Gilchrist 2008, 145-148). Up till now, in this dissertation the charcoal particles reported to come from urnfield graves have been described as representing pyre-debris, but in the light of the example provided by Gilchrist, this does not necessarily has to be the case. The difficulty however is that in the case of the urnfields there is no *Talmud* or Early Medieval documentation to testify to the meaning behind the funerary practices we observe. Also, determining whether a stone or pebble is intrusive or not might prove difficult for some archaeological contexts like cemeteries on fluvial sediments.

Another complication in determining the exact nature of the find categories we encounter in urnfield graves, concerns the long research history of the urnfields. Not always has attention been paid to retrieving the seemingly more insignificant find categories like pieces of stone, flint or charcoal. The numbers of these latter categories have grown substantially ever since the implementation of the Valetta Treaty prompted all sorts of excavation protocols[22] dictating the contents of cremation graves should now be sieved. Thereby, the analysis of cremated remains only developed in the second half of the twentieth century, making find categories like animal bones a relatively “young” niche in urnfield research. In general, urnfields excavated at the beginning of the twentieth century will score low on these smaller and seemingly less significant find categories. On the other hand, urnfields excavated in the earlier era’s (see Section 3.4) will produce significantly more complete urns and objects as most of the urnfields were not levelled

22 For the Netherlands: *Kwaliteitsnorm Nederlandse Archeologie* (Quality standard for Dutch Archaeology)

yet at that time. This latter observation brings us to another taphonomy related issue as it will not always prove possible to determine whether a pottery sherd retrieved from a heavily damaged urnfield grave concerns an urn fragment, a fragment of an accessory vessel or perhaps just a pottery sherd. Especially the latter category seems on basis of more recent excavations to represent an intentional addition to urnfield graves (*e.g.* Tol 1999; 2000; Dyselinck 2013). Overall, there are a lot of uncertainties involved when it comes to determining which find categories functioned as grave gifts and which did not.

To cope with these ambiguities, in the database structure the following approach has been adapted. First of all, to qualify as a grave gift, without the slightest shadow of doubt the artefact concerned was meant to enter the grave as an object or is at least a clear representation of a specific object. It has been decided to exclude the urns, and if presents their lids too, as they already fulfilled the role of container for the cremated remains. Accessory vessels functioning as lids were thus not ranked among the grave gifts. On their turn, accessory vessels were only counted among the lids when they seal off the mouth of the urn, preferably placed upside down. When in doubt if an accessory vessel really functioned as lid, it has been counted among the grave gifts.

Consequently, with all the different capacities in which pottery occurs in urnfield graves, this leaves us with a substantial amount of graves that contain pottery sherds that are not clearly derivative of an urn, lid or piece of accessory pottery. It is for this kind of ambiguous finds that in the 'graves table' [2] a separate field for '*material admixtures*' has been created. In this field all find categories are registered that are clearly of importance to the reconstruction of the mortuary process but did at the same time not clearly function as intentional grave gifts and merely represent the residue of the mortuary process as whole. It also offers space to materials, like pottery sherds or fragments of stone, for which some doubt may exist about their original nature. For instance, after decades of intensive ploughing, all that remains of an urn grave may just be a handful of pottery sherds and a few specks of cremated remains. Having noted all the capacities in which pottery does occur in urnfield graves, there is no way of telling which of the three categories of pottery these sherds might represent: container, accessory vessel or just pottery sherds. Ranking these sherds among the urns or the grave gifts would be to risk blurring the actual figures on both categories as these heavily damaged graves come about quite often. But by putting them in the 'material admixtures' field with an additional remark that these sherds possibly represent an urn or accessory vessel both categories are not wrongfully influenced. Other find categories registered in the 'material admixtures' field (if recorded at all in the excavation concerned) are charcoal, burnt loam, pieces of flint, unworked stone/pebbles and metal slag.

A last find category included in Table 2 concerns the bones of animals. As mentioned, the presence of animal bones in urnfield graves has in the Lower-Rhine-Basin only been noted quite late in the research history of the urnfields, making it difficult to draw a representative picture from the data at hand. The fact that most of the animal bones are burnt and mixed with the cremated remains suggests they represent (food) offerings on the pyre. But occasionally also unburnt animal bones surface in urnfield graves (*e.g.* Blom *et al.* 2012; Bérenger/Pollmann 2008; Pollman 1994). In Table 2 the presence of animal bones [yes/no] has been indicated, and if available, also a brief description of the species, part of the skeleton and weight has been included.

3.3.4 Cremated remains[23]

Making sense of the heavily deformed and often severely fragmented pieces of calcined bone that remained after the destructive process of cremation is not an easy task. Yet still a lot can be learned from cremated remains about the age and sex of the decedent and even things like the temperature of the pyre can roughly be determined on basis of these seemingly unpresentable crumbs of former bones.

The 'cremated remains table' is one of three tables that form the third level in the database structure (see Fig. 3.8). All three tables in this level concern the contents of specific graves, hence every entry in this level is connected to a specific grave. Every entry also received its own unique 'cremation-ID.' Apart from the administrative information like the 'site-code,' 'grave-ID,' and feature number the following variables have been registered for every grave for which osteological analysis was carried out.

As the total weight of cremated remains is often used as an indication for the completeness of the cremation concerned and the carefulness with which the cremated remains have been collected from the pyre (*e.g.* Veselka/Lemmers 2014), for every grave has been indicated [yes/no] whether the grave was still intact when it was found. As mentioned, because of extensive agricultural activities in the last century, "decapitated" cremation graves often come about in the more recent excavations. It goes without saying this taphonomic factor can be of great influence on conclusions based on total weights of cremated remains if not documented correctly. Only graves with urns that have their lids still placed on top and urns that have been preserved *in situ* with their necks and rims still attached are counted among the intact graves. This might seem a bit as too strict of a rule as there are probably also graves without urns that are still intact or "decapitated" urns that were never filled to the rim with cremated remains. However, as we can be pretty sure this small group of graves is indeed intact, it provides us with a safe reference group that can be used to compare the bulk of the graves to.

The analysis of cremated remains is a relatively young discipline and still prone to rapid methodological developments that sometimes alter the outcomes of earlier analyses. Also, when visiting conferences about the analysis of cremated remains, the impression a layman (like myself) often gets is that specialists still seem to disagree on different aspects of the research. Therefore, in the database is also kept track of which examiner performed the analysis of the cremated remains as any conflicting outcomes that might occur possibly reflect differing views of the researchers concerned.

Arriving at the technical aspects of osteological analysis, for keeping track of the grade of combustion, the earlier mentioned scheme of Joachim Wahl (1983; 2008) has been applied. Subsequently, if recorded, the total weights per skeletal region are noted down. Osteologists in general distinguish between *cranial, viscerocranial, axial, epiphyseal* and *diaphyseal* parts of the skeleton. In the database these same skeletal regions have been adapted except for the fact that the *viscerocranium* and *cranium* have been combined into one category as they both concern parts of the head. By noting down the weights per skeletal region not only the average distribution of weight becomes assessable but it also opens up the possibility to check whether only specific parts of the skeleton were

23 Special thanks are due to Barbara Veselka, Rachel Schats and Menno Hoogland of the osteology lab at Leiden University for their help and advice in coming up with a suitable strategy for recording the osteological data.

selected for burial. The weights for the indeterminable fragments are also registered as are the total weights of the cremated remains. The grade of fragmentation has deliberately not been included in the database as this feature of osteological analysis is simply too dependent on too many taphonomic factors.

If possible, an indication for the sex and age of the decedent is registered. As age determination is one of those aspects in the study of cremated remains about which some discussion exists, it has been decided to only create several main categories and not narrow down the age of individuals to years or even months. A major distinction has been made between 'non-adults' [0-15 years old] and 'adults' [>15 years old]. Within these two groups one can distinguish between 'infants' [0-3 years old], 'child' [4-15 years old] and 'old adult' [>40 years old]. The specific age as estimated by the researcher concerned is still noted down in the 'remarks' field so that if necessary, some nuances can be made. For the determination of the sex of the decedent the nuance of 'probably' and 'possibly' is made with respectively one and two question marks. A decedent for whom only vaguely positive indications for the male-sex have been observed is for instance indicated as [Male??]. The database offers room for as much as seven individuals per grave as this is the highest number of individuals for a single cremation grave ever recorded in the Netherlands (Roymans/Hoogland 1999).

3.3.5 Inhumations

As inhumed skeletons are less problematic to study than the heavily deformed bones in cremation graves, the 'inhumations table' has been structured accordingly. Apart from the same administrative fields that were created for the cremated remains, separate columns for an indication of the minimum and maximum age at death have been included for the inhumations. Indications for the sex of the decedent are also more straightforward for inhumed skeletons, hence only the distinctions of 'certain' and 'probably'[?] have been applied. Still, for every grave has been indicated whether the burial was still intact [yes/no] or was damaged by any taphonomic process, as here too, the completeness of the skeleton is of importance in the reconstruction of the funerary practices. An additional column was created to indicate the pose or position of the skeleton like 'stretched on back' or 'flexed on left side.' As inhumation graves are less easy to categorise according to classification systems like the ones devised by Hiddink and De Mulder, the 'remarks' field has been used to provide a short description of each grave.

3.3.6 Objects

As at least two research questions already fully concern the objects themselves, the construction of an elaborate but workable classification system that allows for a quick assessment of all the informative characteristics of the objects is paramount. Especially the categorisation of the objects that were selected for burial in the first place, as the way they were treated are of interest here. It are mostly these two features that shaped the structure of the 'objects table.'

Like with the 'cremation' and 'inhumation' tables, every entry in the objects table received its own unique 'object-ID' that is linked to specific graves (see Fig. 3.8). Again the general administrative information has for every entry been included. However, where for the cremated remains all individual decedents present in one grave have been registered under the same ID, individual objects within the same grave have been recorded separately as individual objects may have received different treatments, consist out of different materials and can be placed in different positions in relation to the body. One grave may thus contain multiple 'object-ID's.'

For the description of the objects themselves, the following categorisation has been established. First the general material the object is made of was determined followed by a more specific categorisation of the material. A dress pin may for instance have been made of 'metal' and more specifically of 'bronze.' Then, inspired by the method applied by Popa (Popa 2018, chapter 2),[24] subsequently the 'object group,' 'object purpose' and 'object type' are indicated. These categorisations provide a rough insight in the references these objects might bear and perhaps even hint at reasons why certain objects were placed in the grave. The categories concerned have however been described as objectively as possible. The bronze dress pin that was already taken as an example in the above could for instance further be described as (respectively): 'cosmetics and clothing,' 'adornment' and 'needle/pin.' Especially the 'object purpose' category is a difficult one as one object might have served multiple and ambiguous purposes. The object purpose of the dress pin in the example has been registered as 'adornment' because it was nicely decorated but at the same time it probably also functioned as 'fastening pieces of clothing.' Also, as grave gifts in urnfield graves are often severely damaged, not every pin-like object evidently represents 'cosmetics and clothing' as an object group. All these nuances have been considered per object and will be readdressed in the final analysis (Chapter 5). Also, when in doubt about one or more of the categorisations, the categories concerned have been left undetermined. Metal rings, for instance, occur in urnfield graves in many different capacities such as finger rings, earrings, horse gear or other forms of composite artefacts. When only a small ring is found among the cremated remains it is often impossible to determine which of the above the ring actually represents. In these occasions 'object group' and 'object purpose' have simply been left open. Finally, the section reserved for the objects themselves also offers space to 'object typology' as typological denominations might be of help in tracing the object concerned in the available archaeological literature.

When numbers are concerned, one grave might contain multiple objects and one object might be fragmented into several pieces. As mentioned, multiple 'object-ID's' can be assigned to a single grave. However, certain composite artefacts may consist out of multiple objects. One glass bead necklace may for instance count as many as 70 individual glass beads (*e.g.* Van Straten/Fermin 2012, 68). In these occasions the glass beads have been lumped as representing one object while the number is set on the number of beads. Fragments of the same object have always been counted as one object, and if countable, are indicated as 'number of fragments' (see Fig. 3.12).

The second segment of the 'objects table' is dedicated to the treatment of the objects. First is indicated whether an object is still *intact* and whether the object is *complete*. Though at first the two descriptions may seem to be aimed at the same capacity of the object, but they do in fact indicate two entirely different qualities. '*Intact*' in this context means an object has not been manipulated at all and is left entirely "unharmed." '*Complete*' is however only used to indicate that no parts of the object are missing from the grave. The object concerned can however still be completely burnt or fragmented, but as long as all parts are still there it is considered 'complete.' Detailed actions concerning

24 Popa reconstructed the mortuary process as reflected in some 300 Iron age graves from present day Romania (Popa 2018).

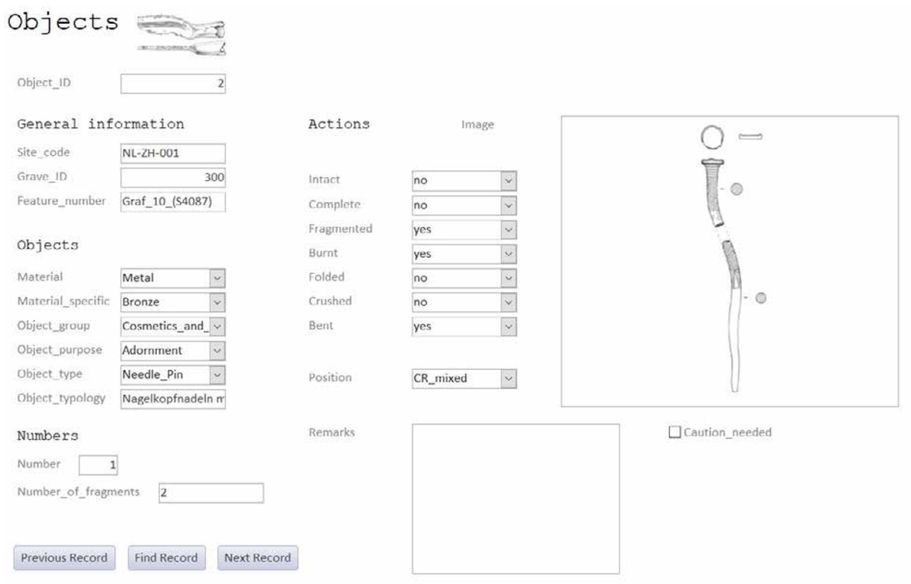

Fig. 3.12: Object form designed for the database of the present research.

the treatment of the objects have been categorised using the classification system devised by Matthew Knight for his research into the treatment of objects in Bronze Age hoards (Knight 2018). Knight distinguishes several categories of manipulation of which five have been adapted in the database: 'burning,' 'breaking/fragmenting,' 'crushing,' 'bending' and 'folding' (Knight 2018, 111- 113). For each form of manipulation the options of 'yes,' 'no,' 'probably' or 'indeterminable' have been registered (see Fig. 3.12). It has to emphasised here, that none of the objects have been analysed by the present author himself and that findings concerning the treatment of objects have generally been adapted from the publications concerned. If some doubt existed about the nature of certain objects or/and their treatment, the box 'caution needed' has been ticked (see Fig. 3.12).

Finally, for all objects entered in the database their position in relation to the body, both cremations and inhumations, has been determined. Nuances and extra descriptions have been entered in the 'remarks' field.

3.3.7 Conclusion

Noting the uniqueness Bourdieu ascribes to a person's *habitus* (Bourdieu 1990, 64), he would probably have shaken his head in dismay when he would learn about the attempt to categorise human behaviour in the way it was done in the above. However, the main aim of this exercise is not so much to fit 900 years of loss, grieve, mourning and celebration into a '*one-size-fits-all*' jacket, but rather to map which actions in general made up the narrative of the urnfield mortuary process (*cf.* Fowler 2013) and how this narrative may have changed over time and differed per region. By examining the decision tree involved in the urnfield mortuary process and noting the slight differences in the way these actions were performed perhaps local communities, households and maybe even individuals might surface in the reconstruction of the mortuary process that will be presented in the next chapters. Clearly, the proposed database structure is merely a means to this end.

3.4 Selection of cemeteries

3.4.1 From assessment to excess: the sheer abundance of urnfield data in the Lower-Rhine-Basin

The next challenge is to determine what number of graves has to be studied in order to draw a representable picture of the funerary practices associated with the urnfields. This means a rough estimation has to be made of the total number of cemeteries and graves in the entirety of the Lower-Rhine-Basin. Also, an assessment needs to be carried out of what portion of the original amount of urnfield graves, meaning *all* decedents interred in the period between 1300 and 400 BC, is in fact reflected by the graves that did make it to our museums an repositories.

Originally, the size of the research area comprised the whole of the present day Netherlands, the Flemish part of Belgium, Lower Saxony west of the river Weser and Nordrhein-Westfalen in Germany. Together these areas cover roughly 110.000 km^2. After an initial inventory of cemeteries throughout the Lower-Rhine-Basin, the size of the original research area simply proved to be too big for the scope of a single PhD-project as the Netherlands alone already produced 689 sites (Fig. 1.9; Appendix I; Appendix III: Map 1),[25] while Flemish Belgium added another 200 cemeteries to the count. After just a superficial scan of inventories and site reports on Westfalen-Lippe, the eastern part of Nordrhein-Westfalen, another 220 sites were added to the list and it was agreed to abandon the inventory for sites in Germany. As Guy de Mulder only recently published his research on urnfield graves from the Scheldt-Basin, which already comprises most of the Belgium urnfields (De Mulder 2011), it was finally decided to confine the research area to the just the present day Netherlands. Methodologically, this decision also had its advantages as now most of the data would be compatible and could be retrieved from the same data-sources. Even more so, a more complete and in-depth study of a smaller area could now be performed.

For the inventory of Late Bronze Age and Early Iron Age cremation grave cemeteries in the Netherlands was initially made use of a corpus of regional inventories (Desittere 1968; Kooi 1979; Verlinde 1987; Gerritsen 2003; Verlinde/Hulst 2010).[26] As most of these inventories have been written several decades ago and do not cover the entirety of the Netherlands, the Dutch national archaeological database [Archis II/Archis 3] and the online report-repository [DansEasy] have been assessed to complete the inventory. To avoid any future confusion, every time the original inventory numbers of the urnfields concerned have been adapted into the system devised for the research at hand. In this register every site received a unique site-code consisting out of the abbreviations of the country and province followed by a number. Number 387 in the Gerritsen's inventory (Gerritsen 2003), for instance, has been registered as 'NL-LI-387' (The Netherlands – Limburg – site 387).

Just to give an impression of the sheer number of graves we are actually dealing with here, before the inventory of the German part of the research area was abandoned, track was kept of all the cemeteries published in the '*Neujahrsgruss,*' which is a concise overview of the archaeological fieldwork carried out in just the area of Westfalen-Lippe and is published on a yearly basis. A survey of all editions issued between 1970 and 2013 yielded no less than 104 newly or rediscovered cremation grave cemeteries that date to the period between 1300 and

25 The inventory may be considered up-to-date until 2016.

26 Special thanks are due to Roy van Beek (University of Wageningen) for providing me with his unpublished inventory of cremation grave cemeteries in the Achterhoek.

400 BC. For 72 of these sites also figures on the number of graves retrieved from the cemeteries concerned had been provided. As many of these graves concern chance finds, the original number of graves for these sites would have been much higher. But, when just these numbers are added up, in total no less than 4,311 graves were discovered in a timespan of just 43 years. This means that on average every year at least some 100 new urnfield graves were discovered in just the area of Westfalen-Lippe. Also, as 72 sites produced 4,311 graves, the average number of graves per cemetery in Westfalen-Lippe is at least 59.9. Assuming that the find circumstances in other parts of the Lower-Rhine-Basin are comparable to the circumstances in Westfalen-Lippe, from chance finds to excavations so to speak, and that the average size of cemeteries throughout the Lower-Rhine-Basin is also comparable, we can extrapolate the numbers from Westfalen-Lippe to gain a rough insight in the total number of graves represented by the known number of cemeteries. For the present day Netherlands this would mean that some 41,254 graves are represented by the 689 sites that have been counted for this area.

The next question is to what extent do these numbers actually represent the original situation, or in other words, how much did we lose over time and how much do we still miss? Even though it might be impossible to come up with a true answer to this question, by scanning through the literature from the last 150 years one cannot escape the impression that we are indeed dealing with only a small fraction of what once might have been. Nineteenth century researchers like Willem Pleyte already complain about the fact that they often arrived just too late at a site and that most of the urns were already destroyed or looted (*e.g.* Pleyte 1887). Subsequently, at the doorstep of the twentieth century AD, many urnfields that had been present in the physical landscape for more than two millennia finally fell victim to reclamation activities before an archaeologist was ushered to the site. As an example, Van Giffen vividly described his observations when he arrived at the site of Zeijerveld in 1934 as he witnessed the damage done to one of the barrows:

> *"…At the eleventh hour, as so often, we were able to conduct some scientific observations. As a rueful, poignant wound, as a bitter, helpless indictment of the ancient landscape the barrow laid. Torn apart, devoured, with here and there some patches of heath still on its heavily violated flanks. Such the once graceful barrow grinned at us like a shell crater on a desolated battlefield…"*[27] A.E. van Giffen 1936b, 24.

Anecdotes do not produce numbers, but these observations at least show that at a time when many urnfields were still visible in the landscape, the urns that made it to the museums were often the clear exceptions. Where in the eighteenth and early nineteenth century looters and urn-diggers would have caused most of the damage to urnfields, heath reclamation, heavy ploughing and rapidly expanding towns have taken their toll from the later nineteenth century onwards. An exemplary case that shows the alarming effects of the early twentieth century reclamations can be found with the urnfield of Uden-Slabroekse Heide in the southern Netherlands.

In 1923 a local physician from Uden learned about the plans of transforming the heathland at Slabroek into arable land. As he knew an urnfield was located on the Slabroekse Heide he informed the State's Museum of Antiquities in Leiden. The excavation that followed was carried out by Remouchamps and a team of local workers.

27 English translation by author.

Fig. 3.13: Two field impressions of the same cluster of graves in the urnfield of Uden-Slabroekse Heide. The top-picture was taken in the excavation of 1923, while the bottom-picture was shot in the trial-trench campaign of 2005. (Van Wijk/Jansen 2010, fig. 6.8).

The excavation produced 38 intact cremation graves as well as intact profile sections of burial mounds (Fig. 3.6). In the end only a small portion of the original urnfield could be excavated (Remouchamps 1924). When the site was finally re-excavated in 2005 (Van Wijk/Jansen 2010) and 2010 (Jansen/Van der Vaart-Verschoof 2020), it proved that more than 50 years of agricultural activities clearly had done the damage as the contours of the cemetery had almost completely been wiped out (Fig. 3.13). Nevertheless, due to the

Fig. 3.14: Uden – Slabroekse Heide. One of the urns found in the 2010-campaign. The urn had not only collapsed under pressure in the ground, but was also "decapitated" and heavily damaged by ploughing. The picture clearly shows one of the plough-marks running right through the urn, scattering the contents of the urn up to several decimetres outside the urn (Photo: Arjan Louwen, August 2010).

process of podzolisation that had occurred underneath the original cut features of the small mounds, still over a hundred funerary structures could be documented. That these by far not represent the original situation is demonstrated by the fact that no trace was left of the largest barrow that was documented by Remouchamps. This section of the cemetery was probably levelled first before the actual ploughing took place. In addition to the podzolized cut features, the remnants of 15 cremation graves were recovered, most of them reduced to a few grams of cremated remains and the bottom segments of urns (Fig. 3.14). Knowing that the urnfield must have consisted of more than a hundred funerary monuments, the here presented numbers indicate that in little over 50 years more than half the original amount of graves had vanished.

The case of Uden-Slabroekse Heide is just one of many examples from the Netherlands where only a fraction of the original urnfield made it to our era. There are even clear examples of historically known cemeteries, like Winterswijk-De Hunebelten, that must have been substantial in size but of which nothing remains (Schabbink 2014). In addition, recent excavations of urnfields start to reveal extensive funerary landscapes (*e.g.* Blom/Van der Velde 2015; Kortlang 1999; Hiddink/De Boer 2011; Laloo *et al.* 2014) implicating many cemeteries still await their discovery. All things considered, determining the right sample size remains a complicated affair. However, as will appear from the following, the quality of the available data varies substantially and only a portion of the data actually allows for the resolution required to study funerary practices.

3.4.2 Urnfield research in the Low Countries

For the research history of the urnfields in the Low Countries usually a division is made between the research performed before and after 1960 (Roymans/Kortlang 1999, 34; Gerritsen 2003, 22). Before 1960 excavations mostly focussed on urnfields still visible within the vast heaths that dotted the Pleistocene parts of the landscape while after 1960 the introduction of the mechanical excavator made it possible to also investigate the so-called '*essen*' complexes. These Late Medieval '*plaggen* soils,' created to enrich the minerally poor sandy soils, had over time covered up substantial parts of the prehistoric landscape and when the first *essen* had to give way to expanding towns in the mid twentieth century, the first cemeteries started to come to light from underneath these sometimes more than one metre thick layers of sods.

Several detailed accounts on the research history of the urnfields have already been published recently (Roymans/Kortlang 1999; Gerritsen 2003; De Mulder 2011). Therefore, in the following only the highlights of the urnfield research history will be addressed. In order to better assess the usability of the data throughout the long research history of the urnfields, a subdivision of the already mentioned research epochs is being suggested. Subsequently, for all 689 sites that have been mapped in the Netherlands, the years the research took place have also been registered. These figures have been used to create Fig. 3.15 which shows the research intensity through time (Also see Appendix III: Map 4). As will derive from the following, every research epoch brings about its own possibilities and restrictions in regard to the quality of the excavational data.

As Fig. 3.15 shows, Roymans and Kortlang rightfully once dubbed the period between 1850 and 1960 the heyday of the urnfield research (Roymans/Kortlang 1999, 34) as this is the period of the great heath reclamations and the period in which archaeology developed into maturity as a scientific discipline. As such, the research history of the urnfields is already divided into three chapters. To start with the beginning, the period before 1850 is characterised by unsystematic research and a first curiosity for the 'heathen past' by the educated upper class, mostly vicars and physicians. Some fascinating accounts exist about clergy men handling the spade in their leisure time to quench their curiosity:

> *"…On march 8, 1711 I resided on my estate near the town of Borken. It was Ash Wednesday and I was contemplating death and the cremation graves of the urnfields. As such I decided to act upon my old plan of excavating opportune places noted much earlier…"* J.H. Nunningh, 1713.[28]

Overall, when the usability of the data obtained in this period is concerned, only an occasional urn finally made it to a local '*Oudheidkamer*' or museum. For these objects it is often even difficult to trace back the urnfield they were retrieved from.

The successive period between 1850 and 1960 could in fact be broken up into two sub-epochs. Between 1850 and 1900 archaeology started to develop as a scientific discipline and the first systematic field techniques were applied in funerary archaeology (*e.g.* Janssen 1856a). Also, the first regional archaeological overviews appear (*e.g.* Ort 1882; Hermans 1865) that occasionally feature the most beautiful illustrations of archaeological objects (*e.g.* Pleyte 1887). It was however only from 1900 onwards that not only the number of

28 Translated to English by author after the Dutch translation of the original Latin text by J.A. Bakker (1983, 21).

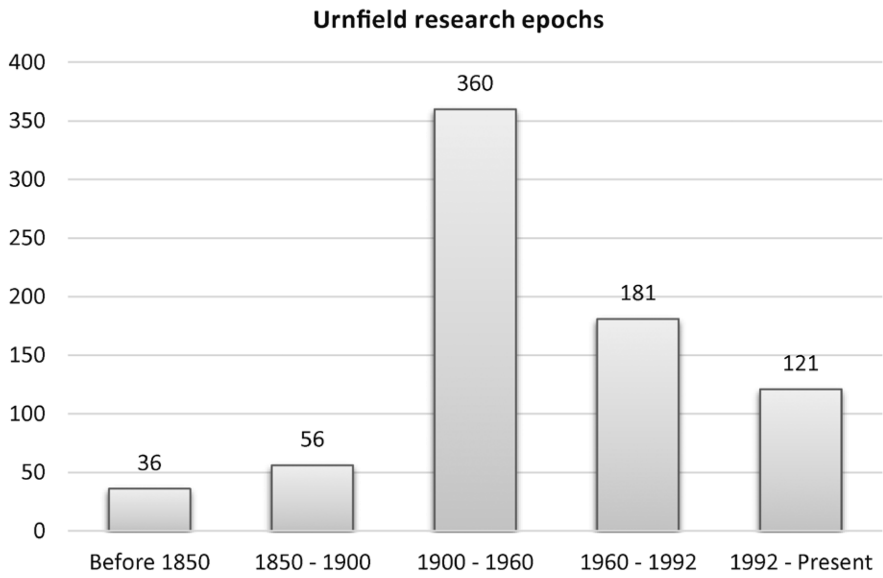

Fig. 3.15: Research intensity in relation to the different urnfield research epochs. One urnfield may have been counted under multiple research epochs as some urnfields have been excavated episodically over time.

excavations really picked up pace (see Fig. 3.15) but also archaeological field techniques developed rapidly. The curator (and later director) of the National Antiquities Museum in Leiden, Jan Hendrik Holwerda (1873-1951), was at that time being trained in archaeological fieldwork in Germany (Holwerda 1906) and introduced systematic excavation techniques to funerary archaeology in the Netherlands with his first barrow excavation at the Crown Estate near the hamlet of Hoog Soeren (Holwerda 1907a). After an argument with one of his pupils, Albert Egges van Giffen (1884-1973), a second epicentre of archaeological field research was created by the latter in Groningen with the founding of the *Biologisch Archeologisch Instituut*. Both Groningen and Leiden conducted numerous excavations of urnfields in the decades preceding the Second World War. Van Giffen, for instance, excavated no less than 48 urnfields in the period between 1917 and 1952. Even though many excavations in fact concerned salvage excavations, field (recording) techniques and additional analyses were developed up to high standards in this period. The most illustrative example is probably the excavation of the urnfield of Gasteren by Van Giffen in 1939. Not only the stratigraphical positions of intercutting funerary structures were precisely documented, also the first systematic palynological and osteological[29] analyses were performed for this urnfield (Van Giffen 1945).

The introduction of the mechanical excavator and the so-called '*essen*-archaeology' have already been mentioned in relation to the birth of a new research era after the year

29 The very first analysis of cremated remains from a Late Bronze Age/Early Iron Age grave was in fact carried out by one professor Vrolijk in 1856 who studied the cremated remains from the site of Hilversum-Westerheide (Janssen 1956b). Unfortunately, after his analysis the cremated remains were buried somewhere in the garden of the National Antiquities Museum in Leiden.

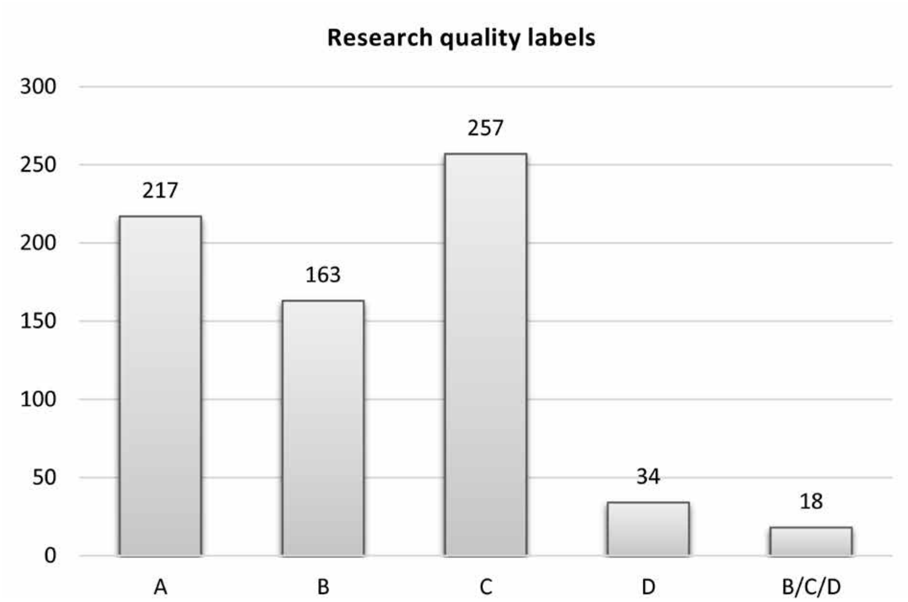

Fig. 3.16: Number of sites per research quality label. N total = 689 sites.

1960. Also the gradual introduction of radiocarbon dating is an important feature of the research period after 1960. But like with the preceding period, the period after 1960 too can also be divided into two sub-research-epochs. Especially since it has already been more than 25 years since the Valetta Treaty was implemented, it would be interesting to see the effects of a treaty that is aimed at protecting archaeology from the whims of all harmful ground penetrating activities. Therefore, 1992 has been chosen as a boundary for indicating a new research era, as before that year all excavations in fact still concerned salvage projects while after 1992 all archaeology got protected by law. As a result, in the Netherlands a commercial market developed to be able to keep up with the countless invasive procedures that now needed to be guided by a form of archaeological investigation. As mentioned, the implementation of the Valetta Treaty also brought about all sorts of protocols meant to guarantee the quality of excavational data. It is for example from 1992 onwards that most of the excavation reports on cremation grave cemeteries also include the osteological analyses of the cremated remains. Finally, since the introduction of 'Malta archaeology' urnfield graves started to pop up in places where they were not expected in the first place. For instance, practically all cremation grave cemeteries on clayey soils in the Dutch riverine area have been excavated after 1992. Not only an entirely different and dynamic archaeological landscape was brought to light in these excavations but also the spectrum of funerary practices broadened substantially as almost all inhumation graves dating to the Late Bronze Age and Early Iron Age have been found in these excavations (Van den Broeke 2014). Also, since 1992 urnfield graves regularly occur as a "bycatch" of sorts in excavations aimed at other objectives, again showing that still a lot of urnfield graves still await their discovery.

3.4.3 Cherry-picking the Dutch data-set?

As appears from the brief research history in the above, clearly there is an abundance of urnfield data around, but the quality of the data is highly dependent on the time of excavation. Stray urns collected from a random heath before 1850 have lost almost all scientific value and for the availability of osteological data, practically only the urnfields that were excavated after the early 1990's are of use. On the other hand, some excavations from the early 1900's have been excavated and published so well that they even exceed some recent reports in quality. The excavation and publication of the urnfield of Well-De Hamert in 1913 under the supervision of Holwerda (1914) would for instance pass the qualifications of the Dutch Quality Standard (KNA) with flying colours.

For his research in the Belgian Scheldt-Basin (De Mulder 2011), Guy de Mulder faced comparable issues concerning the quality of the data. As a way of source criticism, he developed a ranking system for urnfield excavations that divided his data into 4 categories of different quality levels (De Mulder 2011, 48-50). After his analysis, only 31 examples of the original 129 sites met the standards required for the research he had planned to conduct on the composition of urnfield graves, a corpus that now "only" consisted of 729 graves (*ibid*., 207). His method allowed De Mulder to work with only the best quarter of his original dataset. Since his selection method proved to be a fruitful exercise, the urnfields in the Netherlands have been subjected to a slightly adapted version of De Mulder's analysis consisting of four quality categories (also see Appendix III: Map 5):

A. High quality urnfields
The location of the cemetery is exactly known, as are the locations of individual graves. Also, the individual graves can be traced back in the archives and the publication contains at least an excavation plan with the exact location of the graves and preferably field-drawings and/or photographs of the individual graves.

B. Salvaged urnfields
The location of the cemetery is exactly known, but there is only limited contextual information at hand. The cemetery has been published, be it only very concise. Urns, objects and, if present, cremated remains can still be traced back to specific graves, but there are no field drawings or photographs of these graves available. Heavily damaged cemeteries of which only the deepest cut features survived and salvaged finds by amateur archaeologists also qualify as category B cemeteries.

C. Antiquarian urnfields
Location of the cemetery is only approximately known and only a limited number of finds can be traced back in archives, depots and museums. No contextual data on specific graves is available and the publication is of very restricted quality (*e.g.* letter or newspaper)

D. Paper urnfields
Location of the cemetery is only approximately known and finds from these cemeteries are no longer present.
\+ Osteological analysis

For cemeteries with the addition of the plus-sign osteological analyses are available. This addition is not only restricted to A-category cemeteries since osteological analyses have been carried out for A-, B- and C-category cemeteries.

Eventually, of the 689 sites in the Netherlands almost one-third in the end qualified as 'A-category' urnfields (Fig. 3.16). This is not a bad score as this means that almost one-third of the data can still be assessed for the research questions central to the research at hand. For 83 of the 217 sites that qualified as 'A-category' also osteological data are available. 'A-category' urnfields have only been excavated in the Netherlands after 1900 (Fig. 3.17) and make up substantial percentages of all three subsequent research epochs (Fig. 3.18). When the ratios of the different quality labels per research epoch are plotted (Fig. 3.18), it clearly shows the implementation of the Valetta Treaty did indeed have a very positive effect on the quality of the data obtained. Where in the period between 1960 and 1992 only 30.41% of the data qualifies as 'A-category,' after 1992 the percentage increased to no less than 71.07% (Fig 3.18). At the same time the number of graves without clear context ('C-' and 'D-category' urnfields) decreased substantially in the course of the twentieth century (Fig. 3.18). For some 18 sites no documentation could be found. These sites have been classified as 'B/C/D' (Fig. 3.16). Since these 18 sites only make up 2,61% of the total of sites, their influence on the figures presented is negligible.

The next step is to select a representable sample of sites form these 217 'A-category' cemeteries. Not only regional variation has to be considered when a sample is selected, also developments through time need to be included. As the Netherlands are located on the very edge of the continent, the physical landscape too is characterised by great diversity. Ice-pushed ridges and cover-sand plateaus are cut by countless little stream valleys, dry valleys and major rivers. These major rivers on their turn created an ever changing landscape consisting of levees, gullies and basins while throughout the Bronze- and Iron Age vast peat bogs developed behind the dunes, ultimately covering almost two-third of the Dutch physical landscape. Even though not many cemeteries have been located so far in the coastal area, especially from the Early Iron Age onwards, people inhabited the coastal plains (Fokkens 1998), the old dunes and even some of the peaty areas were colonised from the sixth century BC onwards (Van Trierum 2005). Clearly, the diversity of the physical landscape and the possibility of regional variation also need to be included in a sample of sites (also see Appendix III: Maps 2, 3, 6 and 7).

To cover all these factors, the following sample strategy has been adapted. Within the various landscape types, clusters of 'A-category' urnfields were selected as a starting point for the sampling of specific regions. Clusters of cemeteries are likelier to cover a bigger portion of the timespan between 1300 and 400 BC and they provide the opportunity to compare contemporary cemeteries within distances likely to have facilitated contacts between different groups of people. The word 'cluster' has been used in the broadest sense of the word as in some areas a cluster will measure just a few square kilometres while in other areas the 'A-quality' cemeteries were located further apart. Eventually, eight regions of various size have been selected as case study regions (Fig. 3.19; Appendix III):

A. The Frisian-Drentian plateau [Appendix III; Map 8]
B. The glacial landscape of Salland and Twente [Appendix III; Map 9]
C. The riverine area of the IJsselstreek and East Veluwe [Appendix III; Map 10]
D. The Dutch riverine area [Appendix III; Maps 11 and 12]
E. The Dutch coastal area [Appendix III; Map 13]
F. The cover-sand and marsh landscape of West Brabant [Appendix III; Map 14]
G. The cover-sand and stream valley landscape of East Brabant and North Limburg [Appendix III; Map 15]
H. The Meuse terraces and loess landscape of South Limburg [Appendix III; Map 16]

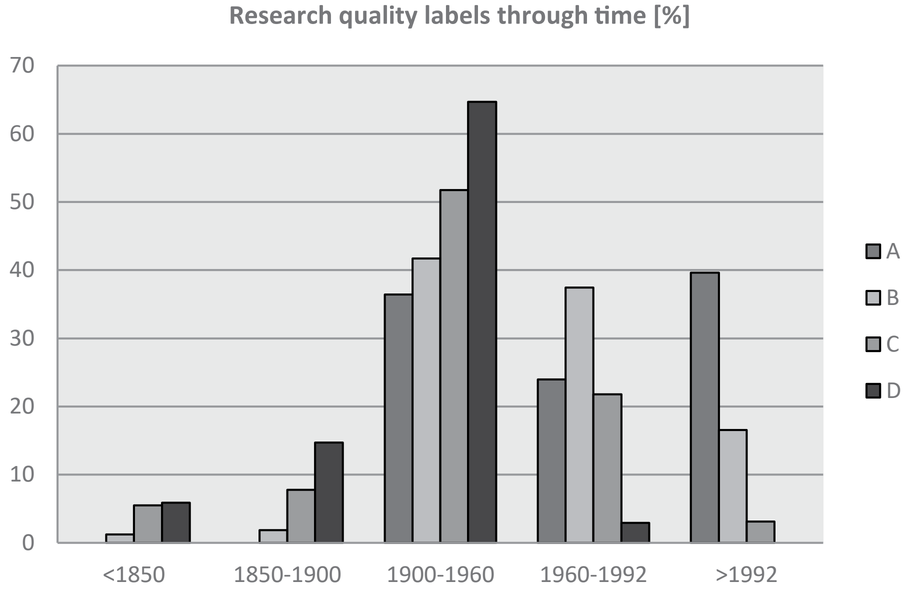

Fig. 3.17: The distribution of the different quality labels through time. As an example, 40% of all 'A-quality urnfields' have been excavated after 1992. For the exact numbers behind the percentages see fig. 3.16.

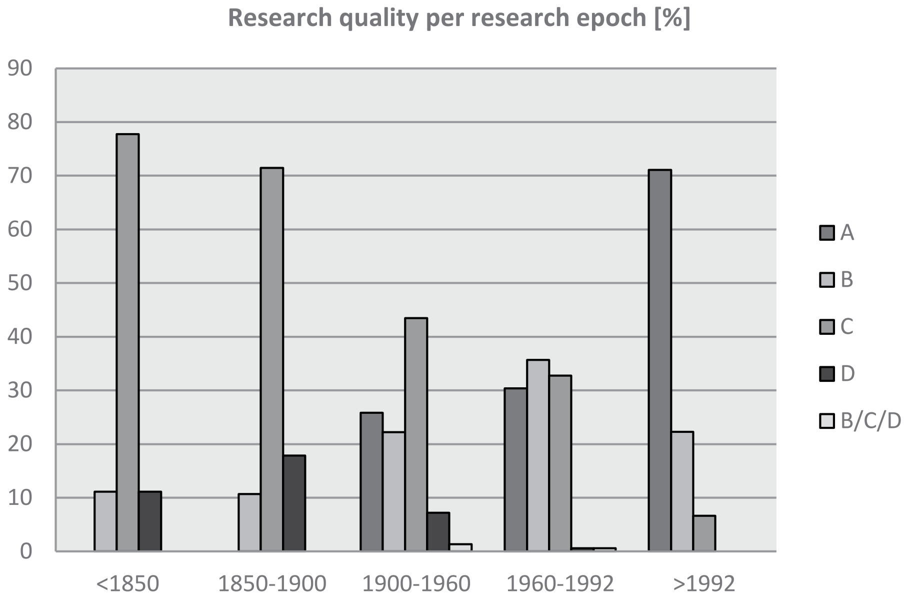

Fig 3.18**:** Research quality labels as a percentage per research epoch. As an example, more than 70% of the urnfields excavated after 1992 concern 'A-quality urnfields.' For the exact numbers behind the percentages see fig. 3.16.

With the exception of the Dutch coastal area, all these regions produced multiple well-documented urnfields. The Dutch coastal area was however still included since it was the only observation available for the west of the country. Effectively, what was done next is adding the 'A-category' cemeteries that are not part of the initial clusters but find themselves within the same region. This exercise was continued until the time reserved for data-entry had run out. As Table. 3.2 shows, many cemeteries exceed the timespan of just the Late Bronze Age and Early Iron Age. In order to be able to detect some long term developments in the funerary practices these cemeteries might represent, both the older and younger graves have also been entered in the database. Interments in the urnfield of Gasteren, for example, clearly peaked in the period of the Late Bronze Age and Early Iron Age (Van Giffen 1945). The cemetery however clearly started as early as the Middle Bronze Age and continued to be used in the Middle Iron Age. In this case the few earlier and later graves have also been included. In the cases where the later graves formed their own distinct (and substantial) cluster, as was the case for the urnfield of Someren-Waterdael III (Hiddink/ De Boer 2011), these later graves have not been included. As every grave entered in the database is provided with an indication for its age, the deviations concerned can be traced back easily.

Eventually, 3,182 graves[30] coming from 75 different cemeteries have been entered in the database (Tab. 3.2). These cemeteries represent 34.56% of all 'A-category' urnfields present in the Netherlands. Despite the knowledge that these 3,182 graves probably still only make up the slightest fraction of the original amount of urnfield graves once present in the Netherlands, they were selected from that portion of cemeteries that produced the most details on the funerary practices concerned with the urnfields. As such, a sample of more than 3000 'A-category' graves still provides a substantial base for the *re*construction of the urnfield funeral to be performed in the next chapters.

30 These are only the graves that were published. The total number of graves coming from these 75 cemeteries is in fact much (100's) higher.

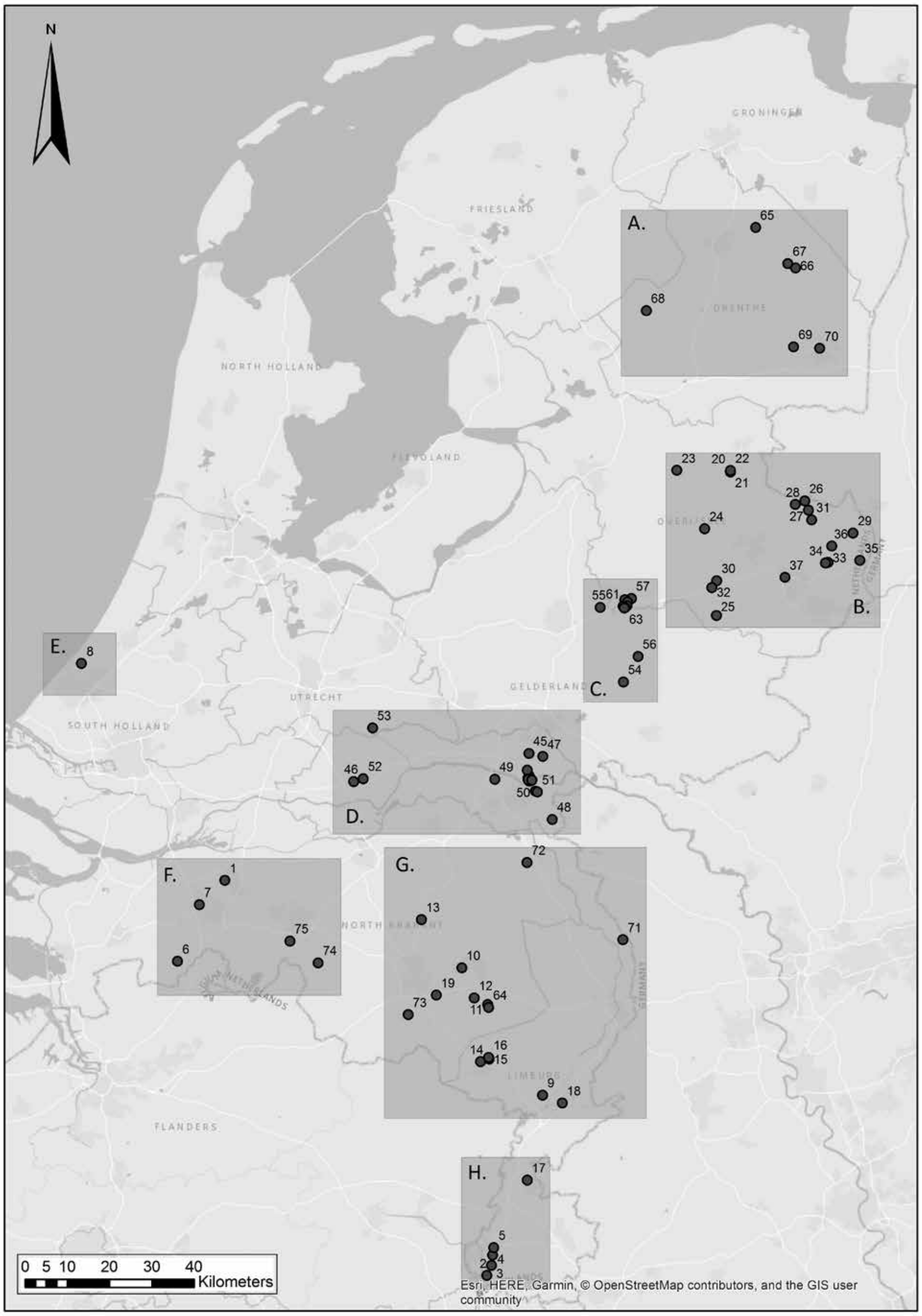

Fig. 3.19: Selection of case-study regions and sites. The clusters of cemeteries around the cities of Nijmegen (D.) and Deventer (C.) are so dense, that the site-numbers concerned cannot be displayed properly on this scale. Detailed maps of all regions, including the site-codes, are available in Appendix III. (Own work; Background: Esri, HERE, Garmin; Copyright Open StreetMap contributors, and GIS user community).

ID	Site-Code	Toponym	Literature
1	NL-BR-136	Oosterhout (Vrachelen/De Contreie)	Verwers/ Beex 1978; Bink/ Dyselinck 2009; Roessingh/ Blom 2012; Veselka/ Lemmers 2014
2	NL-LI-018	Maastricht-Oosderveld	Mildner/ Wetzels 2005
3	NL-LI-397	Maastricht-Vroendaal	Dijkman 2000; Dijkman/ Hulst 2000
4	NL-LI-396	Maastricht-Withuisveld	Dijkman 1995
5	NL-LI-006	Maastricht-Ambyerveld (Hagerhof)	Van der Mark/ Schorn 2008; Dyselinck/ Warmenbol 2012; Dyselinck 2013; 2014
6	NL-BR-010	Zundert-Mencia Sandrode	Krist 2005
7	NL-BR-011	Breda-Steenakker	Koot/ Berkvens 2004
8	NL-ZH-001	Den Haag-Hubertustunnel	Bulten 2007; Bulten/ Opbroek 2014; De Mulder 2015
9	NL-LI-377	Beegden	Roymans/Hoogland 1999
10	NL-BR-220	Mierlo-Hout-Snippenscheut	Tol 1999
11	NL-BR-223	Someren-Waterdael I	Kortlang 1999; Kortlang/ Van Ginkel 2016
12	NL-BR-224	Someren-Philips Kampeerterrein	Modderman 1955b; Modderman 1962/1963
13	NL-BR-210	Sint Oedenrode-Haagakkers	Van der Sanden 1981
14	NL-LI-017	Weert-Laarveld	Tol 2009
15	NL-LI-385	Weert-Kampershoek/Raak/Klein-Leuken	Tol 1998; Hiddink 2010
16	NL-LI-020	Weert-Kampershoek Noord	Hiddink 2010
17	NL-LI-387	Sittard-Hoogveld [sites 3, 4, 8 and 9]	Scholte Lubberink 1998; Tol 2000
18	NL-LI-365	Roermond-Musschenberg	Schabbink/ Tol 2000; Lohof 2001
19	NL-BR-004	Geldrop-Genoenhuis/Grondwal	Hissel *et al.* 2007; Rebergen 2011
20	NL-OV-003	Mariënberg	Verlinde 1975a/b; 1987
21	NL-OV-003II	Hardenberg-Mariënberg II	Verlinde 1978; 1979; 1980; 1982a; 1987
22	NL-OV-003III	Hardenberg-Mariënberg III	Verlinde 1982b; 1983a; 1987
23	NL-OV-006	Varsen	Goutbeek/ Wijnberger 1972; Verlinde 1971; 1972; 1973a/b; 1992a/b; 1987; Hielkema 2014
24	NL-OV-015	Hulsen	Hijszeler 1948; 1961; Verlinde 1987
25	NL-OV-030	Stokkum I and II	Braat 1931; Hijszeler 1961; Verlinde 1969; 1981; 1982a/c; 1983b; 1987
26	NL-OV-084	Mander III	Hijszeler 1961; 1962b; Verlinde 1987
27	NL-OV-086	Vasse	Verlinde 1984; 1987
28	NL-OV-080	Manderveen	Hijszeler 1961; 1963; Verlinde 1987
29	NL-OV-062	De Borchert	Verlinde, A.D., 1973c; 1987
30	NL-OV-024	Noord Elsen	Holwerda 1924; 1925; Hijszeler 1961; Verlinde 1987; Van Beek 2009
31	NL-OV-077	Haarle	Molhuysen 1844; Pleyte 1885; Mulder 1889; Holwerda 1907b; Ter Kuile 1909; Van Deinse 1925; Bursch 1942; Hijszeler 1961; Desittere 1968; Verlinde 1987
32	NL-OV-025	Elsen-Friezenberg	Verlinde 1976a; 1977; 1987; Van Beek 2009
33	NL-OV-050	Oldenzaal-De Tij	Ort 1901; Holwerda 1907b; Ter Kuile 1909; Hijszeler 1951; 1961; Verlinde 1987
34	NL-OV-051	Oldenzaal-De Zandhorst	Ort 1901; Holwerda 1907b; Ter Kuile 1909; Hijszeler 1961; Hijszeler/Verlinde 1975; Verlinde 1976b; 1987
35	NL-OV-049	Losser-De Aust	Ter Kuile 1924; Hijszeler 1961; 1962a; Hijszeler/Verlinde 1978; Verlinde 1987
36	NL-OV-059	Rossum-Oranjestraat/Kulturhus	Verlinde 1987; Eeltink/Smits 2007; Brouwer *et al.* 2008; De Wit/Bergsma 2008
37	NL-OV-092	Hengelo/Borne-Veldkamp/Schild Es	Scholte Luberink 2008; 2010
38	NL-GL-064	Lent-Laauwikstraat-Zuid	Van den Broeke 2002b; 2014
39	NL-GL-065	Lent-Smiltjesland	Van den Broeke 2002b

Tab. 3.2: Sites selected for the present study. Data from these selected sites will form the basis for the research to be presented in Chapters 4 – 6.

ID	Site-Code	Toponym	Literature
40	NL-GL-063	Lent-Castilliëstraat	Daniël 2012
41	NL-GL-039	Lent-Schoolstraat	Van den Broeke 2002b; 2014
42	NL-GL-036	Lent-Lentseveld	Van den Broeke *et al.* 2011; Van den Broeke 2014
43	NL-GL-037	Lent-Steltsestraat	Van den Broeke 2002b; 2008; 2014
44	NL-GL-038	Lent-Zuiderveld-Oost/Stationsweg (Ressen)	Van den Broeke *et al.* 2010; Van den Broeke 2003; 2014
45	NL-GL-047	Elst-Westeraam/Parklaan	Prangsma 2005
46	NL-GL-060	Meteren-De Bogen	Meijlink/Kranendonk 2002
47	NL-GL-026	Huissen-Agropark	Alma/Van Benthem 2008; Bergsma/Stokkel 2011
48	NL-GL-024	Groesbeek-Hüsenhoff	Geerts/Veldman 2012
49	NL-GL-017	Ewijk-Keizershoeve II	Blom *et al.* 2012
50	NL-GL-294	Nijmegen-Hunerberg	Louwe Kooijmans 1973; Beex 1989
51	NL-GL-293	Nijmegen-Kops Plateau	Fontijn 1995; Fontijn/Cuijpers 1999; 2002
52	NL-GL-022	Meteren-De Plantage	Jezeer/Verniers 2012
53	NL-UT-012	Wijk bij Duurstede-De Horden	Hessing 1989; Hessing/Steenbeek 1990
54	NL-GL-019	Steenderen-Steenderdiek	Ringerier 2005; Van Straten 2010
55	NL-GL-068	Twello-De Schaker	Meurkens 2014
56	NL-GL-056	Zutphen-Looërenk (Meijerink)	Bouwmeester 2002; Van Beek 2009; Van Straten/Fermin 2012
57	NL-OV-012	Colmschate-Banekaterveld	Mulder 1889; Butter 1935; Modderman 1960; Van Tent 1974; Hermsen/Van der Wal 2012
58	NL-OV-088	Colmschate-Kloosterlanden (Hunneperweg)	Van Beek 2009; Hermsen/Van der Wal 2012
59	NL-OV-089	Colmschate-'t Bramelt (Hondsroos)	Cuijpers 1991;Van Beek 2009; Louwen 2008; Verlinde/Buisman 1988; Verlinde 1997a/b; Hermsen/Van der Wal 2012
60	NL-GL-029	Epse-Olthof Noord	Van Beek 2009; Hermsen/Van der Wal 2012
61	NL-GL-030	Epse-Waterdijk Noord	Appels 2002; Hermsen/Van der Wal 2012
62	NL-GL-031	Epse-Waterdijk II	Hermsen/Van der Wal 2012; Prangsma 2002; Van Beek 2009
63	NL-GL-067	Epse-Waterdijk-West (III)	Van Mousch 2016
64	NL-BR-014	Someren-Waterdael III	Hiddink/De Boer 2011; Kortlang/Van Ginkel 2016
65	NL-DR-026	Gasteren	Van Giffen 1941; 1945
66	NL-DR-038	Buinen-Hoornse Veld	Kooi 1979
67	NL-DR-039	Drouwen	Van Giffen 1943; Kooi 1979
68	NL-DR-045	Wapse	Van Giffen 1936a; Waterbolk 1957
69	NL-DR-094	Sleen	Kooi 1979
70	NL-DR-054	Noordbarge-Hoge Loo	Van Giffen 1934; 1937a; Kooi 1972; 1973; 1979; Harsema 1976; Arnoldussen/Albers 2015
71	NL-LI-313	Well-De Hamert	Holwerda 1914
72	NL-BR-196	Haps-Kamps Veld	Verwers 1972
73	NL-BR-250	Valkenswaard-Het Gegraaf	Evelein 1909; Brunsting/Verwers 1975
74	NL-BR-159	Hilvarenbeek-Laag Spul	Modderman 1957/1958; Verwers 1975
75	NL-BR-155	Goirle-Hoogeind	Remouchamps 1926; Verwers 1966a

4

The body and the mortuary process

4.1 Introduction

The mortuary process is set in motion with the passing of the decedent. As death turns the human agent immediately into a passive corpse, the decedent is also no longer actively involved in whatever steps follow throughout the rest of the mortuary process. The actions we see reflected in the archaeological context of the grave are solely those of the mourning community. As was argued in Chapter 2, the treatment of the dead body by the mourners reflects upon contemporary perceptions of the self (*cf.* Mauss 1938) and may hold clues about societal values deemed important by the community a decedent was part of (*cf.* Fowler 2004; 2013). This chapter will therefore focus on the treatment of the body from deathbed to the grave and explore the decision tree a corpse was subjected to in Late Bronze Age and Early Iron Age funerals. The groundwork for this part of the research is formed by the osteological analyses available for respectively 1,507 cremation graves and 21 inhumation graves. These 1,528 graves combined are derivative of 50 different cemeteries throughout the whole of the Netherlands and together represent at least 1,590[31] individuals (Tab. 4.1).

4.2 Between deathbed and pyre

The first stage of the mortuary process to be further explored is the period between death and cremation. As was argued in Chapter 3 this episode is difficult to grasp archaeologically since whatever treatment a corpse was subjected to in this stage, it did not leave any traces in the archaeological record (Section 3.2.3). No new evidence could be glanced from the present dataset to narrow down the time-window between death and cremation. The typical thumbnail fractures that predominantly occur when bones are burnt 'in the flesh' (Symes *et al.* 2008; Gonçalves *et al.* 2011, 1312; Section 3.2.3) have not specifically been recorded for any of the sites included in the present dataset. For now, the problem of the imminent decay of the dead body remains the most logical argument in favour of cremation performed within a matter of days after death occurred. In addition, Mielke, who recently worked on a reconstruction of the mortuary process for the Bronze- and Iron age in West Germany, points at Homer's Iliad (Mielke 2018, 115) where Hector's body is cremated within ten days after his death (Iliad 24, 85-87) and where the soul of Patroclus begs Achilles to cremate the body on short notice to prevent it from dwelling on Hades'

31 Some graves contained the remains of multiple individuals.

Site-code	Toponym	Examiner	N Cremations	N Inhumations
NL-BR-004	Geldrop-Genoenhuis	E. Smits	50	0
NL-BR-010	Zundert-Mencia	E. Smits	27	0
NL-BR-011	Breda-Steenakker	L. Ligthart	13	1
NL-BR-014	Someren-Waterdael III	E. Smits	34	0
NL-BR-036	Oosterhout-De Contreie	E. Smits	86	0
NL-BR-159	Hilvarenbeek-Laag Spul	*Only total weights*	68	0
NL-BR-196	Haps-Kamps Veld	*Only total weights*	82	0
NL-BR-210	Sint Oedenrode-Haagakkers	G.N. van Valk/ W.A.B. van der Sanden	39	0
NL-BR-220	Mierlo-Hout-Snippenscheut	E. Smits	40	0
NL-BR-223	Someren-Waterdael I	E. Smits	72	1
NL-GL-017	Ewijk-Keizershoeve II	S.A.M. Lemmers [CR]; B. Berk [INH]	14	4
NL-GL-019	Steenderen-Steenderdiek	E. Smits	15	0
NL-GL-022	Meteren-De Plantage	S.A.M. Lemmers [CR]; B. Berk [INH]	44	2
NL-GL-024	Groesbeek-Hüssenhoff	S.A.M. Lemmers	25	0
NL-GL-026	Huissen-Agropark	G.M.A. Bergsma	9	0
NL-GL-029	Epse-Olthof Noord	M. van der Wal	22	0
NL-GL-031	Epse-Waterdijk II	E. Smits	10	0
NL-GL-036	Lent-Lentseveld	E. Smits [CR/INH]	8	4
NL-GL-037	Lent-Steltsestraat	E. Smits [CR/INH(?)]	2	2
NL-GL-038	Lent-Zuiderveld-Oost (Ressen)	E. Smits [CR/INH]	7	2
NL-GL-039	Lent-Schoolstraat	E. Smits?	0	1
NL-GL-047	Elst-Westeraam/Parklaan	E. Smits	1	0
NL-GL-056	Zutphen-Looërenk (Meijerink)	S. Baetsen	27	0
NL-GL-060	Meteren-De Bogen	J.E. Robb	0	3
NL-GL-063	Lent-Castilliëstraat	E. Smits	2	0
NL-GL-064	Lent-Laauwikstraat-Zuid	E. Smits?	0	1
NL-GL-067	Epse-Waterdijk-West (III)	E. Smits	5	0
NL-GL-068	Twello-De Schaker	B. Veselka/M.L.P. Hoogland	9	0
NL-GL-293	Nijmegen-Kops Plateau	A.G.F.M. Cuijpers	15	0
NL-LI-006	Maastricht-Ambyerveld	S.A.M. Lemmers	78	0
NL-LI-017	Weert-Laarveld	E. Smits	26	0
NL-LI-018	Maastricht-Oosderveld	E. Smits	32	0
NL-LI-020	Weert-Kampershoek Noord	E. Smits	4	0
NL-LI-365	Roermond-Musschenberg	E. Smits	132	0
NL-LI-377	Beegden	M.L.P. Hoogland	19	0
NL-LI-385	Weert-Kampershoek	E. Smits	59	0
NL-LI-387	Sittard-Hoogveld	E. Smits	108	0
NL-LI-396	Maastricht-Withuisveld	E. Smits	18	0
NL-LI-397	Maastricht-Vroendaal	E. Smits	13	0
NL-OV-003	Mariënberg	A.G.F.M. Cuijpers	21	0
NL-OV-003II	Mariënberg II	A.G.F.M. Cuijpers	3	0

Site-code	Toponym	Examiner	N Cremations	N Inhumations
NL-OV-003III	Mariënberg III	A.G.F.M. Cuijpers	3	0
NL-OV-006	Varsen	S. Baetsen	4	0
NL-OV-025	Elsen-Friezenberg	A.G.F.M. Cuijpers	28	0
NL-OV-059	Rossum-Oranjestraat	E. Smits; G.M.A. Bergsma	84	0
NL-OV-062	De Borchert	A.G.F.M. Cuijpers	3	0
NL-OV-089	Colmschate-'t Bramelt	A.G.F.M. Cuijpers	58	0
NL-OV-092	Borne-Veldkamp/Schild Es	S. Baetsen	20	0
NL-UT-012	Wijk bij Duurstede-De Horden	M.L.P. Hoogland	52	0
NL-ZH-001	Den Haag-Hubertustunnel	E. Smits	16	0
TOTAL:			1,507	21

Tab. 4.1: The number of graves per site for which some form of osteological analysis was available. ('N Cremations' = Number of analysed cremation graves); ('N Inhumations' = Number of analysed inhumation graves).

doorstep (Iliad 23, 68-74). But as will appear from the following not for every decedent preparations for cremation were really of the essence as the present dataset shows that some individuals would never be cremated in the first place.

4.2.1 A deviating path: The choice for inhumation

Following the event of death, the mourners were confronted with the first major decision in the mortuary process as the corpse was to be cremated or inhumed. In no less than 98-99% of the cases (3,137/3,182) people chose cremation over inhumation. The small share of inhumation graves in the present dataset however shows that there was some space to diverge from the norm of cremation. Of the 45 inhumation graves entered in the database one example appeared to date to the Late Medieval Period or Modern Era,[32] six graves probably date earlier in the Middle Bronze Age than 1300 BC[33] and about one grave some serious doubt exists whether it concerns a grave in the first place.[34] The remaining 37 graves could all be dated with certainty to the period between 1300 and 400 BC on basis of radiocarbon dates (N=14) or typo-chronological markers.

Except for one early example in the urnfield of Gasteren (Van Giffen 1945, 83-85) all other inhumation graves have been found in the southern half of the country. Here the inhumation graves predominantly date to the Early- and Middle Iron Age (Van den Broeke 2014, tab. 6), with the exception of two Late Bronze Age graves from respectively

32 'Graf 30' in the urnfield of Gasteren [NL-DR-026]. This grave was found in the top of Tumulus 36 and is said to contain inhumed remains of a 'recent' date (Van Giffen 1945, 121). In Late Medieval times and in the early Modern era it was not uncommon to use 'heathen' cemeteries like barrows and urnfields as the location to perform executions and put the unfortunate subjects on display. Sometimes the corpses of the executed persons were buried in the old barrows (Meurkens 2010).

33 All six graves in the urnfield of Gasteren [NL-DR-026]: 'Graf 59,' '60,' '108' and '110' and two secondary burials in 'Tumulus 37.'

34 'Graf 30' in the urnfield of Mariënberg [NL-OV-030]. Here a pit of 1 metre in diameter was found in the urnfield that did not contain any cremated remains. A piece of accessory pottery was placed upside-down on the bottom of the pit (Verlinde 1975a, 12; 1987, 121).

Meteren-De Bogen (Meijlink/Kranendonk 2002, 210; Bourgeois/Fontijn 2008, 51-54)[35] and Meteren-De Plantage (Veldman/Van der Feijst 2012, 57).[36] By far most inhumation graves have been found in the clayey sediments of the Dutch riverine area, more specifically in the Betuwe. Only at Someren-Waterdael I (Kortlang 1999, 149-150; fig. 8) and possibly at Breda-Steenakker (Berkvens 2004, 156-157) have inhumation graves been recorded on Pleistocene sands. With the exception of Meteren-De Bogen and Lent-Schoolstraat, practically all inhumation graves have been found in cemeteries where cremation graves were also present (See Tab. 4.1).

In short, inhumation was still being practiced at the time of the urnfields, but geographically the practice seems to have been restricted to the south of the Netherlands, with a clear centre of gravity in the Dutch riverine area. The Middle Bronze Age B/Late Bronze Age inhumation grave from Gasteren is more likely to represent the gradual transition from inhumation to cremation taking place around that time in the north of the Netherlands (Hessing/Kooi 2005, 631). With regards to their dates, the same probably also applies to the two Late Bronze Age inhumations from the area around Meteren as between 1000 and 800 BC inhumation graves seem completely absent in the region (Van den Broeke 2014, tab. 6). All other dates suggest that inhumation as an alternative way of disposing of a dead body was something predominantly practiced in the Iron Age.

Even though the discovery of inhumation graves among contemporary cremation graves concerns a quite recent phenomenon,[37] theoretical approaches to this "deviation from the norm" are still often aligned with more traditional views of the past as they are not uncommonly seen as a cultural expression of (a) people not native to the place they were buried. For example, in the early 2000's a cluster of some 20 inhumation graves, presumably all females, were excavated at Ilse-Petershagen (Nordrhein-Westfalen, Germany). The graves date to the sixth century BC (Bérenger 2000, 247) and for Southwest Germany too, inhumation graves are quite rare in this period. As some of the graves contained bronze jewellery more commonly found in Middle-/Northeast Germany and Switzerland, the women in these graves were believed to be migrants. The cemetery itself has even been published as a "Ghetto" of a people coming from over the river Rhine (Bérenger 2000). However, not all grave goods had an exotic provenance as local pottery, as well as some bronze dress pins were probably of a local origin (Bérenger 2000, 248). Strontium-isotope ($^{87}Sr/^{86}Sr$) analysis of five of the skeletons carried out later, eventually indicated that two of the sampled individuals grew up in the same region as where they were buried, while the other three displayed strontium values of a non-local origin.[38] Similar results have recently been obtained for inhumation graves in the Dutch riverine

35 [NL-GL-060; Grave_ID 1487]: Labcode GrN-15463 (Bone apatite): 2790 +/- 60 BP: 1110-818 cal. BC (95,4%); A second radiocarbon date of tooth enamel (GrN-16058) produced exactly the same date (Meijlink/Kranendonk 2002, 210). The outcome of these radiocarbon dates has been heavily debated (see Section 5.3.2.4) but it was finally concluded that this particular grave should indeed be dated to the Late Bronze Age (Bourgeois/Fontijn 2008,51-54).

36 [NL-GL-022; Grave_ID 1597]: Labcode SUERC-37112/GU-25442: 2940 +/- 30 BP; 1257-1044 cal. BC (95,4%) (Jezier/Verniers 2012, appendix 6).

37 All inhumation graves in the present dataset have only been excavated *after* 1990.

38 Except for a press release by an unknown author of the Landschaftsverband Westphalen Lippe on July 11, 2006 no publication on the strontium-isotope analyses of the Ilse-Petershagen skeletons could be found. The press release is a short publication of the results in itself an can still be consulted online: https://www.lwl.org/pressemitteilungen/mitteilung.php?urlID=16194

area (Kootker *et al.* 2017). The 23 sampled individuals are derivative of seven different cemeteries and all date to the Early- and Middle Iron Age.[39] Of the total 23 individuals, twelve exhibited strontium values of a local signature (Kootker *et al.* 2017, 102) and four individuals displayed a geological signature of areas adjacent to the Dutch riverine area (*idem.*). The remaining seven individuals (males and females) however displayed $^{87}Sr/^{86}Sr$ ratios that are more common to the Loess region of South Limburg in the southern Netherlands and the boulder clays in the north of the country (*idem.*).

The strontium-isotope analyses in both cases have indeed shown that not all people would eventually be buried in the same region as where they were born and that these places of origin could in fact be a long way away. However, these analyses also show that half the inhumed individuals were born and raised in the same region as where they were buried. The practice of inhumation, as deviating from the norm of cremation, can thus not solely be explained as representing (a) foreign people. In the case of the Dutch riverine area even more so, since in the regions the strontium-isotope signals point at as the place of origin for the non-local individuals, cremation was also the norm at the time. For the cemetery of Ilse-Petershagen it has been suggested that the presence of both locally as non-locally raised individuals among the decedents could be explained by the possibility of different generations being represented among the dead. In this scenario, the non-local signal represents the migrant generation, whilst the local signal concerns the following generations, born and raised in the region of Ilse-Petershagen. Even though this scenario cannot be excluded, the difficulty with such a thesis is that it builds entirely upon the presumption that both burial rites as well as grave goods are direct representations of a culture or (a) people. It is not argued here that the otherness in the way a corpse was treated cannot reflect a new idea that was brought into a community by people from abroad. Clearly the Late Bronze Age/Early Iron Age world was a connected one, with trade networks over long distances (Cunliffe 2008, fig. 8.2). It is however argued here that this otherness does *not* necessarily reflect the need to express one-self in a culturally different way. Whether or not new ideas about death and burial were brought in from elsewhere, these new (or other) ideas must in some way have been reworked into a *local* discourse that *local* communities were susceptible to.

4.2.2 Preparing the body for cremation

As in the Late Bronze Age and Early Iron Age 98-99% of the decedents would eventually be cremated, in the days following death the mourners would have been busy with the preparations for this fiery occasion. Perhaps the dead body was washed and dressed in special clothing or covered with a shroud. For none of these treatments did the present dataset produce any new evidence. Only the burnt pieces of metal jewellery retrieved from a small portion of the graves (see Section 5.5) suggest that corpses were indeed dressed up nicely for cremation.

It is unfortunate that so little of what happened in the time leading up to cremation in some way managed to precipitate in the archaeological record as these would have been

39 Twelve graves are also included in the present dataset: three individuals come from the cemetery of Ewijk-Keizershoeve II [NL-GL-017]; one from Meteren-De Bogen [NL-GL-060]; one from Meteren-De Plantage [NL-GL-022]; two from Lent-Zuiderveld-Oost (Ressen) [NL-GL-038]; one(?) from Lent-Laauwikstraat-Zuid [NL-GL-064]; two from Lent-Lentseveld [NL-GL-036]; and two from Lent-Steltsestraat [NL-GL-037].

intense times for a mourning community (*cf.* Metcalf/Huntington 1991). Prayers, laments, tears, respects paid, story-telling, songs and feasts were probably all part of this intense stage of the mortuary process but went forever lost in time. Fortunately, the next step in the mortuary process left us more clues to work with.

4.3 The cremation process

The cremation ritual must have been a pivotal stage in the mortuary process as it was in this episode where a body still recognisable as a formerly living member of the community was transformed into an abstract heap of calcined bones. Interesting details about this fiery metamorphosis of the body can still be deduced from the cremation graves under study. Details that reflect upon the metaphorical journey made by the decedent from a former living person to whatever role she or he was envisioned to fulfil in death.

4.3.1 The location of the pyre

A first notable aspect about the cremation rite is that it added another locality to the mortuary process. This additional locality appears from the fact that none of the decedents in the present dataset had been buried at the location of the pyre.[40] Apparently, the location for cremation and the location for burial were considered two different stations along the journey of the dead person. However, as will appear later on (Section 4.3.2 and 6.3.1), pyre-debris regularly travelled along with the cremated remains of the decedent, finally to be deposited together in the context of the grave. Clearly, pyre-debris were seen as a meaningful substance and even though the acts of cremation and interment were performed at two separate locations, the pyre could definitely enter the domain of the grave (Section 6.3).

So if not in the same place as the final interment, where was the cremation rite then to be performed? Unfortunately, the present dataset did not produce any newly recovered pyres at all. Only at the cemetery of Geldrop-Genoenhuis (Hissel *et al.* 2007) have features been uncovered that could be related to the cremation process. Here, directly west of the cemetery, some 31 features were found that show clear signs of heating. It must be noted here that no radiocarbon dates are available for the features concerned. The excavators distinguish between 'fiery pits' and 'fiery places' (Hissel 2007, 112). The former concern cut features containing charcoal rich, dark fills while the latter include zones of pink, heated sand still penetrating some 15 centimetres deep (*ibid.*, 113). The exact measurements of these fiery places are not mentioned in the report, but the scale of the presented map (*ibid.*, fig. 7.18) suggests that most of them measure between one and three metres in diameter. According to the excavators these fiery places are too small to represent actual pyres (*ibid.*, 113). However, when taking into account that the excavated level finds itself several decimetres underneath the original prehistoric surface and that the original pyres would have been located on top of this old surface, these fiery places could indeed represent the locations of pyres. The modest penetration in the subsoil of the effects of fire induced by cremation has been attested in modern experiments with cremation as well (McKinley 1997, 134). A location of the pyre close or even in the cemetery itself is also in accordance with the few sites outside the present dataset where pyre locations have been

40 One possible exception is formed by a grave at the cemetery of Weert-Laarveld [NL-LI-017; Grave_ID 544] (see Section 6.3.1 for more details).

observed (*e.g.* Hissel *et al.* 2012; Fontijn *et al.* 2013a). In addition, particles of burnt loam and metal slag collected from some of the graves in the present dataset could suggest that the cremation rite was performed in locations that were also used for the production of pottery and metal (see Section 5.7.4).

4.3.2 Building the pyre

Despite the lack of well-preserved pyre sites, the charcoal particles present in cremation graves can still tell which types of wood would have been preferred for the construction of pyres. Even though only a small portion of the graves in the present dataset had been examined for the presence of charcoal[41] a surprisingly broad variation of wood types springs from this sample.[42] Oak (*Quercus*) seems to have been the dominant type of fuel[43] but alder (*Alnus*) and birch (*Betula*) also often come about. In addition, other trees like ash (*Fraxinus*), willow (*Salix*), maple (*Acer*), lime (*Tilia*) and even pine (*Pinus*)[44] are occasionally represented as well. These latter species always in combination with one of the three dominant wood types. The same applies to small trees and shrubs such as hazel (*Corylus*), buckthorn (*Rhamnus Cathartica*) and heather (*Calluna*). Finally, in the cemetery of Den Haag-Hubertustunnel several graves yielded burnt seeds of barley (*Hordeum vulgare*), blackthorn (*Sprunus spinosa*), hazelnut (*Corylus*) and juniper (*Juniperus*). These latter species might as well represent pyre goods rather than fuel or an accelerant.

The use of oak for building funeral pyres seems like a logical choice since oak has a high calorific value and as a result of which has the quality to burn long. For a cemetery in West Germany it could even be established that the oak logs were freshly chopped (Mielke 2018, 117; Tegtmeier 2006) which is also presumed to prolong the burning process (Wahl/Wahl 1983). The variety in types of wood that was used in addition to- or in combination with oak perhaps indicates that people would have made do with whatever fuel was available at the time someone died. Another explanation is that different types of wood served different purposes in the cremation process such as main fuel and accelerant. In addition, adding shrubs and evergreens such as juniper to the cremation fire perhaps masked the nasty odours of burning flesh a bit. It should however also be considered that at the time certain plants and trees were ascribed certain powers or represented certain qualities that cannot be assessed archaeologically. Birch, for one, is in mythology often associated with renewal and purification. At the Gaelic feast of Samhain, for instance, bundles of birch twigs are used to drive out the spirits of the old year.

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41 353 graves coming from 35 different cemeteries.

42 Number of graves per site for which wood determinations are available: Den Haag-Hubertustunnel [NL-ZH-001]: six graves; Geldrop-Genoenhuis [NL-BR-004]: six graves; Huissen-Agropark [NL-GL-026]: one grave; Maastricht-Ambyerveld [NL-LI-006]: one grave; Wijk bij Duurstede-De Horden [NL-UT-012]: four graves; Rossum-Oranjestraat [NL-OV-059]: 17 graves.

43 For the present dataset oak (*Quercus*) was attested at four sites and comes about in high percentages of charcoal sums. A the cemetery of Rossum-Oranjestraat [NL-OV-059], for instance, two thoroughly examined samples yielded percentages of respectively 71% and 87% of oak (Bottema/Gillavry 2008, 89). Outside the present dataset a dominance of oak has been observed at Weert-Boshoverheide (Hissel 2012, 127) and Oss-Zevenbergen (Van der Vaart *et al.* 2013, table 5.1). In Belgium (De Mulder 2011, 151) and West Germany (Mielke 2018, 117) too, oak seems to have been the dominant type of wood.

44 Pine (*Pinus*) was also found in one of the post holes at this particular site. The presence of pine (*Pinus*) was deemed rather surprising as it is a type of wood that is believed not to occur in the Netherlands as late as the Iron Age (Bottema/Gillavry 2008, 92-93).

As there is a general lack of well-preserved late prehistoric pyre sites in Northwest Europe (*e.g.* McKinley 1997, 132) for a reconstruction of the pyres themselves not uncommonly is turned to vase paintings from Classical Greece (De Mulder 2011, fig. 6.18; Mielke 2018, 117). Here, pyres are generally depicted as rectangular blocks built-up from logs stacked alternatingly on top of each other. When compared to modern evidence from South-East Asia (see for example fig. 8.2 in De Mulder 2011) these Greek vases seem to depict a general and probably also the most straightforward way of building a funeral pyre. It seems therefore safe to assume the funeral pyres in the Late Bronze Age and Early Iron Age in the Lower-Rhine-Basin too would have resembled these examples form Classical Greece or modern India for that matter.

4.3.3 Cremation

With the completion of the pyre, the stage was finally set for the cremation rite itself. At some point the corpse would have been brought out with the necessary decorum and placed on top of the stacked wood. Whether it were multiple persons who ignited the fire or just one, and whether these persons concerned relatives, friends, leaders or perhaps even a priest cannot be assessed archaeologically. What can be assessed is the intensity and thoroughness of the cremation process itself. This is an interesting aspect of the cremation rite as it shows whether the cremation fire was merely seen a cleansing ritual or that is was the complete transformation of the body that was envisioned. If the latter was indeed the case, one would expect to see this thoroughness reflected by the cremated remains.

The intensity of the cremation process is measured in grades of combustion or burn stages as devised by Joachim Wahl (1983; 2008) with 'I' indicating the lowest grade and 'V' the highest. The five grades of combustion, the temperatures these represent and the associated state and qualities of the bones are presented in Figure 4.1 (Lemmers 2011, fig. 7). For the present dataset, details about the grade of combustion were available for some 1,117 graves. Overall, cremations seem to have been performed rather thoroughly as almost 95% of the dataset shows combustion grades of IV and V (Tab. 4.2). This means that for the vast majority of cremations the pyres would have reached temperatures on and above 650-700 °C, for 30% of dataset even on and above 800 °C (Tab. 4.2; Wahl 2008, table 9.1). We can see these high combustion grades for the entire period of study and throughout the whole of the present day Netherlands. A very small minority shows varying degrees of burning with lower thresholds (Tab. 4.2). In most of these cases the pyres would still have reached high temperatures, but not the whole body seems to have endured these extreme heats for the entire cremation process. Instable pyres collapsing early during cremation could be an explanation for varying degrees of burning as body parts may have shifted towards the edges of the fire. It is remarkable though, that many of the cremation graves in the latter group come from the Dutch riverine area where also inhumation graves make up large portions of the composition of the cemeteries concerned: substantial shares of cremation graves found at Ewijk-Keizershoeve II, Meteren-De Plantage, Huissen-Agropark, Lent-Lensteveld, Lent-Steltsestraat and Lent-Castilliëstraat find themselves in this category (see Tab. 4.1).

Especially noteworthy in this regard are 'Inhumation 4' and 'Cremation 10' from the cemetery of Ewijk-Keizershoeve II as these graves both contained burnt and unburnt bone. 'Inhumation 4' was in bad shape but still showed some clear burn marks (600 °C or higher) on the *viscerocranium* (Lemmers *et al.*, 2012, 139). Surprisingly, the *neurocranium*

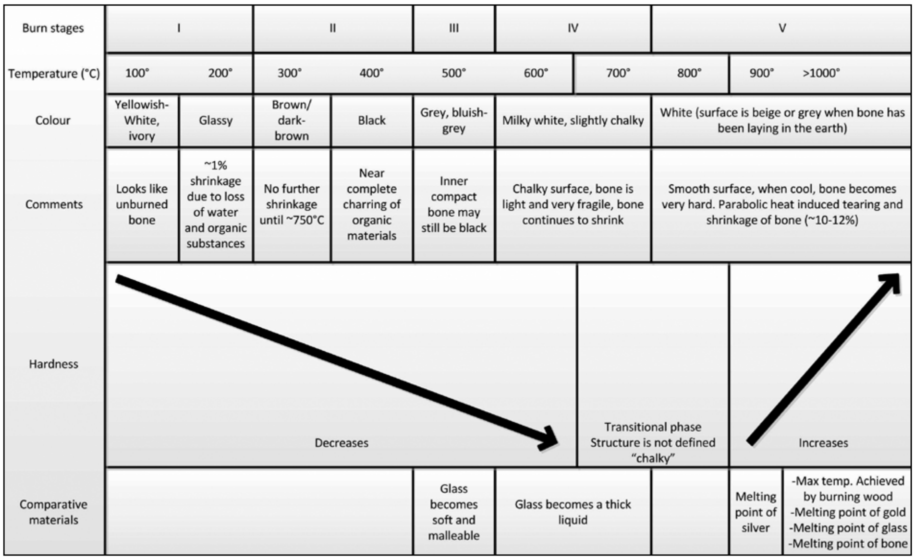

Fig. 4.1: The grades of combustion, associated temperatures and qualities of the bones (Lemmers 2011, fig. 7 which is based on Trautmann 2006, fig. 18; Wahl 2008, table 9.1; Herrmann 1988, fig. 274).

Tab. 4.2: Grades of combustion as observed for 1,117 cremation graves in the present study.

Grade of combustion	N graves	% graves
I-IV	11	0,98
I-V	1	0,09
II-IV	2	0,18
II-V	5	0,45
III-IV	23	2,06
III-V	15	1,34
IV	322	28,83
IV-V	400	35,81
V	338	30,26
Total:	1117	100,00

was completely undamaged by fire (*ibid.*, 141). In this inhumation grave also some cremated remains were present that belonged to another individual, probably a non-adult (*ibid.*, 143-144). 'Cremation 10,' on its turn, contained several unburnt skull fragments and a few vertebrae of the neck were also clearly unburnt, while other parts of the same skeleton must have endured temperatures on and above 800 °C (*ibid.*, 141). For both graves a cremation process whereby parts of the same skeletal regions turned out to be so differently exposed to fire is difficult to reconstruct. Manipulation of the cremation process by poking and pulling the corpse could be considered an option for 'Cremation 10.' The person buried in 'Inhumation 4' was perhaps deliberately only partly exposed to fire. The fact that only the *viscerocranium* showed severe burn marks remains striking in this respect. By rephrasing the Latin in the previous sentence a bit, it appears that this person's face was literally, and presumably deliberately, burnt off.

Only incidentally cremation graves from other regions in the Low Countries show signs of lower grades of combustion and they practically always form the exceptions in the cemeteries they were retrieved from. For instance, of the 96 graves from the urnfield of Roermond-Mussenberg that have been included in this study, only three graves showed some indication for partially lower combustion grades. The graves from the urnfield of Beegden in general also show somewhat lower combustion grades (III-IV), but these still find themselves in the higher segment of the category with lower thresholds, between 550-700 °C (Roymans/Hoogland 1999, 76).

Overall, throughout the Late Bronze Age and Early Iron Age cremations were carried out thoroughly and indeed a complete transformation of the corpse was envisioned. 95% of the analysed graves testify to average temperatures reached during the cremation process of 650 °C and higher. The remainder also shows high combustion grades but at the same time displays more variation in- and lower thresholds of the burning stages involved in the cremation process. Most of these cases have been attested for Iron Age cemeteries in the Dutch riverine area where inhumation graves also make up substantial shares of the composition of the cemeteries concerned. These observations altogether might suggest that a different treatment of- and attitude towards the dead body developed, or was introduced for that matter, in this specific region in the course of the Iron Age.

4.4 Between cremation and interment

4.4.1 Sifting through the pyre-debris…

Evidence from modern open air cremations suggest that, when allowed to burn out, the pyre would have smothered for another two to eight hours (McKinley 1989, 67; Parker Pearson 1999, fig. 1.1). Historical sources from the last millennium BC, such as Homer's Iliad (Iliad 24, lines 789-794) and accounts on Hittite funerary rituals (Otten 1958), point at the possibility cremation fires were doused with the necessary decorum, using liquids like wine and beer (Mielke 2018, 118). Whether the cremation fire was extinguished intentionally or not, what followed next would have been the collection of the cremated remains. As archaeologists we must however bear in mind that the cremated remains we encounter in the context of the grave not so much reflect upon that point in time when the bones were collected from the pyre-debris but rather the state of- and the way in which these cremated remains were finally interred (also see Section 3.2.5). Still, whatever happened to the cremated remains in between cremation and interment, their treatment remains pivotal in our understanding of contemporary attitudes towards the dead person's body. It is exactly at this stage in the mortuary process where the *representativeness* of the cremated remains in relation to the dead person's former body starts to play an essential part.

4.4.2 Selection, taphonomy or a bit of both?

Perhaps the most remarkable characteristic of cremation graves unearthed in archaeological excavations concerns the on average low total weights of cremated remains that are usually retrieved from these graves (*e.g.* Wahl 1982, 25; McKinley 1989, 69; 1997, 137). Total weights of only a few hundred grams instead of the expected thousand plus (Section 3.2.5) are often recorded and not seldomly interpreted as reflecting a deliberate partial selection of cremated remains from the pyre-debris (*e.g.* Wahl 1982, 25) if not as '*pars pro toto*' symbology (*e.g.* Veselka/Lemmers 2014). Clearly the total weights of cremated remains are being assessed to state something about the representativeness of the dead person's body after cremation. But where do these expected total weights of cremated remains in (pre)historic graves actually come from? And what other factors than deliberate selection could be of influence on the amount of cremated remains we encounter in these graves?

4.4.2.1 Cremation weights as a proxy to the representativeness of cremated remains?

For the present dataset track was kept of which reports paid attention to the representativeness of the cremated remains and which osteological studies and total weights put forward in these respective studies had been cited.[45] As Table 4.3 shows, the figures cited range substantially: between 1,001.5 grams and 4,000 grams. What also springs from this table is that not uncommonly the cited figures have been adjusted a bit or have even been wrongfully cited (Tab. 4.3). The article by Silva *et al.*, for one, does not even deal with cremated remains but with a population of dry, unburnt skeletons (Silva *et al.* 2009). Also, in some reports the average weights are taken as the basis for the argument concerning the representativeness of cremated remains while others take the highest weights available. Only seldom is pointed at the ranges obtained in the archaeological samples or the experiments with modern populations that were central to the cited studies.

Two works that have formed an important pioneering basis for the study of cremated remains from archaeological contexts concern Wahl's 1982 *"Leichenbranduntersuchungen. Ein Überblick über die Bearbeitungs- und Aussagemöglichkeiten von Brandgräbern"* and McKinley's 1989 *"Cremations: Expectations, methodologies and realities."* Both works were aimed to effectuate a basic understanding among archaeologists of the methods applied in osteological analysis of cremated remains and the potential of these analyses (McKinley 1989, 65). However, the discipline has grown and widened substantially ever since,[46] as have the "expectations" originally put forward in these works. McKinley, for one, originally mentioned expected total weights of burnt bone left after cremation of an adult individual between 1,600 and 3,600 grams, with an average weight of 3000 grams (McKinley 1989, 66). In her earlier cited article (Section 3.2.5) that was published not much later, the lower threshold of the expected weights had however already shifted to 1227.4 grams (McKinley 1993, 285), 1,001.5 grams when the 2 millimetre fraction is removed from the remains (*idem.*). About archaeological adult collections she states that weights my vary between as little as 200 grams and as much as 2000 grams with an average of 800 grams (McKinley 1989, 69). Wahl points at the same range of variation for archaeological populations, between 200 and 2,500 grams for adult individuals (Wahl 1982, 25). In addition he briefly mentions 'give or take' 2,500 grams as the outcome of several experiments on modern populations in modern crematoria (Wahl 1982, 20; note 58). In a more recent article, Wahl adjusted the expected upper threshold for the weights of cremated remains from archaeological contexts to 2,000 grams (Wahl 2008, 149).

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45 For twelve of the 75 cemeteries included in the present dataset authors paid attention to the representativeness of the cremated remains.

46 In the course of this PhD-project alone, at least four edited volumes completely dedicated to the study of cremated remains were published (Kuijt *et al.* 2014; Schmidt/Symes 2015 [2nd edition]; Thompson 2015; Cerezo-Román *et al.* 2017).

What is most apparent in the works of both Wahl and McKinley is the huge variation in the total weights of the cremated remains observed for adult individuals. This variation clearly not only counts for archaeological populations (*e.g.* McKinley 1989, 69; Wahl 1982, 25) but also for modern populations where individuals had been cremated in modern crematoria under controlled circumstances (*e.g.* Evans 1963, 85; McKinley 1993, 285). An important cause for the variation in weight for both populations already lies in the variation of bone mass present in every living person (Väänänen/Härkönen 1996). Variation is thus to be expected in any case. With regards to archaeological populations both Wahl and McKinley add that total weights are dependent on many factors that are not of influence on specimens from modern crematoria. They both point at taphonomic processes taking place in the ground, the varying visibility of the remains after cremation, weather conditions during cremation such as wind, rain and draught and the uneven distribution of heat over the pyre (McKinley 1989, 66-67; Wahl 1982, 24-25). Taking into account these factors, it is to be expected that archaeological populations on average indeed show lower total weights of cremated remains than is the case for modern crematoria. '*Archaeological populations*' are specifically mentioned here since the on average lower cremation weights are not even typical for the Late Bronze Age and Early Iron Age, but can in fact be observed for the entire timespan from the Bronze Age (*e.g.* Theunissen 2009, 93) up to the Roman Period (*e.g.* Wahl 2008, 149).

In addition, Harvig and Lynnerup have recently argued that both mass and volume[47] of cremated remains are not only heavily reduced by taphonomy but also by (post-)excavation handling of the cremated remains (Harvig/Lynnerup 2013, 2719-2720). By assessing the volume of cremated remains digitally inside four CT-scanned Late Bronze Age urns they were able to establish that between 55 and 66% of *in situ* cremated remains still consisted out of so-called *trabecular* bone (Harvig/Lynnerup 2013, 2719). Trabecular- or *cancellous* bone concerns the more spongy parts of the skeleton and can be found at the ends of long bones (epiphyses), the interiors of vertebrae, ribs, flat bones of the skull and the scapulae.[48] Due to its porous structure trabecular bone is substantially more voluminous but also much lighter and weaker than the much denser *cortical*[49] bone. As a result of which trabecular bone suffers substantially more from taphonomic processes in the ground as well as from handling during (micro-)excavation (Harvig *et al.* 2012). For the four urns in their study only between 41 and 63% of the digitally measured *in situ* volume of the cremated remains was eventually retrieved after micro-excavation (Harvig/Lynnerup 2013, table 2). Harvig and Lynnerup therefore argue that both mass as volume of cremated remains after excavation cannot simply be correlated with data obtained in modern crematoria (Harvig/Lynnerup 2013, 2719) and that whole cremated bodies are probably represented more often than is generally believed in osteoarchaeology (*ibid.*, 2713).

In conclusion, using total weights of cremated remains as a proxy to representativeness is problematic as these weights are dependent on too many factors not related to acts

47 'Volume' as an additional proxy to weight in assessing the representativeness of the cremated remains has a long tradition in Scandinavian archaeology (Harvig/Lynnerup 2013, 2713) but is, perhaps surprisingly, never considered as such in Dutch archaeology. For none of the sites included in the present dataset had the volume of cremated remains been presented.

48 Encyclopaedia Britannica; Entry: 'Cancellous bone'

49 The strong parts of the skeleton, such as the long bones consist for an important part of this much denser type of bone.

Cited study	Ascribed weights in excavation reports	True weight in cited study
Kunter 1989, 417 (combined with Silva *et al*. 2009)	1,600-4,000 g	Female: 1,600 g (mean); Male: 1,850 g (mean); (modern crematoria)
McKinley 1993	1,001.5-2,422.5 g	p.285: 1,001.5-2,422.5 g (modern crematoria after removing 2mm fraction)
McKinley 1994, 77	1,500-3,000 g	p.75: 1,600-3,000 g (modern crematoria as observed by Evans 1963, 85: 1,600-3,600 g)
Silva *et al.* 2009, 628 (combined with Kunter 1989)	1,600-4,000 g	3,850 g is the mean weight of the unburnt male skeleton
Smits 2006, 10-11	1,500-2,700 g	Table 1-2: Female: 1,616 – 1,840 g; Male: 1,843-2,700 g (Based on average weights in Herrmann 1976; Wahl 1982; Holck 1986; Snyder *et al.* 1975; Kunter 1989; McKinley 1993)
Smits 2006, 11	1,500-3,000 g	*idem.*
Smits/Hiddink 2003, 150-151	Female: 1,500 g; Male: 1,800 g	Female: 1,711.3 g; Male: 1,841.6 g (Based on mean weights in Herrmann 1976 who looked at a large sample (F: 226; M: 167) in modern crematoria)
Smits/Hiddink 2003, 150-151	1,500-2,700 g	*idem.*
Wahl 1982, 25	2,500 g	p. 25: "...Jedoch liegt die Variationsbreite bei Einzelbestattungen von Erwachsenen zwischen 200 und 2500 Gramm..."
Wahl 2008, 149	2,000 g	p. 149: "...The complete cremation remains of an adult may weigh up to 2,000 g or more. It was the exception rather than the rule that prehistoric or early historic cremations reached this weight..."
No study was cited	1,500-2,500 g	*Not applicable*.
No study was cited	only 30-40% is put in the grave	*Not applicable*.

Table 4.3: This table is meant to illustrate the discrepancy occurring between osteological studies and excavation reports when in the latter the former are being cited to refer to the expected total weights of cremated remains in cremation graves. The basis for this table is formed by the excavation reports on the sites selected for the present study. Every row represents a single citation in one of these excavation reports (hence some studies occur several times in column 1). Column 1 lists the osteological studies cited in a given excavation report; Column 2 lists the weights mentioned in that same excavation report while Column 3 lists the 'true' weights as they are published in the original osteological study that was cited. As the last two rows indicate, sometimes is not even bothered to bring up an osteological study at all. Publishers and site names have been deliberately kept out of this table.

of selection. Large variations are to be expected and the lower weights in the spectra obtained thus not necessarily reflect selection. Clearly, extreme low weights beneath 100 grams indeed indicate not all cremated remains entered the grave (Wahl 1982, 24), but writing off the entire spectrum of variation underneath the kilogram as selective deposition is not a statement that can simply be made on basis of the on average lower total cremation weights alone.

4.4.2.2 Cremation weights as a stochastic variable: expectation models

The variation in total weights can also be used to an advantage in assessing whether or not selection of cremated remains was part of the mortuary process in the Late Bronze Age and Early Iron Age. In the above it has been established that (1) variation in total weights is to be expected in both archaeological and modern populations and that (2) archaeological populations will generally show lower total weights than modern populations (Harvig/Lynnerup 2013). Despite the expectantly lower total weights for archaeological populations, one would however still expect this variability to show a normal distribution when the amount of cremated remains left after cremation was not affected by selection. In this view the variation in cremation weights is approached as a calculation of probability where the cremation weights themselves serve as the stochastic variable. If it was indeed the norm that the cremated remains retrieved from the pyre-debris were interred as complete as possible, one would expect a graph plotted for the cremation weights in the present dataset to show a bell curve (normal) distribution. If it was however the norm that only a selection of the cremated remains was to be interred, one would expect such a graph to show a clear peak in the first quartiles of the curve.

Before subjecting the present dataset to the suggested analysis, some variables need to be taken into account first. The intactness of the grave, for one, should be considered when assessing the total weights of cremated remains. As in the Netherlands most cemeteries are located on Pleistocene sands that have since the last glacial not seen any additional sedimentation, graves are usually located in vulnerable locations just underneath the present day surface. As a result of which many graves have been "decapitated" by agricultural activities since the Late Medieval Period onwards and not uncommonly only a handful of cremated remains or less is retrieved from the bottoms of the pits and urns concerned (Section 3.4). As modern ploughs reach some 40 centimetres deep considerable amounts of cremated remains might be missing from the grave. For the present dataset an assessment of the intactness of the graves had only been carried out for a minority of the selected cemeteries. In order to solve this uncertain factor the graves for which a reasonable certainty existed as to their intactness were marked as a reference group (also see Section 3.3.4). Only the burial pits that still reached substantially deep with clear undamaged concentrations of cremated remains and urns that still possessed their rim or had their lids still in place have in the end been qualified as '*intact*' graves.[50]

Other variables that should be considered when assessing the total weight of cremated remains are the number of individuals buried in one grave and the age of the decedent. Logically infants produce lower total weights of cremated remains than adult individuals and the remains of two adult individuals will weigh more than the remains of just one adult individual. Therefore, in the final assessment double graves and non-adults should be excluded from the analysis.

4.4.2.3 Cremation weights in the present dataset

For 1,507 graves in the present dataset the total weights of the cremated remains had been published. The lowest weight in this dataset is 0.1 grams while the highest weight is 3,407 grams. The latter weight is in fact exceptional and was produced by an urn grave from Beegden containing the remains of at least seven(!) individuals (Roymans/Hoogland 1999, 76). For 1,453 graves the MNI was '1' and 128 graves could with a fair amount of certainty be designated as 'intact' graves. For 941 of 'MNI=1' graves the age of the decedent could roughly be estimated, respectively for some 713 adult individuals and 228 non-adults (<15 years old).

50 128 graves qualified as 'intact' graves. 111 examples concern urn graves.

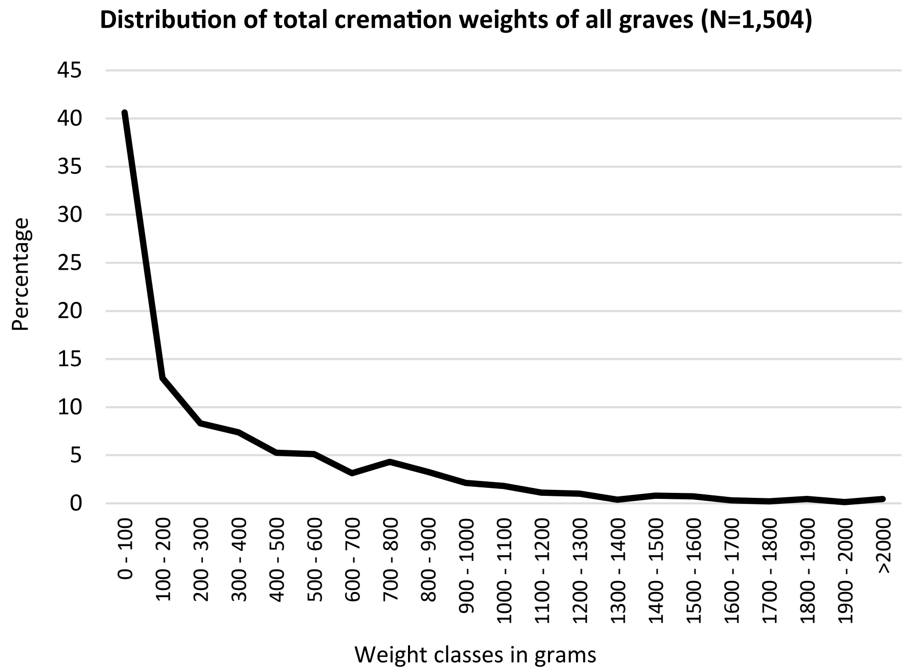

Fig. 4.2: Graph showing the distribution of cremation weights for all graves in the present dataset for which total weights of cremated remains had been published (N=1,504) regardless of intactness, MNI and age.

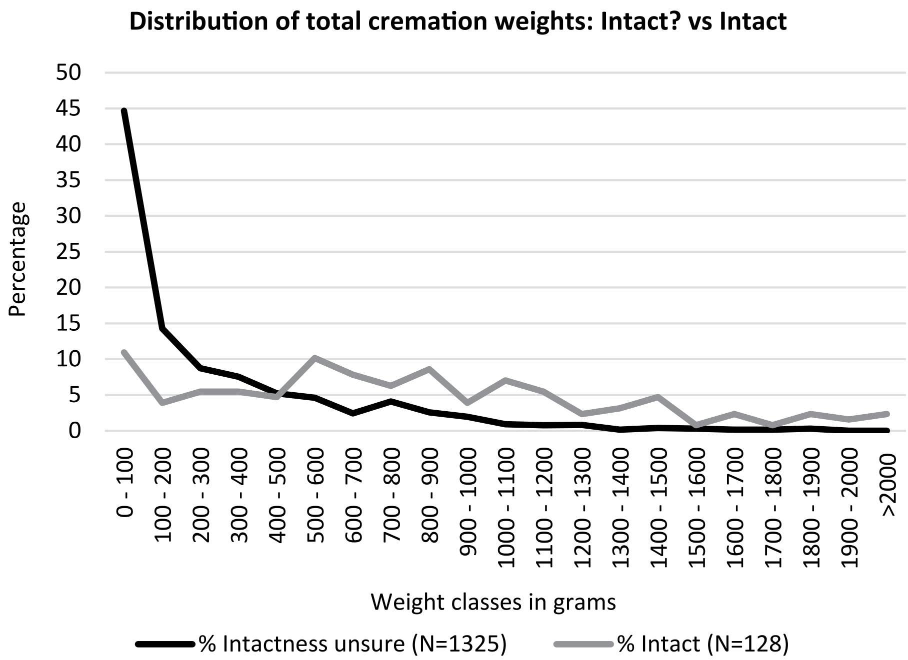

Fig. 4.3: Graph showing the distribution of cremation weights for all 'MNI=1' graves in the present dataset divided into 'Intact' graves and 'Intactness unsure' (Intact?) graves. In this graph still all age categories are represented.

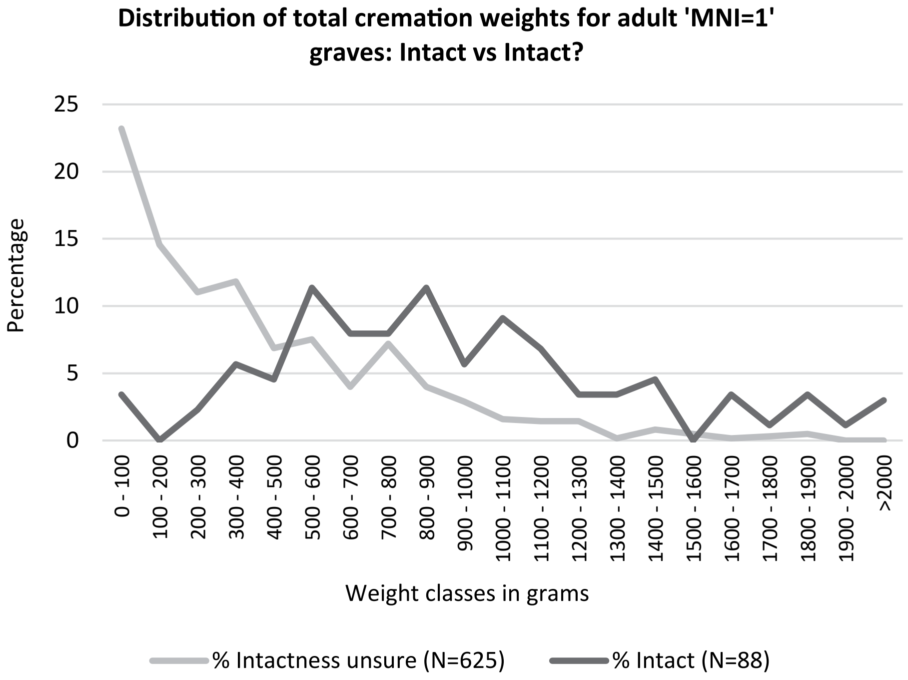

Fig. 4.4: Graph showing the distribution of cremation weights for all adult 'MNI=1' graves in the present dataset divided into 'Intact' graves and 'Intactness unsure' (Intact?) graves.

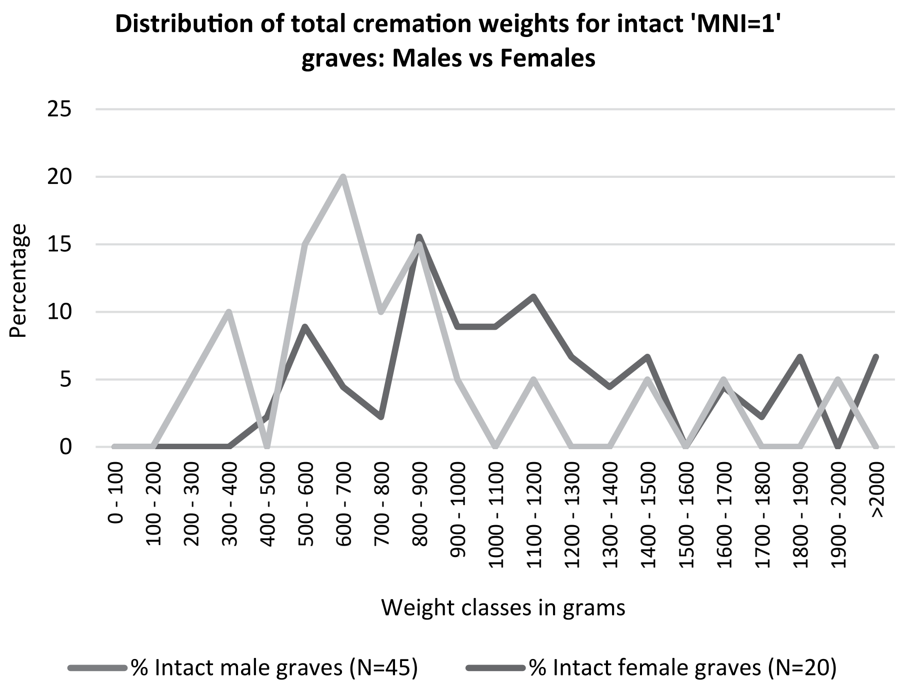

Fig. 4.5: Graph showing the distribution of cremation weights for all 'Intact' adult male and female 'MNI=1' graves in the present dataset.

Category	N	Q1	Median	Q3	Mean
All adults 'intact?'	625	110	309	603.5	404.09
All adults 'intact'	88	586.25	853.5	1180.75	945.5
All males 'intact?'	118	298.5	575.75	815	602.45
All males 'intact'	45	825.5	1067	1407.5	1181.78
All females 'intact?'	126	289.53	467.55	746.75	534.5
All females 'intact'	20	544	677.5	938.75	821.3
All non-adults (<15 years) 'intact?'	198	20.38	64.5	171.5	126.55
All non-adults (<15 years) 'intact'	30	63.75	205.5	415.75	286.52
Infans (0-3 years) 'intact?'	32	15.75	36.5	87	54.93
Infans (0-3 years) 'intact'	10	36	79.3	195.5	109.56
Child (4-15 years) 'intact?'	101	40.5	132	256	193.32
Child (4-15 years) 'intact'	17	205.5	380	565	427

Tab. 4.4: Medians, first- and third quartiles and means (in grams) for the total weights of the cremated remains in the different age and sex categories. For the details concerning the sexes and the different stages of childhood only the graves for which detailed sex and age determinations were available have been included.

Fig. 4.6: Box and whisker plots for the total weights of cremated remains in the different age and sex categories. The weights in grams are shown on the vertical axis. For the exact numbers of the quartiles, medians and means see Table 4.4.

When all factors that are of influence on cremation weights are ignored and the weights of all 1,504[51] graves are plotted over weight classes of 100 grams the graph in Figure 4.2 is created. The steep decline in cremation weights between 0.1 and 300 grams is most apparent in this graph and indeed matches the expectation model in favour of selection. However, if double graves are excluded from the sample and the remaining 1,453 graves are divided into 'intact' and 'intactness unsure' graves, the 'intact' curve starts to show a rather different distribution (Fig. 4.3). Still a small peak in the '0-100 grams' class is noticeable, but the overall distribution already has a far more regular course. When finally only the cremation weights of positively identified adult individuals are included, the 'intact' curve now slowly starts to resemble a bell curve (Fig. 4.4), the expectation model that was created for the non-selection scenario. The vast majority of the recorded 'intact' samples find themselves between 200 and 1600 grams with peaks between 600 and 900 grams. In the light of the above mentioned factors of influence on the total cremation weights for archaeological populations, these indeed seem the kind of weight classes to be expected. Box and whisker plots created for respectively all adults and all non-adults underpin the influence of taphonomy on the total cremation weights represented among archaeological populations (Fig. 4.6 and Tab. 4.4). The first quartile of 'intact' adult graves even coincides with the third quartile of the adult graves for which the intactness is questionable (Fig. 4.6 and Tab. 4.4).

Separate plots for the respective sexes (Figs. 4.5-6; Tab. 4.4) show that male graves produced relatively higher cremation weights than female graves. This difference is probably best explained by differences occurring in bone metabolism in the life cycles of males and females[52] and not so much because of different treatment of the respective sexes after cremation. Also, the same differences in weight between males and females have been observed in experiments conducted on modern populations in modern crematoria (*e.g.* McKinley 1993).

Do the here presented figures for the intact adult graves exclude the possibility of selection all together? The answer would be certainly not. The analysis only underpins the statement made by Harvig and Lynnerup that 'whole' bodies are represented more frequent than is often assumed (*cf.* Harvig/Lynnerup 2013) and that a lot of factors other than selection are of influence on the cremation weights ultimately retrieved from cremation graves in archaeological excavations. What the here presented figures have however also shown, is that even for intact graves of adult individuals occasionally extremely low cremation weights come about that cannot be simply written off as taphonomy or (post-)excavation handling (see 0-100 grams class in Fig. 4.5). In the cemetery of Nijmegen-Kops Plateau, for instance, an intact urn was found containing only one piece of burnt bone (Fontijn/Cuijpers 1999, 52). These are the graves that clearly stand out for the very limited amount of intentionally interred cremated remains. Wahl specifically mentions the intact graves in the 0-100 grams class to represent intentionally incomplete, or symbolic interments (Wahl 1982, 24).

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51 For three graves some uncertainties about the published weights arose during analysis and have been left out of the final count.

52 Deficiencies in the hormone *estrogen* are an important cause for bone loss, or *osteoporosis*. Women exhibit signs of osteoporosis more often when compared to men due to *estrogen* deficiencies occurring from the menopause onwards (Väänänen/Härkönen 1996).

Tab. 4.5: Expected shares of skeletal regions for unburnt adult skeleton (McKinley 1989, 68) and the shares of the skeletal regions as observed for the present dataset.

Skeletal region	McKinley 1989, 68	Present dataset
Skull	18.2%	10.83%
Axial	23.1%	5.08%
Limbs combined	58.7%	35.02%
Residue	0%	49.07%
Total	100%	100%

In addition, a slight bias exists for the present dataset as only the graves for which no doubt existed as to their intactness have been included in the 'intact' group. Of the 128 graves that qualified as 'intact' graves, 111 are urn graves doing no justice to the 56% of graves in the present dataset that did not concern urn graves (Tab. 5.1). The problem however is that the intactness of urnless cremation graves is much harder to assess. When an urn is found in a ploughed-over burial pit but still standing upright with a lid still placed on top, it is fairly safe to state such a grave is for the most important part still intact. In a comparable situation, but this time for the type of grave that only consists of a shaft-like pit where cremated remains have been deposited mixed with pyre debris (Section 6.3) this assessment is much harder to make. Also, because the cremated remains in urnless cremation graves have lacked the protection of a solid container. Still, cases like 'Mound 3' at the site of Oss-Zevenbergen where only one piece of burnt bone was retrieved from underneath a monumental barrow (Section 1.4.2) form clear examples of sealed-off urnless graves where clearly intentionally only a small portion of the original body was deposited.

Without a clear indication for the intactness of the grave concerned, total weights remain a problematic proxy for the representativeness of the cremated remains. When the ratios of the different skeletal regions are however also included in the assessment of representation, even damaged graves can begin to add to the discussion.

4.4.2.4 Ratios of the different skeletal regions as a proxy to representativeness

For an average adult (unburnt) skeleton the different skeletal regions make up specific ratios of the skeleton. It is said that the skull makes up some 18.2%, the axial skeleton some 23.1%, the upper limbs 20.6% and the lower limbs 38.1% (McKinley 1989, 68). By looking at these ratios for the cremated remains the possibility arises to check whether specific body parts were preferred for interment or that all skeletal regions are represented in the expected ratios.

In the analysis of cremated remains from archaeological contexts specialists generally distinguish between the *'(neuro-)cranial,' 'viscerocranial,' 'axial,' 'diaphyseal'* and *'epiphyseal'* parts of the skeleton. However, they also have to reserve a rather large category for 'residue' as for archaeological cremations by far not all bone fragments can still be recognised as belonging to specific parts of the skeleton. For 436 graves in the present dataset that contained the cremated remains of just one individual details were available as to the distribution of the different skeletal regions. In 65 cases these details were delimited to 100% residue. For the remaining 371 cases, respectively 64 'intact' graves and 307 'intact?' graves, the means per skeletal region have been listed in Table 4.5.

Site_code	Grave_ID	Weight	%Skull	%Axial	%Limbs	%Residue	Age
NL-ZH-001	290	11	9.09	0.00	90.91	0.00	Adult_(15+)
NL-LI-365	632	64	26.56	0.00	25.00	48.44	Infans_(0-3)
NL-LI-365	647	18	16.67	0.00	0.00	83.33	Infans_(0-3)
NL-BR-004	904	40	25.00	0.00	12.50	62.50	Infans_(0-3)
NL-BR-004	911	100	48.00	4.00	3.00	45.00	Child_(4-15)
NL-BR-004	922	50	0.00	0.00	80.00	20.00	Adult_(15+)

Tab. 4.6: All 'Intact' graves containing no more than 100 grams of cremated remains and for which the cremated remains had been analysed for the representation of the different skeletal regions.

When the observed ratios for the present dataset are compared to the expected ratios for unburnt skeletons it shows that the present dataset produced lower shares for all respective skeletal regions. Even though these mutual ratios might deviate, for cremation graves they do however appear in logical proportions (Tab. 4.5). First, the lower shares can be explained by the large share of unidentifiable bone fragments in cremation graves (on average 49.07%, see Tab. 4.5). Moreover, as mentioned in the above, bones containing a lot of cortical bone are likelier to survive cremation, interment and excavation than bones containing a lot of cancellous bone. Hence, the relatively large shares of diaphyseal bone fragments in the present dataset. Additionally, ratios comparable to the present dataset have also been attested elsewhere emphasising that the here presented ratios are not out of the ordinary (compare Tab. 4.5 to Wahl 1982, 26). Overall, it does not seem that specific body parts were selected for interment. On the contrary, in most occasions the 'whole' body is represented in expectable proportions.

Also, on basis of the here presented ratios it does not seem that specific body parts were favoured over other body parts for interment. Only in twelve out of 371 cases just one skeletal region was represented, respectively two graves with only skull fragments and ten graves with only fragments of the limbs. All twelve graves however concern heavily damaged graves for which the highest total weight observed was 52 grams and second highest weight 25 grams. Only the six graves in the 'intact' group that produced less than 100 grams of cremated remains and for which the ratios of the different skeletal regions had been analysed show some deviating ratios. Four graves, all non-adults, contain remarkably larger shares of skull fragments and two graves, both adults, show very large shares of limb fragments (Tab. 4.6). Still all these graves contained other parts of the skeleton as well.

A final assessment that can be done on basis of the different skeletal regions, is to check whether an anatomical order was maintained when urning the cremated remains. To test this hypothesis, micro-excavations of cremated remains inside urns are required. For the present dataset only seven examples of such micro-excavations were available. An eighth example outside the present dataset concerns the urn from 'Mound 7' of Oss-Zevenbergen.[53] In sum, seven out of eight urns showed no anatomical order or whatsoever in the way the cremated

53 Urns excavated in layers: Geldrop-Genoenhuis [NL-BR-004]: four urns (Hissel 2007, 98); Zundert-Mencia [NL-BR-010]: one urn (Smits 2005b, 7); Oss-Zevenbergen [NL-BR-180]: one urn (Smits 2013, 260); Elst-Westeraam [NL-GL-047]: one urn (Smits 2005a, 29); Rossum-Oranjestraat [NL-OV-059]: one urn (Bergsma 2008, 75).

remains were put in the urn (Smits 2005a, 29; 2005b, 7; 2013, 260; Hissel 2007, 98). Only one urn found in the cemetery of Rossum-Oranjestraat showed some grouping of long bones and skull fragments (Bergsma 2008, 75). The overall impression from these few examples is that cremated remains entered the grave in a shuffled state. The exception from Rossum however shows that some anatomical ordering might occasionally be expected as well and that further research into the matter is required. Therefore, systematic research to the placement of cremated remains in urns is highly recommended in future excavations. Even by collecting the cremated remains from an urn in just three separate layers can already provide valuable insights in the collection and handling of cremated remains after cremation.

4.4.2.5 Body parts or bodies whole?

To sum up, a fairly normal distribution of cremation weights is displayed by the adult graves in the present dataset that were still intact. Overall these cremation weights are indeed lower than observed for adult individuals in modern crematoria. However, given the many factors that are of influence on both cremation weight as volume archaeological populations can be expected to show generally lower weights than modern populations (*cf.* Harvig/Lynnerup 2013). These factors concern weather conditions during open-air cremation; visibility of the cremated remains after cremation; taphonomy in the ground (*cf.* McKinley 1989, 66-67; Wahl 1982, 24-25); and (post-)excavation handling of cremated remains (*cf.* Harvig/Lynnerup 2013).

Additionally, in the present dataset the different skeletal regions were displayed in the expected ratios by the vast majority of the graves. This observation suggests that overall no selections of specific body parts were carried out for the final interment. As mentioned, none of the above observations exclude the possibility of selection all together. They only underpin that 'whole' bodies are represented more frequent in Late Bronze Age and Early Iron Age graves than is often assumed.

The present dataset did produce a small class of graves for which symbolic interment of only a small representation of the decedent should definitely be considered. These concern the intact graves of adult individuals displaying cremation weights less than 100 grams (*cf.* Wahl 1982, 24). Cases like Nijmegen-Kops Plateau (Fontijn/Cuijpers 1999, 52) and Oss-Zevenbergen (Section 1.4.2) where only a single piece of bone ended up in the grave are clear examples of intentional selective deposition of cremated remains confirming the rite did indeed occur. As mentioned, there might be more examples of selection hiding among the graves for which the intactness could not be assessed.

4.4.3 Mixing bodies

Selection was not the only way of interfering with the burnt remains of a decedent's body in the time between cremation and interment. Not only provided the rite of cremation the mourners with the possibility to break down the decedent's body into pieces, but also to combine (parts of) bodies into new entities. This latter category concerns the 51 double graves that have been recorded for the present dataset (Tab. 4.7). Double graves have been recorded throughout the whole of the Netherlands and occurred throughout the entire period of study. But why were people in the Late Bronze Age and Early Iron Age occasionally combining the remains of multiple individuals into one grave?

One explanation for the presence of multiple individuals in one grave is that these people died around the same time and, whether or not for convenience' sake, were cremated

Combination	N	%
1. Adult [Female]; 2. Adult [Male]	3	5.88
1. Adult [Male]; 2. Adult [sex unknown]	2	3.92
1. Adult [Sex unknown]; 2. Adult [sex unknown]	2	3.92
1. Adult [Male]; 2. Non-adult	3	5.88
1. Adult [Female]; 2. Non-adult	10	19.61
1. Adult [sex unknown]; 2. Non-adult	21	41.18
1. Non-adult; 2. Non-adult	3	5.88
1. Adult [Male]; 2. Age/sex unknown	1	1.96
1. Age/sex unknown; 2. Age/sex unknown	1	1.96
1. Adult [Female]; 2. Adult [Male]; 3. Non-adult	2	3.92
1. Adult [Female]; 2. Age/sex unknown; 3. Age/sex unknown	1	1.96
1. Adult [Female]; 2. Adult [sex unknown]; 3. Non-adult; 4. Non-adult	1	1.96
1. Adult [Male]; 2. Adult [Female]; 3. Adult [Female]; 4. Adult [Female]; 5. Non-adult; 6. Non-adult; 7. Non-adult	1	1.96
TOTAL:	51	100.00

Tab. 4.7: Combinations of sex and age as observed for the 51 cremation graves in the present dataset that contained the remains of more than one individual.

and interred together. On basis of the tacit bones alone this indeed is an explanation that cannot be entirely excluded. However, today we would probably feel rather confused if we were to hear that one of our late beloved ones was to be cremated with a complete stranger for economic reasons or that he or she was to be interred with someone else to save space in the cemetery. The thought alone would by many be considered as appalling. But this all changes as soon as decedents are somehow socially related. Family graves, for that matter, can be found at almost every modern cemetery.

In this light, it seems plausible people in the Late Bronze Age and Early Iron Age too would have wanted to emphasise certain social relations in death. The most direct way of doing this, is by burying the cremated remains of the individuals concerned together. The transformation the decedent underwent in the cremation process, from a decaying corpse to a small and tangible heap of calcined bones, would in fact have facilitated a desire to bury certain individuals together. Moreover, the cremation process also enabled people to perform the final interment of the cremated remains at any desired moment. In other words, if a social relation was to be emphasised in the grave by burying the ashes of individuals together, people could simply have waited until the last individual had died. It is in this regard that the occurrence of double graves could also indicate a substantial amount of time between cremation and interment.

The different combinations of sex and age observed for the double graves in the present dataset are presented in Table 4.7. In one occasion the grave concerned consisted out of two separate urns that were buried 30 centimetres apart, in the other 50 graves the cremated remains had been mixed, whether or not in an urn. 46 of these 51 graves contained the cremated remains of two individuals, three contained the remains of three individuals, in one grave four individuals were represented and in one grave no less than seven individuals. These latter two graves were both found in the Early Iron Age cemetery of Beegden (Roymans/Hoogland 1999) underneath the very same long mound. Clearly these concern exceptional cases as these numbers have not been observed for any of the other cemeteries included in the present dataset. Two of the three graves containing three individuals concern a combination of male, female and non-adult. For the third example only one of the three individuals could positively be identified as an adult female. Though only few in number, it does not escape the impression that these graves might represent a family.

The 46 graves that contained the remains of two individuals show a clear dominance of 'adult/non-adult' combinations. In no less than 34 of these graves, some 67% of the total population of double graves, have remains of both adult as non-adult individuals been identified. Also, among the graves containing more than two individuals combinations of adults and non-adults are abundant. Overall, graves containing the remains of both adults and non-adults make up at least 80.4% (41/51) of all double cremation graves in the present dataset. At first sight, 'female/non-adult' combinations seem dominant over 'male/non-adult' combinations, respectively ten versus three examples (Tab. 4.7). However, six non-adults in the 'female/non-adult' combination concern neonates while this age category is not represented among the 'male/non-adult' combinations. It is very well possible that these combinations of adult females and neonates represent pregnancies or childbirths gone wrong (Section 6.2). Bearing in mind this scenario, it does not seem that males and females were treated very differently in this respect. Combinations of two adults or two non-adults clearly also came about, though by far not as often as combinations of adults and non-adults (Tab. 4.7).

Compared to the total number of cremation graves, these 51 graves only make a small portion of the total population: Some 3.4% (51/1507). However, these only concern the 51 examples where the remains of multiple individuals have been *positively* identified. Still, the vast majority of Late Bronze Age and Early Iron Age cremation graves would have concerned individual burials. At least these few examples show that it is not unlikely that cremated remains were not immediately interred after cremation, but were saved for the right occasion, leaving open the possibility of emphasising specific social relations. A case in point are the two urns found underneath the long mound in the cemetery of Beegden that together represent no less than eleven individuals (Roymans/Hoogland 1999, 77). It is highly unlikely that these eleven individuals all died at once and were cremated and interred at the same time. Looking at the ages and sexes represented by these two urns, one male, four females and at least five non-adults it is more likely that these urns represent entire households if not symbolise a certain bloodline that needed to be anchored in this specific cemetery.

The large share of combinations of adults and non-adults in the present dataset also suggests that especially for the cremated remains of non-adults the option of saving the ashes until they could be interred with the ashes of what presumably was an adult relative was surely considered an option. Reasoning the other way around, thus from the perspective of the adults in these combinations, makes no sense as it presupposes the ability to foretell which children would not make it to adulthood.

4.5 Conclusion

Having witnessed the different treatments a corpse underwent from the moment someone passed away until after cremation, we now slowly arrive at the point in the mortuary process where the body entered the grave. As demonstrated, so far the corpse already made quite a metaphorical journey. With the exception of a small population of inhumed individuals in the Dutch riverine area, some 98- 99% of the decedents were to be transformed from a human body of flesh and blood to a bundle of calcined bones hardly resembling a former living being. Judging from the high combustion grades, people would have made sure this transformation by fire happened thoroughly. Even though the amount of cremated remains that was to enter the grave varied considerably, as argued in the above for the majority of the decedents it is not unlikely these remains were in fact all that was to be retrieved after the cremation process and that ‘whole’ bodies are represented more frequent than is often assumed.

However, intact cremation graves of adult individuals containing less than 100 grams of cremated remains, some 3% of the intact dataset (Fig. 4.4), confirm that intentional selection procedures also occurred. In addition, the various examples of graves containing the remains of multiple individuals indicate that bodies could not only be broken apart but also joined together. Clearly, to these people the cracked, shrunken and calcined bones left after cremation were not simply the last physical remains of a corpse that needed to be disposed of. On the contrary, it rather seems these remains were considered as objectified bodies that still had social qualities. This notion not only stems from acts of selection and mixing, but perhaps even more so from the fact that these objectified bodies were assigned a fixed spot within the physical world. Not on themselves, but in relation to others in the context of the cemetery.

5

Objects and the urnfield mortuary process

5.1 Introduction

Even though urnfield graves might not be particularly known for their abundance in grave goods (Kristiansen 1998, 113; Harding 2001, 320), only seldom does a grave consist of just the burnt bones of the decedent. Urns, pyre-debris, animal bones and a broad array of objects such as accessory pottery and pieces of jewellery can be found in urnfield graves. One for one these grave goods concern intentionally added substances to the bare and shrunken bones of the cremated corpse. Also, some of the objects found in urnfield graves might very well have accompanied the decedent from the very moment he or she drew last breath all the way to the grave. But why did a decedent who him/herself was no longer physically recognisable as human being still needed to be provided with these objects? Plain and simple as grave goods in urnfield graves might look, none were added without reason and as such they conceal stories that reflect upon their role in the narrative about death and burial in the Late Bronze- and Early Iron Age. Therefore, in the following will be examined which grave goods were selected for burial (Sections 5.2; 5.3; 5.4; 5.6; 5.7), how these grave goods were treated (Section 5.5) and when exactly they entered the mortuary process.

5.2 Urns

5.2.1 To be urned or not to be urned...

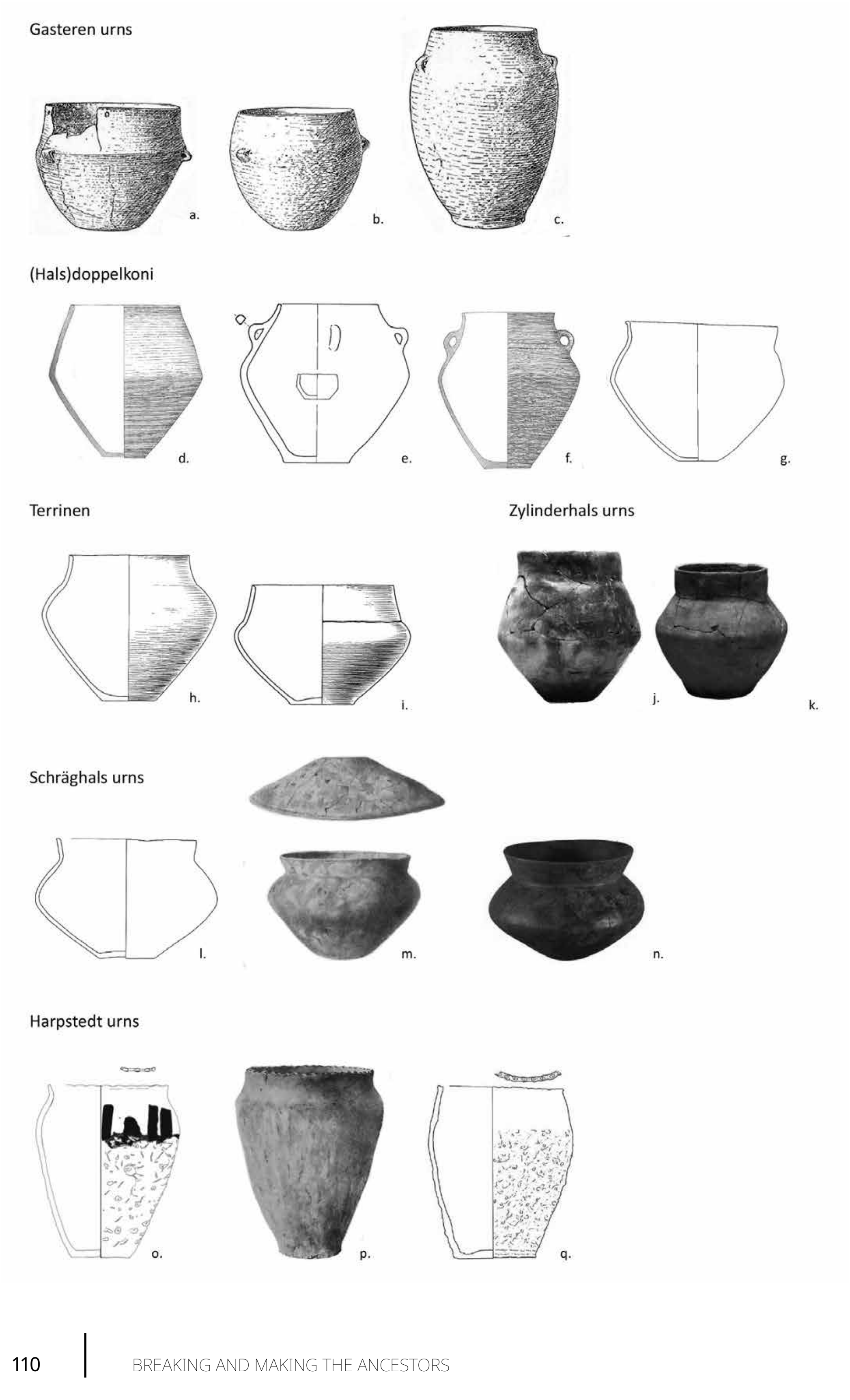
As it provided the burial grounds central to this research with their very name, one would expect urn graves to be omnipresent in these cemeteries. However, not even half the graves in the present dataset qualified as such as only 1,389 of the 3,182 (43.6%) graves in fact produced an urn. But, as Table 5.1 also clearly shows, this overall share of urn graves can certainly not be projected on individual cemeteries. The variation in the share of urn graves per cemetery is in fact striking, even within specific case-study regions and for specific archaeological periods (Tab. 5.1). Cleary, urns were not deemed as a prerequisite for most cemeteries. A difficulty with the here presented overview (Tab. 5.1) is that many cemeteries were in use throughout the entire Late Bronze Age and Early Iron Age, if not longer. Certain time bound trends in the use of urns can easily be obscured by the longevity of these cemeteries. Also, many urns lacked clear typo-chronological markers allowing for a more detailed date than just Late Bronze Age/ Early Iron Age. Only the cemeteries in East Brabant and North Limburg (Region 'G' in Tab. 5.1)

Region	Site-code	Toponym	Period in use	N graves	N urns	% urns
A.	NL-DR-026	Gasteren	MBA-MIA	92	55	59.78
A.	NL-DR-054	Noordbarge-Hoge Loo	MBA-MIA	345	121	35.07
A.	NL-DR-038	Buinen-Hoornse Veld	LBA – EIA	53	32	60.38
A.	NL-DR-039	Drouwen	LBA – EIA	96	61	63.54
A.	NL-DR-045	Wapse	LBA – EIA	164	70	42.68
A.	NL-DR-094	Sleen	LBA – EIA	115	41	35.65
B.	NL-OV-003	Mariënberg	LBA	32	2	6.25
B.	NL-OV-006	Varsen	LBA	11	4	36.36
B.	NL-OV-024	Noord Elsen	LBA	96	33	34.38
B.	NL-OV-050	De Tij	LBA	30	10	33.33
B.	NL-OV-051	Oldenzaal-De Zandhorst	LBA	20	13	65.00
B.	NL-OV-077	Haarle	LBA	29	14	48.28
B.	NL-OV-084	Mander III	LBA	2	0	0.00
B.	NL-OV-086	Vasse	LBA	1	0	0.00
B.	NL-OV-092	Borne-Veldkamp/Schild Es	LBA	20	14	70,00
B.	NL-OV-003II	Hardenberg-Mariënberg II	LBA/EIA	6	0	0.00
B.	NL-OV-003III	Hardenberg-Mariënberg III	LBA/EIA	7	0	0.00
B.	NL-OV-015	Hulsen	LBA/EIA	10	4	40.00
B.	NL-OV-030	Stokkum I and II	LBA/EIA	32	8	25.00
B.	NL-OV-049	Losser-De Aust	LBA-MIA	34	30	88.24
B.	NL-OV-059	Rossum-Oranjestraat	LBA-MIA	88	41	46.59
B.	NL-OV-025	Elsen-Friezenberg	EIA	32	23	71.88
B.	NL-OV-062	De Borchert	EIA	3	3	100.00
B.	NL-OV-080	Manderveen	LBA/EIA	9	8	88.89
C.	NL-GL-030	Epse-Waterdijk Noord	LBA	1	0	0.00
C.	NL-GL-031	Epse-Waterdijk II	LBA	14	0	0.00
C.	NL-GL-067	Epse-Waterdijk-West (III)	LBA	5	0	0.00
C.	NL-GL-068	Twello-De Schaker	LBA – EIA	9	6	66.67
C.	NL-OV-088	Colmschate-Kloosterlanden	LBA-ROM	14	2	14.29
C.	NL-OV-012	Colmschate-Banekaterveld	LBA/EIA	24	5	20.83
C.	NL-GL-019	Steenderen-Steenderdiek	EIA	15	13	86.67
C.	NL-GL-029	Epse-Olthof Noord	EIA	22	17	77.27
C.	NL-OV-089	Colmschate-'t Bramelt	EIA	94	27	28.72
C.	NL-GL-056	Zutphen-Looërenk (Meijerink)	EIA-MIA	27	15	55.56
D.	NL-GL-293	Nijmegen-Kops Plateau	MBA-MIA	48	21	43.75
D.	NL-GL-060	Meteren-De Bogen	MBA-MIA	3	0	0.00
D.	NL-GL-065	Lent-Smiltjesland	LBA	12	6	50.00
D.	NL-GL-294	Nijmegen-Hunerberg	LBA-EIA	5	5	100.00
D.	NL-GL-022	Meteren-De Plantage	LBA-MIA	46	0	0.00

Tab. 5.1 (continued on right page): Shares of urns per cemetery, sorted by case-study region and archaeological period. N graves = total number of all included graves (= features that produced human remains) per cemetery; N urns = total number of urns retrieved from a specific cemetery; % urns = share of urn graves calculated over all included graves from a specific cemetery. The letters in the 'Region-column' represent the following case-study regions: (A) The Frisian-Drentian plateau; (B) The glacial landscape of Salland and Twente; (C) The riverine area of the IJsselstreek and East Veluwe; (D) The Dutch riverine area; (E) The Dutch coastal area; (F) The cover-sand and marsh landscape of West Brabant; (G) The cover-sand and stream valley landscape of East Brabant and North Limburg; (H) The Meuse terraces and loess landscape of South Limburg.

Region	Site-code	Toponym	Period in use	N graves	N urns	% urns
D.	NL-GL-038	Lent-Zuiderveld-Oost (Ressen)	LBA-MIA	9	1	11.11
D.	NL-GL-026	Huissen-Agropark	EIA	11	8	72.73
D.	NL-GL-047	Elst-Westeraam/Parklaan	EIA	1	1	100.00
D.	NL-UT-012	Wijk bij Duurstede-De Horden	EIA	87	37	42,53
D.	NL-GL-036	Lent-Lentseveld	EIA	12	0	0.00
D.	NL-GL-017	Ewijk-Keizershoeve II	EIA-MIA	18	1	5.56
D.	NL-GL-024	Groesbeek-Hüsenhoff	EIA-MIA	27	1	3.70
D.	NL-GL-037	Lent-Steltsestraat	EIA-MIA	33	0	0.00
D.	NL-GL-039	Lent-Schoolstraat	EIA-MIA	1	0	0.00
D.	NL-GL-063	Lent-Castilliëstraat	EIA-MIA	2	0	0.00
D.	NL-GL-064	Lent-Laauwikstraat-Zuid	EIA-MIA	9	0	0.00
E.	NL-ZH-001	Den Haag-Hubertustunnel	LBA	16	0	0.00
F.	NL-BR-136	Oosterhout-De Contreie	MBA-ROM	88	27	30.68
F.	NL-BR-159	Hilvarenbeek-Laag Spul	LBA	71	12	16.90
F.	NL-BR-010	Zundert-Mencia Sandrode	LBA-MIA	31	8	25.81
F.	NL-BR-011	Breda-Steenakker	LBA-MIA	15	6	40.00
F.	NL-BR-155	Goirle-Hoogeind	LBA-EIA	26	10	38.46
G.	NL-BR-196	Haps-Kamps Veld	MBA-MIA	110	36	32.73
G.	NL-BR-250	Valkenswaard-Het Gegraaf	LBA-EIA	33	13	39.39
G.	NL-BR-210	Sint Oedenrode-Haagakkers	LBA-MIA	48	5	10.42
G.	NL-BR-004	Geldrop-Genoenhuis	EIA	52	35	67.31
G.	NL-BR-224	Someren-Philips Kampeerterrein	EIA	22	20	90.91
G.	NL-LI-313	Well-De Hamert	EIA	92	85	92.39
G.	NL-LI-365	Roermond-Mussenberg	EIA	148	146	98.65
G.	NL-LI-377	Beegden	EIA	19	18	94.74
G.	NL-LI-385	Weert-Kampershoek	EIA/MIA	65	47	72.31
G.	NL-BR-014	Someren-Waterdael III	EIA-MIA	35	1	2.86
G.	NL-BR-220	Mierlo-Hout-Snippenscheut	EIA-MIA	49	2	4.08
G.	NL-BR-223	Someren-Waterdael I	EIA-MIA	87	0	0.00
G.	NL-LI-017	Weert-Laarveld	EIA-LIA	27	3	11.11
G.	NL-LI-020	Weert-Kampershoek Noord	MIA	4	0	0,00
H.	NL-LI-006	Maastricht-Ambyerveld	LBA	89	58	65.17
H.	NL-LI-397	Maastricht-Vroendaal	LBA/EIA	15	14	93.33
H.	NL-LI-018	Maastricht-Oosderveld	LBA-EIA	32	21	65.63
H.	NL-LI-396	Maastricht-Withuisveld	LBA-EIA	19	15	78.95
H.	NL-LI-387	Sittard-Hoogveld	EIA-LIA	113	54	47.79
TOTAL:				3,182	1,389	43.65

seem to provide a little more insight in the use of urns throughout the Bronze- and Iron Ages. Here, all five cemeteries that have been solely dated to the Early Iron Age show remarkably high shares of urns. Four out of five cemeteries even display values above 90%. These high percentages seem to decrease as soon as cemeteries were still in use at the beginning of the Middle Iron Age. This trend has been noted before (Gerritsen 2003, 128) and is perfectly illustrated by the three cemeteries near present day Someren. Where the Early Iron Age cemetery of Someren-Philips Kampeerterrein still exhibits a share of 91% urn graves, both Early-/Middle Iron Age cemeteries of Someren-Waterdael (I/III) combined produced only one single urn (Tab. 5.1). Perhaps less clear, the same contrast between the earlier and later Iron Age seems to have been the case for the Dutch riverine area as well (Region 'D' in Tab. 5.1).


Gasteren urns
a.
b.
c.
(Hals)doppelkoni
d.
e.
f.
g.
Terrinen
h.
i.
Zylinderhals urns
j.
k.
Schräghals urns
l.
m.
n.
Harpstedt urns
o.
p.
q.

5.2.2 Urn types

For the Lower-Rhine-Basin ample studies are available that deal with the abundance of urn types found in urnfields (*e.g.* Desittere 1968; Kooi 1979; Verlinde 1987; Ruppel 1990; Schoenfelder 1992; Verlinde/Hulst 2010). The present research has no intention of redoing these encompassing works as these already form the steady encyclopaedic basis for any study encumbered with pottery retrieved from Late Bronze Age and Early Iron Age cemeteries. Moreover, the typology of pottery is hardly relevant for a reconstruction of the mortuary process. Notwithstanding, the shapes and other stylistic characteristics of urns are still often used as an indication for the age of graves, if not entire cemeteries. Therefore, wherever possible, track was kept of the various urn types occurring in the cemeteries under study. For some distinctive urn types like *Harpstedt*- (Fig. 5.1: o-q) and *Schräghals*-urns (Fig. 5.1: l-n) this proved easier than for other more general pottery forms. For instance, conic shaped vessels occurring both with and without necks, known as *(Hals)doppelkoni* (Fig. 5.1: d-g), are far less strictly defined and sometimes it is even rather difficult to distinguish a *Halsdoppelkonus* from a so-called *Zylinderhalsurn* (Fig. 5.1: j-k) or a *Terrine* for that matter (Fig. 5.1: h-i). Often the names of these different pottery types have been borrowed from neighbouring regions in West- and South Germany where their shapes are more pronounced (Verlinde/Hulst 2010, 39). In between these latter shapes a whole range of hybrid forms exists with no clear typological denominations. As a result, some creativity in the descriptions of urns like '*afgeknot peervormig*' (English: 'truncated pear-shaped') is not uncommon in literature encumbered with Late Bronze Age and Early Iron Age pottery (*e.g.* Waterbolk 1957, 60). It should therefore be noted that with regards to these less well defined pottery shapes, others would perhaps have made different decisions as to their typology.

For the present dataset, the sum of radiocarbon dates available for the most occurring urn types have been presented in Figure 5.2. *Zylinderhals* urns have been left out as there was only one radiocarbon data available for this specific urn type. As Figure 5.2 shows, the typology of urns may only be used as a rough indication for the age of specific graves. Pretty much all *Schräghals*- and *Harpstedt*-urns produced radiocarbon dates in the flat section of the calibration curve known as the Hallstatt-plateau (Van der Plicht 2004, 45), indicating both pottery forms represent the later end of the spectrum (*cf.* Verlinde 1987, table K). At the same time, conic-shaped vessels are likelier to produce radiocarbon dates earlier in the spectrum, before the Hallstatt-plateau. So-called *Gasteren*-urns (Fig. 5.1: a-c), an urn type from the northern Netherlands, even date substantially earlier than what is conventionally seen as the beginning of the urnfields in the Netherlands (Fig. 5.2; also see Lanting/Van der Plicht 2003, 162; 213).

Fig. 5.1: Selection of the most occurring urn types in Late Bronze Age/Early Iron Age cemeteries in the Netherlands: (a) Gasteren; height urn (H): 26 cm (Van Giffen 1945, fig. 15:54); (b) Gasteren; H: 24 cm (Van Giffen 1945, fig. 15:56); (c) Gasteren; H: 40 cm (Van Giffen 1945, fig. 15:51); (d) Wapse; H: 24 cm (Waterbolk 1957, fig. 27:102); (e) Oldenzaal-De Tij; H: 25 cm (Verlinde 1987, fig. 40:255.21); (f) Wapse; H: 24 cm (Waterbolk 1957, fig. 27:94); (g) Haarle; H: 21.5 cm (Verlinde 1987, fig. 86:101); (h) Buinen; H: 22 cm (Kooi 1979, fig. 69:93); (i) Drouwen; H: 17 cm (Kooi 1979, fig. 94:1); (j) Zundert-Mencia; H: 20 cm (Krist 2005, fig. 17); (k) Zundert-Mencia; H: 20 cm (Krist 2005, fig. 13); (l) Roermond-Mussenberg; H: 18 cm (Schabbink/Tol 2000, fig. 2.15j:120a); (m) Well-De Hamert; H: 18 cm (Holwerda 1914, fig. 21:18); (n) Oss-Zevenbergen; H: 19 cm (Fontijn *et al.* 2013d, fig. 6.1); (o) Geldrop-Genoenhuis; H: 26 cm (Hissel *et al*. 2007, fig. 7.9:29a); (p) Well-De Hamert; H: 37 cm; (Holwerda 1914, fig. 25:84); (q) Roermond-Mussenberg; H: 26.5 cm (Schabbink/Tol 2000, fig. 2.15e:48a) (Figures A-D; F; H; I: © University of Groningen, Groningen Institute of Archaeology).

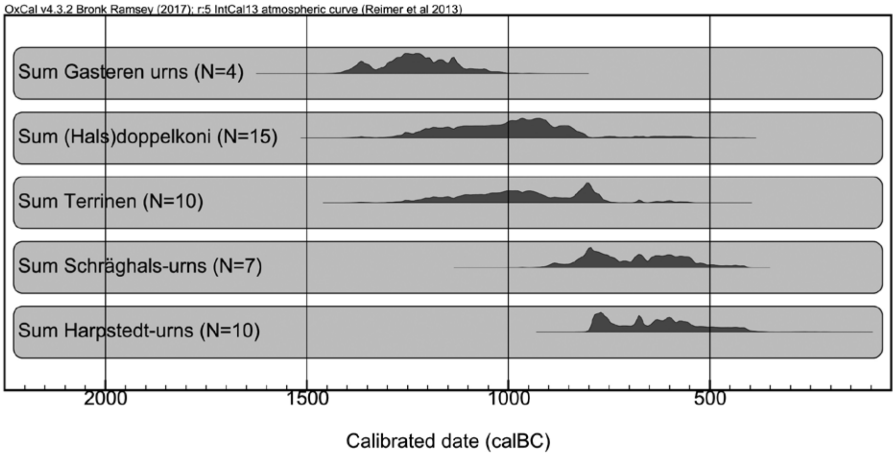


Fig. 5.2: Often occurring urn types in the present dataset and the associated sums of radiocarbon dates.

5.2.3 Sealed urns and alternative containers

For some 72 urns it could be established that the mouth of the urn had originally been sealed off with some form of lid. In most cases a pottery bowl had been placed upside-down over the mouth of the urn (Fig. 5.3: d. and e.) but other examples illustrate that fragments of larger vessels would also suffice (Fig. 5.3: f. and g.). In the cemetery of Noordbarge-Hoge Loo even two examples occurred where two smaller vessels had been stacked upside-down over the mouth of the urn (Fig. 5.3: c). Finally, in four cases the urns had been covered with a stone slab (Fig. 5.3: a).[54] Sealed off urns have been retrieved from cemeteries in both the north as the south of the country and date both to the Late Bronze Age as the Early Iron Age. As many urn graves got “decapitated” over time by recent disturbances the number of urns covered with lids would originally have been much higher. Also, it is not unlikely that more perishable materials like leather or textile cloths were also used to seal off urns. Occasionally, inside a burial pit the position of an accessory vessel right above the mouth of the urn suggests a perishable material once covered the mouth of the urn and prevented the smaller vessel from falling in. For the present dataset this was most probably the case for one grave in the cemetery of Rossum-Oranjestraat (Fig. 5.3: b)

At least these 72 examples show that throughout the Late Bronze Age and Early Iron Age it was not uncommon for the mourners to make sure the cremated remains in the urn were separated from the surrounding earth by sealing off the mouth of the urn. In this regard an additional two graves without urns should be mentioned as in these cases respectively a pottery bowl and the bottom of a larger vessel had been placed upside-down over the cremated remains, possibly reflecting the same desire of shielding the cremated remains.[55]

54 Three specimens in the cemetery of Drouwen [NL-DR-039] had stone slabs as lids, as had one example in the cemetery of Noordbarge-Hoge Loo [NL-DR-054] (Kooi 1979, 136).

55 Zundert-Mencia [NL-BR-010; Grave_ID 262] and Wijk bij Duurstede-De Horden [NL-UT-012; Grave_ID 1679]. Both graves date to the Early-/Middle Iron age.

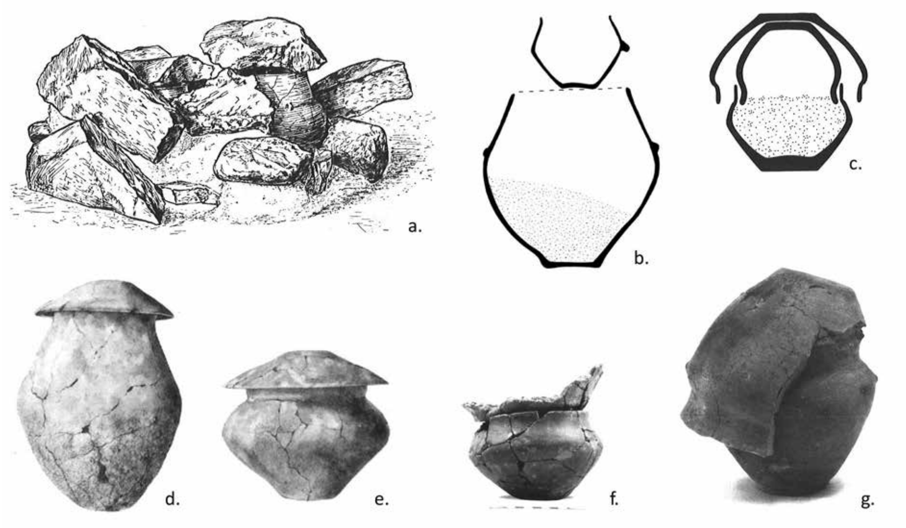


Fig. 5.3: Selection of urns in the present dataset that had some form of lid: (a) Drouwen (Kooi 1979, fig. 89); (b) Rossum-Oranjestraat; height urn (H): 35 cm (Ufkes 2008, fig. 3.1:87/88); (c) Noordbarge-Hoge Loo; H (urn): 9 cm (Kooi 1979, fig. 42:156); (d) Well-De Hamert; H: 31 cm (Holwerda 1914, fig. 21:10); (e) Well-De Hamert; H: 18.5 cm (Holwerda 1914, fig. 21:13); (f) Maastricht-Oosderveld; H: 10 cm (Mildner *et al.* 2005, fig. 3); (g) Noordbarge-Hoge Loo (Kooi 1979, fig. 20) (Figures A; C; G: © University of Groningen, Groningen Institute of Archaeology).

It is evident from the present dataset that cremated remains not necessarily had to be shielded or contained. Not uncommonly they were just scattered in burial pits or even sprinkled over the urns (Section 6.3.1). However, it is not unlikely that a fair share of cremated remains retrieved from graves without urns were originally still wrapped or packed in a container of a more perishable material like leather, textile or perhaps even wood. The present dataset did not produce any new evidence that proves this thesis. For the Netherlands the already mentioned examples from Nieuwenhagen and the 'Chieftain's grave of Oss' (Section 3.2.4) are still the only clear examples where textiles have been retrieved from graves that could indicate cremated remains and grave goods were indeed wrapped in cloth (Van der Vaart-Verschoof 2017b, 194). It should be noted though that both these examples are in fact urn graves. Notwithstanding, especially the compact bundles of cremated remains, De Mulder's type C graves,[56] could indicate these were originally wrapped in textile or leather causing the compressed distribution of cremated remains in these graves.

For the present dataset the bronze '*cista a cordoni*' that was found in the cemetery of Sittard-Hoogveld is the only clear example of an alternative container used to contain the cremated remains. Even though this delicate bronze bucket was severely damaged, it could still be established the *cista* was used as an urn based on the cremated remains that were found on the inside of the bottom fragment that was still lodged in its original place (Tol 2000, 109). According to its excavators, the *cista a cordoni* must have found its way to Sittard all the way from northern Italy or the eastern Alpine region and was dated between 450 and 350 BC on typo-chronological grounds (Tol 2000, 112-113).

56 German: '*Knochenlager*'; Dutch: '*Beenderpakgraf*' or '*Crematienest*'

5.2.4 The selection of urns and indications for prior use

Several questions spring to mind when the use and selection of urns are concerned. For instance, when exactly does the urn enter the mortuary process? Was it only somewhere after the cremated remains had been collected from the location of the pyre or are there indications for prior use of urns? Do urns concern typical funerary pottery or are they merely a representation of whatever pottery could be found in any household's kitchen? And what were the requirements to be buried in an urn in the first place?

5.2.4.1 Age and sex

To begin with the latter question, the considerable size of the present dataset perfectly allows for an assessment of the use of urns related to sex and age in general. However, when it comes down to specific cemeteries this assessment becomes much more difficult as for most cemeteries only for about one third of the individuals buried in urns some details as to their sex are available. The present analysis will therefore remain restricted to the overall level.

Regarding the relation between sex and the use of urns the numbers clearly speak for themselves (Tab. 5.2). For 187 urn graves some indications for the sex of the decedent were available. Only graves that contained just one individual have been included and the indications for the sex of the decedent include all variations of certainty (Section 3.3.4). The almost perfectly equal shares of females and males buried in urns, respectively 50.8 vs 49.2% (Tab. 5.2), indicate that sex was clearly not a determinant when it came to the use of urns.

The same observation also applies to age. In Section 6.2 it will show that the overall share of non-adults in the present dataset is 26%. As Table 5.3 shows, for 487 urn graves the age of the decedent could be approached. Some 25.5% appeared to concern individuals that did not make it to adulthood, almost perfectly resembling the overall share of non-adults in the present study. Clearly, when the overall population is concerned, neither sex or age seem to have been significant in determining whether someone's ashes were to be put in an urn or not (*cf.* Kooi 1979, 134).

A next assessment would be to check whether specific types of urns show some relation to sex and age. For this assessment it is necessary to have cooccurring, well distinguishable types of urns. For the present dataset *Schräghals*-urns and *Harpstedt*-urns were deemed the most suitable types as they both concern typical Early Iron Age forms (Verlinde 1987, 288-289, tab. K.; Fig. 5.2) and often cooccur in the same cemeteries (*e.g.* Tol 2000; Schabbink/Tol 2000; Waterbolk 1957). As Table 5.3 shows, the shares of the different sex and age categories related to these specific types of urns hardly deviate from the numbers presented in Table 5.2. Clearly, the type of urn was neither related to either sex or age.

5.2.4.2 Size of urns

Even though no exact track was kept of their measurements, the variation in sizes of urns is already evident from just glancing at the various drawings and photographs in the original publications (see Fig. 5.4). Sometimes the urns are hardly bigger than a coffee mug while others are as big as the drums in modern washing machines. A thorough assessment of how the amount of cremated remains exactly relates to the size of an urn has yet to be performed but so far there does not seem to have been a one on one relation between the two. For the exceptional cases in the present dataset where the cremated remains

Sex	N	%
Female	95	50.80
Male	92	49.20
Total:	187	100.00

Age	N	%
Non-adult	124	25.46
Adult	363	74.54
Total:	487	100.00

Tab. 5.2: The use of urns related to sex and age.

	Schräghals-urns		*Harpstedt-urns*	
Sex	**N**	**%**	**N**	**%**
Female	15	48.39	29	51.79
Male	16	51.61	27	48.21
Total	31	100,00	56	100,00

Age	N	%	N	%
Non-adult	15	21.43	24	21.62
Adult	55	78.57	87	78.38
Total	70	100.00	111	100.00

Tab. 5.3: The use of specific types of urn related to sex and age.

Fig. 5.4: Urns excavated in the urnfield of Riethoven (NL-BR-252) on display. As an indication for the variation in sizes of urns compare nos. 47 and 48 to nos. 53 and 58. (Photograph originally published in Holwerda 1913: Fig. 53; Holwerda 1914: Fig. 18).

inside the urn had been projected on the urn drawings it often showed that the urns were filled up to around the shoulder. However, other cases show a clear discrepancy between the amount of cremated remains and the size of the urn. In some cases the cremated remains even hardly reached several centimetres above the bottom of the urn (Fig. 5.5). Especially in these latter cases it should be considered that the remaining space in urns was filled up with more perishable materials that did not make it to our era. As recent research on the 'Chieftain's grave of Oss' has shown the many grave goods retrieved from this extraordinary urnfield grave were wrapped in textile cloth and placed in bundles inside the situla (Van der Vaart-Verschoof 2017a, 59). Since many of the grave goods in

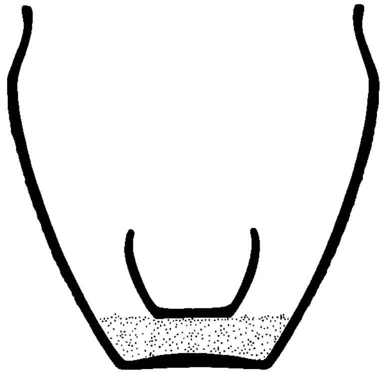


Fig. 5.5: The cremated remains and accessory vessel projected on the inside of the urn in grave 821 (Grave ID: 2864) in the urnfield of Noordbarge-Hoge Loo. As this image shows, the amount of cremated remains hardly relates to the size of the urn. Original height urn: 28 cm. (Kooi 1979, fig. 42: 821 © University of Groningen, Groningen Institute of Archaeology).

the present dataset bear references to the consumption of food and drink (Section 5.3) it is not unlikely food and drink were placed on top of the cremated remains inside the urn. Perhaps future micromorphological analysis of the insides of urns can shed some new light on this hypothesis.

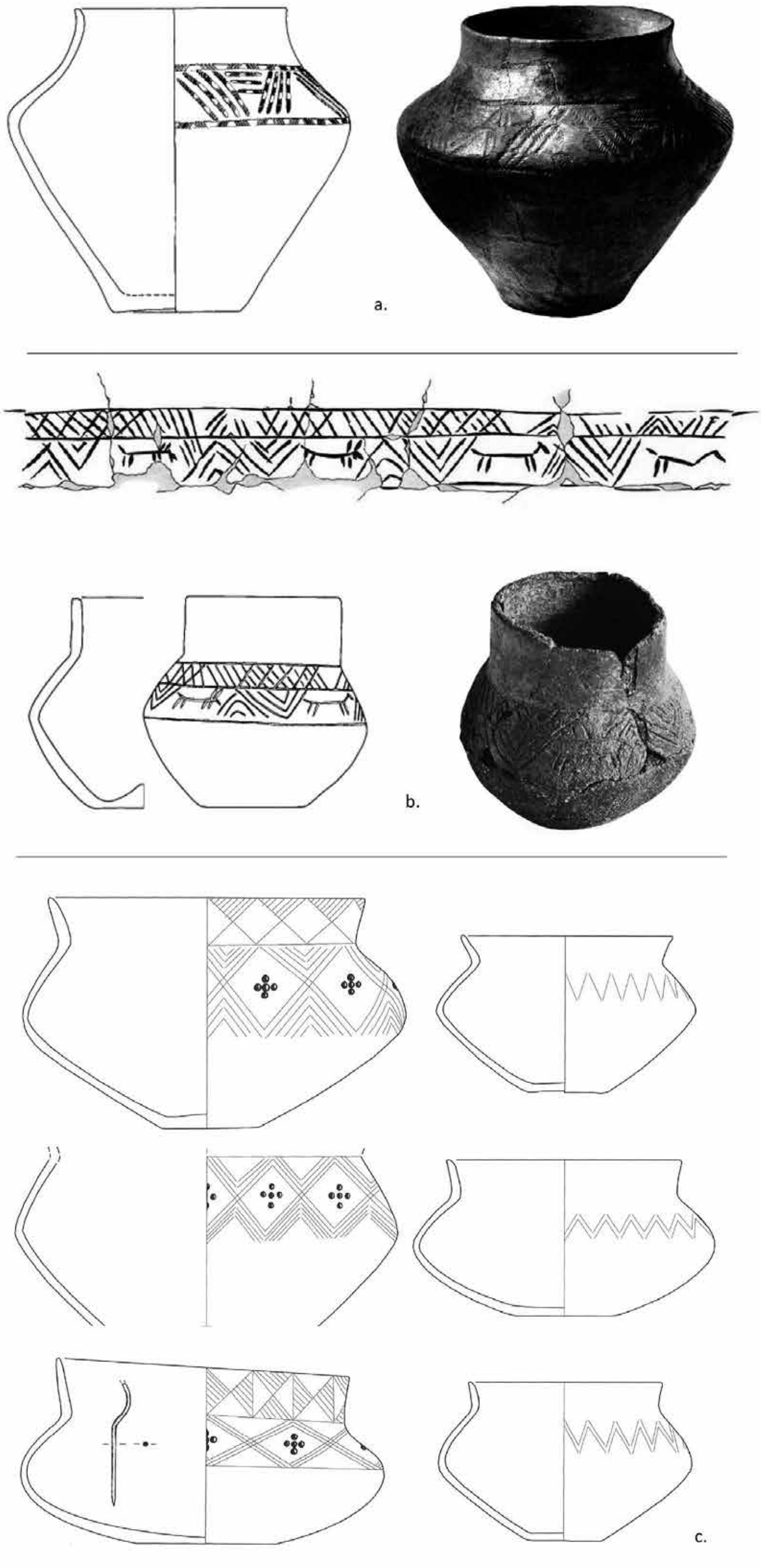
5.2.4.3 Funerary pottery or ordinary cooking pots?

It is beyond the scope of the present research to make an extensive comparison between the pottery retrieved from cemeteries and the pottery found in contemporary settlement sites. An additional difficulty lies in the fact that only rarely the accompanying farmsteads to specific cemeteries have been excavated (Louwen 2010, 167). For the present dataset only the cemeteries of Haps-Kamps Veld (Verwers 1972), Someren-Waterdael I (Kortlang 1999), Wijk bij Duurstede-De Horden (Hessing 1989), Zutphen-Looërenk (Fontijn 1996b; Van Beek 2009, 224-226) and Colmschate-'t Bramelt (Hermsen 2007; Van Beek 2009, 176-179) qualify as examples where with a fair amount of certainty some of the associated farmsteads have been found. Another problem is that pottery retrieved from settlements is usually incomplete and heavily fragmented. Nevertheless, the general impression is that the vessels that ended up in cemeteries are not much different from the pottery retrieved from settlements (Hessing/Kooi 2005, 640) or were even selected from the gamut of pottery used on a daily basis in and around the farmhouse (Verlinde 1987, 284).

Slight differences between urns and pottery retrieved from settlement terrains are however occasionally observed for particular cemeteries. For instance, for the Early Iron Age cemetery of Wijk bij Duurstede-De Horden and accompanying settlement it was noted that 'coarse' (Dutch: *besmeten*) surfaces occurred more often in the settlement than in the cemetery (Hessing 1989, 320-321).[57] This observation could indicate that some attention was paid to the refinement of pottery in the selection process. However, the typical *Harpstedt*-urns that often exhibit these rough and coarse surfaces are still abundant in Early Iron Age cemeteries.

Fig. 5.6 (right): Compilation of exceptional decorations in the cemeteries of (a) De Oelemars; H: 25 cm (After: Verlinde 1987, figs. 31:198 and 31a); (b) Losser-De Aust; H: 9 cm (After: Hijszeler 1962, figs. 1 and 2; Verlinde 1987, fig. 5; (c) Beegden (Roymans/Hoogland 1999, fig. 5.

57 25% vs 75%.


a.
b.
c.

As the decoration of the walls and rims of pottery was clearly not only restricted to urns or accessory pottery (Van den Broeke 2005a, fig. 27.8), neither can decoration be used as a marker to distinguish funerary pottery from household pottery. In general the decoration of pottery in the Late Bronze Age and Early Iron Age is restricted to geometrical patterns like incised triangles, horizontal 'collars' of finger- and nail imprints on the rims, necks, shoulders and bellies of vessels and horizontal and vertical fields of finger- and nail imprints in so-called '*Kalenderberg*' pottery (Van den Broeke 2005a, fig. 27.8). We see these different patterns and forms of decoration occur on both household pottery as on urns. Only in exceptional cases does it seem that particular forms of decoration have been reserved for funerary pottery. In the cemetery of Losser-De Aust a little urn or piece of accessory pottery was found on which four stylistic animal figures can be recognised surrounded by the more common incised triangles (Fig. 5.6: b; Hijszeler 1962a; Hijszeler/ Verlinde 1978, 105). So far, this is the only piece of pottery in the Netherlands of a Late Bronze Age/Early Iron Age date showing zoomorphic figures. In the same province, at a site called 'De Oelemars' an urn was found that was decorated with imprints of a bronze bracelet, again in a triangular pattern forming a horizontal frieze on the shoulder of the urn (Fig. 5.6: a; Verlinde 1974, 93; 1987, 67; fig. 31a). Finally, six urns from the cemetery of Beegden should be mentioned with regards to their decoration. Here two pairs of three urns, all *Schräghals*-urns, have been excavated showing very distinct configurations of either zigzag incisions or triangular incisions combined with groups of five dots or so-called '*dellen*' (Fig. 5.6: c; Roymans/Hoogland 1999, fig. 5). One can simply not have made one urn without seeing or knowing of the others, suggesting these vessels were made by the same person or at least group of people (Roymans/Hoogland 1999, 72).

An indication for prior use of urns other than resembling the general household assemblage stems from the work of Verlinde (1987). He had observed that some 10% of the urns retrieved from cemeteries throughout the province of Overijssel showed weathered and damaged surfaces, particularly on their bottom sections. This indicates these vessels had already been used rather intensively before being selected as urns (Verlinde 1987, 284). For the present dataset comparable macroscopic use-wear has been observed for four urns from the cemetery of Geldrop-Genoenhuis (Hissel 2007, 92). Also, some urns in the present dataset showed burn marks[58] or even charred crusts of what presumably concerns burnt food or fat.[59] A logical explanation is that these urns were used as cooking vessels before finally being selected as urns. The question that subsequently comes to mind is *when* did the actual cooking then take place?

5.2.4.4 On the possible other roles of urns

An urn would be no urn without cremated remains. It seems therefore logical to assume an urn entered the mortuary process right after cremation. But what concrete evidence is there to prove the urn was already present at the point of collecting the cremated remains?

58 Urns with (secondary) burn marks: Breda-Steenakker [NL-BR-011]: 'grave 9' [Grave_ID 278] (Berkvens 2004, 161); Noordbarge-Hoge Loo [NL-DR-054], 'grave 85' [Grave_ID 2582] (Kooi 1979, 25); Huissen-Agropark [NL-GL-026]: 'grave S2.27'; 'grave S4.08'; 'grave S4.10' [Grave_ID's 1490; 1493; 1495] (Beckerman 2011, 34); Geldrop-Genoenhuis [NL-BR-004]: 'grave 16' [Grave_ID 906] (Hissel 2007, 92).

59 Urns with charred crusts of presumably food or fat: Steenderen-Steenderdiek [NL-GL-019]: 'grave 9'; 'grave 11' [Grave_ID's 1735; 1736] (Van Straten 2010, 35); Geldrop-Genoenhuis [NL-BR-004]: 'grave 42' [Grave_ID 932] (Hissel 2007, 92).

Fig. 5.7: Photo of a well preserved pelvis in an Early Iron Age grave recently excavated by Leiden University at the barrow alignment of Epe (Central Netherlands). Only seldom is a pelvis found in cremation graves in such a well preserved state since its cancellous structure makes the bone very brittle when burnt. As this example still finds itself in one piece it is likely the pelvis was directly assembled in the urn after cremation. (Photos: Louïse Olerud; courtesy of Dr. Quentin Bourgeois, Leiden University).

As shown in Section 4.4.2.4 the cremated remains in most occasions seem to have entered the urn in an already shuffled and fragmentary state. Also, it has been argued that the time between cremation and interment might as well have taken years (Section 3.2.5). Cremated remains could therefore have been transported to the settlement, or somewhere else for that matter, only to be put in the urn moments before the actual interment. For (urn) graves that contained the remains of multiple individuals this would in fact be a logical sequence of events (Section 4.4.3). In this scenario the urn thus only enters the mortuary process moments for the act of interment.

It is however not set in stone that this scenario applied to all urn graves. On the contrary, urns in which the cremated remains are (1) not shuffled, (2) are still rather intact and (3) show some anatomical order could indicate the cremated remains were indeed collected directly into the urn. As demonstrated by a recent pilot of a multi-layered excavation of the cremated remains inside an urn found at Epe, direct placement of the cremated remains inside the urn right after cremation also forms a plausible scenario (Fig. 5.7).

Whether it was directly after cremation or only moments before interment, both scenario's set out in the above presuppose the urn to only have functioned as an urn. But as the mortuary process can be considered a narrative in which the decedent is gradually transformed to whatever *persona* he or she was envisioned to reflect (*cf*. Fowler 2013), objects too might not simply have been the static entities they appear to be. In this light it is possible that, like the decedent her-/himself, grave goods resurfaced throughout the mortuary process several times and in different capacities. Here we return to the burn marks and charred crusts that have been observed on several urns in the present dataset: were these vessels indeed part of the original kitchen inventory of a farmhouse or is there a possibility that cooking was also part of the mortuary process? As will appear later on, many grave goods bear references to the consumption of food and drink (Section 5.3) while the presence of burnt seeds (Section 4.3.2) and animal bones (Section 5.6) suggest that food offerings like fruits and chunks of meat were already accompanying the decedent on the pyre. Also, accessory pottery like small bowls and eared drinking cups not uncommonly show severe burn marks as well, suggesting these objects too were already present at/on the pyre. An alternative explanation for the presence of burnt animal bones, fruit seeds, drinking cups and pottery dishes is that these reflect the residue of a funeral feast held in the run up to cremation or perhaps during the process of cremation itself (though the smell of burning flesh would certainly not have aroused the appetite…).

The sharing of food and drink somewhere along the mortuary process is one possible occasion where a vessel that was later to be used as urn could turn up. The bronze cauldrons known as *situlae* (Kimmig 1964) that are found in contemporary Hallstatt chieftains' graves (Van der Vaart-Verschoof 2017a, 117-121) are generally ascribed a function of (communal) mixing vessels for strong liquor (Prüssing 1991, 6) which has been confirmed by mead residue on the insides of cauldrons retrieved from Early Iron Age elite graves in Germany (Biel 1985, 129-130; Kimmig 1988, 158; Van der Vaart-Verschoof 2017a, 118). The initial function of these cauldrons seems therefore inextricably linked to social events such as feasts or drinking bouts (*e.g.* Arnold 1999; Diepeveen-Jansen 2001). Yet in the Lower-Rhine-Basin these cauldrons were used as urns. Still, use wear analysis of some examples has shown that before these kettles ended their lifepaths as urns they were also used for what probably was their original purpose (Van der Vaart-Verschoof 2017a, 117). Even though it is difficult to prove archaeologically these cauldrons were also used for mixing (and sharing out) alcoholic beverages *during* the mortuary process itself, what the *situlae* in Early Iron Age elite graves however have in common with the more ordinary pottery vessels in urnfield graves is that they were both initially fabricated for the production or temporarily storing of food and/or liquids before ending their mutual life paths as urns. The possibility that urns too, especially the ones showing burn marks and charred residues of what might have been some form of nourishment, functioned earlier in the mortuary process as cooking pots should therefore also be granted consideration.

5.2.5 Conclusion

The use of urns was clearly not a prerequisite in Late Bronze Age/Early Iron Age funerals (Section 5.2.1). Neither was the use of urns related to either sex or age (Section 5.2.4). Even though there certainly are cemeteries where burial in urn was definitely the norm like at Roermond-Mussenberg, in other cemeteries like Someren-Waterdael I and Den Haag-Hubertustunnel urns are completely absent (see Tab. 5.1). For the vast majority of Late Bronze Age and Early Iron Age cemeteries however, urn graves and urnless graves cooccur (Tab. 5.1). How should this variation in the use of urns be explained?

It has been noted that some cemeteries show remarkably high shares of urn graves while others do not (Section 5.2.1; Tab. 5.1). The use of urns in general could therefore reflect certain local and timebound ideas about how cremated remains should enter the earth. But when cremated remains could also enter the ground without a pottery container, why then use urns in the first place? From a pragmatic standpoint it could be argued that the cremated remains simply had to be transported from 'A' to 'B' in some way as none of the graves in the present dataset were located in the same place as the pyre (Section 4.3.1). There are also clues that some of the urns possibly functioned earlier in the mortuary process as cooking vessels or as the containers of food and drink before finally ending up as the container for the cremated remains (Section 5.2.4). Other urns reflect the intention of shielding the cremated remains from the surrounding earth as they had been carefully sealed off with fitting lids. Yet other urns, like the ones found in the cemetery of Beegden, show very distinct decorations that seem to emphasise a certain relation between the individuals buried in these specific urns (Fig 5.6: c). Even though urns with distinct anthropomorphic features have not been attested for the present dataset, the urn serving as a new skin for the bare bones on the inside surely is another option that should be considered.

In addition, while to our minds an urn might represent a rather distinct category of objects, Late Bronze Age/Early Iron Age people might have considered a textile- or leather cloth as just another means to pack the cremated remains. Also, scattering the cremated remains directly back into the earthly womb that eventually brings forth all life on earth might have been regarded as meaningful an act as keeping the cremated remains together in a new skin and then place it in the earth.

The substantial variation in the ratios between urn graves and urnless graves as observed for the cemeteries in the present dataset remains notable. While the reasons behind the use of urns might indeed have been as diverse as the people and (local) communities who once did the actual burying, utilising an urn as the container for cremated remains was clearly something that made sense to all of them in some way. The fact that cremated remains could also be buried without urn makes this latter observation even more interesting. Since the use of urns was not related to either age or sex (Section 5.2.4), it seems the mortuary process of the Late Bronze- and Early Iron Age offered quite some room for interpretation and the variation in the use of urns reflects local, perhaps even personal ideas about how the narrative of the mortuary process was to be ensued.

5.3 Selection of objects

5.3.1 General figures

Next to the urns there is a whole range of other objects that were intentionally added to urnfield graves. As mentioned, these various objects and their respective treatments conceal stories about their role(s) in the narrative of the mortuary process. Mapping the array of objects that were selected for burial and the way they were treated along the mortuary process is therefore an exercise worthwhile.

Objects other than urns have been collected from 436 graves in the present dataset. This means that overall a share of at least 13.7% of the decedents (436/3,182) was provided with an object in the grave. Sixteen of these graves in fact concern inhumation graves. When redoing the math separately for these conceptually rather different ways of treatment of the corpse it shows that inhumed individuals (16/44 = 36.4%)[60] were likelier to be provided

60 After leaving out the one inhumation grave that probably dates to the Late Medieval- or Modern Era (Section 4.2.1).

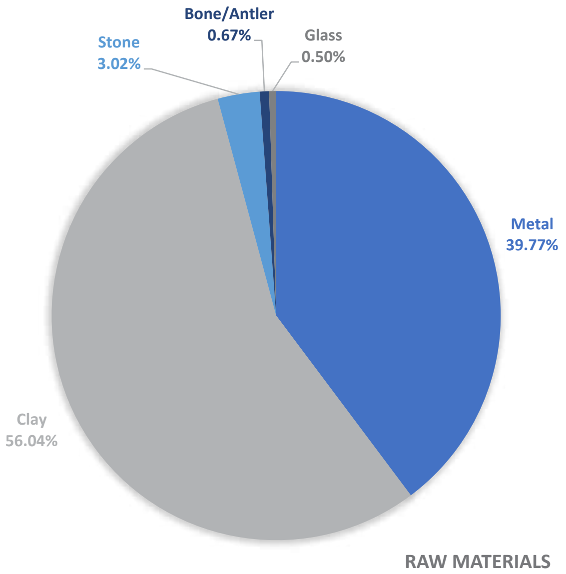


Fig. 5.8: Raw materials used to fabricate the objects retrieved from the graves in the present dataset. N total = 596.

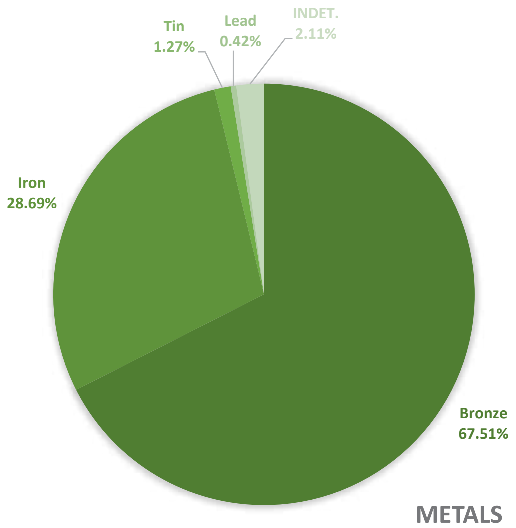


Fig. 5.9: Subdivision of the raw material 'metal' into different kinds of metal used to fabricate the metal objects retrieved from the graves in the present dataset. N total = 237.

with objects in the grave than cremated individuals (422/3,137 = 13.5%). A slight bias might exist in favour of inhumation graves as in these graves objects did not have to go through the destructive process of cremation.

When looking at the number of objects per grave, 342 graves contained one object, 62 graves had two objects, 19 examples produced three objects and in 13 graves more than three objects had been deposited. In total 561 Object-ID's have been distributed that together represent at least 596 individual objects. It should be noted though, that especially for a fair share of metal objects it proved impossible to determine which original object the lumps of metal once represented, let alone their original number.

The raw materials used to fabricate the different objects have also been recorded. Even though strictly speaking metal and glass are not raw materials it was still decided to use these categories as they both concern very distinct materials that after their intensive production processes hardly betray their mineral roots. Clay is the best represented raw material (334 objects) followed by the metals (237 objects). Stone (18 objects), bone and antler (4 objects) and glass (3 objects) only make up modest shares (Fig. 5.8). The alloy *bronze* is by far the best represented material among the metal objects (160 examples), followed by *iron* (68 objects). Additionally, three *tin* objects and one made of *lead* have been recorded (Fig. 5.9). *Amber* is best represented among the small group of stone objects (4/11). *Tephrite, jet, lignite* and *lydite* are all represented only one time. Some objects concern artefacts composed of multiple raw materials. These objects have been counted under the raw material forming the main constituent. It must be mentioned here that a fair share of grave goods fabricated of more perishable materials like textiles, leather, wood, worked bone and all sorts of food and drink are probably missing. It only are the more resilient materials like stone and baked clay that made it to our era. As the fragile state of many a metal object in the present dataset shows, we cannot even assume that all of the metal objects that once entered the grave survived the more than two millennia they had to spend in the ground before being uncovered by archaeologists.

The share of graves containing an object other than an urn varies considerably per cemetery (Tab. 5.4). Nevertheless, even for the cemetery (Maastricht-Vroendaal) that produced the highest share of graves containing an object (46.67%) still not even half the decedents were provided with one. Like the use of urns, the provision of objects in the grave clearly was not deemed a prerequisite.

As Table 5.4 also shows, metal objects are far better represented in the south of the country. North of the river Rhine (Regions A-C) the share of graves containing a metal object rarely exceeds the boundary of 10% (Tab. 5.4). In fact, in many of these northern cemeteries no metals have been found at all and even in thoroughly excavated large cemeteries like Noordbarge-Hoge Loo (Kooi 1979; Arnoldussen/Albers 2015) only 3 out of 345 graves produced a metal object (0.87% of the entire grave population). This picture slightly changes as soon as the old river Rhine is crossed in southern direction. Still the shares of graves that produced metal objects do not skyrocket, but percentages between 10 and 20% are not uncommon. For the cemetery of Roermond-Mussenberg even a share of 21.62% was recorded (Tab 5.4). More to the south the share of graves containing a metal object seems to slightly decrease again (compare regions H and G in Tab. 5.4). Possibly the confluence of the major rivers Rhine and Meuse played some role in the access to metal objects.

				Graves with objects		Graves with metal objects	
Reg.	**Cemetery**	**Period in use**	**N graves**	**N**	**%**	**N**	**%**
A.	Gasteren	MBA-MIA	92	22	23.91	7	7.61
A.	Noordbarge-Hoge Loo	MBA-MIA	345	25	7.25	3	0.87
A.	Buinen-Hoornse Veld	LBA – EIA	53	2	3.77	0	0.00
A.	Drouwen	LBA – EIA	96	20	20.83	4	4.17
A.	Wapse	LBA – EIA	164	11	6.71	1	0.61
A.	Sleen	LBA – EIA	115	10	8.70	1	0.87
B.	Mariënberg	LBA	32	12	37.50	1	3.13
B.	Varsen	LBA	11	1	9.09	0	0.00
B.	Noord Elsen	LBA	96	9	9.38	0	0.00
B.	De Tij	LBA	30	4	13.33	1	3.33
B.	Oldenzaal-De Zandhorst	LBA	20	5	25.00	0	0.00
B.	Haarle	LBA	29	3	10.34	0	0.00
B.	Borne-Veldkamp/Schild Es	LBA	20	1	5.00	0	0.00
B.	Hulsen	LBA/EIA	10	2	20.00	0	0.00
B.	Stokkum I and II	LBA/EIA	32	7	21.88	0	0.00
B.	Losser-De Aust	LBA-MIA	34	2	5.88	0	0.00
B.	Rossum-Oranjestraat	LBA-MIA	88	14	15.91	0	0.00
B.	Elsen-Friezenberg	EIA	32	4	12.50	4	12.50
C.	Epse-Waterdijk II	LBA	14	1	7.14	0	0.00
C.	Colmschate – Kloosterlanden	LBA-ROM	14	1	7.14	0	0.00
C.	Colmschate-Banekaterveld	LBA/EIA	24	0	0.00	0	0.00
C.	Steenderen-Steenderdiek	EIA	15	1	6.67	1	6.67
C.	Epse-Olthof Noord	EIA	22	4	18.18	4	18.18
C.	Colmschate-'t Bramelt	EIA	94	5	5.32	0	0.00
C.	Zutphen-Looërenk (Meijerink)	EIA-MIA	27	2	7.41	1	3.70
D.	Nijmegen-Kops Plateau	MBA-MIA	48	9	18.75	7	14.58
D.	Lent-Smiltjesland	LBA	12	0	0.00	0	0.00
D.	Meteren-De Plantage	LBA-MIA	46	7	15.22	6	13.04
D.	Huissen-Agropark	EIA	11	2	18.18	2	18.18
D.	Wijk bij Duurstede-De Horden	EIA	87	10	11.49	5	5.75
D.	Lent-Lentseveld	EIA	12	2	16.67	2	16.67
D.	Ewijk-Keizershoeve II	EIA-MIA	18	1	5.56	1	5.56
D.	Groesbeek-Hüsenhoff	EIA-MIA	27	3	11.11	3	11.11
D.	Lent-Steltsestraat	EIA-MIA	33	3	9.09	3	9.09
E.	Den Haag-Hubertustunnel	LBA	16	1	6.25	1	6.25
F.	Oosterhout-De Contreie	MBA-ROM	88	6	6.82	3	3.41
F.	Hilvarenbeek-Laag Spul	LBA	71	11	15.49	3	4.23
F.	Zundert-Mencia Sandrode	LBA-MIA	31	6	19.35	2	6.45
F.	Breda-Steenakker	LBA-MIA	15	4	26.67	1	6.67
F.	Goirle-Hoogeind	LBA-EIA	26	3	11.54	1	3.85
G.	Haps-Kamps Veld	MBA-MIA	110	16	14.55	7	6.36
G.	Valkenswaard-Het Gegraaf	LBA-EIA	33	10	30.30	2	6.06
G.	Sint Oedenrode-Haagakkers	LBA-MIA	48	9	18.75	6	12.50
G.	Geldrop-Genoenhuis	EIA	52	3	5.77	3	5.77

Tab. 5.4 (continued on right page): Numbers and shares of graves containing objects for individual cemeteries for which more than 10 graves had been published.

				Graves with objects		Graves with metal objects	
Reg.	**Cemetery**	**Period in use**	**N graves**	**N**	**%**	**N**	**%**
G.	Someren-Philips Kampeerterrein	EIA	22	2	9.09	2	9.09
G.	Well-De Hamert	EIA	92	25	27.17	11	11.96
G.	Roermond-Musschenberg	EIA	148	37	25.00	32	21.62
G.	Beegden	EIA	19	1	5.26	1	5.26
G.	Weert-Kampershoek	EIA/MIA	65	2	3.08	0	0.00
G.	Someren-Waterdael III	EIA-MIA	35	2	5.71	2	5.71
G.	Mierlo-Hout-Snippenscheut	EIA-MIA	49	5	10.20	2	4.08
G.	Someren-Waterdael I	EIA-MIA	87	7	8.05	2	2.30
G.	Weert-Laarveld	EIA-LIA	27	7	25.93	5	18.52
H.	Maastricht-Ambyerveld	LBA	89	25	28.09	13	14.61
H.	Maastricht-Vroendaal	LBA/EIA	15	7	46.67	0	0.00
H.	Maastricht-Oosderveld	LBA-EIA	32	4	12.50	0	0.00
H.	Maastricht-Withuisveld	LBA-EIA	19	2	10.53	0	0.00
H.	Sittard-Hoogveld	EIA-LIA	113	23	20.35	8	7.08

Object group	Object purpose	Object type	N Graves	N Objects	% all graves
Accessory pottery	Consumption of food and drink	Tableware	291	327	9.15
Cosmetics	Personal hygiene; Appearance	Razors	7	7	0.22
		Tweezers	6	6	0.19
Cosmetics and clothing	Adornment	Beads and pendants	12	12 (>106)	0.38
		Bracelets and neckrings/torques	22	25	0.69
		Ear-/hairrings	7	21	0.22
		Spirals	3	6	0.09
	Adornment; Fastening pieces of clothing	Buttons and studs	4	4 (33)	0.13
		Fibulae	6	6	0.19
		Belt (-buckles, -hooks,-rings)	7	7	0.22
		Needles and pins	23	23	0.72
Tools	Hammering; Preparation of food	Grinding- and pounding tools	2	2	0.06
	Wood working	Nails	3	3	0.09
	Manufacturing textiles	Spindlewhorls	4	5	0.13
	Sharpening objects	Whetstones	1	1	0.03
Weapons and tools	Fighting; Cutting food	Daggers and knives	4	4	0.13
Weapons	Fighting and hunting	Arrow(head)s and spear(head)s	8	23	0.25
	Fighting	Swords	1	1	0.03
	Protection and hunting (Reference to past?)	Wristguards (Neolithic)	1	1	0.03
Horsegear	Horse riding	Horsegear	1	1	0.03
Diverse	Manifold	Rings	24	>25	0.75
Unknown	Unknown	INDET.	81	>81	2.55

Tab. 5.5: Overview of the different object groups and types of objects as observed for the present dataset.

5.3.2 Categories of objects

The almost 600 objects that have been recorded for the present dataset can roughly be divided into the four main object categories of (1) accessory pottery, (2) cosmetics and clothing, (3) tools and (4) weapons. More than half the objects could be counted under 'accessory pottery,' which is also by far the largest object group. In some 81 cases, practically all lumps of deformed metal, it could no longer be established what object these fragments once represented. The remaining objects show a broad range of especially cosmetics, some toiletries, a few tools and a small amount of rather specific weapons.

5.3.2.1 Accessory pottery

Starting with the largest group of objects, at least 291 graves produced one or more pieces of accessory pottery. In this count, only the objects still recognisable as such have been included. Among the hundreds of graves that only contained pottery sherds (Section 5.7.2) there are probably more pieces represented. The share of graves containing a piece of accessory pottery as presented in Table 5.5 (9.15%) must therefore be considered as the most modest estimation of the share of decedents that were provided with accessory pottery. Clearly accessory pottery formed the most dominant type of object to be put in a grave in the entire study area and throughout the entire period of study. The forms and sizes of the vessels concerned vary considerably but in most occasions they include small bowls, little beakers, eared cups and little basins (Fig. 5.10: a-c) some of the latter category with feet. Occasionally an accessory vessel resembles the form of the urn it was found in. Sometimes exceptional forms occur as well like the spoon-like object found in the cemetery of Zundert-Mencia (Krist 2005, 42) and the two bowls with drilled holes from Lent-Zuiderveld/Ressen and Wijk bij Duurstede-De Horden that most logically functioned as sieves (Ball/Daniël 2010, 138; Hessing 1989, 321). For the cemetery of De Horden, it was suggested that the sieve was used for the collection of the cremated remains from the pyre-debris (Hessing 1989, 321). Pottery with drilled holes can also be connected to the production of cheese as the residues of milk fats found on some very early examples in Poland have shown (Salque *et al.* 2013). Neither examples from the present dataset have been tested for residues, nor have any of the other 325 examples of accessory pottery. Notwithstanding, the sizes and shapes of the different vessels suggest that most of the accessory pottery found in Late Bronze Age and Early Iron Age cremation graves was is in some way related to the consumption of food and drink. Especially the one-eared cups known as *Henkeltassen* or *Henkelbecher* (Verlinde 1987, 308) suspect an original function of drinking cups. Other functions, or references for that matter, must however still be considered. As an example, for the typical small basins that go by the name of *Eierbecher* (Tackenberg 1934) a function of oil lamps has been considered as one of its original purposes (Perizonius 1976, 90).

5.3.2.2 Cosmetics and clothing

The second group of objects includes all objects that are somehow related to (personal) adornment and appearance. In relation to cremation graves this is in fact a rather peculiar group of objects as there clearly was no longer a body to adorn with these trinkets. Yet still the group of cosmetics and clothing forms the second largest group of objects represented among the different graves and, as will appear from the following, consists of a broad variety of jewellery, toiletries and pieces of garment.

Razors

In total seven razors have been recorded. Six of them have been retrieved from cemeteries in the north of the country (provinces of Drenthe and Overijssel) while the seventh example, ranked among the so-called '*Zweischneidige Rasiermesser mit Rahmengriff und X-förmiger Griffverstrebung*' (Jockenhövel 1971, 105), has been found at Maastricht-Ambyerveld (Fig. 5.11: e), one of the southernmost cemeteries in the present day Netherlands (Dyselinck 2013, 96-97). Six razors had been made of bronze, one is made of iron. The iron example from the cemetery of Noordbarge-Hoge Loo can be dated to the Early Iron Age on basis of the *Harpstedt*-urn it was found in. The cremated remains associated with the razor of Maastricht-Ambyerveld have been radiocarbon dated to the latest phase of the Late Bronze Age[61] which seems to confirm its typo-chronological date in the ninth century BC (Dyselinck/Warmenbol 2012, 60; Jockenhövel 1971). The earliest example in the present dataset comes from an inhumation grave in the oldest section of the Gasteren urnfield where it was found associated with a long mound of the '*Vledder*-type' which dates to the latest phase of the Middle Bronze Age and early phase of the Late Bronze Age (Fig. 6.12).

Even though most of the seven razors are heavily damaged and corroded it is still apparent they represent a broad range of forms and types. Two-edged razors have been found at Gasteren and Maastricht-Ambyerveld. The iron example from Noordbarge-Hoge Loo is trapezium-shaped and slightly curved (Kooi 1979, 18; fig. 32, no. 484b). The remaining four all seem to concern one-edged examples.

Four razors have been found in urns, the other three were collected from urnless burials. The example from Maastricht-Ambyerveld is part of a grave set that apart from the razor itself consisted of a piece of accessory pottery and a bronze socketed knife. The *Harpstedt*-urn from Noordbarge-Hoge Loo in which the iron razor was found also contained a piece of accessory pottery. Finally, two razors were found associated with bronze tweezers which also brings us to the next category of objects.

Tweezers

At least five tweezers have been recorded for the present dataset. Only one of them has been found in an urn. Four are made of bronze and one example from Weert-Laarveld was made of iron. Again, most examples have been retrieved from cemeteries in the very north of the country. Only one example comes from the south of the country. All of the four bronze tweezers have broadened beaks (Fig. 5.10: d) while the one iron example is rather slim and only slightly trapezoid towards the beak. One bronze example was found in the same inhumation grave in the cemetery of Gasteren as the bronze razor mentioned earlier (Van Giffen 1945, figs. 14 and 15A: c) and dates to the transition of the Middle Bronze Age to the Late Bronze Age. Another pair comes from the same *Terrine* as one of the bronze razors found in the Drouwen cemetery for which Kooi has argued a typo-chronological date in the ninth or eighth century BC (Kooi 1979, 95-96). The iron example from Weert-Laarveld is the only pair of tweezers in the present dataset for which the associated cremated remains have been radiocarbon dated[62] and must be placed somewhere in the fourth or third century BC accordingly (Tol 2009, 103).

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61 [NL-LI-006; Grave_ID 195]: Labcode LTL8423A: 2734 +/- 45 BP; 990-807 cal. BC (95,4 %) (Dyselinck 2013, 136).

62 [NL-LI-017; Grave_ID 544]: Labcode Poz-25928: 2285 +/- 35 BP: 406-210 cal. BC (95,4 %) (Tol 2009, 103).

Beads and pendants

Beads and pendants were collected from graves all over the Netherlands but most of them have been found south of the province of Overijssel. The two northernmost examples concern a conical bronze bead from Epse-Olthof Noord (Hermsen/Van der Wal 2012, 67) and a bronze pendant consisting of three adjoining rings from Gasteren (Van Giffen 1945, 119). Beads and pendants were retrieved from urns as well as from graves without an urn and can be found throughout the entire period of study. Nine graves produced one or more beads while four contained pendants. In the cemetery of Maastricht- Ambyerveld one grave contained both respective types of objects.

In total four pendants and 102 beads have been recorded for the present dataset. 77 of the latter category were found in one single grave in the cemetery of Zutphen-Looërenk/Meijerink (Van Straten/Fermin 2012, 68-72). Beads and pendants have been combined into one group of objects as they both would have been worn as personal adornment, whether or not in composite necklaces, bracelets or earrings. As an example, four of the five glass beads found in a grave at Haps were still attached to a fragment of bronze wire (Verwers 1972, 62).

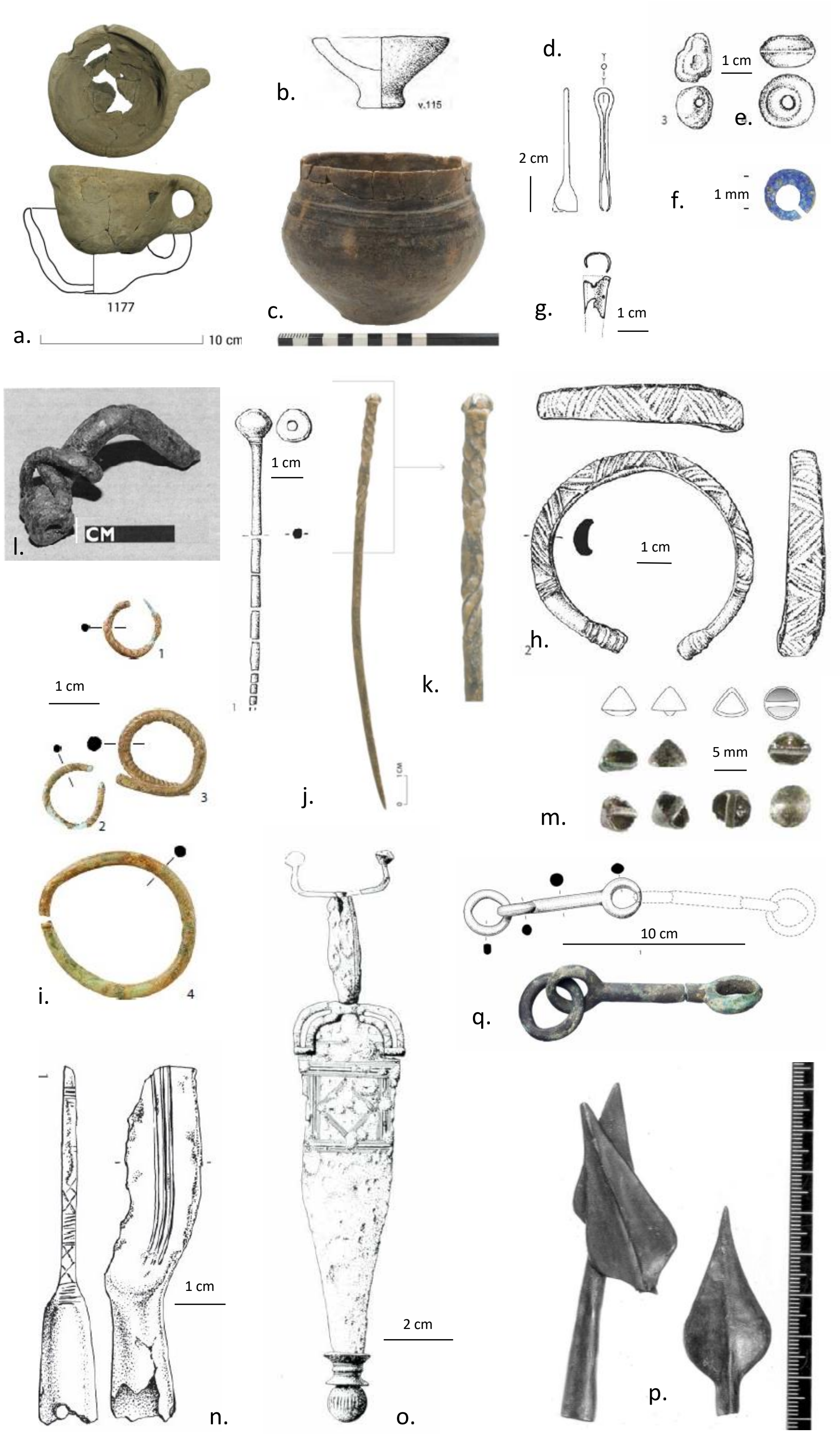
A variety of raw materials has been used to fabricate the beads recorded in the present dataset: 82 have been made of (cobalt) blue glass (three graves), 13 concern pottery beads (two graves),[63] four were made of amber (two graves), two of tin (two graves) and one concerns the already mentioned bronze example. As for the pendants, three were made of bronze and one of bone.

With regards to the beads, round and conic shapes make up the vast majority of shapes and often these little trinkets measure no more than one centimetre in diameter (Fig. 5.10: e), sometimes just over one millimetre (Fig. 5.10: f). One of the amber beads from the cemetery of Maastricht-Ambyerveld has an elongated shape and was drilled right through its longest axis (Fig. 5.11: c). A pottery bead from the same cemetery is somewhat flat and has been drilled along the longest axis too.

Next to the 76 round glass beads, fragments of a spiral-shaped tin bead were found in the one grave from Zutphen-Looërenk/Meijerink. The glass beads from this grave have been thoroughly analysed (Van Straten/Fermin 2012, 68-72) and provide some insight in the provenance of glass beads in the Lower-Rhine-Basin. To start with the typo-chronological

Fig. 5.10 (right): Compilation of objects selected for burial. The objects are derivative from the following cemeteries: (a) Oosterhout-De Contreie (Roessingh *et al.* 2012, fig. 5.34:1177); (b) Twello-De Schaker (Meurkens 2014, fig. 9.15; No scale available); (c) Rossum-Oranjestraat (Ufkes 2008, fig. 3.17); (d) Oldenzaal-De Tij (Verlinde 1987, fig 41:265); (e) Maastricht-Ambyerveld (Dyselinck 2013, fig. 3.27:3/4); (f) Maastricht-Ambyerveld (Dyselinck 2013, fig. 3.30); (g) Maastricht-Ambyerveld (Dyselinck 2013, fig. 3.28:4); (h) Maastricht-Ambyerveld (Dyselinck 2013, fig. 3.27:2); (i) Lent-Lentseveld (Van den Broeke *et al.* 2011, fig. 4.7); (j) Maastricht-Ambyerveld (Dyselinck 2013, fig. 3.29:1); (k) Geldrop-Genoenhuis (Hissel 2007, fig. 7.16); (l) Epse-Olthof Noord (Hermsen/Van der Wal 2012, fig. 4.8); (m) Zutphen-Looërenk/Meierink (Van Straten/Fermin 2012, fig. 64); (n) Maastricht-Ambyerveld (Dyselinck 2013, fig. 3.26:1); (o) Haps-Kamps Veld (Verwers 1972, fig. 31); (p) Someren-Waterdael I (Kortlang 1999, fig. 13); (q) Lent-Zuiderveld-Ressen (Van den Broeke *et al.* 2010, fig 12.26)

63 An hourglass shaped pottery bead or pendant from 'Graf 1' [Grave_ID 1475] from the cemetery of Lent-Zuiderveld [NL-GL-038] has mistakenly been overlooked in the data entry process and has thus not been counted under the objects.


a.
1177
10 cm
b.
v.115
c.
d.
2 cm
e.
1 cm
f.
1 mm
g.
1 cm
l.
CM
j.
1 cm
k.
h.
1 cm
1 cm
i.
m.
5 mm
q.
10 cm
n.
1 cm
o.
2 cm
p.

markers, four of the 76 glass beads are somewhat bigger (6-11 mm in diameter) than the rest (4,9 – 8 mm in diameter). These bigger beads concern so-called *'Ringaugenperlen'* (Haevernick 1987) that originally would have been adorned with white or yellow ring-shaped decorations, hence their typological denomination (Literal English translation: 'ring-eyed-pearls'). Due to their burnt state (Fig. 5.11: d) these decorations were no longer present. *'Ringaugenperlen'* are especially known for the Mediterranean area where they are dated to the ninth- to seventh century BC (Van Straten/Fermin 2012, 69) which corresponds with the radiocarbon date obtained for the cremated remains in this particular grave.[64] So far, these are the only examples of *'Ringaugenperlen'* in the Netherlands (*ibid*., 69; Van der Vaart-Verschoof 2017b, 143). XRF-analysis of a sample of the remaining 72 smaller glass beads has shown that the original glass used to produce these beads also originated from the Mediterranean area. However, the original objects would have been molten again and, judging from a varying degree of substances that were added to the melt like lead, tin, antimony and copper, had been reworked in different patches into the glass beads found in the grave at Zutphen (Van Straten/Fermin 2012, 79-80). Whether or not these beads were produced locally is difficult to tell. It has been suggested the many bubbles of gas and the inclusion of various minerals in the glass paste are an indication of amateurs or novices involved in the production process (Van Straten/Fermin 2012, 79) which could be used as an argument for the local thesis. Whatever might have been the case, it is very well possible that the different glass and tin beads found in this grave were once part of single composite necklace (*e.g.* Van Straten/Fermin 2012, fig. 72; Sprockhoff 1956, fig. 44).

Finally, two bronze conical pendants are worth mentioning. Fontijn has already mapped this particular form of pendant once and noted that they predominantly occur in Early Iron Age graves in the modern Kempen area (Fontijn 2002, 200). It is suggested these might concern locally specific dress items (*ibid*., 200). Fontijn already mentions the one example from Roermond-Mussenberg as an outlier (Fontijn 2002, 200) of this particular dress item. The present study widens the area even further south with an example from the cemetery of Maastricht-Ambyerveld (Dyselinck 2013, 103) that also dates slightly earlier than the Early Iron Age (Fig. 5.10: g). A possible third example comes from the cemetery of Wijk bij Duurstede-De Horden where a fragment of rolled up sheet bronze of comparable size was collected from a grave (Hessing 1989, 321). Outside the present dataset another example was recently republished that was retrieved from an *Harpstedt*-urn found before 1933 at Ede-Bennekom (Verlinde/Hulst 2010, 59-60). It would be interesting to submit the cremated remains associated with these typical conical shaped pendants to strontium-isotope analysis to test the thesis put forward by Fontijn about these objects being locally specific dress items (Fontijn 2002, 200).

Bracelets and neck rings

Bracelets and neck rings were found in at least 22 graves. Three graves contained multiple examples, bringing the total for this category of objects up to 25. Bracelets and neck rings had initially been combined into one category since it is not always possible to distinguish between the two types of objects. In the end only one example, a so-called *'Wendelring'* made of bronze from the cemetery of Haps-Kamps Veld (Verwers 1972, 54; fig. 29), qualified as neck ring or torque. The other 24 examples most probably all concern bracelets. 21 bracelets were made

64 [NL-GL-056; Grave_ID 1754]: Labcode GrN-49737: 2570 +/- 35 BP: 811-551 cal. BC (95,4%) (Van Straten/Fermin 2012, 91).

of bronze, two of iron and one was made of stone, more specifically *lignite* (Eeltink/Smits 2007, 41). Bracelets have been recorded for cemeteries all over the present day Netherlands and for the entire period of study. One bracelet still found itself on the wrist (Fig. 6.15: c) of an inhumed individual (Meta) at Meteren-De Plantage (Jezeer/Verniers 2012, 82; fig. 6.11). The others were all found in cremation graves, both in urns as well as in urnless graves.

For three bracelets coming from two different graves in the cemetery of Maastricht-Ambyerveld the associated cremated remains had been radiocarbon dated. These are probably also the eldest examples in the present dataset as the cremated remains in both graves produced dates between the fourteenth and tenth century BC.[65] One of the graves at Maastricht-Ambyerveld contained three fragments of an *'omega bracelet'* with ribs (Dyselinck 2013, 97-98; fig. 3.28: 1) while the second grave lodged a complete *bracelet à tampons* (*ibid.*, 98; fig. 3.27: 1) and a *'Ring mit gegossener Flechtbandverzierung'* (*ibid.*, 98; fig. 3.27: 1; Paszthory 1985, fig. 77; Fig. 5.10: h).

For two other bronze bracelets the associated human remains have been radiocarbon dated to the Early Iron Age and beginning of the Middle Iron Age.[66] The first example concerns the already mentioned bracelet with round profile found on the wrist of Meta. This particular bracelet had been decorated with stripes running across the outside of the bracelet (Jezeer/Verniers 2012, 85; fig. 6.15). The second example concerns a fragment of a bronze bracelet found in an urn in the cemetery of Geldrop-Genoenhuis (Hissel 2007, 100).

Two well preserved and almost complete bronze bracelets have been found in an urn in the cemetery of Noordbarge-Hoge Loo. One concerns a plain example made of thick bronze wire that was bent into shape (Kooi 1979, 17; fig. 27: 252). The other has a flat D-shaped profile an tapers a bit towards the ends (Kooi 1979, 17; fig. 27: 252). Most of the remaining metal bracelets are only represented by smaller fragments, some of which showing the typical twisted profiles of *'Wendelringen'* like the earlier mentioned neck ring found in the cemetery of Haps (Verwers 1972, 54; fig. 29). The two fragments of a bracelet with a broad and flat cross-section found in an urn in the cemetery of Well-De Hamert are most probably derivative of omega bracelets (Holwerda 1914, 8; fig. 24).

The two iron examples are in too bad a condition to make any definitive statements as to their original appearance. It is even unsure whether these objects concerned bracelets or neck rings in the first place. With regards to their diameters, respectively 6.5 centimetres and 10 centimetres an original function as bracelets or neck rings seems however plausible. The example from Sittard-Hoogveld was found associated with the bronze *cista* (Section 5.2.3) and exists of three heavily corroded pieces of curved iron forming a ring of some 6.5 centimetres in diameter (Tol 2000, 109; fig. 4.14: 32c). The second example was found in the cemetery of Haps-Kamps Veld and concerns an iron ring that measures some 10 centimetres in diameter (Verwers 1972, 161). An iron ring with the same diameter was found in an inhumation grave at Lent-Lentseveld where it was laying at the height of the waist of an adult female (Van den Broeke/Daniël 2011, fig 4.5). Its function has been thoroughly discussed and options put forward range from a belt ring of

65 [NL-LI-006; Grave_ID 210]: Labcode LTL8405A: 2901 +/- 45 BP: 1221-940 cal. BC (95,4%) (Dyselinck 2013, 136); [NL-LI-006; Grave_ID 223]: Labcode LTL8411A: 2989 +/- 55 BP: 1396-1050 cal. BC (95,4%) (Dyselinck 2013, 136).

66 [NL-GL-022; Grave_ID 1642]: Labcode SUERC-37117/GU-25444: 2470 +/- 30 BP: 768-431 cal. BC (95,4%) (Jezier/Verniers 2012, appendix 6); [NL-BR-004; Grave_ID 917]: Labcode Poz-12962: 2570 +/- 35 BP: 811 – 551 cal. BC (95,4%) (Hissel *et al.* 2007, 317).

sorts to a clasp (Van den Broeke/Daniël 2011, 42). Perhaps the functions of the iron rings from Haps-Kamps Veld and Sittard-Hoogveld must be sought in the same direction.

Finally, the stone bracelet from the cemetery of Rossum-Oranjestraat is worth mentioning here as these kind of bracelets only rarely occur in the Netherlands. Examples have been found in Goirle (Bink 2005, 62) and Sint Maartensdijk (Van Heeringen 1986) where they were not associated with cremated remains. The closest natural sources of *lignite*, the sort of stone used to fabricate the bracelet, are located in South Limburg (the Netherlands), South Belgium and the brown coal area between Mönchengladbach and Aachen in Germany (Bink 2005, 62), which means that the raw material or the bracelet itself travelled between 150 and 200 kilometres before ending up in a grave at Rossum.

Ear- and hair rings

Earrings and hair rings have most frequently been found in inhumation graves. Only in one occasion, a gilded bronze hair-ring from Maastricht-Ambyerveld (Dyselinck 2013, 100-101; fig. 3.27: 6), had the decedent been cremated. The dominance of inhumed individuals associated with ear- and hair rings most probably concerns a bias. In inhumation graves the position of these trinkets in relation to the body easily betrays their original function (see Fig. 6.15) whereas for cremation graves the function of these often fragile and composite objects is much more difficult to assess. It is very well possible that some of the beads and little rings that are occasionally found in cremation graves once were part of earrings too.

Seven little rings that were cut from sheet bronze had each been laced through amber beads and adorned the head of an adult female in the cemetery of Meteren-De Plantage (Fig. 6.15: c; Drenth/Langelaar 2012, 84; fig. 6.13). The rings could have been worn as hair rings as well as earrings. The refined clasps cut out of the original sheet bronze however plea for a function of earrings over hair rings as the latter would not have required such delicate technicalities. In fact, the little clasps in these rings even resemble the clasps in some modern earrings (Drenth/Langelaar 2012, 85). A heavily corroded and tiny bead, presumably also made of amber, was found attached to a piece of fine bronze wire in an inhumation grave at Meteren-De Bogen (Meijlink/Kranendonk 2002, 211). As this object was also found near the skull it possibly concerns the same kind of earring as the seven examples from the near site of Meteren-De Plantage.

Bronze rings of various sizes and shapes were found on- or directly next to the skulls in four inhumation graves in different cemeteries in the present day village of Lent (Fig. 5.10: i) and are likely to have been worn as earrings or in braids as was suggested for the individual who was christened '*Man van Lent*' (Van den Broeke 2002b, 22).

For all seven graves containing ear- or hair rings radiocarbon dates are available. The inhumed individuals all six date to the Early Iron Age or the beginning of the Middle Iron Age[67] whereas the cremated individual from Maastricht-Ambyerveld has been dated to

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67 Meteren-De Plantage [NL-GL-022; Grave_ID 1642]: Labcode SUERC-37117/GU-25444: 2470 +/- 30 BP: 768-431 cal. BC (95,4%) (Jezier/Verniers 2012, appendix 6); Lent-Lentseveld [NL-GL-036; Grave_ID 1434]: Labcode GrA-47271: 2425 +/- 40 BP: 752-402 cal. BC (95,4%) (Van den Broeke *et al.* 2011, 31); Lent-Steltsestraat [NL-GL-037; Grave_ID 1442]: Labcode GrA-18410: 2540 +/- 35 BP: 801 – 543 cal. BC (95,4%) (Lanting/Van der Plicht 2003, 227); Lent-Steltsestraat [NL-GL-037; Grave_ID 1443]: Labcode GrA-18408: 2490 +/- 35 BP: 788-486 cal. BC (95,4%) (Lanting/Van der Plicht 2003, 227); Meteren-De Bogen [NL-GL-060; Grave_ID 1485]: 1.) Labcode GrA-16517: 2300 +/- 50 BP: 488-204 cal. BC (95,4%)/ 2.) Labcode GrA-16055: 2360 +/- 50 BP: 750-258 cal. BC (95,4%); 570-358 cal. BC (82,2%) (Lanting/Van der Plicht 2005, 349); Lent-Laauwikstraat-Zuid [NL-GL-064; Grave_ID 1406]: Labcode GrA-11992: 2350 +/- 50 BP: 746-232 cal. BC (95,4%); 554-355 cal. BC (82,6%) (Lanting/Van der Plicht 2005, 349).

an early phase of the Late Bronze Age.[68] Even though for the present dataset ear- and hair rings have only been found in cemeteries south of the river Rhine, earrings also occasionally occur in graves in the north of the country (*e.g.* Kooi 1979, 148).

Spirals

Spiral shaped objects have only been found in two cemeteries. In an urn in the cemetery of Gasteren, that also contained a delicate dress pin, a little spiral shaped ring was found. Judging from the drawing in the original publication (Van Giffen 1945, fig. 15: 54c) it could also concern a spiral shaped bead like the one that was found in the cemetery of Zutphen-Looërenk/Meierink (see beads and pendants).

Two urns in the cemetery of Roermond-Mussenberg contained multiple fragments of spiral shaped objects. In both cases they concern bronze wires that have been curled up into flat spirals (Schabbink/Tol 2000, 41), known as *'Brillspiralen'* (Fontijn 2002, 199). Possibly they served as brooches or belt ornaments (Fontijn 2002, 199; *cf.* Verlaeckt 1996, 28).

Needles and pins

Together with the bracelets and neck rings, needles and pins form the largest group of objects within the category of cosmetics and clothing. Some 23 pins and needles have been recorded (Tab. 5.5). A difficulty with this category of objects is that needles and pins occur in different capacities and probably also fulfilled different purposes. Most would have concerned elegant cloak- or dress pins that functioned both for fastening pieces of clothing as well as personal adornment while others were used as hair pins, tattoo needles or as burins for the engraving of metal (Heynowski 2014). In addition, the fragmentary and corroded state of many a stave-like object in Late Bronze Age/Early Iron Age cremation graves often hampers an accurate assessment of the original function.

Notwithstanding, some fine examples of dress- or hair pins have been recorded for the present dataset. Starting with the Late Bronze Age, in the cemetery of Den Haag-Hubertustunnel a bronze pin was found with an only slightly pronounced flat head and decoration of zigzag lines alternated with horizontal lines (Fig. 5.11: f). A pin like the one found at Den Haag is counted under the *'Nagelkopfnadeln mit massiven, scheibenartigen Kopf'* (Bulten/Opbroek 2014, 60; *cf.* Říhovský 1979, 42-46) or according to Heynowski (2014, 36: 5) *'Nadeln mit horizontalem Kopfabschluss,'* more specifically *'Trompetenkopfnadeln'* (*ibid.*, 89) or *'Nadeln Typ Göggenhofen'* (*ibid.*, 92). The latter two sub types are dated by Heynowski to the period between the fifteenth and twelfth century BC (*resp.* Heynowski 2014, 89; 92) which is more or less concurrent with the radiocarbon date obtained for this particular grave.[69] Another pin with a broad, slightly conical head was found in an urn at Gasteren and would probably be counted under the same family of pins by Heynowski. The head of the pin has been decorated with four concentric lines and with four smaller arches in the innermost circle. The type of urn it was found in, a so-called *Gasteren*-urn, has been dated to the transition of the Middle Bronze Age to the Late Bronze Age (see Fig 5.2). Four additional pins come from the cemetery of Maastricht-Ambyerveld

68 [NL-LI-006; Grave_ID 210]: Labcode LTL8405A: 2901 +/- 45 BP: 1221-940 cal. BC (95,4%) (Dyselinck 2013, 136).

69 [NL-ZH-001; Grave_ID 300]: Labcode GrA-51715: 2930 +/- 35 BP: 1226-1014 cal. BC (95,4%) (Bulten/Opbroek 2014, 62).

and have been dated to an early phase of the Late Bronze Age.[70] Two of them have biconical heads (Dyselinck 2013, 100) while the other two concern subspherical examples with the apt French denomination of *'bulbe d'oignon'* (Dyselinck 2013, 100; Fig. 5.10: j).

Well preserved iron pins come from Geldrop-Genoenhuis and Gasteren. The example from Geldrop-Genoenhuis has a double twisted profile just beneath its only slightly pronounced head (Fig. 5.10: k). Both pins have been collected from *Harpstedt*-urns and can thus be safely dated to the Early Iron Age (see Fig. 5.2). A bronze *'Bombenkopfnadel'* was found in the same urn as the 76 glass beads in the cemetery of Zutphen-Looërenk/Meierink. The associated cremated remains have been radiocarbon dated to the Early Iron Age.[71] It has been suggested that the relatively high percentage of tin in the alloy of this particular needle provided this trinket with an even shinier appearance (Van Straten/Fermin 2012, 63). At Lent-Zuiderveld a heavily corroded bronze pin was found lying next to the waist of the only inhumed individual associated with this category of objects (Fig. 6.15b). This grave too was radiocarbon dated to the Early Iron Age and the beginning of the Middle Iron Age. Typical iron *'Kropfnadeln'* with their distinct dent have been found at Haps-Kamps Veld, Wijk bij Duurstede-De Horden and possibly at Beegden.

The remaining pins and needles have all been less well preserved or have not been published with an additional drawing or photograph, making it difficult to assess their characteristics, let alone their original functions. Nevertheless, especially the pins and needles used as dress- and hair pins occurred throughout the entire period of study and display a variation in characteristics that is probably as broad as the characters that once wore them. However, it seems that from the Early Iron Age onwards, the ones used for fastening cloaks get some competition from the next category of objects: *fibulae*.

Fibulae

Fibulae have been found in six graves. The eldest two examples have been collected from typical Early Iron Age urns. A *Harpstedt*-urn in the cemetery of Well-De Hamert produced fragments of what Holwerda describes as *"…die winzigen Bronzefragmente möglich einer Fibula…"* (Holwerda 1914, 11). As Holwerda does not seem entirely confident in his description, some caution is needed with this particular example. About the second fibula there needs to be no doubt as the bigger part of a *'draadfibula'* (English: 'wire' fibula) was found in a *Schräghals*-urn in the cemetery of Epse-Olthof Noord (Fig. 5.10: l).

The four remaining fibulae have been found in two different cemeteries in the province of Limburg and all four date to the period between the Middle Iron Age and the beginning of the Late Iron Age. The associated cremated remains of one example in the cemetery of Weert-Laarveld have been radiocarbon dated to the fourth to second century BC.[72] The two well-preserved *'spiraalfibulae'* (English: 'spiral' fibulae) from the cemetery of Sittard-Hoogveld can both be attributed to the same period on basis of radiocarbon dates of

70 [NL-LI-006; Grave_ID 173]: Labcode LTL8413A: 2845 +/- 50 BP: 1194-896 cal. BC (95,4%); [NL-LI-006; Grave_ID 209]: Labcode LTL8404A: 2930 +/- 50 BP: 1279-980 cal. BC (95,4%); [NL-LI-006; Grave_ID 235]: Labcode LTL8433A: 2893 +/- 45 BP: 1215-936 cal. BC (95,4%) (Dyselinck 2013, 136).

71 [NL-GL-056; Grave_ID 1754]: Labcode GrN-49737: 2570 +/- 35 BP: 811-551 cal. BC (95,4%) (Van Straten/Fermin 2012, 91).

72 [NL-LI-017; Grave_ID 541]: Labcode Poz-25886: 2195 +/- 35 BP: 369-174 cal. BC (95,4%) (Tol 2009, 101).

charcoal and cremated remains associated with these finds.[73] The prevailing radiocarbon dates of fibulae in the second half of the Iron Age and the fact that bronze dress pins no longer occur in graves by that time suggest that the younger fibulae indeed seem to concern the successors of dress pins in the development of this category of dress items.

Buttons and studs

Four cremation graves in the present dataset produced buttons or studs. At least 29 little tin studs were collected from the one grave in the cemetery of Zutphen-Looërenk/Meierink that also contained the 76 glass beads and *'Bombenkopfnadel.'* Like with the *'Bombenkopfnadel'* in this grave, the studs displayed very high percentages of tin, some even more than 70%. As argued for the *'Bombenkopfnadel'* this was probably done to provide the studs with a shiny appearance (Van Straten/Fermin 2012, 93). The studs have a conical shape, are some 6 millimetres in diameter and have a hollow core with little bars running across the openings (Fig. 5.10: m). Most probably these studs had originally been sewn onto clothing (Van der Vaart-Verschoof 2017b, 145). A stud of exactly the same size and shape has been collected from an urn in the cemetery of Roermond-Mussenberg (Schabbink/Tol 2000, 41). Next to the 29 studs, a single bronze button with a round, slightly hemispheric shape was collected from the one grave at Zutphen-Looërenk/Meierink. Its diameter is some 12 millimetres and like with the studs, the button is hollow and a bar runs across the opening.

From the cemetery of Maastricht-Ambyerveld comes half a disc-shaped button made of bronze with a little loop attached to its core. The disc itself consists of a relief of concentric ribs and is some 30 millimetres in diameter. The associated cremated remains have been radiocarbon dated to the Late Bronze Age.[74]

Finally, a decorated bone button was found in a grave at Rossum-Oranjestraat. The button or toggle has probably been made of the *radius* of a sheep, is some 30 millimetres in length and 6 millimetres thick (Ufkes 2008, 57). In addition to the natural hollow were once the bone marrow had been, a single hole had been drilled through only one side of the original long bone. The decoration consists of double circumferential incisions on both outer ends and a diagonal cross running over the field in the middle of these circumferential incisions. The associated cremated remains have been dated to the transition from the Middle Bronze Age to the Late Bronze Age.[75] Outside the present dataset, an almost identical button with the same decoration has been found in an urn at Borger-Drouwenerstraat and dates to the same period (Lanting *et al.* 2001, 83).

Belt accessories

The last group of objects for the category of cosmetics and clothing concerns the paraphernalia associated with belts. Like with the fibulae, belt accessories only seem to occur in graves from the Early Iron Age onwards. For the present dataset belt buckles (N = 4) have only been recorded for graves dating to the Middle Iron Age and later. Three of the four iron belt buckles have been collected from graves in the cemetery of Weert-Laarveld. For one example the associated cremated remains have been radiocarbon

73 [NL-LI-387; Grave_ID 884]: Labcode GrA-23444: 2135 +/- 45 BP: 357-46 cal. BC (95,4%); [NL-LI-382; Grave_ID 889]: Labcode GrN-25437: 2220 +/- 35 BP: 381 – 201 cal. BC (95,4%) (Lanting/Van der Plicht 2005, 366).

74 [NL-LI-006; Grave_ID 173]: Labcode LTL8413A: 2845 +/- 50 BP: 1194-896 cal. BC (95,4%) (Dyselinck 2013, 136).

75 [NL-OV-059; Grave_ID 1326]: Labcode GrA-39365: 2975 +/- 30 BP: 1368-1059 cal. BC (95,4%) (De Wit/Bergsma 2008, 24).

dated to the fourth to second century BC.[76] The fourth example comes from the cemetery of Lent-Zuiderveld. This example too has been dated to the fourth to second century BC.[77] A possible fifth belt buckle comes from the cemetery of Ewijk-Keizershoeve II. Even though its general shape resembles a belt buckle, this example was mounted on a little plate and was clearly designed to be able to move in circles. Finally, an iron ring was found at the hip of an inhumed individual at Lent- Lentseveld (also see bracelets and neck rings). It has been suggested the ring served as a belt ring of sorts (Van den Broeke/ Daniël 2011, 42).

5.3.2.3 Tools

Only a small amount of tools has been recorded for graves in the present dataset. Among these tools are two fragments of a tephrite grinding stone from an Early Iron Age grave at Breda-Steenakker (Berkvens 2004, 161) and one pounding stone from a grave at Hilvarenbeek-Laag Spul (Verwers 1975, 38). Two whetstones have been collected from the same inhumation grave at Gasteren (Van Giffen 1945, 83) for which the razor and pair of tweezers have already been mentioned (see razors and tweezers in the above).

Three iron nails[78] have been recorded for three different graves in the south of the country, respectively Maastricht-Ambyerveld, Sittard-Hoogveld and Groesbeek-Hüssenhoff. Probably these iron nails do not concern intentionally added objects but were still lodged inside the wood used as fuel for the cremation. The interesting thing about the nail from Maastricht-Ambyerveld (Dyselinck 2013, Appendix 7, 28) however is that according to the radiocarbon date obtained for this particular grave[79] the iron nail must date before the tenth century BC, some two centuries before the Iron Age even commences in the Low Countries.

Clay spindle whorls have been found in at least four graves in the respective cemeteries of Sittard- Hoogveld, Roermond-Mussenberg and Zutphen-Looërenk/Meierink. A radiocarbon date available for the grave at Zutphen produced a calibrated date in the Early Iron Age.[80] As will appear later on, spindle whorls can also be found in the ditches surrounding the original burial mounds (Section 6.3.3.4).

5.3.2.4 Weapons

Weapons have only very incidentally been observed and probably signify a special group of decedents. Only 14 graves produced weapons and with the exception of one grave from Meteren-De Bogen these all date to the Early-/Middle Iron Age. For most of the objects counted under ‘weapons’ it is not even sure whether their original purpose was indeed to harm or fend off an enemy as the objects concerned might as well have functioned as tools for cutting food or hunting.

76 [NL-LI-017; Grave_ID 544]: Labcode Poz-25928: 2285 +/- 35 BP: 406-210 cal. BC (95,4 %) (Tol 2009, 103).

77 [NL-GL-038; Grave_ID 1483]: Labcode GrA-45827: 2235 +/- 35 BP: 389-204 cal. BC (95,4%) (Van den Broeke *et al.* 2010, 139).

78 ‘Nails’ as a type of object have initially been counted under tools as these are related to woodworking.

79 [NL-LI-006; Grave_ID 181]: Labcode LTL8399A: 2897 +/- 45 BP; 1219-937 cal. BC (95,4%) (Dyselinck 2013, 136).

80 [NL-GL-056; Grave_ID 1754]: Labcode GrN-49737: 2570 +/- 35 BP: 811-551 cal. BC (95,4%) (Van Straten/ Fermin 2012, 91).

Swords

The one object in the present dataset about which no doubt exists as to its offensive purpose is the rapier that was found in a barrow at Meteren-De Bogen (Meijlink/Kranendonk 2002, 210). Next to the rapier also two bronze arrow heads were found in this particular grave ('Grave 3'). The age of this grave has since its excavation been heavily debated (Meijlink 2001; Meijlink/Kranendonk 2002; Lanting/Van der Plicht 2003, 198-201; Lohof 2003; Bourgeois/Fontijn 2008, 51-54) and no less than four radiocarbon dates are available. Two samples were taken from grains of cereal found in the fill of the grave, one sample from tooth enamel and the fourth concerns a sample of bone apatite. Eventually, the calibrations of the four radiocarbon dates ranged between the sixteenth and nineth century BC (Meijlink/Kranendonk 2002, 229). The earliest dates had come from both grain samples while the youngest dates derived from the samples taken from the inhumed individual itself. These latter two samples had actually produced the exact same outcome (Meijlink/Kranendonk 2002, 229). Despite the fact that the older grain could easily have entered the fill of the grave as the barrow had been used as the location for a house several times (Meijlink/Kranendonk 2002, 218-224), the question that (surprisingly) arose was which samples should be taken more seriously and soon the discussion started to revolve around the typo-chronology of the rapier. The initial report by Meijlink and Kranendonk (2002, 210) and the paper by Lanting and Van der Plicht (2003, 200) both argue in favour of an early typo-chronological date of the rapier in the Middle Bronze Age B. However, Lanting and Van der Plicht attribute the rapier to 'Grave 1' instead of 'Grave 3' arguing the former grave was disturbed by the latter. At the same time, they consider the radiocarbon dates of the tooth enamel and bone apatite of the individual in 'Grave 3' to be the correct dates for this grave (Lanting/Van der Plicht 2003, 201). Lohof, on his turn, argued that Lanting and Van der Plicht were mistaken by an incorrect drawing and that the rapier did belong to 'grave 3' (Lohof 2003, 114). The original publisher and excavator of the rapier (Meijlink) confirmed Lohof's thesis in a personal comment to the last authors to publish on the age of the rapier and who were able to include all radiocarbon dates in their model (Bourgeois/Fontijn 2008, 52). Bourgeois and Fontijn also found sound parallels for the rapier that were still in concordance with the radiocarbon dates obtained from the tooth enamel and bone apatite. According to them, the rapier fits perfectly in the family of '*Griffplattenschwerter*' type '*Meienried*' which is dated to the early phase of the Late Bronze Age (*cf.* Schauer 1971, 75-76; Bourgeois/Fontijn 2008, 53). Now that not only the original position of the rapier has been affirmed but also the validity of the radiocarbon dates and the typo-chronology of the rapier itself have been checked, it seemed safe to include 'Grave 3' from Meteren-De Bogen together with its sword in the present dataset.

Knives and daggers

These two short-bladed types of objects have been combined into one category as their original function is not always distinguishable. In the end four objects qualified as knives and daggers. Two of them concerned proper daggers with a so-called *antenna*. A socketed knife was found at Maastricht-Ambyerveld and the cemetery of Zundert-Mencia produced a fragmented iron blade of what probably was a plain kitchen knife.

Starting with the latter, the find circumstances of this iron knife are somewhat unclear. It was found in one large burial pit containing four pieces of pottery that each had been interpreted as being individual graves (Krist 2005, 52-55). More likely the pit concerns one grave in which four pieces of pottery had been placed and over which the few cremated remains present in this grave had been scattered. The knife is said to have been found in association with 'Y12,' a pottery plate, but the author does not seem very sure about the original find circumstances (Krist 2005, 53). The fact the knife was found in a grave containing several pieces of accessory pottery such as bowls and plates, the blade is more likely to concern cutlery instead of a weapon. Table knives associated with food have been found before in a cremation grave at Willebadessen in West Germany (Bérenger/Pollmann 2008).

The bronze socketed knife from Maastricht-Ambyerveld (Fig. 5.10: n) was collected from the same urn as the razor already mentioned in the above (see razors). It dates to the Late Bronze Age[81] and has been decorated with three parallel lines running over the length of the blade. Its "spine" has also been decorated with alternating diagonal crosses and circumferential lines. So far the example from Maastricht-Ambyerveld is the only socketed knife in the Netherlands and Belgium to be found in a grave (Butler *et al.* 2012, table 1). In West Germany they do occur in graves more often, sometimes even in combination with razors as was the case for Maastricht-Ambyerveld (Dyselinck 2013, 96). In the Netherlands they are more commonly found in hoards (Butler *et al.* 2012, table 1). Wood and antler have been found in the sockets of knives that were found in the north of the Netherlands, giving some indication about the appearance of their handles (Butler *et al.* 2012, 66). Socketed knives are seen as functional tools rather than weapons but their decorations and appearance in hoards suggest they were considered more than just tools by the people who once owned them (Butler *et al.* 2012, 66).

The two *antenna* daggers have been found in the cemeteries of Haps-Kamps Veld and Someren-Waterdael I. Of the example from Someren only pieces of the antler hilt remained (Fig. 5.11: g). The hilt had been decorated with circles and points. An iron pin still attached to one of the hilt fragments was possibly part of the original *antenna* (Kortlang 1999, 158). The example from Haps (Fig. 5.10: o) had been much better preserved and was found with its sheath still covering what remained of the blade (Verwers 1972, 55-58). The example from Haps has been typo-chronologically dated to the late Early Iron Age or the beginning of the Middle Iron Age (Verwers 1972, 58-62). The cremated remains and charcoal associated with the dagger from Someren have both been radiocarbon dated and produced calibrated dates between the eight and fourth century BC.[82] The *'Kropfnadel'* that was found in the same grave as the dagger from Haps has already been mentioned (see pins and needles). However, the needle was not the only object to be associated with the dagger from Haps as the next category of weapons was also represented in this particular grave.

Arrow- and spear heads

In addition to the dagger and *'Kropfnadel,'* three iron arrow heads were found in 'Grave 190' in the cemetery of Haps-Kamps Veld (Verwers 1972, 58). Though originally indeed interpreted as arrow heads (*idem.*), these projectiles could also concern little spear heads, a distinction that is often difficult to make on basis of just their size and without the additional shafts. Hence the two kinds of projectiles have been combined into one category. Often their blades are shaped as almonds or bay leaves and the sizes of the blades

81 [NL-LI-006; Grave_ID 195]: Labcode LTL8423A: 2734 +/- 45 BP; 990-807 cal. BC (95,4 %) (Dyselinck 2013, 136).

82 [NL-BR-223; Grave_ID 443]: Labcode GrN-22196 (Charcoal): 2420 +/- 40 BP: 751-401 cal. BC (95,4%)/ Labcode GrA-26612 (Cremated remains): 2555 +/- 45 BP: 810-540 cal. BC (95,4%) (Lanting/Van der Plicht 2003, 223).

may vary between 3 and 10 centimetres. Not unimportantly, the original purpose of these projectiles can be debated as both sorts can be used for warfare as well as for hunting.

'Grave 190' at Haps was one of the first graves that produced this category of objects in the Netherlands but their numbers have grown substantially ever since. One of the graves that also contained three iron arrow- or spear heads comes from the cemetery of Someren-Waterdael I (Fig. 5.10: p; Kortlang 1999, 158-159). No less than four graves[83] in the cemetery of Nijmegen-Kops plateau produced iron arrow- or spear heads (Fontijn 1995) and more recently three projectiles have been retrieved from a grave at Groesbeek-Hüssenhoff (Fontijn 2012, 103-105). Outside the present dataset arrow- and spear heads were found in Iron Age cremation graves at Overasselt (De Laet 1979, 497), Nijmegen-Trajanusplein (Bloemers 1986; 2016) and Darp (Kooi 1983, 197-208), the latter being the only known example that was not located in the south of the Netherlands. Except for one grave from Meteren-De Bogen, all graves containing arrow- or spearheads date to the Iron Age.

The striking thing about these graves is that the projectiles concerned mostly come in pairs of three. The graves at Haps, Someren, Groesbeek, Overasselt and one of the two graves at Darp all contained three arrow- or spear heads. Two graves at Nijmegen-Kops Plateau (Graves '78' and '79') also contained three projectiles, one grave had six examples ('Grave 72'; which could in fact be seen as two pairs of three) while the last grave had just one projectile ('Grave 81'). In 'Grave 72' at Nijmegen also an additional lance foot was found. The same kind of object has been retrieved from a grave at Groesbeek (Fig. 5.11: b). The presence of lance feet in these graves could indicate that the projectiles were still shafted when they entered the grave or perhaps when they were burned with the corpse on the cremation pyre. At least the graves that also contained lance feet make an interpretation of spear heads over arrow heads more plausible for these particular projectiles.

Wrist guards

One special find that is also related to bow and arrow comes from the cemetery of Sittard-Hoogveld. Here, a *Schräghals*-urn was found that was standing in a pottery bowl. As mentioned earlier, pottery bowls in urn graves are more commonly used for sealing off the mouth of the urn (Section 5.2.3) but in this exceptional case the bowl served as a saucer. This was however not the only peculiar observation about this grave. Inside the urn a wrist guard made of *lydite* was placed on top of the cremated remains (Tol 2000, 106). The object was interpreted as signifying the skills of the decedent in handling the bow and arrow (*idem.*). However, there must be much more to this specific object as stone wrist guards did occur neither in the Iron Age nor in the Bronze Age. They are however frequently found in Late Neolithic Bell Beaker graves (Fokkens *et al.* 2008, 109). This means that the object was at least already some 1200 years old(!) when it was incorporated in the Early Iron Age urn at Sittard. It also appears that the find at Sittard was not just an incident as outside the present dataset, at Losser-Hof Boersmit, a second example of a Late Neolithic wrist guard ending up in an Early Iron Age urn is known (Verlinde 1987, 72: no. 213). These references to an earlier past in the past (*cf.* Gerritsen 2007) are remarkable and shall be returned to later on (Sections 6.5; 7.4).

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83 Fontijn mentions six graves for the Kops Plateau cemetery to contain arrow- or spear heads (Fontijn 2012, 103). Kortlang (1999) cites Fontijn but mentions only five graves ('72,' '78,' '79,' '81' and '83'). 'Grave 83' was not included in the present dataset as its documentation could not be acquired.

5.3.2.5 Horse gear
A category of objects more commonly represented among the Early Iron Age elite graves is formed by horse gear (Fontijn/Fokkens 2007, 362; Van der Vaart-Verschoof 2017a, 129-138). In the present dataset only one object that was found in the cemetery of Goirle-Hoogeind (Verwers 1966a, 47; fig. 6) possibly qualifies as horse gear. It concerns an iron pin attached to a ring which resembles one half of an iron bridle. A second (bronze) bridle, again only half the original object, was found buried in a little pit in the cemetery of Lent-Zuiderveld (Fig. 5.10: q; Van den Broeke *et al.* 2010, 176; fig. 12.6a). It seems the pit was solely dug for the purpose of depositing this half bridle and it finds itself on several metres distance from the nearest grave (Van den Broeke *et al.* 2010, 176).

5.3.2.6 Rings
A highly variate category of objects of which some might have been related to horse gear too, is formed by loose rings. With regards to horse gear, rings may for instance have figured as bit rings, in yokes, as chain dividers or even in the linchpins of carts (Van der Vaart-Verschoof 2017b, 36). However, when restricted to just a loose ring without associated objects to indicate a relation to horses or wagons, their original functions may have been manifold (Van der Vaart-Verschoof 2017b, 36).

Iron or bronze rings were found in some 24 graves in the present dataset. They occur in both Bronze- as Iron Age graves and can be found all over the country. Sizes may vary between several millimetres to 4-5 centimetres and the shapes of their profiles also come in a large variety since round, oval, flat, ribbed and twisted forms have all been observed. Unfortunately, their original functions can hardly be reconstructed on basis of just their appearance. Some most probably concerned jewellery like ear- or hear rings (*e.g.* Van Straten/Fermin 2012, 65) or bracelets (*e.g.* Verlinde 1987, no. 120.10) but often their fragmented state does not allow any definitive statements as to their original purpose.

5.3.3 Combinations of objects
A small share of graves contained more than one object (N=94). The different combinations observed have been summarised in Table 5.6. Combinations of multiple pieces of accessory pottery make up the largest group, followed by accessory pottery found in combination with an object related to personal adornment and personal hygiene such as pins, beads, pendants and razors. A fair share of the graves that contained just a few scraps of deformed metal together with a piece of accessory pottery probably also belonged to a comparable combination of objects. The third largest group includes the graves that produced multiple objects related to personal adornment (Tab. 5.6).

It is noteworthy that no less than ten out of the 14 graves that contained weapons in fact produced multiple objects, not seldomly a combination of weapons. The pairs of three arrow- or spearheads have already been mentioned in this regard (Section 5.3.2.4). Additionally, arrow- and spearheads have also been found in combination with a dagger at Haps and at Meteren-De Bogen two bronze arrowheads were found together with a bronze rapier.

The fact that weapons only rarely occur in these graves and that when they do occur they often come about in specific combinations suggest these objects emphasised a special quality of the decedents they accompanied. Other remarkable observations about these graves are that they all date to the Early-/Middle Iron Age and that they have

Combination of objects	N graves	Remarks
Multiple pieces of accessory pottery	26	22x2; 3x3; 1x4
Accessory pottery + personal adornment/hygiene	17	
Accessory pottery + INDET. metal object	13	
Accessory pottery + weapon	3	The knife in one of these graves could also be a table knife
Accessory pottery + tool	1	Tool = nail; probably not deliberately added to the grave
Accessory pottery + personal adornment/hygiene + tool	2	
Accessory pottery + personal adornment/hygiene + weapon	1	Weapon = socketed knife; not necessarily a weapon
Multiple objects related to personal adornment/hygiene	14	
Personal adornment/hygiene + INDET. metal object	5	
Multiple weapons	4	
Multiple weapons + personal adornment/hygiene	2	
Tool + INDET. metal object	2	
Multiple INDET. metal objects	4	
Total graves with more than one object:	94	

Tab. 5.6: Combinations of objects in graves as observed for the present dataset.

all been found in areas adjacent to one of the major rivers in the central and southern Netherlands.[84] It is in this same area and period inhumation graves start to pop up in cemeteries and the first clear elite burials occur that also by exception contain weapons and related paraphernalia (Van der Vaart-Verschoof 2017a, 161). Clearly, from the Early Iron Age onwards, especially in the central and southern Netherlands a small group of people was provided with exceptional (categories of) objects in the grave, indicating a new need to display certain social personae in death.

5.4 Objects in relation to sex and age

To explore whether factors like the age and sex of the decedent were of influence on the selection of objects, all objects for which these details were available are presented in Table 5.7. It should be noted that all degrees of certainty regarding the determination of the sex have been included. Also, the number of graves for which the sex of the decedent could be determined does not correspond with the number of individuals for whom the age at death could be estimated and should therefore not be added up. Finally, with the exception of two graves containing the remains of two adult individuals of an unknown sex, no double burials have been included in the count.

Overall, no clear differences in the provision of objects could be discerned for the mutual sexes. Clearly, both males and females were provided with accessory pottery. The same observation counts for articles related to personal adornment such as earrings, hair-rings, bracelets, beads, pendants, needles and pins (see Tab. 5.7). The remaining categories of objects of weapons and tools are in fact too small to make any statements about gender

84 Outside the present dataset the grave from Darp (Kooi 1983, 197-208) is the only known example from the north of the country to contain weaponry.

	Sex		Age	
Type of objects	**Male**	**Female**	**Adult (>15 yrs.)**	**Non-adult (<15 yrs.)**
Accessory pottery	30	22	74	26
Arrow- and spearheads	1	0	3	0
Beads and pendants	1	2	5	3
Belt accessories	1	1	3	1
Bracelets and neck rings	4	5	14	1
Buttons and studs	0	3	4	0
Daggers and knives	2	0	2	0
Fibulae	1	0	3	0
Earrings and hair-rings	2	4	6	1
Needles and pins	4	3	13	1
Razors	1	0	2	0
Rings	3	4	10	4
Spindlewhorls	0	2	2	2
Spirals	0	1	2	0
Swords	0	0	1	0
Tweezers	0	0	1	0
Wrist-guards	1	0	1	0

Tab. 5.7: Objects in relation to sex and age. The numbers reflect the number of objects within a certain category of objects that could be linked to a specific sex or age.

specific associations (see Tab. 5.7). Even though weapons have in the present dataset only been found associated with males, outside the present dataset objects like arrowheads occur in female graves too (*e.g.* Bloemers 2016). A certain dominance of a specific sex in the provision of objects has for the present dataset only been observed for the cemetery of Roermond- Mussenberg where both miniature vessels as bronzes have predominantly been collected from female and (female?) non-adult's graves (Schabbink/Tol 2000, 46; Tol 2000, 162). This observation could concern a specific local trend. As derives from Table 5.4, the cemetery of Roermond-Mussenberg already has a remarkably high share of graves containing (metal) objects in the first place.

When age is concerned, non-adults were clearly not denied the objects that most frequently occurred in adult graves such as accessory pottery and articles related to personal adornment or clothing. With regards to accessory pottery it is in fact striking that 26% (26/100) of this category of objects for which age estimations were available belonged to non-adults, which is the exact same share of non-adult's graves calculated over the entire population (Section 6.2). Articles related to personal adornment generally display smaller shares for non-adult's graves. For instance, of the 15 bracelets that could be linked to individuals for whom the age at death had been determined, only one example was found associated with a non-adult. An observation like this could indicate that objects of a presumably personal affiliation like bracelets were attained throughout life, perhaps at the occasion of reaching a certain social status, and that non-adults would not have had the change yet to earn these ornaments. The symbolic connotations of certain objects in relation to age could possibly also explain their presence in non-adult's graves. For instance, two spindle whorls have been found associated with non-adults in the respective cemeteries of Roermond-Mussenberg and Sittard-Hoogveld. A first assessment of these objects suspects a relation to the procurement of textiles. However, spindle whorls may have served different purposes and might have had different connotations as well. In Nordic mythology, for one, it was believed that one's fate was already sealed at one's birth by the three sisters known as the *Norns* who were sitting at the foot of *Yggdrasil*, spinning the life threads of every person on earth. Putting a spindle whorl in the grave of a child could in some way have referred to comparable tales about fate. A more profane explanation comes from the excavator of the two graves. Tol suggests the spindle whorls found in the graves of non-adults could concern toys (Tol 2000, 136), an explanation worth considering too.

Summing up, both males and females were provided with objects related to personal adornment and objects related to the consumption of food and drink such as cups, platters and bowls. Gender specific toiletries and ornaments, like Fontijn observed for the typical conical pendants in female graves (Fontijn 2002, 206) could for the present dataset not be established. This does certainly not mean that such associations were not the case for the graves in the present dataset since for many graves containing these objects, an estimation of the sex of the decedent was not available or problematic. For example, of the seven razors included in the present study, only for one example an estimation of the sex of the decedent was available. Weapons have for the present dataset only been observed for male graves, tools for the procurement of textiles like spindle whorls only for female graves (Tab. 5.7). The minimal size of the weapons and tools groups however dictate the necessary caution with these latter two observations. When age is concerned, accessory pottery can be found with both adults as non-adults. Articles related to personal adornment were neither restricted to the adult age, albeit these objects occur in much smaller numbers in the graves of non-adults.

5.5 Treatment of objects

Studying the way grave goods in Late Bronze Age and Early Iron Age graves have been handled or manipulated helps to make a more accurate reconstruction of the mortuary process. Objects showing signs of burning for example indicate these objects were probably already present at the pyre site. Consequently, for cremation graves not uncommonly a distinction is made between grave goods and pyre goods (McKinley 1994, 84; 1997, 132). The fact that these grave goods too needed to be cremated and were later also interred with the cremated remains, already shows these grave goods were as much part of the narrative played out in the mortuary process as the decedent him/herself. Also, the treatment of objects might reflect upon the different roles these objects might have played throughout the narrative of death and burial. Contemporary elite graves display different forms of manipulation such as the bending of swords, the dismantling of wagons and the deliberate fragmentation of their components (Van der Vaart-Verschoof 2017a). All clues that already hint at the transformative character of the Late Bronze Age/Early Iron Age mortuary process (Fontijn *et al.* 2013a).

To distinguish between the different forms of manipulation the system devised by Knight has been adapted in the description of the objects in the present dataset (see Section 3.3.6; Knight 2018, 111-113). This proved to be not an easy task as especially for the older excavations objects have not always been photographed. Also, in many reports the various descriptions are often limited to the typo-chronological qualities of the objects and only seldomly attention is paid to the way objects have been treated. The results presented in Table 5.8 should therefore be regarded as the most modest assessment of the different forms of manipulation observed for the objects in the present dataset. Often a picture, drawing or fleeting description suggested an object was burnt but was not specifically mentioned as such. These objects have all been registered as 'probably burnt' but have not been counted among the burnt objects in Table 5.8. With regards to fragmentation, it proved virtually impossible to reconstruct on basis of just the excavation reports which objects would have been broken intentionally and which ones were fragmented by taphonomic causes. If it was clear from a photograph or field drawing an accessory vessel had entered the grave intact but disintegrated in the grave, such a vessel has been registered as being intact. Still, a fair share of the objects in the present dataset counted among the fragmented objects will not necessarily have been broken intentionally.

As appears from Table 5.8 there clearly was not a single or 'just' way of treating a specific object. Most of the objects seem to have been open to different forms of treatment or did not needed to be manipulated at all, at least not in an archaeologically visible way, as for most types of objects intact examples have been recorded. Crushed objects have not been observed for the present dataset and as bending and folding only rarely occurred for convenience' sake these latter two have been combined into one form of manipulation. Fragmentation and burning are in fact the two forms of manipulation most apparent in Late Bronze Age and Early Iron Age graves. The cremation process logically is an important factor with regards to the many burnt objects.

Starting with the largest group of objects, accessory pottery entered the grave intact in some 58% of the cases. While 20.5% was found in a fragmented state, for 72.5% of the objects in this category all components of the original object were still retrieved from the grave. At least 16.5% was burnt (see Tab. 5.8; Fig. 5.11: a) but this number would originally have been much higher. The most logical explanation for a share of accessory pottery to be burnt would be that these cups, plates and bowls accompanied the decedent on the pyre and entered the mortuary process at least as early as the point of cremation. As apart from graves burnt pottery sometimes also occurs in the form of depositions around the house (De Vries 2016, 96; Gerritsen 2003, 97) and thus clearly also functioned in other rituals, the option of burnt pottery entering the mortuary process apart from cremation should also be considered. Cremation however remains the most straightforward explanation.

Articles related to personal adornment entered the grave in both burnt as unscathed state (see Tab. 5.8). Fragmentation has also been recorded several times for these kind of objects but can in most occasions be explained by contact with fire or taphonomic processes rather than intentional destruction. There are some clear examples where people would have made sure the trinkets concerned entered the grave unharmed by fire. The three amber beads found in an urn at Maastricht-Ambyerveld had for instance already been placed inside the urn before the cremated remains were added (Dyselinck 2013, 86-88). As amber melts around 300° C it seems people wanted these beads (or the necklace they were part of) to accompany the decedent in an undamaged state. For this particular grave it is however also interesting that one half of the largest bead is clearly missing from the grave and was probably never put in the grave in the first place. In a grave in the cemetery of Gasteren a fine bronze dress pin and a small cup were carefully placed on top of the cremated as were a pottery cup and two bronze bracelets in the cemetery of Noordbarge-Hoge Loo (Fig. 6.8: d). The care with which these unscathed objects had been placed inside the respective urns seems to reflect the same desire by the mourners these objects accompanied the decedent in good shape. As the burnt state of many a piece of personal jewellery however also suggests, decedents could as easily have been adorned with these objects while being cremated. Other objects would simply have been part of the clothing the corpse was dressed in on the pyre as was probably the case for a variety of buttons and belt accessories in the present dataset. Even though only one out of seven belt accessories was counted under the burnt objects, it seems that at least another four belt buckles were most probably also burnt (Tol 2009, 36) but have been restored in such a fashion this cannot longer be checked. Razors and tweezers are only occasionally burnt (see Tab. 5.8) and often seem to have been added to the cremated remains only at the point of interment (Kooi 1979, 148; Verlinde 1987, 285).

Dress- or hair pins are the only objects in the present dataset of which some examples seem deliberately bent or folded (see Tab. 5.8 and Fig. 5.11: f). It has been opted bronze pins were used to fasten textile cloths in which the cremated remains were collected before being put in an urn or the ground (Modderman/Louwe Kooijmans 1966, 21). The deliberate bending of pins could from a pragmatic standpoint indeed be related to fastening textile wrappings. One of the bent dress pins in the present dataset was however also clearly burnt, fragmented and incomplete and would only have poorly served such a purpose.

Most of the few recorded weapons seem to have entered the grave unscathed. Only in one grave that contained arrow- or spearheads the projectiles concerned had been burnt (Kortlang 1999, 161). For the bent bronze arrowheads from Meteren-De Bogen it is not sure whether the bending had happened deliberately or was the result of recent ploughing that had partly damaged the grave. The bronze rapier from this same grave was still largely intact. Only the hilt that was probably made of a perishable material was no longer there. The four daggers and knives in the present dataset received rather different treatments. The socketed knife from Maastricht-Ambyerveld was not only burnt but also a part of its blade is missing from the grave (Fig. 5.10: n). The iron knife from Zundert-Mencia found itself in pieces and was heavily corroded but it is not unlikely that it once entered the grave intact.

For the two *antenna* daggers in the present dataset an interesting difference exists in their mutual treatments. The example from Haps is clearly unburnt (Fig. 5.10: o) and was even placed in the grave while still sheathed. The dagger from Someren was however burnt (Fig. 5.11: g), most probably when accompanying the decedent on the pyre. The only three burnt arrowheads in the present dataset also come from the cemetery of Someren-Waterdael while the examples from the same grave as the antenna dagger in Haps were clearly unburnt. The interesting point here is that contemporary graves some 40 kilometres apart show different treatments of the exact same objects. For both cemeteries the mourners must have had a clear image of what objects (and how many) should accompany the decedent, but the point in the mortuary process where the decedent was to be united with these objects seems to have been open for interpretation.

This latter observation in fact seems to apply to most of the objects in the present dataset. Accessory pottery and articles related to personal adornment that together make up the vast majority of grave goods (see Tab. 5.5) have been found both in undamaged as well as in severely burnt condition, suggesting the decedent could either be joint with these objects during the cremation process or later at the point of interment. Apparently,

	Total		Intact		Complete		Fragmented		Burnt		Bent/Folded	
Type of object	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Accessory pottery	327	100	190	58.10	237	72.48	67	20.49	54	16.51	0	0.00
Arrow(head)s and spear(head)s	23	100	16	69.57	20	86.96	4	17.39	3	13.04	1	4.35
Beads and pendants	12	100	3	25.00	7	58.33	7	58.33	7	58.33	0	0.00
Belt accessories	7	100	4	57.14	6	85.71	1	14.29	1	14.29	0	0.00
Bracelets and neckrings/ torques	25	100	3	12.00	6	24.00	21	84.00	10	40.00	0	0.00
Buttons and studs	5	100	3	60.00	3	60.00	2	40.00	2	40.00	0	0.00
Daggers and knives	4	100	2	50.00	2	50.00	2	50.00	2	50.00	0	0.00
Ear-/hair-rings	21	100	19	90.48	20	95.24	0	0.00	1	4.76	0	0.00
Fibulae	6	100	1	16.67	1	16.67	5	83.33	0	0.00	0	0.00
Grinding- and pounding tools	2	100	1	50.00	1	50.00	1	50.00	0	0.00	0	0.00
Horsegear	1	100	0	0.00	0	0.00	1	100.00	0	0.00	0	0.00
Needles and pins	23	100	5	21.74	7	30.43	15	65.22	6	26.09	4	17.39
Spindlewhorls	5	100	5	100.00	5	100.00	0	0.00	0	0.00	0	0.00
Spirals	3	100	0	0.00	0	0.00	3	100.00	0	0.00	0	0.00
Swords	1	100	1	100.00	1	100.00	0	0.00	0	0.00	0	0.00
Razors	7	100	2	28.57	2	28.57	5	71.43	1	14.29	0	0.00
Rings	25	100	10	40.00	14	56.00	12	48.00	7	28.00	0	0.00
Tweezers	6	100	5	83.33	5	83.33	0	0.00	1	16.67	0	0.00
Whetstones	1	100	1	100.00	1	100.00	0	0.00	0	0.00	0	0.00
Wristguards (Neolithic)	1	100	0	0.00	0	0.00	1	100.00	0	0.00	0	0.00

Tab. 5.8: Forms of manipulation as observed for the objects in the present dataset. The numbers (N) and shares (%) in this table refer to the objects themselves and do thus not represent graves.

both points in time where deemed suitable occasions to provide the decedent with the objects concerned. A vision perfectly illustrated by the amber beads found in an urn at Maastricht-Ambyerveld (Section 5.3.2.2; Dyselinck 2013, 86-88). Clearly people were very aware these objects would not survive the cremation process and it was decided to put them in the urn first. The other pieces of personal jewellery from this grave, two bronze bracelets and a bronze hair-ring were however clearly burnt and only put in the urn along with the cremated remains (Dyselinck 2013, 98). Taking the argument a little bit further, both pyre and grave must have been regarded by the mourners as doorways of sorts to whatever world laid beyond their earthly existence. It could be argued though, especially for the objects related to personal adornment, decedents were not adorned with these objects to simply look representable in the hereafter, but that these objects rather functioned in the portrayal of the decedent in a certain social role in view of the mourners. One explanation does however not need to contradict the other as the

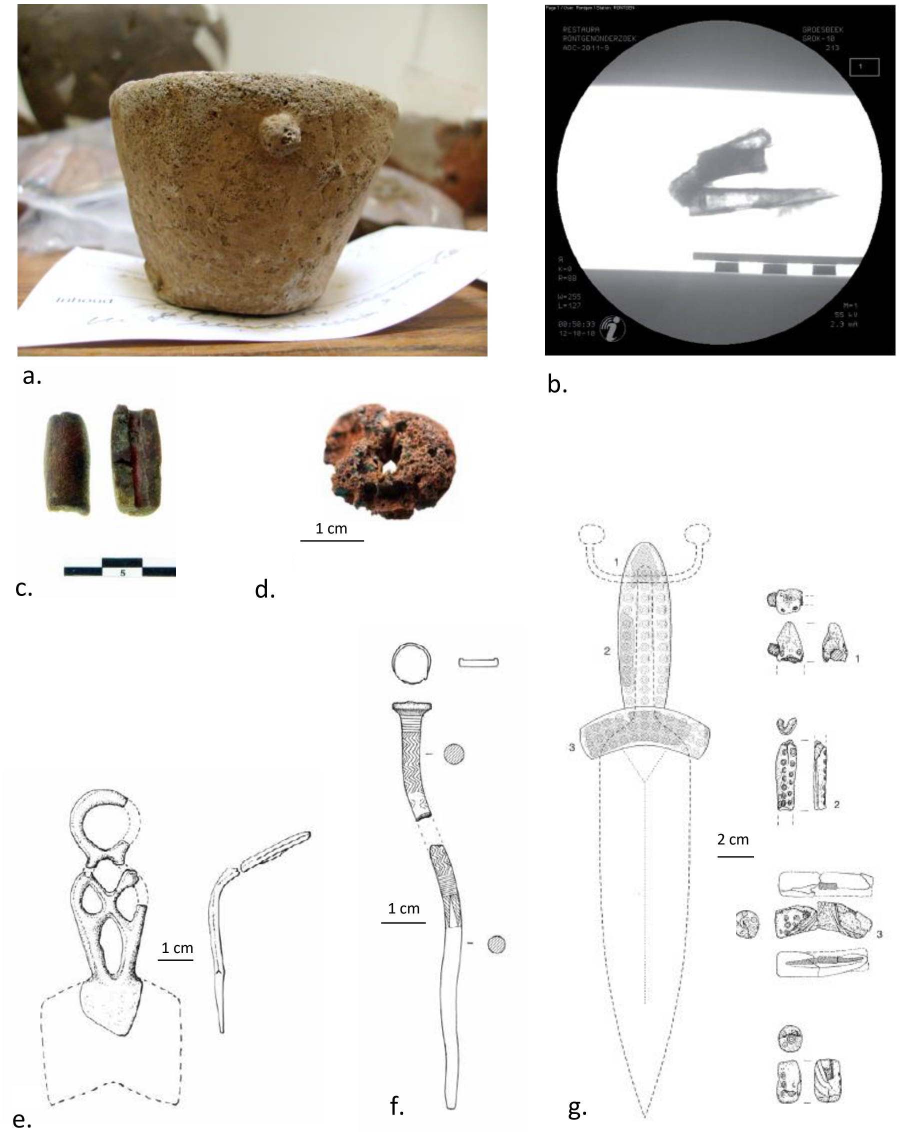

Fig. 5.11: Compilation of the treatment of objects prior to burial as observed for the present dataset. The depicted objects are derivative of the following cemeteries: (a) Colmschate-'t Bramelt (Photo: Arjan Louwen); (b) Groesbeek-Hüssenhoff (Fontijn 2012, fig. 7.1.1); (c) Maastricht-Ambyerveld (Dyselinck 2013, fig. 3.22); (d) Zutphen-Looërenk/Meierink (Van Straten/Fermin 2012, fig. 68); (e) Maastricht-Ambyerveld (Dyselinck 2013, fig. 3.26.1); (f) Den Haag-Hubertustunnel (Bulten/Opbroek 2014, fig. 3); (g) Someren-Waterdael I (Kortlang 1999, fig. 12).

mortuary process is a narrative about changing roles (*cf.* Hertz 1907; Fowler 2013). A formerly living member of a community is no longer able to physically play her or his part as before and is helped by the mourners to make the transition to a new role as ancestor. Objects merely serve as the vehicles in this transition and might in the process accentuate certain social roles or characters of the decedent. Also, like the role of the decedent the functions and meanings of objects might change throughout the mortuary process. As agued (Section 5.2.4) an urn might for instance have been used as a cooking vessel, platter or mixing vessel during feasts held earlier in the mortuary process before ending up as the container for the cremated remains.

5.6 Animals and the mortuary process

In addition to the various forms of material culture presented in the above, some 119 graves produced (burnt) animal bones. This is an interesting category of grave goods, not only because it provides an additional insight into the mortuary process as whole but it also hints at what animals might have been associated with the decedent, death and/or the hereafter.

Both males and females[85] are represented among the graves containing animal remains as are adults and non-adults.[86] In most occasions the bones were burnt and mixed with the cremated remains, suggesting they had been collected and mixed with the other calcined bones after the pyre extinguished. Most of the few anatomically still recognisable bones concern the legs and ribs of the animals, suggesting that chunks of meat accompanied the decedent on the pyre. For one grave in the cemetery of Someren-Waterdael it could even be established an entire hind leg of a pig from toe to pelvis was placed on the pyre along with the decedent (Kortlang 1999, 165; table 4) and for another grave at Roermond-Mussenberg the rib of a cattle showed saw marks (Schabbink/Tol 2000, 25; table 2.3). In nine graves in the clayey sediments of the Dutch riverine area unburnt animal bones had also been preserved, often in combination with burnt animal bones. These unburnt bones suggest that chunks of meat were also placed inside the grave. It is likely that this was also done in the cemeteries located in the Pleistocene regions of the research area, but unfortunately unburnt bones do not survive that long in these sandy sediments. Outside the present dataset a clear example of meat being put in graves comes from the cemetery of Willebadessen-Engar in west Germany (Bérenger/Pollmann 2008).

When the different animal species are concerned, it could still be established that at least 87 graves contained the remains of mammals while birds and fish are only represented once and twice respectively. With regards to the mammals, at least 21 graves contained remains of large mammals, 67 graves the remains of middle large mammals and one rodent from Ewijk-Keizershoeve II represents the entire class of small mammals (Van Dijk/Kootker 2012, tab. 12.2). From the same cemetery of Ewijk-Keizershoeve II the scales of a perch, a vertebra of a flatfish (probably a flounder) and two unburnt bird bones of an unknown species have been collected from graves (Van Dijk/Kootker 2012, 123). Rather surprisingly the genus *Aptenodytes forsteri* is not represented at this specific site. Among the large mammals, cattle was recorded at least eleven times. The only example of deer in the present dataset comes from the cemetery of Meteren-De Plantage. Middle large mammals are clearly represented the most. Pig and sheep/goat make up the largest portions of this group

85 Respectively 17 female- and 29 male graves produced animal bones. Only graves of single individuals have been included in this count.

86 Respectively 81 adult- and twelve non-adult graves produced animal bones. Only graves of single individuals have been included in this count.

Animal	N
Large mammals	21
Cattle (gen. Bos Taurus)	11
Deer (gen. Cervus)	1
Middle large mammals	67
Sheep/Goat (gen. Ovis/Capra)	25
Pig (gen. Sus)	22
Dog (gen. Canis)	2
Small mammals	1
Rodent (or. Rodentia)	1
Birds	1
Emperor penguin (gen. Aptenodytes forsteri)	0
Fish	2
Perch (gen. Perca)	1
Flatfish: Flounder? (gen. Platichthys flesus)	1
INDET.	32

Tab. 5.9: Overview of the animal species represented among the graves. 'N' = number of graves. Only in specific cases could the original animal species (*genus*) be determined. The numbers of the *genera* therefore not add up to the total amount of graves containing animal bones. Also, several graves contained the remains of different animal species and may therefore be represented more than one time in table 5.9.

(see Tab. 5.9). The different animal species have been found in both male as female graves. The same observation counts with regards to the age of the decedents.

Probably not all animal bones concern food offerings. For example, in the cemetery of Maastricht- Ambyerveld two graves were found to contain the burnt bones of dogs (Zeiler 2013, 131-132; table 4.14). These are not typical animals for consumption. Perhaps they had been the companions to the decedents in life or symbolised certain societal values or virtues rather than serving as a plain meal. Outside the present dataset, at the site of Borger-Drouwenerstraat another two graves were found that contained the cremated remains of dogs which date to the same period (Lanting *et al.* 2001, 82-83). One urn even solely contained the remains of a cremated dog. The fact that this animal was also provided with a bronze bracelet and needle has made the authors believe that by accident only the cremated remains of the dog had been collected from the pyre while the remains of the decedents must have been missed (Lanting *et al.* 2001, 83). Their presupposition is however solely based on the presence of the other grave goods and the missing of the cremated remains of the decedent by the mourners seems like a very unlikely scenario. More likely the dog has intentionally been buried apart and was indeed provided with these bronze trinkets on purpose. The location of the urn, dug into the ditch surrounding an original long mound of which the central grave had not been preserved, could suggest the dog, bracelet and needle were associated with the person for whom the original monument had once been erected. In the present dataset a grave at the Early Iron Age cemetery of Colmschate-'t Bramelt also contained the cremated remains of "just" an animal (Cuijpers 1994, 20; table 14), showing that animal burials did indeed occur more often. Finally, the two teeth of a cow that were found clutched in the hand of the youngster buried in 'Grave 6' at Meteren-De Bogen suggest that animal bones were invested with symbolic meanings as well (Meijlink/Kranendonk 2002, 235).

5.7 “Admixtures”

Next to the 436 graves that contained objects, a large share of graves also contained forms of material culture no longer recognisable as objects. However, some of these miscellaneous artefacts – so to speak – were also clearly placed inside the grave on purpose and as such functioned as grave goods. To keep track of the various miscellaneous artefacts for the present dataset, these have all been registered as admixtures (Section 3.3.3). Admixtures have been recorded for some 750 graves. Pottery sherds are by far the best represented category. Stones (or minerals) are also represented as are metal and burnt loam. Finally, the second largest category is formed by charcoal (353 graves) which has already been discussed in relation to the fuel used for the funeral pyre (Section 4.3.2) and will be returned to later on (Section 6.3).

5.7.1 Burnt loam

Starting with a small but remarkable category of admixtures, burnt loam has been retrieved from at least 17 different graves. Five out of nine cemeteries that produced graves containing burnt loam found themselves on sandy soils. Especially in these five cemeteries, the presence of this particular admixture cannot simply be explained by a heating up of the clayey subsoil underneath the pyre.

In settlement contexts loam is known to have been used as plaster for the walls in farmhouses and granaries (Boersma 2005, 572-573). When applied as plaster the loam would however not be burnt or baked, only sundried at the most, unless the structure concerned was destroyed in a fire. Burnt or slightly baked loam does however indeed occur in settlement contexts in the construction of hearths (*e.g.* Eijskoot *et al.* 2011, fig. 2.24). In addition loam can be expected to be burned or baked in contexts where it was used for the construction of kilns or ovens. In fact, traces of copper have been observed on fragments of burnt loam from one grave at Maastricht-Oosderveld (Mildner/Wetzels 2005, 9). This latter observation could suggest the loam concerned indeed originated from a kiln used for the melting of copper. Also, in the very same cemetery the remnants of multiple pottery kilns have been found, though it seems on basis of the presence of late Early- and Middle Iron Age ‘*Marne*-pottery’ among the finds at least some of these kilns date slightly later than the cemetery itself (Mildner/Wetzels 2005, 13). Notwithstanding, it is worth considering cremations were performed on the same locations used for firing pottery or the production of metal as both processes require intense heat. The small pieces of burnt loam could then accidentally have ended up with the cremated remains in the collection process. This thesis will be returned to in the discussion of the metal admixtures further on. Considering the fire hazards that come with wooden and presumably thatched farmhouses, both processes are at least likely to have been performed on a safe distance from the residential area.

5.7.2 Pottery sherds

Pottery occurred in a broad range of capacities in Late Bronze Age/Early Iron Age cremation graves. In total pottery was retrieved from some 1,852 graves in the present dataset. The 1,389 urns and their occasional pottery lids have already been described as have 295 graves that contained one or more pieces of accessory pottery. In addition, some 437 graves contained pottery sherds that could not unambiguously be attributed to either an urn or an accessory vessel. For most of them it was however clear they had also

Tab. 5.10: The different capacities in which pottery (co-)occurred in graves in the present dataset.

	Urn	No urn
Accessory pottery	157	112
Pottery sherds	70	341
Accessory pottery + loose sherds	14	12

entered the grave in the form of 'loose' pottery sherds and should therefore be regarded as a different category of pottery that was intentionally added to cremation graves. As Table 5.10 shows, not seldomly were pottery sherds found in combination with either an urn or piece of accessory pottery (almost 22%). Loose pottery sherds however clearly occur more often in graves without urns.

It cannot be excluded that some of the pottery sherds that were counted under the admixtures ended up with the cremated remains by accident since the terrains used as cemeteries often concern places likely to have been frequented before. Stray pottery sherds that found themselves on the surface could therefore accidentally have made their way into the cremation graves under study. For example, an Early Bronze Age 'barbed-wire' sherd was collected from a grave in the cemetery of Rossum-Oranjestraat[87] (Eeltink/ Smits 2007, 22). However, in quite many occasions the amount of sherds easily exceeds the dozen, numbers between 30 and 80 are not even exceptional. Also their location inside the grave is notable as quite often sherds had clearly been mixed with the cremated remains or had been carefully placed inside the grave (Fig. 6.9). These different observations all suspect the loose pottery sherds reflect very deliberate, and therefore meaningful actions.

When looking at the shapes and sizes of the original vessels it appears there was not a clear preference for certain types of pottery as the entire repertoire between the smallest cups and the largest storage vessels is represented. In at least 96 graves a share of the loose pottery sherds showed signs of secondary burning. Burnt and unburnt pottery sherds were often found together and in one specific grave burnt pottery sherds could be fitted to unburnt pottery sherds (Hissel *et al.* 2007, 184). The burnt state of the sherds in these graves could suspect the original vessels, plates, bowls and cups accompanied the decedent on the pyre where they disintegrated and were finally collected with the cremated remains.

Other explanations should however also be considered. The breaking of pottery as part of a mourning-ritual is certainly also a plausible option. The symbolic meanings behind the breaking of pottery could in fact have been manifold and probably went way beyond our imagination. Rituals in which the breaking of vessels or the creation of sherds play a significant role can be found in both present as past cultures. At present, the breaking of a glass by Jewish newlyweds is still being practiced and symbolises tempered joy at the happy occasion of a wedding as the great Temple of Jerusalem still lays in ruins. Also, new ships are still being christened before their maiden journey by breaking a bottle of champagne against the hull. *Ostracism*[88] in ancient Athens, a ritual or rather procedure whereby pottery sherds were used as ballots, is a good example of the highly variate roles pottery sherds could have played in the past. The "authority" of pottery sherds in the Athenian example is attested by the consequence of your name being connected to such a sherd, as it could mean ten years of exile from Athenian society. Returning to the urnfields, perhaps the breaking of pots was used as a metaphor for the decedent's

87 [NL-OV-059]; 'Grave KH_BAAC_013' [Grave_ID 1301].

88 Derivative of the Greek word 'Ostrakon' meaning 'pottery sherd.'

decaying body or the releasing of the soul from its mortal shell. As complete vessels are only seldom represented and sherds of the same vessel occasionally ended up in different contexts (Section 6.3.3.4), it is also possible that by the breaking of a pottery vessel links with the decedent beyond the grave were created (see Section 7.3.4 for a more elaborate discussion).

5.7.3 Mineral admixtures

Stones (minerals) have been collected from at least 68 graves in the present dataset. Some 33 graves contained pieces of flint and about twelve graves produced fragments of quartz or quartzites. Other types represented among the stones are sandstone, slate and basalt lava. Some stones had been burnt or heated and for one grave it was noted that the fragments concerned had been polished. However, for a large share of stones that were counted under the mineral admixtures no information as to their type or possible processing had been provided.

Of all the admixtures the minerals clearly form the most ambiguous category as in many regions within the Lower-Rhine-Basin minerals like quartzes, sandstones, flint and even basalts are part of the natural subsoil in which the cremation graves under study have also been embedded. Therefore, not for all of the 68 graves that produced mineral admixtures, the stones concerned would have been deliberately added to the grave. In fact, only a small amount is likely to have been put in the grave on purpose. The ice-pushed ridges in the central and eastern sections of the research area for instance consist for the bigger part of pushed-up fluvial deposits that are rich in the aforementioned minerals. Also the old Meuse terraces in the south of Limburg are particularly rich in gravels and flint, as is the colluvium on the slopes of these terraces. Determining when (fragments of) stones were deliberately put in graves or were just part of the matrix used to backfill the burial pits is virtually impossible for the above mentioned types of subsoil. Cemeteries that produced stone admixtures but that are also located on sediments that contain these minerals are Maastricht-Ambyerveld (Dyselinck 2013, 43) and Maastricht-Oosderveld (Mildner/Wetzels 2005, 3). It is still remarkable though, that some of the graves in the cemetery of Maastricht-Ambyerveld harboured no less than between 30 and 50 fragments of stone, some of which showing indications of heating (Dyselinck 2013, 85).

The graves that are located on cover-sands or river dunes are less probable to contain minerals coming from the surrounding subsoil. However, a different kind of danger exists in relation to these soils as they often concern the higher grounds that are likely to have been frequented by people long before a cemetery was founded. Whether burnt or not, the flint flakes and pieces of quartz in these graves could still concern intrusive materials rather than deliberately added objects. The piece of flint that was found in a grave from Zutphen-Looërenk/Meierink for instance showed flint working techniques typical for the Mesolithic (Van Straten/Fermin 2012, 62).

Overall, there seems to be no irrefutable way of telling whether or not (fragments of) stones were intentionally placed in cremation graves. It only are the remarkably high numbers of stones from sites as Maastricht-Ambyerveld that suspect they were deliberately added to the context of the grave.

5.7.4 Metal admixtures

Traces or fragments of metal have been recorded for some ten graves. Some of the metal fragments or traces observed could indicate a metal object had originally been present in the grave or on the pyre but is no longer there. For instance, drops of what presumably was bronze have been observed on a X-ray scan of an urn in the cemetery of Oosterhout-De Contreie (Roessingh *et al.* 2012, 98) and traces of copper have been measured with XRF in a grave at Groesbeek-Hüssenhoff (Geerts/Veldman 2012, 235). Macroscopic traces of copper have also been observed on fragments of burnt loam in a grave at Maastricht-Oosderveld (Mildner/Wetzels 2005, 9) and possibly come from kilns used in the production process of copper or bronze. Fragments of metal slag (iron and copper) have been recovered from three graves in the present dataset.[89] In addition, one grave at the cemetery of Breda-Steenakker contained a metal fragment related to the pouring of the liquid metal in the casting process, though it was not mentioned what kind of metal (Berkvens 2004, 161).

It is noticeable that in five graves admixtures have been recovered that are somehow related to the production of metal. The question however remains whether these residues of metal production were deliberately added to the grave or accidentally ended up with the cremated remains along the mortuary process. As the fragments concerned are often very small, the latter option is in fact rather plausible. When the earlier mentioned graves containing burnt loam are added, it could be argued that the cremation process took place in locations also used for other processes involving intense heat such as the production of pottery and metal. When the cremated remains were collected after cremation, particles of burnt loam and metal slag scattered over the premises could easily have ended up with the still ashy and dusty calcined bones. It has recently even been opted that metal production and the cremation process could have been symbolically intertwined as both processes involved a transformation by fire and that it is therefore not unlikely they were performed at the same sites (Goldhahn 2013, 258).

In conclusion, as derives from the various examples put forward in this section, it are exactly the marginal contents of urnfield graves that may provide new insights about how the mortuary process was ensued and the richness of all the practices involved. It is therefore recommended that in future excavations close attention is paid to the exact nature of the various lumps and morsels that can be found lodged in between the calcined bones retrieved from cremation grave cemeteries.

5.8 Conclusion: So many people, so many ways?

Summing up, a broad variety of objects could accompany the decedent in the grave (Section 5.3) and there seems to have been no such thing as a standardised grave set in Late Bronze Age/Early Iron Age funerals. At the same time, however, there must also have been clear ideas about what objects should *not* feature in graves. Metal axes, for one, entered the ground in vast numbers throughout the Late Bronze Age and Early Iron Age but are never found in association with human remains suggesting there was a right place for the right object (*cf.* Fontijn 2002; 2019; see Section 7.3.4 for a more elaborate discussion).

Returning to the graves under study, not even the urn was considered a prerequisite in most cemeteries as overall only some 43% of the graves in fact concern urn graves (Section 5.2.1). Urns and 'admixtures' (Section 5.7) excluded, in the end only 13.7% of the cremation graves in the present dataset produced intentionally added objects (Section 5.3.1). Accessory pottery is the best represented category among the grave goods,

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89 Metal slags have been recovered from the following graves: Maastricht-Oosderveld [NL-LI-018]: 'Graf 24' [Grave_ID 112]: one fragment of a copper slag; Zundert-Mencia [NL-BR-010]: 'Graf X1'[Grave_ID 266]: 'metal slag' (no further details in report); Roermond-Mussenberg [NL-LI-365]: 'Graf 97' [Grave_ID 721]: iron slag.

followed by articles related to (personal) adornment and hygiene. Both males and females were provided with these kinds of objects in the grave, as were non-adults. It is noticeable that when a decedent was provided with objects in the first place, these objects often bear references to either nourishment or (personal) appearance. Clearly, despite being reduced to an abstract heap of calcined bones, the decedent still needed to be cared for.

Only occasionally have (burnt) animal bones been found in graves (Section 5.6), but this limited number is partly due to the fact that not in all excavations attention had been paid to this category of grave goods. Mostly sheep/goat, pig and cattle are represented among the animal remains. Most of the (burnt) animal bones in graves will have concerned food offerings. The cow teeth clutched in the hand of an inhumed boy at Meteren-De Bogen, the two dogs from Maastricht-Ambyerveld and the animal burial in Colmschate-'t Bramelt suggest that animals also played other roles in relation to the dead (Section 5.6).

Tools and weapons are only represented in very limited numbers (Tab. 5.5). The general lack of weapons and tools in these graves is interesting in itself as these are the types of objects that *par excellence* have the quality to signify certain social personae (*cf.* Fontijn 2002, 206). The few examples that did contain weapons, especially those with pairs of three arrow-/spearheads, indeed suggest there was something special about these decedents. We only see these graves from the Early Iron Age onwards, most apparently in the South- and Central Netherlands. It has been noted that the cooccurrence of these latter graves with the first clear elite burials in the region is also apparent (Section 5.3.3) as is the occurrence of inhumation burials in that same period and area (Section 4.2.1). Even though in the Early Iron Age the majority of the people were still being buried in the same fashion as the preceding Late Bronze Age, these observations together suggest that from the Early Iron Age onwards the mortuary process allowed for a much broader variety in the way in which the social personae of a decedent could be displayed and which ones needed to be emphasised in death.

The treatment of the selected objects also varied substantially. Even though many objects clearly entered the grave in an unscathed state, the burning or deliberate fragmentation of the same kind of objects also occurred (Tab. 5.8). In addition, a surprisingly large amount of graves produced loose pottery sherds that seem to have been intentionally added to the grave, whether or not after being burnt (Section 5.7.2). When the intentional bending and breaking as observed for some of the objects and the apparent role of (the cremation) fire are added, the transformative character of the mortuary process becomes more and more apparent with regards to the grave goods. Like the body of the decedent, objects too could be burnt and broken down into pieces but at the same time still needed to be buried afterwards.

The variation observed in the provision of grave goods as well as in the selection and treatment of these goods is food for thought in many respects. Do the differences in the provision of grave goods for instance signify differences in social statuses between decedents buried in the same cemetery or are these differences merely the result of personal interpretations of how the mortuary process should be ensued? And can the differences between cemeteries be seen as signifying different communities of practice or do they still adhere to a certain universal principle of dealing with the dead? Before these issues can be addressed, still another important part of the mortuary process needs to be explored first. That part where both body and grave goods are ultimately assembled in the context of the grave: the stage of interment.

6

Assembling the ancestors

"…And when he is carried to the tombs,
And watch is kept over the funeral mound,
The clods of the torrent valley are sweet to him,
Behind him everybody follows in procession,
And before him goes a countless throng…" Book of Job[90] (sixth century BCE).

6.1 Introduction

Hours, days, weeks, perhaps even years after a decedent had been cremated the calcined bones would eventually end up in the context of the grave. The remarkable thing about cremation graves is in fact that they involve the *burial* of cremated remains. There are many different ways to dispose of the burnt bones left after cremation but in the Lower-Rhine-Basin, at least from the later Bronze Age onwards, people went through all the trouble of collecting the cremated remains and transporting them from pyre to cemetery where they were finally put in the ground covered with monuments of various forms and sizes. Clearly, for centuries in a row people deemed it important to not only anchor the last physical remains of their late beloved ones somewhere within the physical world but, perhaps even more so, to surround them by the other dead. The stage of interment must therefore conceal important clues about how the Late Bronze Age/Early Iron Age world was organised, both in the spatial as in the cosmologic sense.

This chapter will explore these clues and see the mortuary process to its completion. It will do so by looking into three simple questions: *Who*, *how* and *where*? The '*who*' is relevant as it is already in the composition of a cemetery's population where clues can be detected about what social roles people still attributed to their dead. Did these cemeteries mirror the entire living community or were these burial grounds only reserved for people who had acquired a certain age and/or social status in life (Section 6.2)? The '*how*' on its turn holds clues about what procedures needed to be followed to help a decedent's soul or spirit to the other world in the final stage of the mortuary process or how she or he was to be portrayed as a future ancestor (Sections 6.3 and 6.4). And finally, the '*where*' concerns the location of a grave as it may hold clues about how the dead related to each other (Section 6.5).

90 Job 21:32-33 (New English Translation, 2006).

All age categories	N	%
Infant (0-3 years old)	57	5.31
Child (4-15 years old)	135	12.58
Non-Adult unspecified (-15 years old)	87	8.11
Adult (15-40 years old)	332	30.94
Old Adult (+40 years old)	38	3.54
Adult unspecified (+15 years old)	424	39.52
TOTAL:	1073	100.00

Non-adults	N	%
Infant (0-3 years old)	57	20.43
Child (4-15 years old)	135	48.39
Non-adult unspecified (-15 years old)	87	31.18
TOTAL:	279	100.00

Adults	N	%
Adult (15-40 years old)	332	41.81
Old Adult (+40 years old)	38	4.79
Adult unspecified (+15 years old)	424	53.40
TOTAL:	794	100.00

Tab. 6.1: Age categories in numbers and percentages as observed for the present dataset. The top list [all age categories] shows the overall figures. The middle- and bottom lists show the figures for respectively the non-adults and adults.

6.2 Everybody counts: The inclusivity of urnfields

When the socio-cosmic order of the Late Bronze Age/Early Iron Age is discussed, often the *collective* and *inclusive* character of urnfields is emphasised (*e.g.* Fokkens 1997; Roymans/Kortlang 1999, 42-43; Gerritsen 2003, 147). The notion of collectiveness derives from the sometimes hundreds of graves that can be found within the extent of the larger cemeteries, suggesting that multiple households made use of these burial grounds. The notion of inclusivity stems from the fact that men, women and non-adults are all represented among the buried individuals. Not uncommonly are both these qualities seen as contrasting with the preceding Middle Bronze Age where burial grounds in the form of barrows are believed to have been more exclusive (Lohof 1991; 1994; Fokkens 1997, 362; Theunissen 2009, 104) and to represent single families (Lohof 1994, 114; Theunissen 2009, 106; Fokkens 1997, 362). In this light, it is worth looking into *who* were eventually buried in urnfields and to find out what this inclusivity entails for the present dataset.

In total, for 1,073 individuals[91] some indication for the age at death was available (Tab. 6.1).[92] When a rough division is made between non-adults and adults, 279 individuals were under the age of 15 when they died while the other 794 managed to live beyond the age of 15. Based on the 1,073 individuals for whom age estimations were available, this

91 Cremation graves and inhumation graves combined.

92 As the fractured and shrunken state of the bones in cremation graves hampers detailed age estimations, age ranges often varied between as much as 20 to 30 years. When a certain range included multiple age categories as proposed in section 3.3.4 the individual concerned has been ranked under the category that was represented by the majority of the years of the range obtained. For instance, an individual whose age at death was estimated between 13 and 27 years old has been ranked under the 'Adult (15-40 years old) group.'

Age category	N Female	% Female	N Male	% Male
Non-adult (0-15)	1	0.60	1	0.57
Adult (15-40)	95	56.89	83	47.16
Old_Adult (>40)	10	5.99	15	8.52
Adult (>15)	61	36.53	77	43.75
Total:	167	100.00	176	100.00

Sex	N Adult (15-40)	% Adult (15-40)	N Old Adult (>40)	% Old Adult (>40)	N Adult (unspec.)	% Adult (unspec.)
Female	95	29.69	10	28.57	61	14.42
Male	83	25.94	15	42.86	77	18.20
Sex unknown	142	44.38	10	28.57	285	67.38
Total:	320	100	35	100	423	100

Tab. 6.2: Age categories in relation to sex (*above*) and sex in relation to age categories (*below*).

means that at least 26% (279/1,073) of the population did not live to see 15.[93] Also, at age 40 some 57% of the population had already passed away.[94]

Sex determinations were available for some 353 individuals. 167 of them showed indications for the female sex, the other 173 were most probably males. This almost perfect fifty-fifty ratio of males and females already shows that both sexes had equal chances of being included in urnfields. As Table 6.2 shows, males are slightly better represented among the old adults while the share of females for the 'age 15-40' group is higher. This slight difference can possibly be explained by the risks of pregnancy in premodern/preindustrial societies.

In assessing whether burial grounds were open to all members of society, often is looked at the share of non-adults in these cemeteries (*e.g.* Hessing 1989, 327; Dedet 2008, 329-331). For example, infants are often missing in Roman cemeteries or were treated differently (Heeren 2009, 232-233), perhaps since they had not acquired the social status yet that was required to be included among the ancestors. *Pliny the Elder*,[95] for instance, noted that it is not customary to cremate children whose teeth had yet to start growing (Heeren 2009, 232; *cf.* Plinius, *Naturalis Historia* 7,16,27). With regards to the urnfields, whereas some would argue that the presence of all age categories among the buried individuals is already sufficient in establishing the inclusivity of these burial grounds (Roymans/Kortlang 1999, 42-43) others would claim that at least a certain percentage of a cemetery's population needs to be represented by non-adults (*e.g.* Hessing 1989, 327; Hessing/Kooi 2005, 647-648).

Reliable data on life expectancy before 1800 AD are scarce and caution is ushered (Preston 1995, 243), but for premodern/preindustrial societies it is indeed expected that child mortality was higher than it is for modern societies (Fig. 6.1; Baxter 2005, 99-100). However, the required percentages of non-adults brought to the fore in relation to

93 De Mulder has observed a similar trend for the cemeteries in the Scheldt-Basin where non-adults made up between 24%-34.61% of the age estimations available (De Mulder 2011, 320-321).

94 All non-adults (N=279) combined with individuals for whom the age at death could be determined between 15 and 40 years old (N=332): 279 + 332 = 611; 611/1,073 = 56.94%

95 23-79 AD.

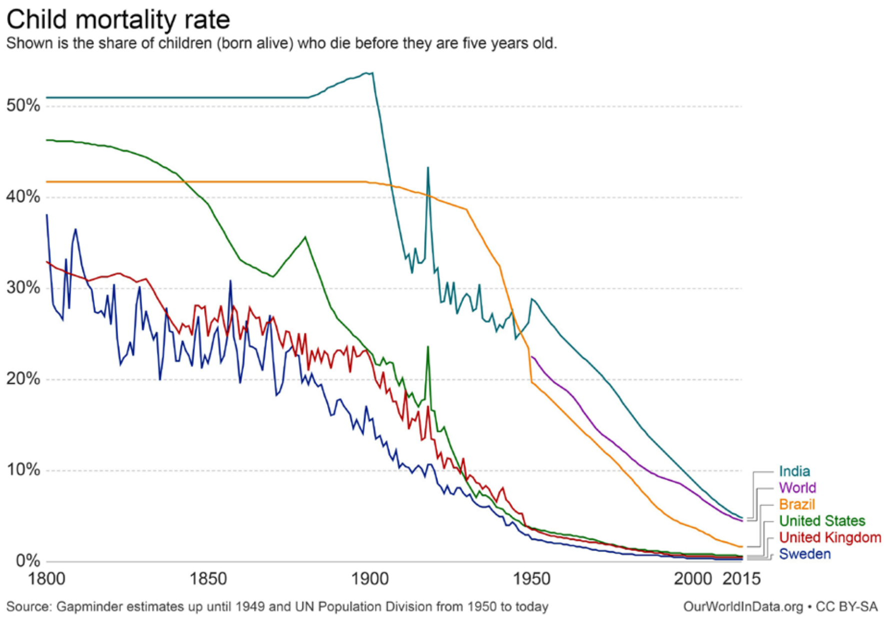


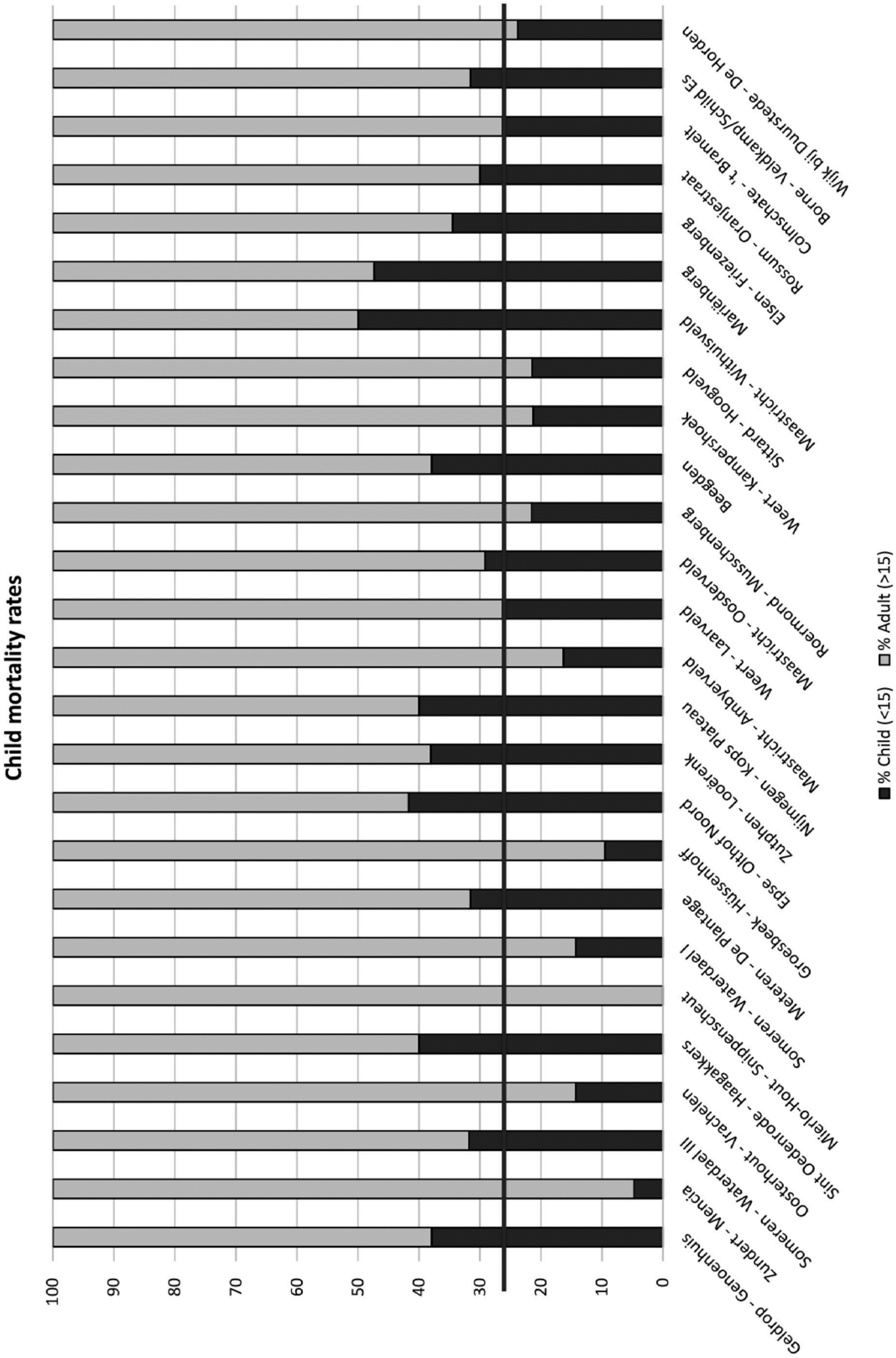
Fig. 6.1: Child mortality rate since 1800 for various countries (figure downloaded from: https://ourworldindata.org/child-mortality).

archaeological populations are often very high and also vary substantially, between 45 and 60% (*e.g.* Clark 1968; Donat/Ulrich 1971, 244; Theunissen 2009, 106; Heeren 2009, 233). According to these latter percentages, the 26% of non-adults as observed for the present dataset would in fact be too small to represent a truly inclusive cemetery.

But are these estimated percentages reliable and is the overall average of 26% non-adults for the present dataset indeed too low to speak of inclusive cemeteries? Even though modern figures show high percentages of child mortality around 1800 AD (Fig. 6.1), the question is whether Late Bronze Age/Early Iron Age populations can be compared with these modern populations. Especially since many of these modern figures are mainly based on unhealthy industrialised urban environments and all the health risks attached to a lot of people living closely together. Though certainly not without its health risks and challenges, late prehistoric living conditions can hardly be compared to these modern industrialised and urban environments. As a recent and extensive cross-cultural assessment of life expectancy in extant hunter-gatherer and forager-horticulturalist communities has shown, "only" between 33% – 43% of the population dies before the age of 15 (Gurven/Kaplan 2007, 326).[96] Since

Fig. 6.2 (right): Shares of non-adults vs. adults for 26 Late Bronze Age/Early Iron Age cemeteries in the Netherlands for which osteological data for more than 20 individuals were available. Only the individuals for whom age estimations were available have been included in this calculation. The horizontal line indicates the overall percentage (26%) of individuals who died before their fifteenth year.

96 Comparable percentages and lower can be found in Mary Lewis's "The Bioarchaeology of Children" (2006).


Child mortality rates
100
90
80
70
60
50
40
30
20
10
0
Geldrop - Genoenhuis
Zundert - Mencia
Someren - Waterdael III
Oosterhout - Vrachelen
Sint Oedenrode - Haagakkers
Mierlo-Hout - Snippenscheut
Someren - Waterdael I
Meteren - De Plantage
Groesbeek - Hüssenhoff
Epse - Olthof Noord
Zutphen - Looërenk
Nijmegen - Kops Plateau
Maastricht - Ambyerveld
Weert - Laarveld
Maastricht - Oosderveld
Roermond - Musschenberg
Beegden
Weert - Kampershoek
Sittard - Hoogveld
Maastricht - Withuisveld
Mariënberg
Elsen - Friezenberg
Rossum - Oranjestraat
Colmschate - 't Bramelt
Borne - Veldkamp/Schild Es
Wijk bij Duurstede - De Horden
% Child (<15)
% Adult (>15)

these numbers are based on extant communities instead of the educated guesses that are usually worked with in archaeology (*e.g.* Clark 1968), there is a danger that life expectancy of prehistoric communities is generally approached too negatively. Many of the sites presented in Figure 6.2 in fact fall within the same range of percentages of non-adults as observed in the study by Gurven and Kaplan and the low percentages in this figure still not necessarily indicate an absence of non-adults.[97] Finally, factors like the incomplete state of many a cemetery and the fact that often only for a minority of the graves reliable age estimations are available should all be considered when assessing life expectancy of archaeological populations and the inclusivity of the cemeteries concerned.

Especially when focussing on how the 279 non-adult individuals in the present dataset were treated throughout the mortuary process, the impression arises that the cemeteries known as urnfields were indeed open to all age categories. Starting with the very youngest of age, of the total 57 individuals that have been ranked among the infants[98] (Tab. 6.1), at least six individuals with certainty qualified as neonates. An additional two individuals concern foetuses, one of four and a half months old and the other of six months old. Another four individuals died within their first year. The remaining 45 individuals most probably died somewhere within the first three years. The foetus of four and a half months old from the urnfield of Maastricht-Ambyerveld was found associated with the cremated remains of a young woman who presumably is the mother and who died while the foetus was still in her womb (Dyselinck 2013, Appendix 7, 56). However, the other foetus, that was found at the urnfield of Oosterhout-Vrachelen/De Contreie, received its own burial (Roessingh *et al.* 2012, 103), complete with urn and monument (*ibid.*, fig. 5.43).

The six individuals that with certainty qualified as neonates were all buried in the company of an adult individual. Four of these adult individuals concern females, for the other two no sex could be determined. It could very well be that the females in these graves are the mothers of these neonates and that these graves reflect the event of a pregnancy gone wrong in the very last phase- or the deaths of both mother and child in childbirth. Of the remaining 49 individuals in the infant category, 42 individuals were buried alone. Overall, this means that a share of 75.4% (43/57)[99] of all individuals in the infant category received its own grave. The overall share of non-adult individuals that received their grave is even higher: 83.5% (233/279).[100/101]

In conclusion, when all of the above is taken into consideration, it appears that Late Bronze Age/Early Iron Age cemeteries in the Lower-Rhine-Basin were indeed open to all categories of age, underpinning the inclusive character of these cemeteries. From the very youngest of age to the very oldest, all went through the transforming qualities of the cremation fire before finally being laid to rest in an urnfield. In addition, as was shown in Chapter 5, both sexes could be provided with the same categories of objects. Even non-adults were not denied the occasional accessory vessel or items related to personal adornment and

97 For example, Tol, who excavated the urnfield of Mierlo-Hout-Snippenscheut himself, states about the preservation state of the urnfield: *"…The Mierlo-Hout urnfield is incomplete and heavily eroded, making it of limited use for social analysis…"*Tol 1999, 89.

98 Infants: 0-3 years of age.

99 43 individuals in the infant category of a total of 57 individuals in the infant category .

100 233 individuals under the age of 15 out of a total of 279 individuals under the age of 15.

101 It is remarkable though, that 80.4% (41/51) of all cremation graves that contained the remains of multiple individuals concern combinations of an adult and a non-adult (also see Section 4.4.3).

De Mulder 2011	Description	N	% Tot.	% Det.
Type A	Urn grave (sensu stricto)	207	6.51	30.49
Type B	Urn grave with mixed cremated remains and pyre-debris	41	1.29	6.04
Type C	Concentration of 'clean' cremated remains	288	9.05	42.42
Type D	Concentration of 'clean' cremated remains buried separately from pyre-debris	27	0.85	3.98
Type E	Mixed deposition of cremated remains and pyre-debris in small pit	63	1.98	9.28
Type F	Scatter or concentration of cremated remains in fill of surrounding feature	40	1.26	5.89
Type G	Scatter of cremated remains in large pit	12	0.38	1.77
Type H	Bustum grave with separate interment of cremated remains	1	0.03	0.15
Type I	Bustum grave (sensu stricto)	0	0.00	0.00
TOTAL:		[679]		100.00

Other	Description			
Type A/B	Urn grave unspecified	1,128	35.45	
Type A/F	Urn grave in surrounding feature	17	0.53	
Type C/D	Concentration of cremated remains unspecified	42	1.32	
Not Type A/B	Cremation grave without urn unspecified	1,023	32.15	
Secondary grave	(Cremation) grave dug into an older funerary monument	5	0.16	
Cremation unspecified	Cremation grave, but no further details available	242	7.61	
Inhumation grave	Grave containing an inhumed body	45	1.41	
Bi-ritual	Grave containing an inhumed body that is partly burnt/cremated	1	0.03	
TOTAL:		3,182	100.00	

Tab. 6.3: The different types or *compositions* of graves as observed for the present dataset. 'N' indicates the total number of graves that falls under the respective category of graves. The percentages in the column '% Tot.' have been calculated over the entire population (N=3,182) while the shares in the column '% Det.' only concerns the graves that could be classified according to De Mulder's scheme (N=679).

appearance (Section 5.4). Neither was the use of urns in some way related to either sex or age (Section 5.4). In sum, at the doorstep of interment, archaeologically still little difference can be observed in the way the different sex and age categories were treated.

6.3 Assembling the dead: Modes of interment

Having arrived at that stage in the mortuary process where the physical remains of a decedent were to enter the ground, the mourning community resurfaces in an archaeological visible way as never before. Most of the actions we see reflected in urnfield graves were in fact part of this stage of the mortuary process. The way in which the cremated remains entered the ground (in an urn, scattered or bundled), the placement of objects in relation to a decedent's (former) body and the in- or exclusion of pyre-debris are all examples of actions that were only performed at the stage of

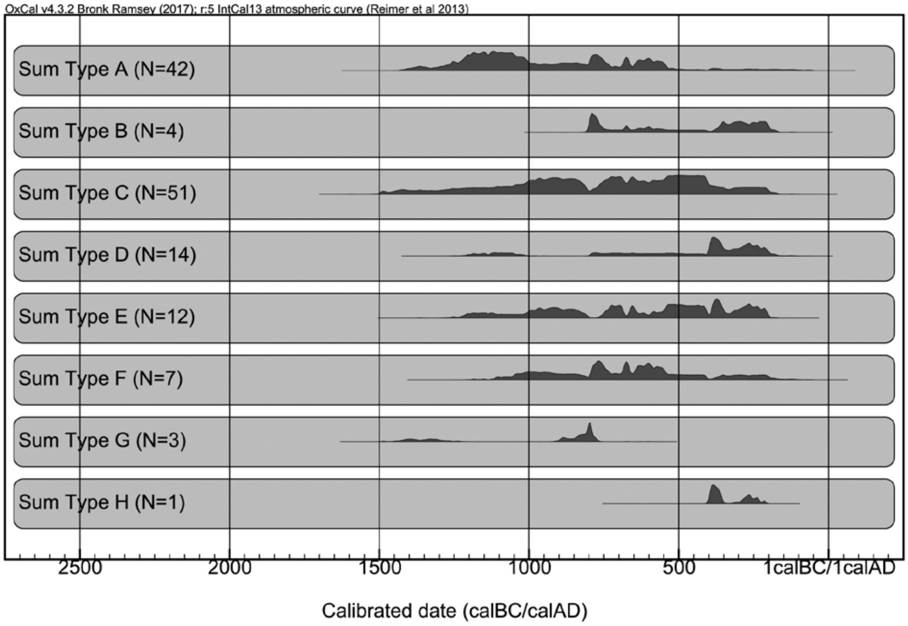


Fig. 6.3: Grave types and the sum of the associated radiocarbon dates available for the 679 graves in the present dataset that could be ranked according to De Mulder's classification (De Mulder 2011).

interment. It is in this stage of the mortuary process where we learn about the last requirements that needed to be taken into account before a decedent could make the final transition. As will however appear, *the* urnfield grave clearly did not exist and like with the rest of the mortuary process, the mode of interment seems to have been open to some interpretation and variation.

6.3.1 Shaping the grave

In order to map the different fashions in which cremated remains could enter the ground, the 3,137 cremation graves in the present dataset have all been checked with the classification system De Mulder had devised for urnfield graves in the Belgian Scheldt-Basin (De Mulder 2011, 214-235; fig. 8.4). From a theoretical standpoint this seemed initially like a useful exercise since De Mulder's scheme perfectly allows for a quick assessment of the composition of cremation graves (See Section 3.3.3). Unfortunately, for the present dataset it soon appeared that for many graves the detailed documentation required for this assessment simply lacked. Even in some of the most recent reports it proved virtually impossible to distinguish whether the pottery retrieved from a cremation grave was used as an urn or concerned accessory pottery. Only in 679 cases the documentation of the graves allowed for a division into one of De Mulder's grave types without problems. Nevertheless, since De Mulder's scheme has been set up as a decision tree it was still possible to assign 2,193 of the remaining graves a place closer to the decision tree's trunk, as it were (Tab. 6.3). As an example, for some 1,128 graves it was clear they concerned urn graves, but the presence of pyre-debris had not been documented for these particular examples. These graves have then been registered as 'Type A/B.' The other way around,

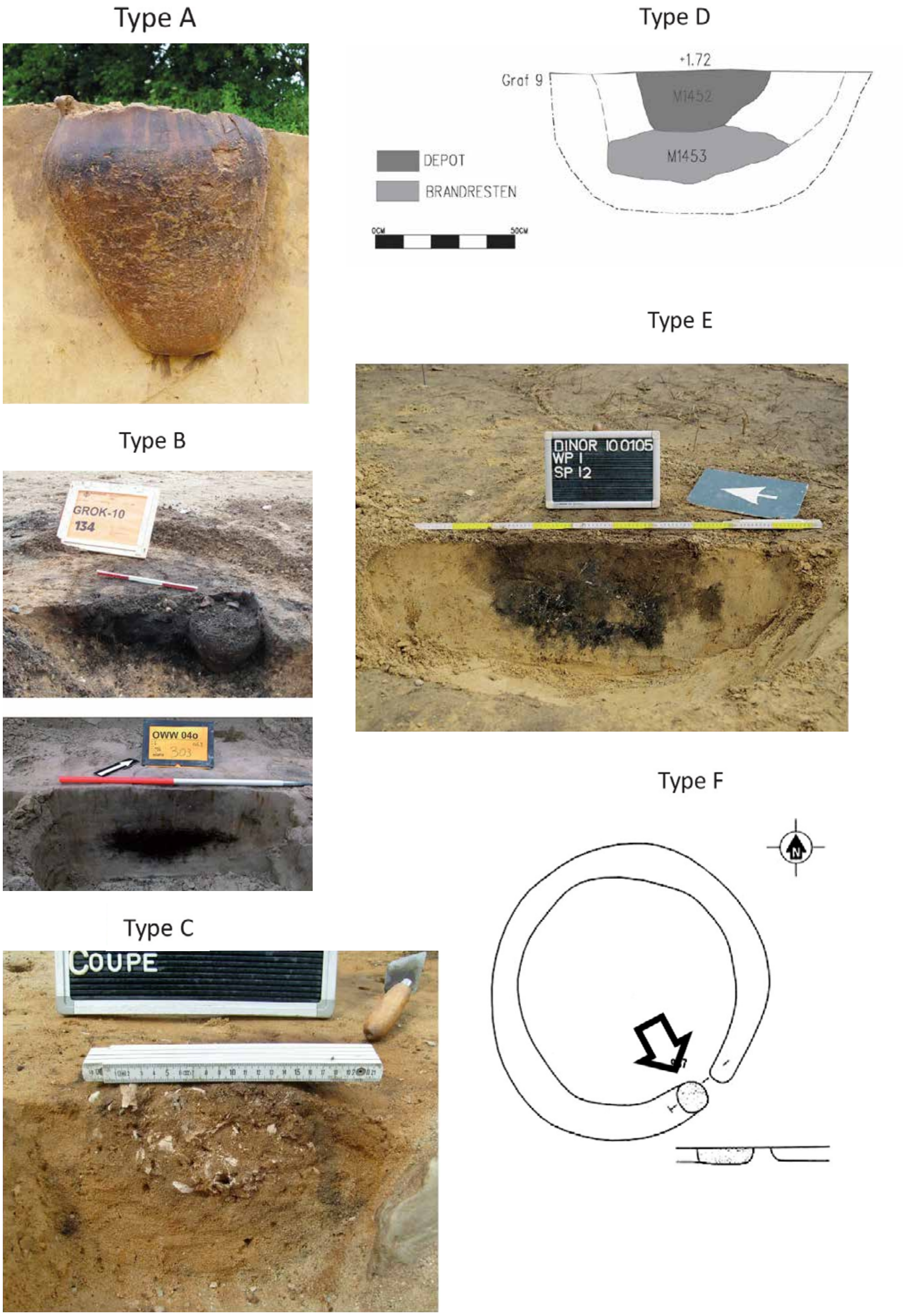


Fig. 6.4: Field impressions of grave types 'A' – 'F.' No clear field pictures were available for grave 'G' and 'F' types. The photos were shot at the following cemeteries: (type A) Geldrop-Genoenhuis (Hissel *et al.* 2007, 206); (type B) Groesbeek-Hüssenhoff (Geerts/Veldman 2012, fig. 4.6); (type C) Uden-Slabroekse Heide (Photo: Arjan Louwen); (type D) Den Haag-Hubertustunnel (Bulten *et al.* 2007, 93); (type E) Rossum-Oranjestraat (Eeltink/Smits 2007, fig. 37); (type F) Someren-Waterdael III (Hiddink/De Boer 2011, fig. 14.12).

some 1,023 graves that clearly concerned depositions of cremated remains without urn, but for which any further detail lacked, have been registered as 'Not Type A/B.'

For the 679 graves that could accurately be ranked according to De Mulder's classification system, it shows that 'clean' depositions of cremated remains, both in urns ('type A') as without urns ('type C'), are absolutely dominant (Tab. 6.c). Even though both urnless cemeteries as well as cemeteries where more than 90% of the population was buried in urns come about (see Tab. 5.1), in most cemeteries both ways of interment were practiced in unison. Both types of 'clean' cremation depositions can be observed for the entire period of study (Fig. 6.3) and do not seem to have been bound to a specific region (see Tab. 5.1). Generally, both types of graves involved the digging of a small round and shaft-like pit, just big enough to lodge the urn or bundle of cremated remains (see Fig. 6.4: types 'A' and 'C'). For some urn graves it was attested that cremated remains had been scattered in the backfill of the burial pit as well.[102] At the cemetery of Noordbarge-Hoge Loo even one case occurred whereby an urn was covered with a lid and cremated remains had subsequently been placed on top of that lid. A second lid was then placed over these cremated remains before the burial pit was finally sealed off (Kooi 1979, 52, fig. 42, no. 480). It is unclear whether in these specific cases the original graves had been reopened before the second bulk of cremated remains were placed inside these pits.

A third and alternative way of depositing clean cremated remains concerns De Mulder's 'type G' graves. This type of grave involved the scattering of clean cremated remains in a large pit and has only occasionally been observed for the present dataset (Tab. 6.3). The available radiocarbon dates for this type of grave all calibrate in the later Bronze Age (Fig. 6.3).

Grave types whereby pyre-debris play a significant role (types 'B,' 'D' and 'E') are represented in smaller shares but certainly did not concern mere exceptions (see Tab. 6.3). 'Type B' graves, urn graves that contain a mix of cremated remains and pyre-debris, often come about as shaft-like pits. They are occasionally also found as larger pits wherein the urn has been placed in one corner while the pyre-debris fill up the rest of the pit (see Fig.6.4: type B). 'Type D' graves, which are urnless graves wherein pyre-debris have been buried separately from the cremated remains, occur as small shaft-like pits but sometimes also as larger pits. It is however always clear for 'type D' graves that pyre-debris have been deposited separately from the cremated remains and that both deposits involved different actions. As a consequence, both cremated remains as pyre-debris must have been stored separately, or at least transported as such, before finally being deposited together in one grave. This is also what distinguishes 'type D' graves from 'type E' graves as in the latter case the cremated remains have been mixed with the pyre-debris before finally being deposited in the grave in one go. 'Type E' graves too, may come about as little shaft-like pits or as larger round or oval pits. Additionally, two cases have been recorded whereby pyre-debris had been buried in a separate pit next to the pit with cremated remains (Fig. 6.5). In the example from Someren-Waterdael III the pit with pyre-debris also contained 15 grams of cremated remains and has therefore been treated as a grave (Hiddink/De Boer 2011, fig. 14.11). No cremated remains have been collected from the pit with charcoal from Geldrop-Genoenhuis (Hissel *et al.* 2007, 197).

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102 Cremated remains in the backfill of urn graves have been attested in the following cemeteries: Sittard-Hoogveld [NL-LI-387] (Tol 2000, 104); Elsen-Friezenberg [NL-OV-025] (Verlinde 1976, 15); Huissen-Agropark [NL-GL-026] (Bergsma/Stokkel 2011, fig. 2.8); Wijk bij Duurstede-De Horden [NL-UT-012] (Hessing 1989, 340); Hilvarenbeek-Laag Spul [NL-BR-159] (Verwers 1975, 26).

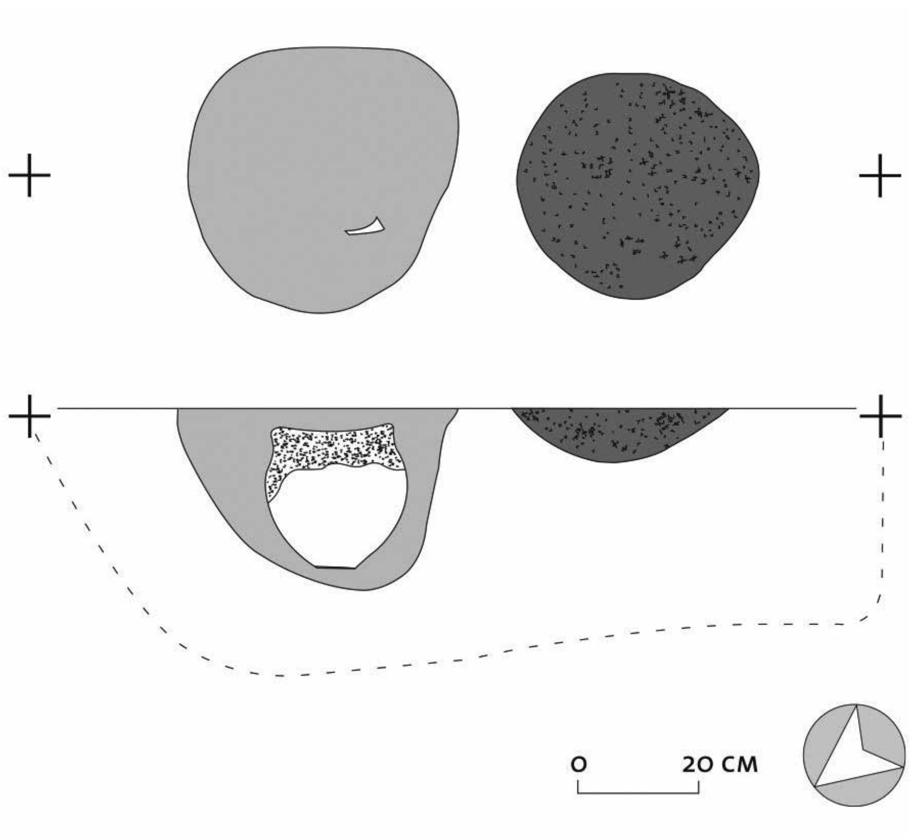

Fig. 6.5: Urn grave at Geldrop-Genoenhuis with additional pit of what presumably are the pyre-debris (After: Hissel *et al.* 2007, 197).

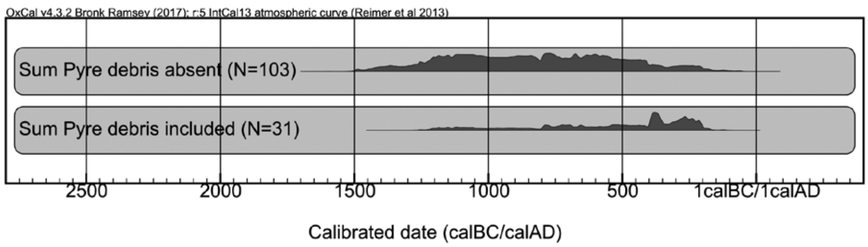

Fig. 6.6: The sum of radiocarbon dates available for grave types with- and without pyre-debris in the present dataset. Only graves that could be ranked according to De Mulder's classification (De Mulder 2011) have been included.

The deliberate act of adding pyre-debris to cremation graves has been recorded for the entire period of study. However, it seems that, especially for the type 'B' and 'D' graves, the available radiocarbon dates gravitate towards the Early Iron Age and later (Fig. 6.3 and Fig. 6.6). These dates possibly indicate that the role of pyre-debris at the stage of interment increases as the Iron Age continues. Perhaps can the cinerary barrows that occur in the Middle Iron Age be seen as the culmination of this importance of pyre-debris as in these graves the entire pyre-site was covered up with a small mound while

Cremains in/on	Pyre-debris?			Proposed (English) classification	De Mulder 2011	Hiddink 2003	German terminology
	Absent	*Apart*	*Mixed*				
Pyre	-	-	yes	Bustum (*sensu stricto*)	Type I	-	*Brandflachengrab*
	-	yes	-	Bustum; cremains apart	Type H	-	-
Urn	yes	-	-	Urn, pyre-debris absent	Type A	Type A	*Urngrab*
	-	yes	-	Urn, pyre-debris apart	Type B?	Type B	-
Nest	-	-	yes	Urn, pyre-debris mixed	Type B	Type C	*Brandschüttungsgrab*
	yes	-	-	Cremation nest, pyre-debris absent	Type C	Type A	*Knochenlager*
	-	yes	-	Cremation nest, pyre-debris apart	Type D	Type B	-
Scatter	yes	-	-	Cremation scatter (in pit)	Type G	Type A	*Leichenbrandschüttungsgrab*
Mix	-	-	yes	Mixed pyre-debris and cremains	Type E	Type C	*Brandgrubengrab*

Tab. 6.4: Proposal for a general classification system of cremation graves.

the cremated remains were just left on the pyre (Hessing/Kooi 2005, 637; Lanting/Van der Plicht 2005, 308). In the present dataset only one such grave ('type H') has possibly been found at the site of Weert-Laarveld (Tol 2009, 103) and has indeed been radiocarbon dated to a later phase of the Iron Age.[103]

The last form of interment to be discussed here concerns the placement of cremated remains in the surrounding features of already existing funerary monuments. For the present dataset 57 examples of this form of interment have been recorded. In 40 cases the cremated remains had been scattered inside the ditch or had been deposited in a compact bundle (De Mulder's 'type F'). In the remaining 17 cases the cremated remains had been put in an urn first (Tab. 6.3: 'type A/F'). This particular practice occurred throughout the entire period of study (Fig. 6.3) and has been observed for cemeteries in both the north as the south of the research area. The fact that it was regularly decided not to provide the cremated remains with their own distinct funerary monument but to bury them in a circular ditch of an already existing monument, adheres to the ritual importance of these surrounding features (also see Sections 6.3.2 and 6.3.3).

When all the various ways of interment are considered, there clearly was no strict template of what the urnfield grave should look like. But how should this variation then be explained? As was already argued in Section 5.2.1, neither sex or age seem to have formed determining factors in using an urn or not. However, as was also illustrated in Section 5.2.1, some regions display a clear preference for the use of urns in containing the cremated remains during a certain period of time. For instance, in Early Iron Age cemeteries in the sandy area of East Brabant and North Limburg, urn graves make up more than 90% of the graves. This observation consequently leads to a dominance of De Mulder's 'type A' graves in this specific region during the Early Iron Age (Section 5.2.1; Tab. 5.1). Only a few centuries later, at the transition from the Early- to the Middle Iron Age the same region exhibits a clear dominance of urnless graves, consequently leading to an abundance of De Mulder's 'type C' graves. Clearly there are some timebound and

103 [NL-LI-017; Grave_ID 544]: Labcode Poz-25928: 2285 +/- 35 BP: 406-210 cal. BC (95,4 %) (Tol 2009, 103).

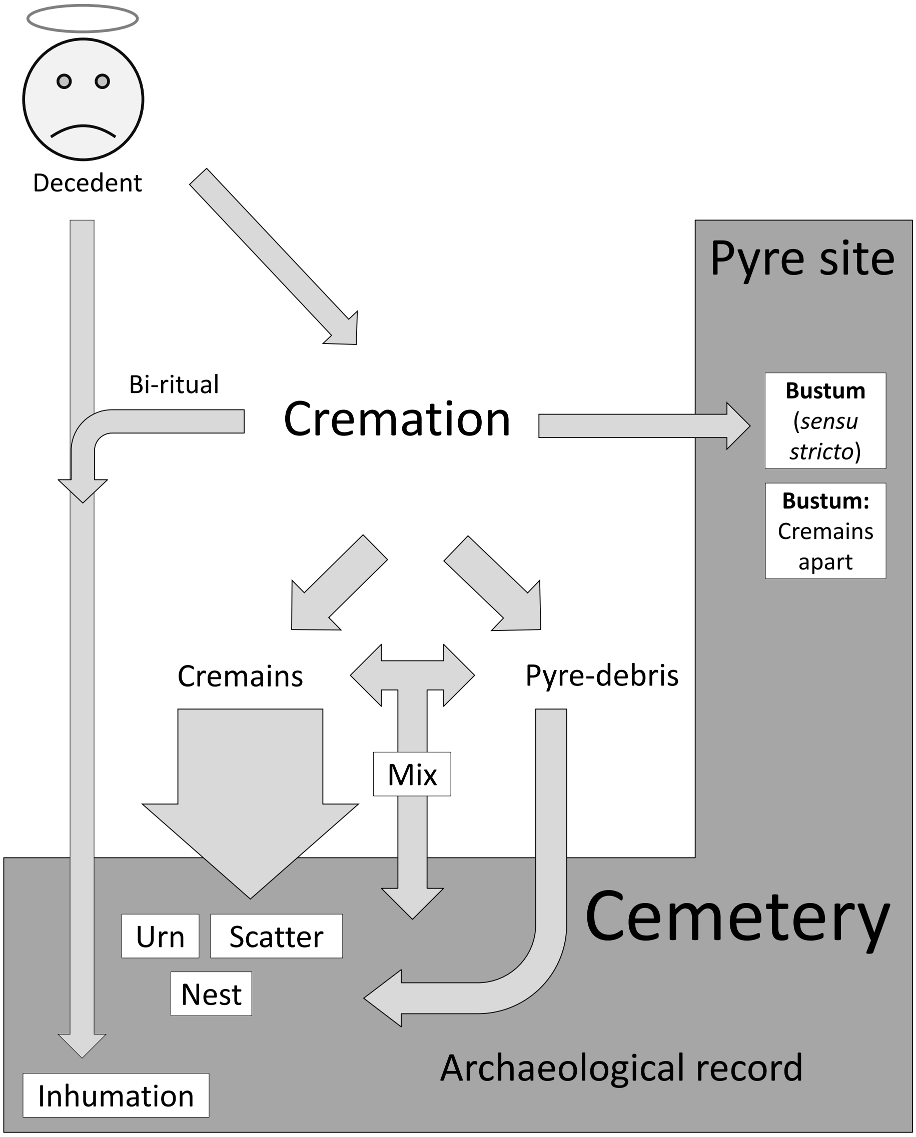

Fig. 6.7: The variety of grave forms as observed for Bronze- and Iron age cemeteries in the Lower-Rhine-Basin. The terminology applied in this flow chart may be used as building blocks in the description of graves (see Tab. 6.4).

regional trends in the occurrence of specific types of graves. The inclusion of pyre-debris has already been discussed in this regard. It should however also be noted that urn graves and urnless cremation graves often cooccur within the same cemetery (Tab. 5.1), meaning that different modes of interment could be practiced in unison within the confinements of a single cemetery.

An interesting question that follows is how different are these various modes of interment really? While to our minds the different modes of interment as we see them in our excavations may indeed look very different, this not necessarily reflects the perception of the people who once did the actual burying. It is not argued here that the composition of graves is therefore meaningless, on the contrary, this entire dissertation builds upon the presumption that these graves are meaningful composite artefacts (Section 1.4.1). But we must bear in mind that as archaeologists we are fortunate to be able to see the entire picture of a cemetery and that what we see in our excavation plans, GIS's and catalogues only came into being after sometimes hundreds of years of burial. Where we can exactly see, measure and examine the contents of countless of graves at once (*e.g.* the present dataset), the people who once buried their beloved ones in such a cemetery perhaps only witnessed a dozen of these burials unfold. Logically, not all graves in a cemetery like Noordbarge-Hoge Loo that was in use for more than 700 years (Kooi 1979; Arnoldussen/Albers 2015) will look exactly the same. Returning to Bourdieu's notion of the *habitus* (Bourdieu 1990; Section 2.2) time and time again people would have processed and weighed all they saw when they witnessed or took part in a funeral. Therefore, what we see in a particular grave is the residue of all the practices that in some way made sense to the mourners at that particular funeral and at that particular occasion. While this thesis means that there is in fact not a single grave alike as both actors and audience would have differed at every other funeral, it also means that the different modes of interment as we see them are still the result of practices that made sense to a lot of people in the Late Bronze Age and Early Iron Age.

In this light, when the different modes of interment are broken down into main constituents, cremated remains are the only substance returning in all graves. Cremating a corpse and burying the burnt bones in an urnfield was something that made sense to people in 99%[104] of the cases someone had died. In addition, pyre-debris have been collected from a substantial share of graves as well. What follows is that after the event of cremation people were time and time again confronted with the decision how to finally assemble the cremated remains in the context of the grave and what to do with the pyre-debris (Fig. 6.7). Regardless of all the possible motivations behind these practices, it is basically the result of this decision what we finally see reflected in the different modes of interment. And it is at this crucial stage in the mortuary process where we must consider that to the mourners it was perhaps more important *that* cremated remains and/or pyre-debris were finally to be buried in the first place rather than *how*. To our minds the different modes of interment may seem to reflect rather different perceptions of what a grave should look like, and in a way they do. But what we again must bear in mind is that these people will only have witnessed a limited number of funerals themselves and they will have acted in a way that made sense to *them*. Surely people would have had a clear idea about *why* pyre-debris should be buried along with the cremated remains but the way this was finally accomplished may have been prone to personal interpretations or those of local groups (of practice) for that matter. The same applies to the cremated remains themselves: it is clear they needed to be buried but there are several (and at the same time only restricted) possibilities of accomplishing this as they can be put in a container, placed in a pit (either concentrated or scattered) or be mixed with the pyre-debris (Fig. 6.7; Tab. 6.4). What remains is that even though every single grave is unique as it was created by a unique group of people acting according to their mutual *habitus*, the practices we can still distil from these graves made sense to all of them. Practices that resulted in various but at the same time restricted possible modes of interment (Fig. 6.7; Tab. 6.4).

104 Considering the small share of inhumation graves in the present dataset.

6.3.2 Furnishing the grave: The placing of objects and admixtures inside the grave

With the cremated remains and pyre-debris in place, the next step is to examine which positions the various objects were assigned inside a grave. For 328 objects from cremation graves some information as to their original position could be obtained. Often this information was restricted to a position in- or outside the urn but for some 162 examples the original position of the objects had been documented in more detail. For cremation graves a major distinction can be made between graves with and without urns since the urn as container for the cremated remains is a rather defining feature with regards to the position of the objects.

To start with the urn graves, in 218 cases had the position of the objects in relation to the urn and/or the cremated remains been documented. In 191 graves the objects had been placed inside the urn while in the remaining 27 cases the objects had been deliberately kept out. When the details concerned had been provided, it is notable that by far most pieces of accessory pottery had been placed on top of the cremated remains inside the urn (Tab. 6.5). Only in two occasions had they been found amidst the cremated remains. About a bronze bracelet from the cemetery of Wijk bij Duurstede-De Horden,[105] it was noted that some 20 pieces of this bracelet were also found outside the urn in the fill of the burial pit (Hessing 1989, 340). The amber beads that were found on the bottom of an urn in the cemetery of Maastricht-Ambyerveld have already been mentioned (Section 5.5). An iron razor[106] and two bronze bracelets[107] had carefully been placed on top of the cremated remains in two respective graves in the cemetery of Noordbarge-Hoge Loo. A bronze dress pin was found lying on top of the cremated remains in an urn at Gasteren where it was accompanied by a miniature version of a '*Gasteren*-urn' that had been placed on its side (Fig. 6.8:c). The two bronze bracelets from Noordbarge were also accompanied by a piece of accessory pottery which was standing upright, partly on top of the two bracelets (Fig. 6.8:d.).

About 17 of the objects that were found outside urns more details are available as to their exact location. Two spindle whorls from different cemeteries were found lying next to the respective urns.[108] An interesting detail about one of these graves, the example from Zutphen-Looërenk/Meierink, is that a second spindle whorl had been placed *inside* the urn (Van Straten/Fermin 2012, 60). Of the 14 pieces of accessory pottery in this group, four examples were placed against the walls of the urns concerned. In two occasions have miniature vessels been found lying on their sides next to- or against the urn.[109] It is not always clear whether this had been done on purpose or that is was caused by taphonomic processes. In one exceptional case the urn was found standing inside a pottery bowl[110] (Tol 2000, 144).

For cremation graves that did not involve the use of an urn, about 110 objects some information as to their original position in relation to the cremated remains had been provided. It should be mentioned though that taphonomic processes taking place in

105 [NL-UT-012; Grave_ID 1700].
106 [NL-DR-054; Grave_ID 2737].
107 [NL-DR-054; Grave_ID 2646].
108 [NL-LI-365; Grave_ID 0686]; [NL-GL-056; Grave_ID 1754].
109 [NL-LI-387; Grave_ID 0780]; [NL-DR-054; Grave_ID 2737].
110 [NL-LI-387; Grave_ID 0781].

Urn [inside]

Object group	On top CR	Mixed	Underneath CR	Inside unspecified	TOTAL
Accessory pottery	25	2	0	110	137
Cosmetics and clothing	3	4	1	41	49
Tools	0	0	0	2	2
Weapons	0	0	0	2	2
Horse gear	0	0	0	1	1

Urn [outside]

Object group	Against urn	Next to urn	Underneath urn	Outside unspecified	TOTAL
Accessory pottery	4	10	1	2	17
Cosmetics and clothing	0	0	0	8	8
Tools	0	2	0	0	2
Weapons	0	0	0	0	0
Horse gear	0	0	0	0	0

No urn

Object group	On top CR	Mixed	Underneath CR	Next to CR	TOTAL
Accessory pottery	30	30	7	7	74
Cosmetics and clothing	1	23	0	0	24
Tools	0	3	0	0	3
Weapons	0	9	0	0	9
Horse gear	0	0	0	0	0

Tab. 6.5: The main object groups and their position in relation to the cremated remains. The numbers represent the number of graves whereby a certain position of an object has been positively identified. When a grave contained multiple objects that were placed in the same position, these objects have then been counted as one observation as they seem to reflect one decision. For instance, the 9 observations whereby weapons have been found mixed with the cremated remains in urnless cremation graves together include some 23 individual objects (2 daggers and 21 arrow-/spear heads).

the ground may have caused certain objects that had originally been placed on top of cremated remains to finally end up mixed with them. Even the closing of the burial pit itself may already have caused such a distribution. Most objects were found mixed with the cremated remains (see Tab. 6.5). Only for accessory pottery it could be established that this category of objects was also often placed on top of cremated remains. Of all the objects related to personal adornment, only a bronze tweezers from Oldenzaal-De Tij[111] was found placed on top.

In addition, a substantial amount of graves contained loose pottery sherds that seem to have been put in the grave on purpose (Section 5.7.2). Only rarely has their exact location inside the grave been documented but the occasional micro-excavation

111 [NL-OV-050; Grave_ID 1238].

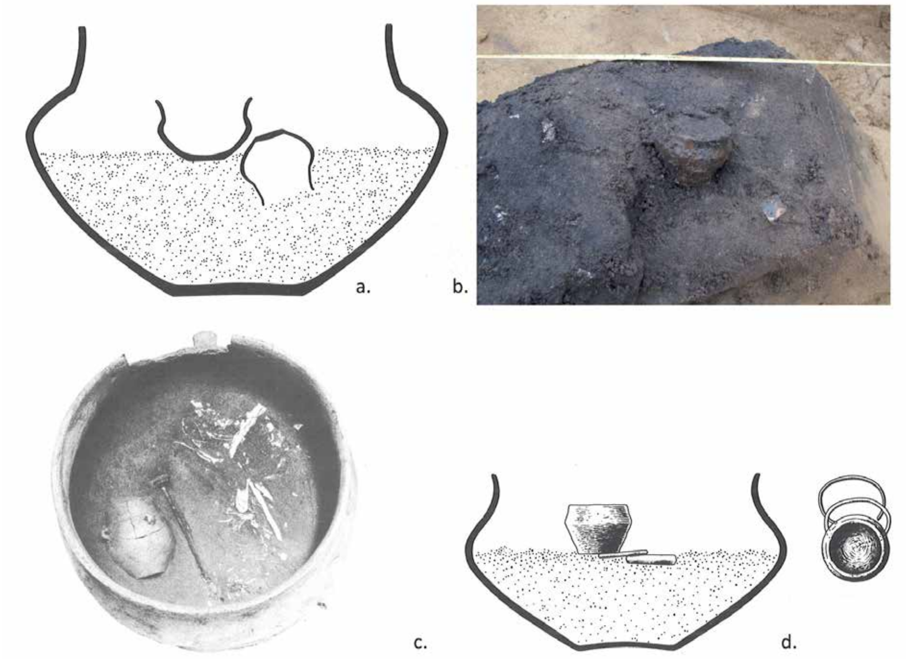

Fig. 6.8: Examples of the placement of objects inside cremation graves as observed for the present dataset: (a) Noordbarge-Hoge Loo; H (urn): 26 cm (Kooi 1979, fig. 42:157); (b) Groesbeek-Hüssenhoff (Geerts/Veldman 2012, 242); (c) Gasteren (Kooi 1982, fig. 33); (d) Noordbarge-Hoge Loo; H (urn): 16 cm; (Kooi 1979, fig. 42:252) (Figures A; C; D: © University of Groningen, Groningen Institute of Archaeology).

shows that pottery sherds were carefully and purposefully placed inside these graves (Fig. 6.9; Van den Broeke/Daniël 2011, fig. 4.20). The present dataset also yielded two examples where pottery sherds found in graves fitted pottery sherds retrieved from surrounding features.[112] In the case of St. Oedenrode-Haagakkers the fitting sherds came from different funerary monuments but at Geldrop-Genoenhuis the fitting sherds came from the very same monument. Also, at Geldrop the sherds found in the circular ditch were burnt and had been submerged in an oleaginous substance while the sherds from the grave itself were clearly unburnt (Hissel *et al.* 2007, 184) suggesting the former sherds were part of an additional practice involving fire and grease before being placed inside the circular ditch. The fact that both grave and circular ditch contained sherds of the same vessel either suggests sherds of the same vessel were deliberately kept out of the grave only to be interred in the circular ditch after the completion of the monument or that both grave and ditch laid open at the same time. Like the ample examples of cremated remains retrieved from surrounding features (Section 6.3.1), these findings again emphasise the ritual importance of these structures (also see Section 6.3.4.4).

112 Graves with sherds fitting sherds from other contexts: St.-Oedenrode-Haagakkers [NL-BR-210]: 'Grave 49' [Grave_ID 521]: six sherds from this particular grave fitted sherds from the ditch surrounding graves '40a-c' [Grave_ID's 515-517]; Geldrop-Genoenhuis [NL-BR-004]: 'Grave 8' [Grave_ID 898].

Fig. 6.9: Grave 11 [Grave_ID 1440] in the cemetery of Lent-Lentseveld [NL-GL-036] possibly showing the careful placement of pottery sherds inside the grave. (Van den Broeke/Daniël 2011: fig. 4.20).

Overall, there seems to have been no clear blueprint of where exactly an object needed to be placed inside the grave. However, when the treatment of the different objects is added, it appears that when objects were found mixed with the cremated remains, there is a bigger chance these objects have been burnt. For instance, at least 14 out of the 32 pieces of accessory pottery that were found mixed with the cremated remains are burnt while for the examples that had been placed on top of the cremated remains only four out of 55 examples showed signs of burning. The same observation probably also counts for objects related to cosmetics and clothing. Of the 27 objects that have been found mixed with cremated remains at least eight had been burnt and another seven most probably also. For most of the other examples in this category no details had been provided as to their treatment. Only four of these latter objects were definitely unburnt. None of the four objects related to cosmetics and clothing that had been placed on top of the cremated remains had been burnt and except for the heavily corroded iron razor from Noordbarge[113] were all even pretty much intact.

The same observation applies to fragmentation. 15 out of the 32 pieces of accessory pottery that had been mixed with the cremated remains have been found in a fragmented state while of the 55 examples placed on top the cremated remains only six were fragmented, five of which most probably due to taphonomic processes rather than intentional fragmentation. Of the objects related to cosmetics and clothing 14 out of 27 examples mixed with cremated remains were found in a fragmented state. The relatively high number of graves where burnt and/or fragmented objects have been found mixed with the cremated remains is probably best explained by the scenario where these objects were worn by the decedent on the pyre (cosmetics and clothing accessories) or had been added to the cremation fire (accessory pottery). After the pyre-

113 [NL-DR-054: Grave_ID 2737].

debris had cooled down these burnt and broken objects were then collected together with the cremated remains, finally to be deposited in the context of the grave in a mixed state. Objects that were placed on top of the cremated remains are often unscathed and were probably meant to enter the grave in such a capacity. As argued earlier (Section 5.5) both pyre and grave seem to have been regarded as suitable occasions in the mortuary process, or places for that matter, to provide the decedent with (the same kind of) objects.

A final remark concerns the specific placements of some pieces of accessory pottery. In no less than 23 cases the pottery concerned had deliberately been placed upside-down, whether or not on top of the cremated remains. It is clear by their positioning these cups, bowls and plates did not contain any liquid or food at the time they were placed inside the grave. Perhaps these vessels were just meant to accompany the decedent as future utensils rather than the containers of food and drink. Another explanation that should be considered though is the deliberate inversion of things in death. A clear contemporary example concerns the Early Iron Age elite burial of Hochdorf where the left shoe of the chieftain had deliberately been placed on his right foot and vice versa. Also, the arrows that were found in the Hochdorf burial chamber had deliberately been placed upside-down in their quiver (Veit 1988; Rebay-Salisbury 2017, 61).

6.3.3 Marking the grave

6.3.3.1 Making the dead visible

After cremated remains, pyre-debris and objects had been assembled in the context of the grave the mortuary process would have slowly drawn to an end. It is difficult to determine at what point the mourners would have felt the mortuary process was concluded as the dead were surely revisited until long after interment (Sections 6.3.3.4 and 6.5). Nevertheless, the next step in the mortuary process involving the closing and marking of the grave would undoubtedly have marked a conclusive station along the journey of a decedent from a former living member of the community to a future ancestor.

Originally, many of the cremation graves in the present study would have been covered with small burial mounds. However, as at present most urnfields have been levelled, for the present dataset only in 126 cases have remnants of burial mounds been observed. But since many of the original small mounds were once surrounded by circular ditches that were cut deep into the virgin soil, the original location, shape and size of these monuments is often still perfectly indicated. In addition, minerals that accumulated in the fills of these ditches penetrated even deeper in the subsoil by the process of podzolisation (Berendsen 2008, 88-89), sometimes as deep as 70 centimetres underneath the original prehistoric surface (Fig. 6.10). As a result, even cemeteries that have literally been erased from the face of the earth, can sometimes still be traced back by documenting these soil formation processes (*e.g.* Hakvoort/Van der Mei 2010; Jansen *et al.* 2020). Unfortunately, the process of podzolisation can only be used as an advantage for the cemeteries located on sandy soils. Soil formation processes in clayey sediments and loess penetrate less deep into the subsoil and the features themselves are often only vaguely visible. Erosion and homogenisation are other notorious factors of influence on the invisibility or the seemingly absence of funerary structures in clayey sediments (Dyselinck 2013, 54).

Fig. 6.10: The imprint of illuviated minerals underneath the original circular ditch of an Early Iron Age grave in the cemetery of Uden-Slabroekse Heide (Photo: Arjan Louwen).

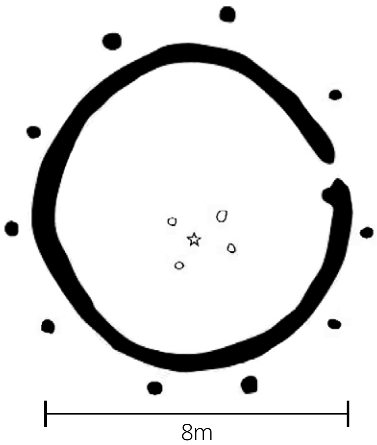

Fig. 6.11: Example of a grave surrounded by four posts in the cemetery of Steenderen-Steenderdiek (After: Hermsen/Van der Wal 2012, fig. 3.12).

It is however also clear that not for every single grave a new monument was erected or circular ditch was dug as cremation graves can also be found in the narrow spaces in between the different small mounds. In addition, one mound could host multiple graves and as illustrated in the above even the circular ditches themselves were considered suitable places to deposit the last physical remains of a decedent (see Tab. 6.1). It should also be considered that there might have been alternative ways of marking the location of a grave above ground that are now largely invisible to the archaeological eye. As an example, a handful of graves in the present dataset were originally surrounded by four posts (Fig. 6.11)[114] that could have supported a small platform, granary-like building or shrine.

6.3.3.2 Types of monuments

Of the total 3,182 graves in the present dataset, ultimately 1,585 graves[115] coming from 55 different cemeteries could positively be linked to 1,360 individual monuments or surrounding features. It should be noted with regards to these counts that for the present dataset only the funerary structures that could positively be linked to preserved graves have been included.

As Table 6.6 shows, round mounds accompanied with a circular ditch are by far the best represented type of monument. The types of monument present in one particular cemetery may however vary substantially. Long mounds of the Goirle type, for instance, made up substantial, if not dominant shares of the total number of monuments in the cemeteries of Goirle-Hoogeind and Hilvarenbeek-Laag Spul. Also, the occurrence of some specific types of monuments, like long mounds of the '*Vledder*-type' and so-called keyhole-shaped monuments (*Schlussellochgräber*), seems restricted to specific regions in the Lower-Rhine-Basin. The southernmost example of the former type of monument has recently been excavated at Epse[116] (province of Gelderland), while the cemetery of Beegden produced the only known exception of a Keyhole-shaped ditch south of the river Meuse. The occurrence of specific types of monuments may also have been restricted to specific periods of time. Long mounds of the '*Vledder*-type' seem to concern an early type of monument no longer in use at the dawn of the Iron Age while quadrangular ditches predominantly occurred from the later Early Iron Age onwards (Fig. 6.12). Round mounds accompanied with circular ditches clearly concerned a universal type of monument. In the Netherlands the youngest examples even date to the Early Medieval period (*e.g.* Holwerda 1926; Verwers/Van Tent 2015, 15). Examples with an opening in the surrounding feature however seem to concern a typical (Early) Iron Age phenomenon (Fig. 6.12; Verlinde 1987, tabel K). It is apparent that the south-eastern section of the compass was much favoured for the location of an opening in a circular ditch. Out of the 206 openings in circular ditches that could positively be identified no less than 105 were directed at the southeast. Another 85 openings were located somewhere between due east and due south. The reason for openings in circular ditches to be predominantly directed towards the southeast could be related to the angle of sunrise. Other explanations should however be considered as well. Even in today's world religions the locations of holy places play an important role in determining the direction of shrines, graves and prayers such as Jerusalem for Christianity and Mecca for Islam.

As Table 6.6 also shows it does not seem that specific types of monuments were only reserved for specific sexes or age classes. Assuming that graves located centrally underneath monuments also concern the initial or primary graves for which a monument was erected, both males and females and both non-adults as adults could be buried

114 Cemeteries where four-post structures surrounding graves have been recorded: Wijk bij Duurstede-De Horden [NL-UT-012]: 'Grab 58' (Hessing 1989, fig. 8); Noord Elsen-Friezenberg [NL-OV-025]: 'Grab 7,' '24,' '25' and '52' (Verlinde 1987, fig. 19); Steenderen-Steenderdiek [NL-GL-019]: 'Graf 1' (Van Straten 2010, fig. 21); Valkenswaard-Het Gegraaf [NL-BR-250]: 'Graf 55' (Brunsting/Verwers 1975, Appendix).

115 Inhumation graves included.

116 Unpublished.

		Buried central			
Type of monument	**Type of surrounding feature**	**N monuments**	**Male**	**Female**	**Non-adult**	**Adult**

Type of monument	Type of surrounding feature	N monuments	Buried central: Male	Buried central: Female	Buried central: Non-adult	Buried central: Adult
Round mound	Circular ditch [Kreisgräber]	1136	28	30	30	127
Round mound	Double circular ditch	23	2	2	2	6
Round mound	Three double circular ditch	3	0	0	0	0
Round mound	Circular ditch and post circle	11	1	2	0	5
Round mound	Post circle	4	0	0	0	0
Round mound	Keyhole-shaped ditch [Schlussellochgräber]	22	1	0	0	1
Round mound	*Not applicable*	8	0	0	0	0
Round mound	INDET.	5	0	0	0	0
Quadrangular[?] mound	Quadrangular ditch	35	3	2	0	10
Long mound	Rectangular ditch	86	0	2	1	6
Long mound	Rectangular ditch segments	11	6	1	0	8
Long mound	Double rectangular ditch	1	0	0	0	0
Long mound	Oval shaped ditch	2	0	0	0	0
Long mound	Post circle	3	0	0	0	0
Stone cist	*Not applicable*	1	0	0	0	0
Stone platform	*Not applicable*	4	0	0	0	0
Funerary house[?]	Small rectangular ditch with a post in each corner	1	0	0	0	1
"Mound complexes"	Multiple overlying structures of different types	2	0	0	0	0
INDET.	Straight ditch segments	2	0	0	0	0
TOTAL:		1,360	41	39	33	164

Tab. 6.6: The different types of monuments/surrounding features and the associated numbers of occurrence as observed for the graves in the present dataset. The columns for the different sex and age categories only include graves that contained the remains of just one individual and that were located centrally in/underneath the monuments concerned.

centrally underneath any kind of monument. Occasionally, a local trend may be observed as for the cemetery of Geldrop-Genoenhuis it was noted that non-adults were buried underneath smaller barrows (Hissel *et al.* 2007, 97). Outside the present dataset Roymans and Kortlang have made the same observation for several other cemeteries in the Meuse-Demer-Scheldt region (Roymans/Kortlang 1999, note 23). However, the thesis they put forward that long mounds were predominantly reserved for males that possibly fulfilled the role of family heads (Roymans/Kortlang 1999, 47-48) does not seem to hold as in the present dataset both males (MNI = 9) and females (MNI = 6) have been found buried underneath these monuments as were at least nine persons that did not reach age 15.[117] In the small selection of cemeteries from the Meuse-Demer-Scheldt region on which they base their model (Roymans/Kortlang 1999, table 2) males indeed make up large portions of the positively identified sexes and non-adults indeed *mostly* seem to form combinations

117 In contrast to Table 6.6, these counts do include all graves retrieved from underneath long mounds, thus located both central as a-central and containing the remains of both single as multiple individuals.

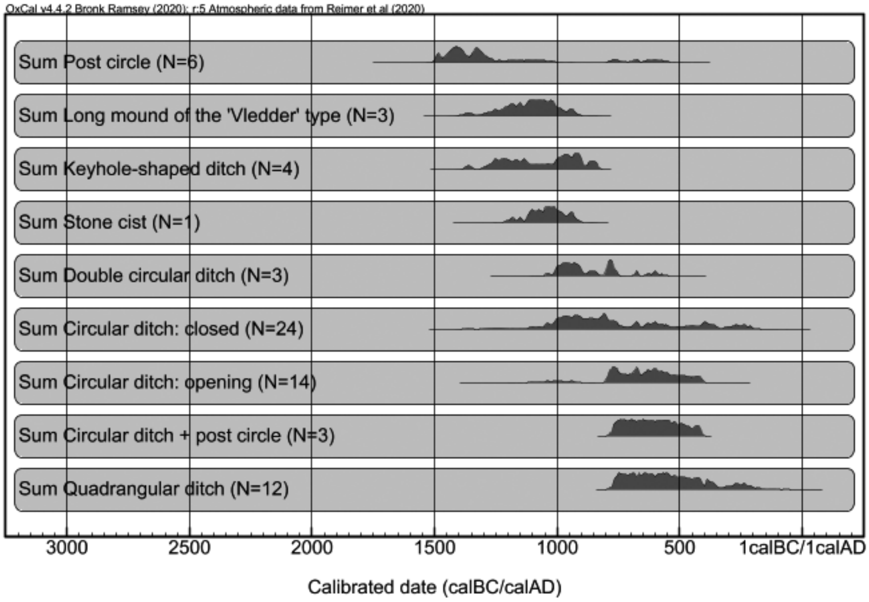

Fig. 6.12: Types of surrounding features and the associated sums of available radiocarbon dates in the present dataset. All radiocarbon dates have been obtained from either cremated remains or charcoal from primary interments within the confinements of the structures concerned.

with adults. However, even within the Meuse-Demer-Scheldt region women are buried central and individually underneath long mounds (*e.g.* Grave 1 in Tol 1999, 123; table 4).[118] In the present dataset also examples occur of non-adults buried individually underneath long mounds,[119] even within the cemeteries on which the model of Roymans and Kortlang is based upon (see Grave 6c in Hessing 1989, 335). The co-occurrence of different types of funerary monuments within the same cemeteries, especially the long mounds of sometimes extreme measurements (Kortlang 1999, 145) should thus be explained otherwise.

6.3.3.3 Circular ditches: A boundary between the dead and the living?

But why had the dead to be surrounded by ditches? In contrast to erecting a mound or surrounding a grave by a post-circle, which are both ways of consolidating the presence of a grave in the physical world, the digging of a ditch did not really increase the visibility of a grave and in fact even involves the creation of a negative (empty) space. At the time the phenomenon itself was widely spread across Northwest Europe and does not seem to have been restricted to the border of what is generally considered the be the distribution area of the so-called urnfield systems (Cunliffe 2008, fig. 8.2) as in the British Isles too ring ditch cemeteries come about (Caswell/Roberts 2018, 6). In addition, the digging of ditches around graves is not typically an urnfield phenomenon as they already appeared in the

118 [NL-BR-220; Grave_ID 0327].
119 [NL-OV-092; Grave_ID's 1386; 1390].

Middle Bronze Age (Bourgeois 2013, 37) and can still be found in Merovingian cemeteries (*e.g.* Holwerda 1926; Verwers/Van Tent 2015, 15).

The ditches themselves confined certain areas where human remains were deposited and physically set apart these areas from the surrounding world as it were. As such, these surrounding features may be considered as boundaries of sorts. Openings in the various forms of ditches suggest the areas confined by them could still be accessed, as do the forecourts of specific kinds of monuments such as keyhole-shaped ditches. All in all, not only was it deemed important to anchor the cremated remains of late beloved ones somewhere within the physical world, they were also still granted their own space by literally fencing them off. In an attempt to come up with a general processual approach to man-made linear boundaries in the first millennium BC, Mette Løvschal recently argued that *"…by materializing well-known points of orientation, such as constructed linear boundaries, visual references and physical anchors are created for social conflicts, identities, negotiations of rights, and so on…"* (Løvschal 2014, 729). Even though Lovschal's initial research did not include microcosmic fenced off spaces such as individual grave monuments, in the light of the above the digging of ditches around graves seems to adhere to the same principle.

6.3.3.4 The placing of objects and human remains in surrounding features: Acts of commemoration?

Assuming the ditches around graves were indeed dug to draw a line between the dead and the living, the material culture retrieved from these ditches might reflect upon how this liminality was perceived by the living community. Of the 55 cemeteries in the present dataset whereby specific graves could be linked to specific monuments, for 29 sites had attention been paid to materials found in these ditches or had the ditches at least been preserved in such a fashion attention could be paid to their contents. The results of a survey of the contents of these ditches have been summarised in Table 6.7. Accessory pottery is best represented and occurs in the form of complete vessels, dishes, bowls and cups but also as stray (un)burnt pottery sherds. Sometimes the vessels concerned have deliberately been placed upside down in these ditches (Kooi 1979, 189: nos. 48 and 49). Occasionally, rather specific objects such as spindle whorls and stone tools used in food preparation also occur in these ditches (see 'other' in Tab. 6.7). Since typical tableware such as bowls and cups are often represented among the repertoire of pottery (Fig. 6.13) these could indeed be related to ceremonial feasting (*e.g.* Roymans/Kortlang 1999, 45) as feasting in honour of the dead is a phenomenon encountered in both past as present cultures (Metcalf/Huntington 1991). With regards to loose pottery sherds, it could be argued that these sherds ended up in these ditches by accident. However, the two examples in the above of pottery sherds from graves fitting pottery sherds from surrounding features (Section 6.3.2) already indicate there was probably much more to these broken pots than just simple waste. Also, judging by their vast number of occurrence, it is has been argued in the above that pottery sherds were deliberately placed inside graves along with the cremated remains (Fig. 6.9; Sections 5.7.2 and 6.3.2). Following the Medieval example mentioned earlier of ashes from domestic hearths being placed in graves to prevent the spirit of the decedent from returning home (Section 3.3.3; Gilchrist 2008, 145-148), the placement of household pottery in surrounding features could have been done for comparable reasons. Even the 57 cases in the present dataset of cremated remains deliberately being placed

Site-code	Toponym	Cremated remains	Charcoal	Pottery	Other
NL-BR-004	Geldrop-Genoenhuis	x	x	x	Iron plate
NL-BR-010	Zundert-Mencia	x	-	x	-
NL-BR-011	Breda-Steenakker	x	x	x	Animal bones; La Tène bracelet (molten); (Iron?) nails; Fragments of tephrite
NL-BR-014	Someren-Waterdael III	-	-	x	-
NL-BR-159	Hilvarenbeek-Laag Spul	-	x	x	-
NL-BR-196	Haps-Kamps Veld	-	-	x	-
NL-BR-210	St. Oedenrode-Haagakkers	x	x	x	Spindle whorl
NL-BR-223	Someren-Waterdael I	x	x	x	2 Spindle whorls; Pottery spoon; Amber bead
NL-BR-250	Valkenswaard-Het Gegraaf	-	-	x	-
NL-DR-038	Buinen-Hoornse Veld	-	-	x	-
NL-DR-039	Drouwen	-	-	-	Bronze hoard(!)
NL-DR-045	Wapse	x	-	x	-
NL-DR-054	Noordbarge-Hoge Loo	x	-	x	Quern; Grinding stone; One circular ditch was filled with boulders
NL-DR-094	Sleen	x	-	x	-
NL-GL-019	Steenderen-Steenderdiek	-	x	x	Burnt loam; Flint
NL-GL-029	Epse-Olthof Noord	-	-	x	-
NL-GL-056	Zutphen-Looërenk	-	-	x	-
NL-GL-068	Twello-De Schaker	x	-	x	-
NL-GL-293	Nijmegen-Kops Plateau	-	-	x	-
NL-LI-387	Sittard-Hoogveld	-	-	x	-
NL-OV-003II	Hardenberg-Mariënberg II	-	-	x	-
NL-OV-012	Colmschate-Banekaterveld(?)	x	-	x	-
NL-OV-030	Stokkum I and II	-	-	x	-
NL-OV-050	Oldenzaal-De Tij	x	-	x	-
NL-OV-059	Rossum-Oranjestraat	x	-	x	-
NL-OV-086	Vasse	-	-	x	-
NL-OV-089	Colmschate-'t Bramelt	x	-	x	-
NL-OV-092	Hengelo/Borne-Schild Es/ Veldkamp	-	-	x	-
NL-UT-012	Wijk bij Duurstede-De Horden	x	-	x	-

Tab. 6.7: Cemeteries in the present dataset for which the contents of surrounding features have been documented. The 'x' marks all positive observations. Especially with regards to charcoal, only in exceptional cases had attention been paid to the presence of charcoal in the concerning reports.

in surrounding features might represent a comparable idea of soothing the spirit of a decedent buried centrally by the symbolic presence of the person represented by the cremated remains in the surrounding feature.

In the same train of thought, pottery cups, bowls and plates buried in surrounding features might still represent references to feasts, but the question is whether the

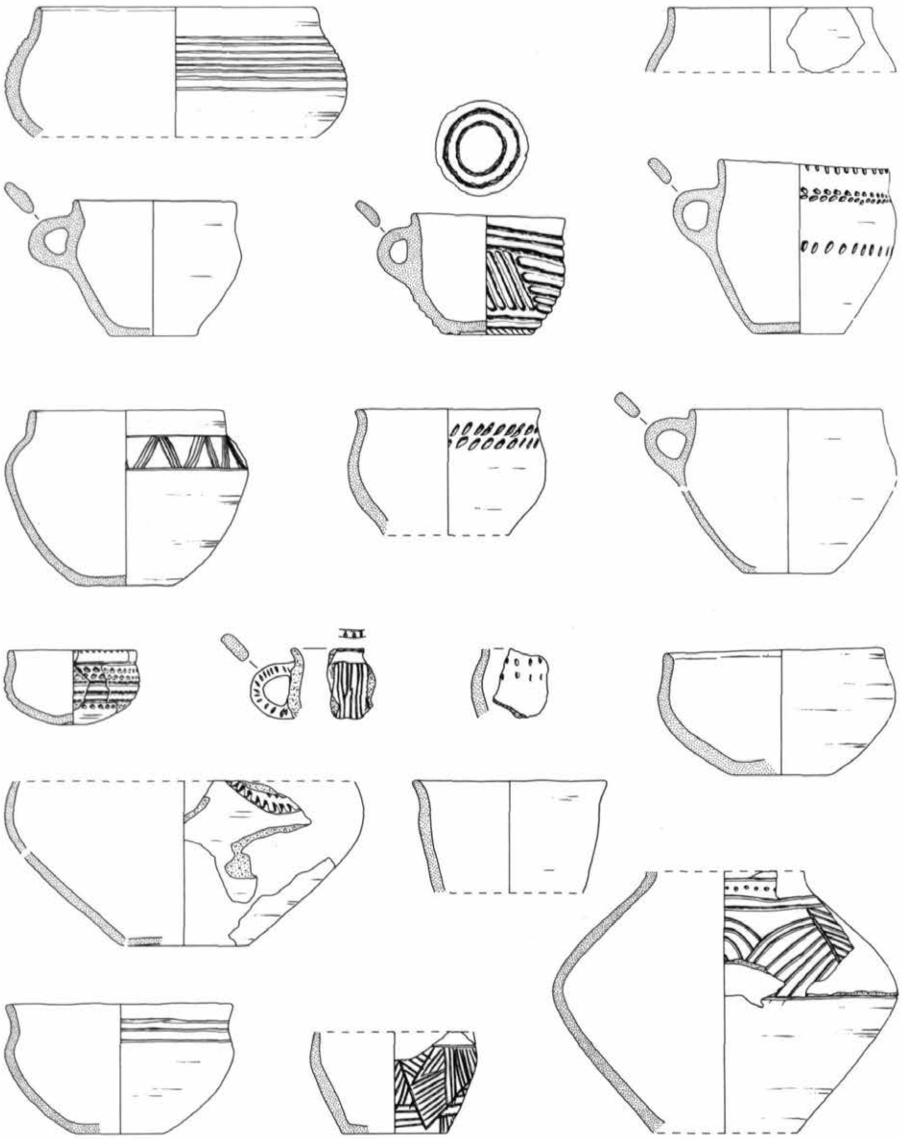

Fig. 6.13: Example of the pottery found in surrounding features: Hilvarenbeek-Laag Spul (Scale: 1:5; After: Verwers 1975, fig. 5).

feasting happened by the living community or that a feast was offered to a decedent's spirit or soul by placing it in the liminal zone between its new and former residence. The act of *libation*, the ritual pouring of drink or food, was for instance common practice in both ancient Greece and Rome (Scheid 2007, 269) as it is still today in many a culture. Drink or food were/are not only offered to deities and spirits but also to the dead. Roman tombs have for instance been found equipped with special tubes to be able to keep providing the decedent's spirit with drink and food (Roller 2006, 42). In the present dataset one *Schräghals*-urn from the cemetery of Roermond-Mussenberg had a perforation several centimetres underneath the shoulder (Lohof 2001, fig. 9) that can possibly be explained by the ritual of libation.

The idea of materials being deposited in surrounding features as offerings is probably best illustrated by an extraordinary find from the cemetery of Drouwen.[120] At a rescue dig in the cemetery of Drouwen a cast bronze hanging bowl was collected from what later appeared to be a circular ditch (Kooi 1979, 91; fig. 87). The hanging vessel was found associated with six bronze and non-identical omega bracelets, six double-wire bracelets, a so-called spectacle fibula (‘*Plattenfibel*’), a bronze ring, looped button, a narrow rod with tiny perforations, a pair of spacers, a pair of so-called ‘skate-key’ spacers, a necklace with three bronze beads and spirally wound bronze ribbon beads, two glass beads and ten jet beads were found (Butler/Steegstra 2008, 386-392). It is notable that for the present dataset the largest amount of metal objects found in one context, does not come from a grave but rather from a circular ditch surrounding a (vanished) grave. Late Bronze Age hoards like the one from Drouwen are usually not found in surrounding features of graves (Fontijn 2002, fig. 14.2). It is unfortunate that the accompanying grave at the site of Drouwen has not been preserved so that a comparison could be made between the contents of the grave and the circular ditch. Even though this particular ditch concerns one of the two bigger surrounding features excavated at Drouwen, with its diameter of 5.5 metres it still only is a modest monument in size. In the Netherlands, for the Late Bronze Age no clear examples of richly furnished graves exist, but with regards to the few Early Iron Age elite graves whose original contexts are known it is notable these are often found in larger monuments (Fontijn/Fokkens 2007, 362). The size of the monument the Drouwen deposition was found in thus not necessarily suspects the central interment was particularly rich in grave goods. Also, when the sheer amount of metal in this particular hoard is compared to the modest amount of metal that was found in total in one of the largest and most extensively excavated cemeteries in the northern Netherlands, the site of Noordbarge-Hoge Loo (two bronze bracelets, an iron razor and a undeterminable piece of bronze), the contrast is striking. The hoard found at Drouwen underpins that people in the region clearly had access to these metals but it was time and time again decided not to bury these objects with their previous owner(s). Judging from its (presumed) position in one of the upper fills of the ditch (Butler/Steegstra 2008, 384) this hoard must have been deposited sometime after the initial interment, meaning people returned to this particular place to connect these objects to the decedent buried in the centre of the circular ditch.

There are other observations that not only show specific decedents needed to be cared for after the point of interment, but also the dead in general. These observations concern the various features that can be found in between graves. At the cemetery of Drouwen, for instance, have several pits been excavated that were solely dug for the purpose of depositing small series of complete pottery vessels (Kooi 1979, 94). (Miniature) vessels have also been collected from in between graves at Buinen (Kooi 1979, 192: no. 86), Sleen[121] (Kooi 1979, 189), Mariënberg (Verlinde 1975a, 12) and Hengelo-Schild Es (Scholte

120 Perhaps the fact that the find was done on Saint Nicholas’ Eve (5 December 1939 at dusk) contributed to its discovery… (Butler/Steegstra 2008, 383).

121 The example from Sleen seems to have been deliberately buried in front of the entrance of a key-hole shaped ditch (Kooi 1979, 189: no. 28).

Lubberink 2010, 62). The remarkable thing about all these latter examples is that in all cases the vessels concerned had been buried upside down. In addition to pottery vessels, at Colmschate-'t Bramelt a pit was found that contained burnt pottery sherds, burnt animal bones, burnt loam and fragments of a molar or grinding stone (Cuijpers 1994, 10; Verlinde/Buisman 1988, 50; Louwen 2008, 49) and at Lent-Zuiderveld one half of a bronze horse bridle was found deposited in a small pit, several meters apart from the nearest grave (Section 5.3.2.5; Van den Broeke *et al.* 2010, 176; fig. 12.6a). Querns and molars have also been found in between graves Kooi 1979, Appendix I) as have spindle whorls (Kooi 1979, no. 45) and a sea-salt container (Hessing 1989, 313).

The remarkable thing about the objects retrieved from surrounding features and the various contexts in between graves is that these can also be found in the graves themselves. Even the way they were handled (left intact, burnt and/or broken) and deposited (occasionally deliberately inverted) corresponds to the objects retrieved from graves. This could mean that some practices involved in the initial funeral needed to be repeated occasionally after interment in relation to specific decedents (objects retrieved from surrounding features) or to the dead in general (objects retrieved from in between graves). Only the hoard from Drouwen remains exceptional in this regard. Though the objects retrieved from this hoard still relate to personal adornment and appearance, specific objects like the hanging vessel and spectacle fibula have at least in the Netherlands not been found in graves. Perhaps the fact that until now this is the only example of such a hoard to be retrieved from a funerary context also adheres to the exceptional occasion or event in relation to which this particular act once took place.

6.4 Interring bodies whole: The composition of inhumation graves

In this final stage of the mortuary process, a small group of graves has so far received only little attention. Perhaps only small in numbers, these 45 inhumation graves still form a notable part of the present dataset. In contrast to the almost 99% of cremation graves, for these few decedents there still was a body, fully recognisable as a human figure available at the point of interment (Fig. 6.7). While cremated remains enabled the mourners to mix, fuse and separate the objectified former human body, still having access to the decedent in its human form created other possibilities in composing the grave, especially when display was concerned.

For 21 of the 45 inhumed individuals in the present dataset had details about the position of the body been published and for most of these graves drawings of the burial pits themselves had also been provided. Three individuals were buried in (the same) barrow of Meteren-De Bogen (Meijlink/Kranendonk 2002). The remaining inhumation graves probably all concern flat graves, or were at least dug into the virgin soil.

It is notable that the two graves that were located on sandy soils both concern regular and rectangular pits (Fig. 6.14: a) while the majority of graves located in clayey sediments tend to have more irregular and narrower shapes (Fig. 6.14: b-c). This difference probably relates to the substantially more efforts it takes to dig a pit in the compact clays of the Dutch riverine area compared to cover-sands. Only at Lent-Schoolstraat the burial pit was too small to accommodate the body in stretched position. In this case the body was placed on its back and the knees had been bent in uphold position in front of the torso suggesting the limbs of this person were bound in this unnatural position (Van den Broeke 2002b, 29).

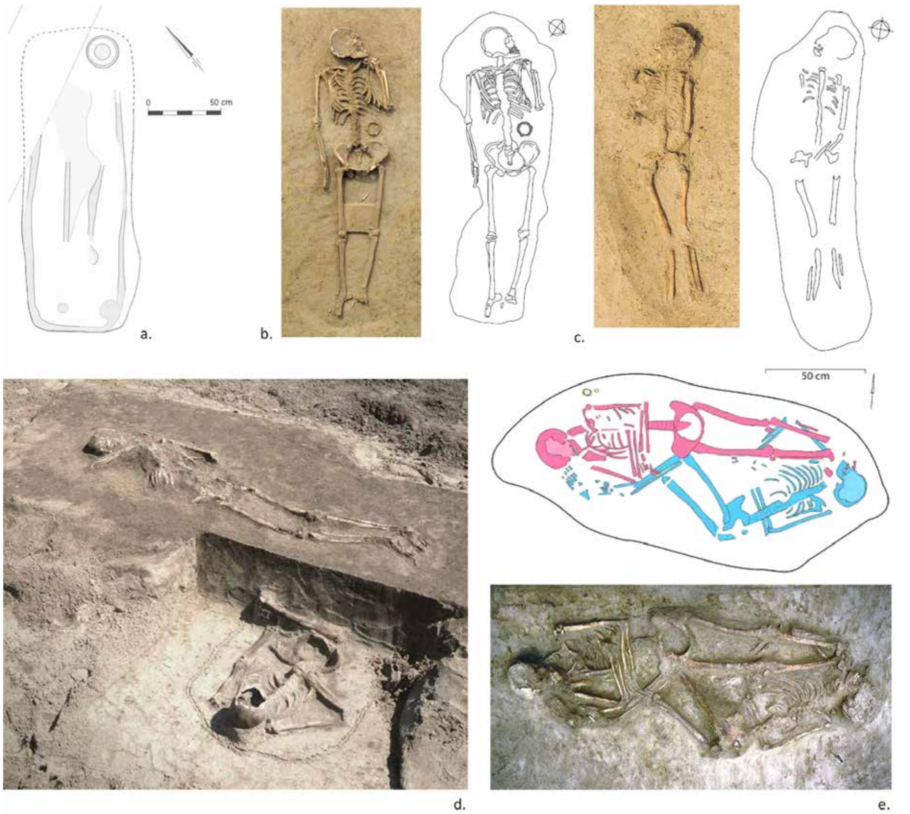

Fig. 6.14: A selection of inhumation graves from Someren and the Nijmegen-region:
(a) Someren-Waterdael I (Kortlang 1999, fig. 8); (b) Lent-Lentseveld (Van den Broeke *et al.* 2011, fig. 4.5); (c) Lent-Lentseveld (Van den Broeke *et al.* 2011, fig. 4.4); (d) Lent-Laauwikstraat-Zuid (Van den Broeke 2014, fig. 113); (e) Lent-Steltsestraat (Van den Broeke 2014, figs. 107 and 109).

The child that was buried in 'grave 5' in the barrow of Meteren-De Bogen was missing the lower part of its body. It is unclear whether the lower part of the body was removed on purpose or that it was the result of (recent) disturbances (Meijlink/Kranendonk 2002, 210).

Most individuals had been buried in stretched position. Remarkably, no less than four of these individuals had been buried on their bellies instead of their backs. Additionally, two individuals were lying on their right side while another two were buried on their left. Both females and males were found in stretched position and both sexes are represented among the individuals buried on their bellies. For the individuals that were buried on their sides only in one case could the sex of the decedent (male) be determined. For most of the persons buried in stretched position the arms had also been stretched alongside the body. In one case the left hand was placed in front of the mouth and in one case had both arms been folded over the belly. At least two individuals buried on their sides were placed in the foetal position with uphold knees. Finally, the orientation of graves varies substantially and seems not related to sex. This latter observation is perhaps best illustrated by the cemetery of Lent-Lentseveld (Van den Broeke/Daniël 2011, 25-35). The four inhumation graves from this particular cemetery all belonged to women. Two graves were oriented northeast-southwest with the head in the southwest facing north while a third grave was

Position objects	*Accessory pottery*	*Cosmetics and clothing*	*Tools*	*Weapons*
Head	2	3	1	
Ear (left)		1		
Ear (right)		1		
Ears (both)		3		
Neck				
Chest		1		
Arm (left)	1			1
Arm (right)	1			
Wrist (left				
Wrist (right)				
Waist		1		
Leg (left)		1		
Leg (right				
Ankle (left)		1		
Ankle (right)				
Feet	1			
Alongside	2			

Tab. 6.8: Inhumation graves and the position of objects in relation to the body. The numbers represent the numbers of positive observations for unique graves. Four vessels found alongside a presumed inhumed body in the cemetery of Breda-Steenakker have for instance been counted as one observation.

oriented more or less north-south, head in the north and facing west. This latter example was the only individual in this cemetery to be buried on her belly. The fourth grave was oriented northwest-southeast, head in the southeast facing north.

Three inhumation graves contained more than one individual. One example has already been mentioned as it concerns the exceptional grave from the cemetery of Ewijk-Keizershoeve II where cremated remains of probably a child had been added to a badly preserved inhumation that showed some severe burn marks on the viscerocranial parts of the skull (Section 4.3.3; Lemmers *et al.*, 2012, 139-144). The latter individual also concerns the one grave that has been recorded as the only 'bi-ritual' form of interment (Tab. 6.1). At Lent-Steltsestraat a male and female, both in the age between 25 and 35 years, had been buried together in one pit. Their bodies were placed alongside each other while the head of the male was next to the feet of the female and vice versa (Fig. 6.14: e; Van den Broeke 2014, 164; fig. 109). A double inhumation grave showing more or less the same configuration, though not included in the present dataset, was found in the same region at the site of Oosterhout-Eeuwige Lente [NL-GL-066]. Here too the bodies were placed alternatingly alongside each other, only in this case both individuals were probably male (Van den Broeke 2014, 163; fig. 106). The third inhumation grave containing two individuals was found at Lent-Laauwikstraat-Zuid (Fig. 6.14: d). Again the configuration in which the bodies were placed is special. An old male in the age of 40-60 years, who was christened '*The Man van Lent*,' was laying on his back with his legs in uphold position, but turned towards his left side. A few decimetres above this old male a second person of an unknown sex was placed face down in crosswise position with the left arm on the back and slightly bent towards the neck (Van den Broeke 2014, 167; fig. 114).

The 21 inhumation graves discussed here already exhibit a broad variety in the positions the bodies were placed in. There does not seem to have been a relation between a certain body position and the sex of the decedent as both males and females were clearly placed in varying and comparable positions. Overall, there do not seem to have been strict rules about how an unburnt body should enter the ground, perhaps suggesting the placement of the body in the grave was open for variation and thus interpretation. At the same time, burying a person face down or with the knees bent in a foetal position seem like meaningful actions in themselves and suggest the topography of the dead human figure was appealed to for conveying symbolic messages to the mourners (*cf.* Sørensen 2010). Messages that perhaps told something about the way the decedent had lived (or died for that matter) or what qualities of a decedent's person needed to be emphasised in death. The position of the body could also have been important for the transition a decedent had to make to the other world. A foetal position could for instance symbolise a return to the (earthly) womb while a flexed position on the back would have allowed for a better display of the decedent as the future ancestor she or he was envisioned to become.

The objects found in inhumation graves could often easily be linked to the body's topography as in most occasions the skeleton had been preserved (Tab. 6.8). Especially the objects related to cosmetics and clothing were found in the expected locations, or the other way around, their position in relation to the body helped determining the nature of the objects concerned. Earrings were found in the ears, a bead was found on the height of the chest and an arm ring was still lodged around the decedent's arm (Fig. 6.15:c). At Lent-Zuiderveld a bronze pin was found lying alongside the decedent's left leg, some 30 centimetres apart from the body. For a dress- or cloak pin a place alongside the leg is not the most logical location to be found in. An educated guess would be that the pin was used to tighten a shroud that once covered the corpse of the male that was buried here.

Accessory pottery has been found in different locations in relation to the body. Their numbers are however too small to make any definitive statements about what exact locations would have been preferred, if there were any preferred locations at all. In two occasions pottery was found at the head of the decedent, in two other occasions had pottery been placed alongside the corpse and in one occasion at the feet. In one grave at Lent-Zuiderveld pottery, respectively a small vessel and a sieve, had been laced against or on top of both arms of an adult female (Fig. 6.15:a).

The only tool to be retrieved from an inhumation grave, a whetstone from the cemetery of Gasteren, was presumably found at the head of the decedent (Van Giffen 1945, 83). However, no silhouette has been found to confirm this thesis. The same applies to the bronze razor and tweezers that were found at the same spot, as for the vessel that was presumably found at the feet of the decedent. Finally, the only weapon from an inhumation grave, the bronze rapier from Meteren-De Bogen, was found lying next to the decedent's left arm (Meilink/Kranendonk 2002, fig. 9.3).

What is already evident from the 21 inhumation graves presented here, is that there is almost not a single grave alike. Regardless of sex and age decedents could be buried in various positions and there does not seem to have been a standardised set of objects that was to accompany a decedent in the grave. Even though the treatment of the corpse in inhumation graves may be rather different from the majority of cremation graves, the apparent liberty people seem to have experienced in creating the final composition of

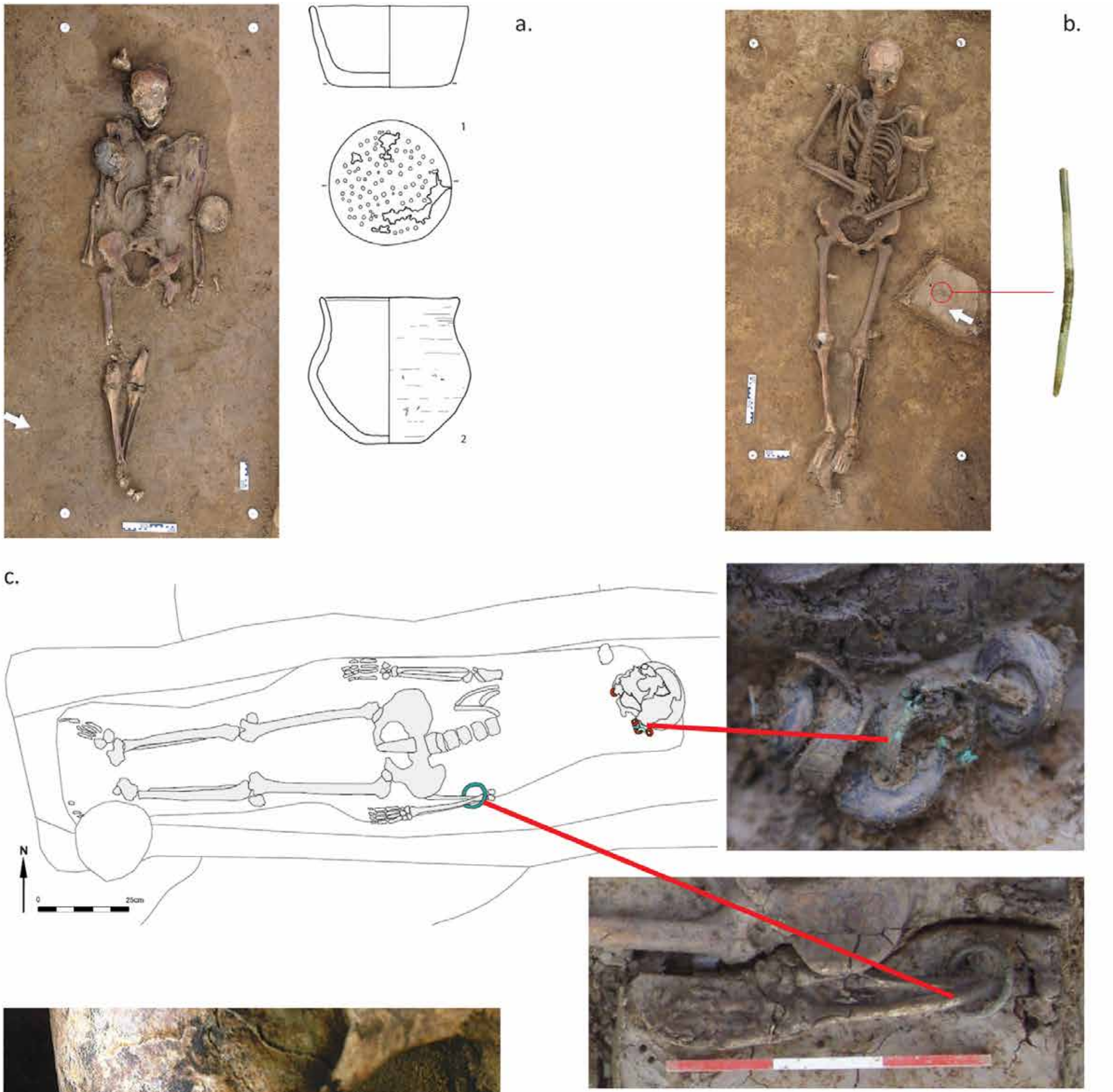

Fig. 6.15: Examples of the placement of objects in inhumation graves as observed in the present dataset: (a) Lent-Zuiderveld-Ressen (Van den Broeke *et al.* 2010, fig. 12.9); (b) Lent-Zuiderveld-Ressen (Van den Broeke *et al.* 2010, fig. 12.10); (c) Meteren-De Plantage (Jezeer/Verniers 2012, figs. 6.8; 6.11; 6.13); (d) Lent-Laauwikstraat-Zuid (Van den Broeke 2002, 22).

the grave very much corresponds with what was observed for the majority of cremation graves. Even the categories of objects present among the inhumation graves largely correspond with the majority of cremation graves as accessory pottery and objects related to personal appearance make up the largest share of objects (Tab. 6.8).

6.5 Locating the grave

In the right order of things the choice for a location of a grave logically comes before the actual interment. It was however decided to discuss the different modes of interment first as these illustrate the various possibilities people would have had at their disposal in selecting the right location for a new grave. Also, the selection procedures for the location of a grave concern issues that cannot longer be tackled from the perspective of individual decedents. This section will focus on where someone was to be buried and whether there are any clues available as to the *why* someone was to be buried in a specific location.

As in every cemetery an individual decedent is always surrounded by the other dead, the location of a new grave is automatically directed by the presence of already existing graves. Even for two graves that may find themselves hundreds of metres apart the location of the younger grave is still related to the location of the older grave as it was decided *not* to bury the decedents concerned in close proximity to each other. As such, the outlay of a cemetery too can be read as a narrative that with the addition of every new grave evolves and reflects upon how the dead might have related to each other. The above statement builds upon the assumption that both *time* and *space* form determining constituents in this cemeterial narrative: "Time" in the sense that different forms of ancestry (*cf.* De Coppet 1985; Helms 1998) may play a role in the location of graves (*e.g.* Fokkens 2012) and "space" in the sense that relations between the dead can be emphasised by specific distances between graves, or perhaps better, the lack thereof.

For Late Bronze Age/Early Iron Age cemeteries in the Low Countries it is in fact evident by various practices people tried to emphasise certain relations between the dead. One of these practices has already been discussed as the present dataset yielded at least 51 examples of graves that contained the cremated remains of multiple individuals (Section 4.4.3). In these cases the dead were already merged into one new entity *before* the point of interment. As illustrated by Table 4.7, often these combinations consisted of an adult individual with a non-adult. Also combinations of adult males and females have been observed, as have combinations of males and females with additional non-adults. These various combinations of sex and age categories could suggest these graves were meant to emphasise family ties between decedents.

Another form of emphasising a certain relation between the dead, was to bury them within the confinements of a single funerary monument. Of the total 1,360 monuments that have been included in the present dataset, at least 135 examples, which is roughly 10%, produced more than one grave. This number would originally have been much higher as most of the included urnfields had been severely damaged by recent disturbances. In most cases the monuments concerned housed two graves (N=90), a smaller group contained three graves (N=25) and a minority lodged four graves or more (N=20). Exceptionally high numbers of graves do occur among the latter category. A mound at the cemetery of Wijk bij Duurstede-De Horden for instance contained no less than 14 Early Iron Age graves. Additionally, among these 135 monuments containing multiple graves, at least four examples also hosted graves that contained the remains of multiple individuals. Among them is the long mound of Beegden that produced two urn graves that contained the remains of respectively four and seven individuals (see Section 4.4.3;

Roymans/Hoogland 1999). Round mounds are still best represented among this selection of monuments, but compared to their general and mutual occurrence long mounds are likelier to produce more than one grave than the little round mounds.[122]

Assuming the persons buried within the confinements of a single monument were purposefully placed in relation to each other, what factor(s) then constituted this relationship? The available number of age and sex determinations for the monuments hosting more than one grave are restricted, but can still be used to provide some insight. In total, for 21 monuments determinations of sex and age were available for more than one grave. This count only includes graves that hosted the remains of just one individual. In 14 cases only adult individuals were represented, while in five cases both adults as non-adults were found buried within the same monument. Only in one occasion has a combination of only non-adults been observed. Combinations of adult males and females have been observed four times, but this low number is mainly caused by the restricted number of available sex determinations. Though the resolution required often lacks, the available radiocarbon dates and typo-chronological markers do not exclude the possibility that individuals buried in one monument also knew each other in life.[123] Combinations of adult males and females, as well as combinations of adult and non-adults could therefore indicate these individuals were connected by family ties, perhaps representing single households.

In contrast, at least three monuments yielded graves that indicate substantially more time was involved between the different interments.[124] The practice of interring graves into burial mounds already centuries old definitely was a practice that regularly occurred in the Late Bronze Age/Early Iron Age but is in the present dataset clearly underrepresented as almost all included cemeteries were already levelled when excavated. The overall inventory of Late Bronze Age/Early Iron Age burial sites performed for the present study (Appendix I) yielded at least 58 sites where this practice was positively observed. The cemetery of Oss-Zevenbergen from the introduction (Section 1.4.2) and the nearby site of Oss-Vorstengrafdonk (Jansen/Fokkens 2007) are another two clear examples of mounds dating to the Middle Bronze Age that were reused for burial in the Early Iron Age. In these cases family ties can hardly be used as an argument in labelling the relation between the decedents concerned as the time period in between the interments simply extends the boundaries of a conscious memory of the persons buried in the oldest graves. The observation that a new grave could be placed in relation to contemporary graves as well as in relation to graves already centuries old already indicates different notions about the relatedness between the dead existed.

Yet another way of emphasising relations between the dead was to build the funerary mounds adjacent to each other or to even let them overlap. An in depth analysis of the spatial development of specific cemeteries over time falls beyond the scope of this

122 Round mounds: N graves >1 = 103/1212 = 8.5%; Long mounds: N graves >1 = 20/103 = 19.41%.

123 For example, one monument in the cemetery of Zutphen-Looërenk [NL-GL-056; Monument_ID 597] yielded three graves for which the following dates are available: 'Graf 4' [Grave_ID 1757]: Labcode GrN-49734: 2495 +/- 40 BP: 792-434 cal. BC (95,4%) (Van Straten/Fermin 2012, 91); 'Graf 5' [Grave_ID 1758]: Labcode GrN-50127: 2410 +/- 45 BP: 751-397 cal. BC (95,4%)(Van Straten/Fermin 2012, 91); 'Graf 6' [Grave_ID 1759]: 800-400 BC on basis of *Harpstedt*-pottery (see Fig. 5.2)

124 Weert-Laarveld [NL-LI-017; Monument_ID 196]; Gasteren [NL-DR-026; Monument_ID 672]; Haps-Kamps Veld [NL-BR-196; Monument_ID 1259].

research, but would definitely be worthwhile in this regard. Modest attempts have already been performed in the past (*e.g.* Kooi 1979, 53-54; Kortlang 1999, 168-171; Arnoldussen/Albers 2015) and the clustering of potential kin groups has been suggested for some of these cemeteries (Kortlang 1999, 170).

Even without going into too much detail about the exact spatial development of the cemeteries concerned, just by glancing at the outlay of specific cemeteries one can already detect dense clusters of monuments or an almost organic growth of funerary monuments around specific eye-catching monuments. Good examples in the present dataset are Colmschate-'t Bramelt (Fig. 6.16) and Gasteren (Fig. 6.17). In the Early Iron Age cemetery of Colmschate-'t Bramelt a large mound surrounded by a double ditch was excavated in the northwest section of the cemetery. The mound itself had already been levelled and unfortunately no grave was found preserved within the confinements of the double ditch. Large(r) monuments surrounded by double or even three double ditches have been found in the same region at Zutphen-Looërenk/Meierink and Rossum-Oranjestraat where the graves they surrounded date both to the Late Bronze Age[125] as to the Early Iron Age.[126] Even though an exact date for the example from 't Bramelt remains problematic, the outlay of the cemetery as a whole at least shows that the other smaller monuments take into account the position of this larger monument. Even more so, while respecting the larger monument by not building over it, the smaller monuments seem to cluster and even overlap around this particular monument while more to the south the space in between the smaller monuments slowly increases (Fig. 6.16). The distribution of the various smaller monuments as a whole therefore suspects that in locating the position of a new grave the position of the larger monument in some way must have played a defining role. While absolute dates lack for the cemetery of 't Bramelt, the typo-chronological markers of the urns found in this cemetery suspect the cemetery was only in use during the Early Iron Age (Hermsen/Van der Wal 2012, 110). While caution is still ushered, in the case of 't Bramelt it is possible that the person buried within the larger monument was known by the people buried in the surrounding graves or that stories about this person were still vivid in the collective memory of the group of people who made use of this cemetery.

The cemetery of Gasteren, on its turns, has a remarkable outlay of funerary monuments and covers at least a full millennium of funerary practices. The cemetery has been thoroughly published (Van Giffen 1941; 1945), including pollen analysis and a study of the cremated remains,[127] features still rather exceptional for that time. The overall distribution of funerary monuments in this particular cemetery displays a slight crescent shape,[128] orientated more or less north-south (Fig. 6.17). When studying the excavation plan of the cemetery, the position of 'Mound 37' immediately catches the eye as is finds itself outside the crescent of funerary monuments. It even seems that the other monuments

125 [NL-OV-059; Grave_ID 1320]: Labcode GrA-40002: 2810 +/- 30 BP; 1050-895 cal. BC (95,4%) (De Wit/Bergsma 2008, 20).

126 [NL-GL-056; Grave_ID 1754]: Labcode GrN-49737: 2570 +/- 35 BP: 811-551 cal. BC (95,4%) (Van Straten/Fermin 2012, 91).

127 Since the study of cremated remains has developed extensively since 1945, the results of the Gasteren cemetery have not been incorporated in the present study.

128 It must be noted here that the excavation of this cemetery was aimed at the some 44 mounds still visible in the heathland (Van Giffen 1945, 70) and was completely done by hand. It can therefore not be excluded that other, undiscovered graves laid hidden beyond the extents of the excavation.

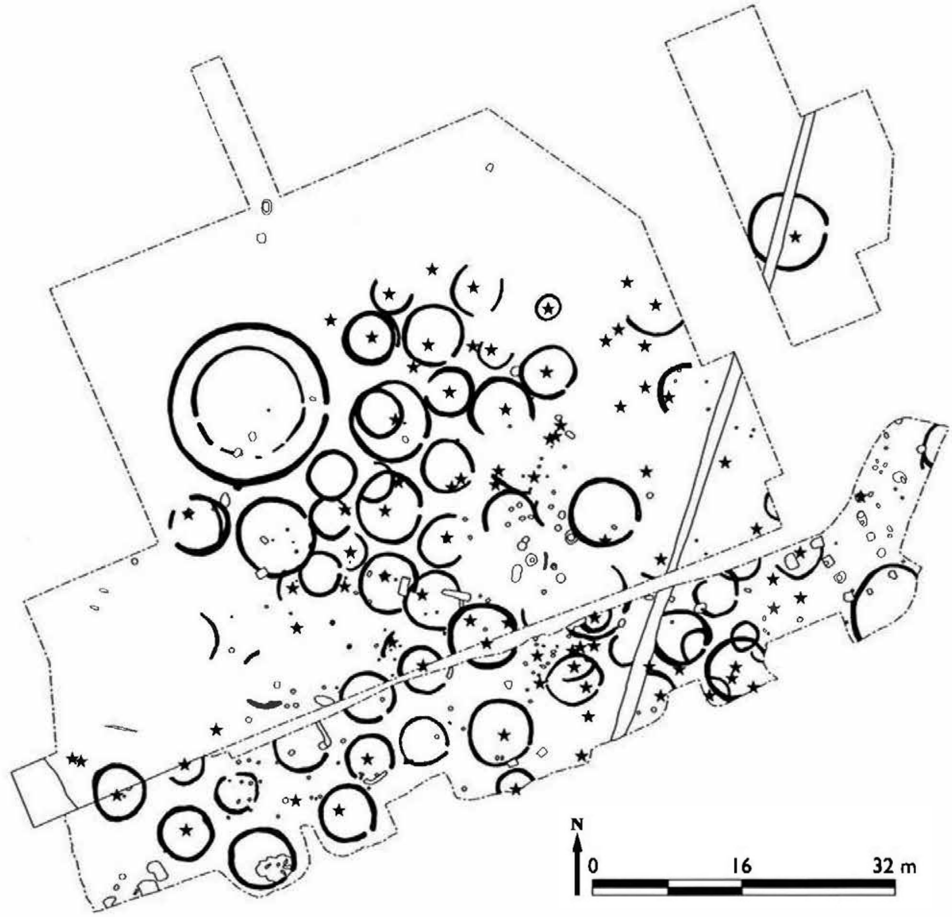

Fig. 6.16: The cemetery of Colmschate-'t Bramelt. The stars mark the graves. (After: Hermsen/ Van der Wal 2012, fig. 6.12).

were placed in such a position that they ultimately surrounded 'Mound 37.' 'Mound 37' also happens to contain the oldest grave of the cemetery. The primary grave finds itself slightly west of the mound's centre and concerns a so-called coffin grave. The remarkable thing about this (oak) coffin is that the trunk itself had been deliberately charred and it was found not to contain an inhumed individual but cremated remains instead, which had been scattered inside the coffin (Van Giffen 1945, 73-74). In Dutch these graves are called '*brandskeletgraven*'[129] as the way in which the cremated remains are scattered seems to have been aimed at resembling a human figure. A study of the cremated remains revealed that a young teenager had been buried here (*ibid.*, 73) and a radiocarbon date that was later obtained from the cremated remains places the grave in the period between the fifteenth and thirteenth century BC.[130] After the interment of the youngster, the grave was covered with a mound and surrounded by nine large posts (Van Giffen 1945, 77). Only

129 English translation by author: 'burnt-skeleton-graves'; In German: *Brandskelettgräber*

130 'Graf 105' [Grave_ID 2093]: Labcode GrA-16017: 3100 +/- 45 BP: 1453-1257 (92.8 %) (Lanting/vd Plicht 2003, 192).

later would four additional graves be placed in the flanks of the mound, tangentially to the primary grave. Again, all four graves concern charred coffin graves but only this time all four graves appeared to have been inhumation graves. In only one of these four graves could some modest traces of a body silhouette be documented, as a consequence the age and sex of these four decedents remain unknown. Pottery found in one of these graves (Van Giffen 1945, fig. 12c: 59) was decorated with a so-called *cordon*, a form of decoration occurring between the beginning of the Middle Bronze Age and Late Bronze Age (Butler/ Fokkens 2005, 376). The combination of this typical decoration and the bucket shape of the vessel itself make a date at the end of the Middle Bronze Age the most plausible option. The four tangential graves also form the latest interments in 'mound 37.'

Probably within the time scope of a few generations, a new phase of the cemetery of Gasteren commences when to the north and east of 'mound 37' long mounds of the '*Vledder*-type' are erected (Fig. 6.17). Urns of the so-called '*Gasteren*-type' (Fig. 5.1) were found within the confinements of these monuments. Both the type of urn as well as the type of monument are associated with the earliest radiocarbon dates available for cemeteries known as urnfields in the Netherlands (see Figs. 5.2 and 6.12). In the case of Gasteren, no less than six radiocarbon dates have been obtained from cremated remains associated with either *Gasteren*-urns[131] or '*Vledder*-long mounds.'[132] The sturdy posts that are found within the confinements of '*Vledder*-long mounds' are believed to have belonged to roofed mortuary houses (Hessing/Kooi 2005, 636). If this was indeed the case, when visiting the cemetery of Gasteren somewhere between the thirteenth and eleventh century BC, one would have encountered quite a monumental sight with 'Mound 37' surrounded with some seven mortuary houses of various sizes.

No radiocarbon dates are available for the younger phases of the Gasteren cemetery. However, the presence of both conical pottery as well as '*Harpstedter Rauhtöpfen*' among the urns excavated at Gasteren suspect the cemetery remained in use from the Late Bronze Age onwards and throughout the Early Iron Age (Figs. 5.1 and 5.2). In this timespan the cemetery itself is extended to the south. Here the youngest structures can be found in the form of cinerary barrows (Van Giffen 1945, 93-95). At this stage the cremated remains are no longer put in urns but instead left on the burnt-out pyre and subsequently covered with a small mound (see Section 3.2.4). Radiocarbon dates for cinerary barrows in the northern Netherlands fall within the timespan between the sixth and fourth century BC (Hessing/Kooi 2005, 636). So far, the cinerary barrows seem to represent the youngest additions to the Gasteren cemetery.

Overall, the Gasteren cemetery not only exhibits a remarkable spatial development in a "horizontal" sense. There are some locations within this cemetery where we can see comparable substantial amounts of time represented within the confinements of a single monument. One of these locations concerns 'mound 36' (Fig. 6.18). The mound still visible at the start of the excavation only represents the very latest phase of this funerary complex and is probably connected to the quadrangular ditch in its centre (Fig. 6.18). Quadrangular

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131 'Graf 56' [Grave_ID 2045]: Labcode GrA-17795: 3010 +/- 60 BP: 1412-1074 cal. BC (95,4%); 'Graf 57' [Grave_ID 2046]: Labcode GrA-17796: 2990 +/- 50 BP: 1391-1054 cal. BC (95,4%); 'Graf 54' [Grave_ID 2043]: Labcode GrA-16282: 3005 +/- 40 BP: 1392-1118 cal. BC (95,4%) (Lanting/Van der Plicht 2003, 162; 213).

132 'Graf 52' [Grave_ID 2041]: Labcode GrA-17793: 2980 +/- 60 BP: 1392-1024 cal. BC (95,4%); 'Graf 53' [Grave_ID 2042]: Labcode GrA-16022: 2860 +/- 50 BP: 1207-906 cal. BC (95,4%); 'Graf 100' [Grave_ID 2088]: Labcode GrA-10877/80: 2900 +/- 40 BP: 1216-976 cal. BC (95,4%) (Lanting/Van der Plicht 2003, 162; 214).

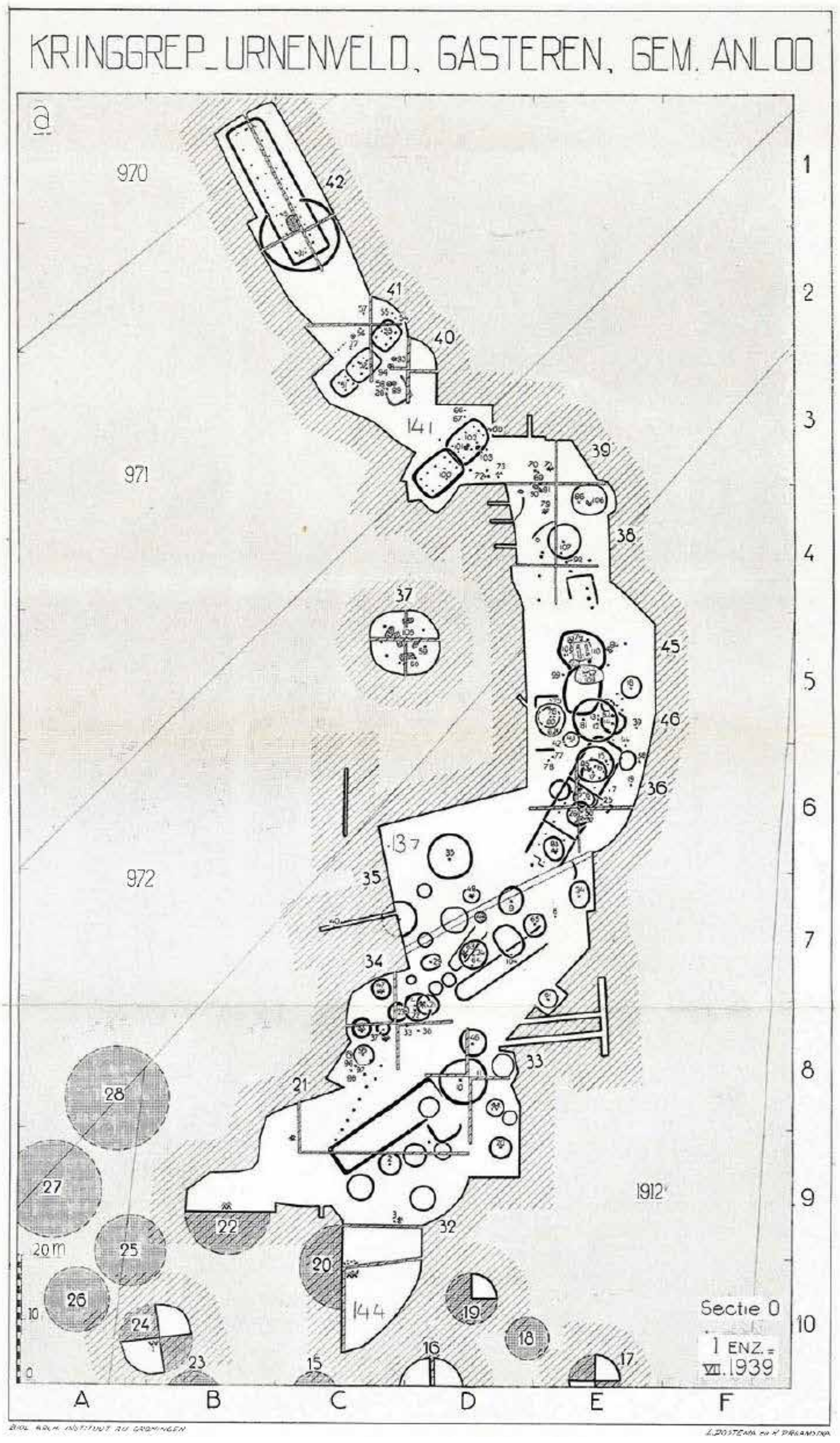


Fig. 6.17: Plan showing the cemetery of Gasteren (Van Giffen 1945, fig. 13; © University of Groningen, Groningen Institute of Archaeology).

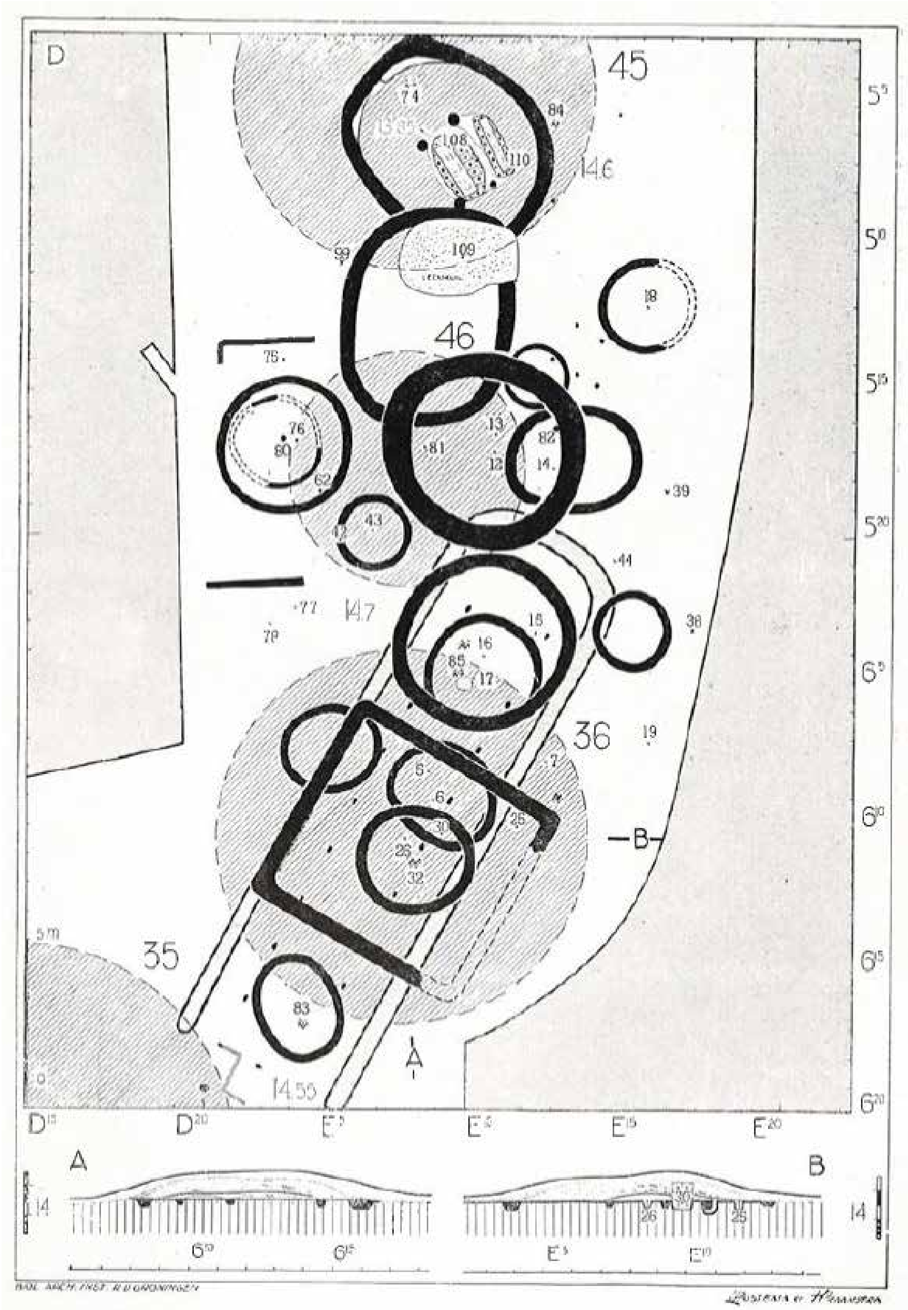


Fig. 6.18: Segment of the Gasteren cemetery displaying all funerary structures associated with respective mounds 45, 45 and 36 (Van Giffen 1945, fig. 20; © University of Groningen, Groningen Institute of Archaeology).

ditches first emerge in cremation grave cemeteries at the end of the Early Iron Age and beginning of the Middle Iron Age (Fig. 6.12). At that time, the '*Vledder*-long mound' located on the very base of 'mound 36' must already have been between 500 and 800 years old. As the two circular ditches underneath the quadrangular ditch, but on top of the '*Vledder*-long mound overlap, just by the principle of superposition already four subsequent phases of monument construction are represented at the location of 'mound 36.' Directly north of this mound comparable dense and overlapping clusters of funerary monuments can be observed (Fig. 6.18). Clearly there was sufficient space outside the already existing monuments, but in the course of time people deliberately returned to specific monuments to bury their late beloved ones. At the same time, for almost a thousand years people abstained from creating new graves in 'mound 37' and respectfully kept their distance to this monument. It is highly unlikely Early Iron Age people at Gasteren would have known about the teenager that laid buried underneath 'mound 37' for 800 years already. Yet still they must have had clear ideas about why this particular mound was different from the rest.

While at Gasteren, and possibly at Colmschate-'t Bramelt too, the oldest elements in the cemetery remain untouched there are ample examples where this is clearly not the case. For example, in cemeteries of Oss-Zevenbergen and Oss-Vorstengrafdonk older elements of the funerary landscape are deliberately incorporated in new graves or new graves are added to these older monuments. It derives from these different attitudes towards centuries old monuments that even with regards to the more distant past different notions existed about how the ancient dead should be treated and how to relate to them.

All in all, it is evident that different notions about the relatedness of the dead were at play simultaneously every time a new dead person was to join the realm of the other dead. Notions that must have been rooted both in the present, reflecting on the group's social fabric (*cf.* Hertz 1907; Van Gennep 1909; Fowler 2013), as well as in the past, possibly reflecting on different notions about ancestry. So far, the role of ancestors has only slightly been touched upon. This will change in the next chapters when the focus will gradually shift to the *meaning* behind the *practice*.

7

The related dead

7.1 Meaning through practice

7.1.1 So many practices, so many ways?

Having arrived at the close of the mortuary process concerned with the urnfields in the Lower-Rhine-Basin, we have seen a long and intricate process of decision making pass in review (Chapters 4-6). Though from a quantitative perspective urnfield graves might still indeed appear to be poor, it must also be clear by now the burnt bones and broken objects in these graves represent a true wealth of funerary practices. Before delving into the possible meanings behind the practices observed, for the sake of comprehension, it is necessary to recapitulate on some general observations.

First, it may be concluded the urnfields represent an inclusive funerary tradition as men, women and non-adults are all represented among the buried individuals in the expected ratios (Section 6.2). Also, when it comes to their mutual treatment, the mortuary process seems to have been rather indiscriminative with regards to the various age and sex categories: all could be buried centrally within funerary monuments of various shapes and sizes (Tab. 6.6); all could be buried in urns of different shapes and refinement (Section 5.2); and all could be provided with objects such as accessory pottery and personal ornaments made of metal (Section 5.4). When is zoomed in on specific object categories, dominances of specific age and sex categories over others may be observed (Tab. 5.7), but non so far as to suggest these objects were only reserved for a specific age or sex. The very few weapon graves in the present dataset might display a dominance of the male sex (Tab. 5.7), outside the present dataset examples exist of females being equipped with weapons in the grave as well (*e.g.* Bloemers 2016). And even though observations made by Roymans and Kortlang of a numerical dominance of males in graves located centrally underneath long mounds may still hold (Roymans/Kortlang 1999, 47-48), the present research has also shown that these specific burial locations were certainly not only reserved for men (Section 6.3.3.2).

Another general observation concerns the destructive and transformative nature of the various funerary practices throughout the mortuary process. To begin with the decedent her/himself, in almost 99% of the cases someone died, it was decided to cremate the corpse (Section 4.2.2). As argued, the cremation rite is an intense process involving a broad spectrum of specific practices such as the preparation of the corpse (Section 3.2.3; 4.2.2), the assembling of the pyre (Section 3.2.4; 4.3.2), the lighting of the pyre, the cremation process itself (Section 3.2.4) and the collection of the cremated remains after the pyre had cooled down. Throughout this process the decedent was transformed from a decaying body to a tangible heap of calcined bones which from then on could be stored, divided up (Section 4.4.2) or merged with other cremated individuals (Sections 4.4.3; 6.2), finally to be buried in urnfields surrounded by the other dead (Section 6.5). A comparable demeanour can be observed towards the objects interred with the cremated remains. Still many objects were interred unscathed, at the same time a substantial amount of objects was subjected to either burning (Tab. 5.8) or deliberate fragmentation before interment (Tab. 5.8; Section 5.5). With regards to the practice of fragmentation, the present dataset has even yielded some clear examples of graves whereby parts of the cremated body or objects seem to have been deliberately kept out of the grave (Sections 4.4.2.5; 5.5).

What also stems from Chapters 4-6 is the apparent inherent variation in the forms and compositions of urnfield graves as for the present dataset there is not a single cemetery alike. If the present research has shown anything, it is that *the* urnfield grave clearly did not exist (Section 6.3.2). Yet at the same time, there must have been clear ideas about which elements were not part of the grave. For example, bronze axes and sickles, both objects that at the time would have been present in every single farmstead, never feature in urnfield graves but in hoards instead (Fontijn 2002; 2019). Returning to the variability observed, when graves are indeed considered to be the material precipitation of funerary practices, what follows is that variety is in some way always related to slight differences in the practices that would finally shape the grave. The interesting point being here is that despite the variation in practices, in almost 99% of the cases (see Section 4.2.2), the mortuary process would eventually result in cremated remains entering the ground forming the contexts that would millennia later consistently be recognised by archaeologists as being urnfield graves. Does this mean that the differences in practices observed are simply variations to the main tune of the mortuary process? And within that same train of thought; do the differences observed between cemeteries therefore represent different cultural adaptions of what is conceptually still the same mortuary process?

7.1.2 The relativity of time

Ever since archaeology developed as a distinct scientific discipline, it has equipped itself with various tools to look at differences in material (culture) and the practices underlying it. Obviously *time* is an important factor to take into consideration as practices may alter over time. This evolutionistic presumption was indeed vital to the development of typo-chronological schemes still shaping the current chronological frameworks of European prehistory (Sørensen/Rebay 2008). The urnfields in the Lower-Rhine-Basin are no exception in this regard. The introduction of the long mound, for example, still heralds the beginning of the Late Bronze Age in the Dutch system (Gerritsen 2003, 123). Certainly, for the present dataset many practices observed are timebound such as the construction of keyhole-shaped monuments (Fig. 6.12) or might even represent certain fashions such as the gradual replacement of dress pins by fibulae in the course of the Iron Age (Section 5.3). It would almost be irrational to argue that time does not play a role in the changes we observe in the archaeological record. The question however is *what* the role of time exactly entails.

As mentioned earlier, as archaeologists we are fortunate to see the entire picture. We can measure and map the exact outlay of cemeteries that have been in use for more than a millennium and study how (funerary) practices might have evolved through time. We must however bear in mind that this is in fact a perspective that the people buried in these cemeteries would never have had. Bourdieu refers to this "scientist-perspective" as '*totalization*' (Bourdieu 1990, 82). This in sharp contrast to the split second in which true *meaning* is (re)produced and (re)negotiated by means of either individual- or group practice (Bourdieu 1990, 58-59; also see Section 2.2). *Meaning*, as such, is therefore caught somewhere in time. From this latter perspective, the differences we observe between graves can therefore hardly be regarded as a deliberate alteration of the *chaîne opératoire* of the mortuary process through time. Even more so, at present radiocarbon dating is probably the most accurate method at our disposal of determining the exact age of specific graves and to put graves in relation to each other when time is concerned. But even for the steepest sections of the calibration curve, the probability ranges still include many decades if not centuries. In other words, the closest we can get to pinpointing a specific event in the formation of Late Bronze Age/Early Iron Age funerary contexts is no more precise than the timespan of an entire lifetime, a significant error margin to say the least. If we really want to understand the apparent variation in funerary practices from the perspective of the communities that once performed the actual burying, we must conclude that at present we often lack the resolution when time is concerned. This statement is not made to marginalise our attempts to understand the meaning behind the variation in (funerary) practices, but rather to put our attempts in the right perspective. Certainly practices did evolve over time, as illustrated by the present dataset, but the question is whether this was a very conscious and deliberate process from the perspective of the acting human agents central to this research.

7.1.3 Communities- and constellations of practice

In addition to the factor *time*, variation in (funerary) practices might also be explained by spatial dimensions in the sense that certain practices were perhaps region bound. In Chapter 5 it was for instance shown that Early Iron Age cemeteries in the east of the province of Brabant and in the north of the province of Limburg exhibit exceptionally high shares of urn burials (Section 5.2; Also see Gerritsen 2003, 128). Another example from Chapter 5 concerns the conical-shaped bronze pendants occasionally found in Early Iron Age graves in the Kempen area (Section 5.3.2.2) that might represent a local dress item the dead were adorned with (Fontijn 2002, 200). The observant reader will have noted that, paradoxically, in order to understand variety, the focus of the present section has gradually shifted toward uniformity. In archaeology, regionally reoccurring traits such as in the above mentioned examples often go hand in hand with the demarcation of certain cultural groups (see Fig. 1.4). A *modus operandi* understandable from a traditional perspective as the reoccurrence of a specific type of artefact and similarities in the way burial rites are performed in fact both concern traits of Childe's original proposition of what a(n archaeological) culture entails:

> *"…We find certain types of remains – pots, implements, ornaments, burial rites and house forms – constantly recurring together. Such a complex of associated traits we shall call a "cultural group" or just a "culture". We assume that such a complex is the material expression of what today we would call "a people"…"* Childe 1929, pp. v-vi

Though it has been argued earlier on (Section 1.3) that in urnfield research we should start looking beyond the cultural approach, Childe's proposition of "culture" includes several interesting elements indeed. First of all, Childe not only talks about material culture but also about *im*material culture when he specifically mentions "burial rites" that presuppose a series of actions or in other words *practices*. Also, in combination with specific expressions in material culture and housebuilding traditions these practices in disguise in Childe's proposition are believed to represent "a people" or group of people bounded by a shared set of practices. In essence, Childe's notion of a(n archaeological) culture already holds elements that in sociology would later become known as '*communities of practice*' (Wenger 1998). The question that follows is whether the concept of *culture* then equals the concept of a *community of practice*. There is however a vital difference between the two concepts. Whereas Childe's proposition of culture reasons backwards from the archaeological data itself in defining a (group of) people, in communities of practice a group of people is (only loosely) defined from within by the (sub)conscious sharing of a set of practices (*cf.* Cohen 1985; Wenger 1998). True *meaning* in the latter is only generated by the practices themselves and not so much by shared elements of material culture. To put it plainly, an archaeological culture does only exist in the head of the archaeologist whereas the notion of a community does not exist outside the lives of its members (Gerritsen 2003, 112; *cf.* Cohen 1985).

For the Lower-Rhine-Basin, Fokke Gerritsen was probably the first to bring this notion of community in relation to (Late) Bronze Age and (Early) Iron Age groups (Gerritsen 2003). To him the concept of a community (of practice)[133] played a central role in the reconstruction of what he calls '*local identities*' (2003). On his turn, he himself drew inspiration from the work of the social anthropologist Anthony Cohen. An excerpt from Gerritsen's dissertation on the work of Cohen (1985) perfectly catches both the potential as well as the pitfalls when trying to reconstruct social groups from an archaeological perspective:

> *"…To Cohen, the idea of community is essentially a symbolic one. The community itself is a symbol, but it is also created and marked through the use of symbols. These can take innumerable forms, from manners of speech to dress or hair-style, from shared day-to-day practices to festive occasions, from gossip to ritual – all those things, in short, that would make an outsider who is unfamiliar with 'the way things are done' stand out. A key aspect of community, therefore, is its relational character: it implies that people feel that they have something in common with each other, and that what they share is not shared with others. The symbols used to mark a community create boundaries, and thus members and non-members, insiders and outsiders. But as with all symbols, these boundaries, and in fact the meaning of community itself, contain a certain degree of vagueness and ambiguity. Not all members perceive the community and its boundaries in the same way, nor is the significance for each member the same at all times and in all contexts.* […] *…communities* […] *are not a given, natural structure, but are*

133 As can be read from the excerpt, even though Gerritsen does not explicitly mentions communities as 'communities *of practice,*' his notion of community in fact comes down to a community of practice: "… *communities* […] *are not a given, natural structure, but are constantly created and reproduced in social practices through which the group defines itself…"* Gerritsen 2003, 112.

constantly created and reproduced in social practices through which the group defines itself. Through these practices a group distinguishes itself from other groups, although the form and structure of these practices need not differ from those of neighbouring communities. Especially in the case of small, localised communities it is likely that symbols used to create and maintain boundaries [...] *differ little from those of nearby communities…"* Gerritsen 2003, 111-112.

What is essential in Gerritsen's reading of the concept of *community* is the ambiguity both in the way in which the sense of community is experienced by its members as well as in the way it is expressed. Also, community is neither static nor self-evident as it needs to be (re)created, (re)lived and reproduced all the time by means of social practices. It is in this context where we must seek the real essence of the funerary practices summarised in the previous chapters. This does certainly not mean that locality, or regionality for that matter, is unimportant. On the contrary, the role of landscape and the associated sense of belonging are in fact vital elements in the creation and reproduction of community (Gerritsen 2003). These aspects of community will be returned to later on (Section 7.4), but for now it is important to acknowledge that even though certain (funerary) practices may indeed look the same from an archaeological perspective, these similarities in practices thus not necessarily reflect communities of practice. But how must we then understand the reoccurring traits we as archaeologists observe in the formation of urnfield graves that find themselves tens, if not hundreds of kilometres apart?

A valuable insight into this matter can be read from the work of yet another sociologist. Etienne Wenger's lifework in fact revolves around the concept of *communities of practice* (*e.g.* Wenger 1998; 2000; Wenger *et al.* 2002; 2015). As an important point of departure, Wenger sees communities of practice as learning environments *par excellence*. *Learning*, in this view, must be read in the broadest sense of the word as the innate human drive of knowing and apprehension by means of social participation in *communities of practice* (Wenger 1998, 4). As he puts it, the concept of practice implies doing, not just on itself, but inextricably linked to historical and social context[134] that provides both structure and *meaning* to the things we do (*ibid.*, 47). Like Gerritsen (2003) in following of Cohen (1985), Wenger too emphasises the informal nature and pervasiveness of a *community of practice*: *"…Most communities of practice do not have a name and do not issue membership cards…"* (Wenger 1998, 7). *Communities of practice* are in fact analytical categories that refer to abstract kinds of social aggregates (*ibid.*, 126) that are not even necessarily experienced as such by their members. Wenger however also reasons that despite not being narrowly defined, the boundaries of a *community of practice* can only be stretched so far and that as an analytical tool a community of practice is in fact a midlevel category (*ibid.*, 124). For example, most people living in the Netherlands will also have the Dutch nationality, but the nation of the Netherlands cannot simply be regarded as a *community of practice*. Yet we see certain symbols[135] and traits reoccur throughout the nation, such as the drowning of French fries in mayonnaise, the inter-sex exchange of three kisses by way of greeting or the wearing of orange clothing when the Dutch national soccer team (one day…) makes

134 Note the correspondence with Bourdieu's notion of *habitus* (Bourdieu 1990; Section 2.2).

135 Symbols are an important tool in what Wenger calls '*reification*': *"…the process of giving form to our experience by producing objects that congeal this experience into "thingness"…"* Wenger 1998, 58.

it to an international final tournament. The here mentioned examples all regard a rather large configuration (*i.e.* the Dutch nation) but we can see the same things happening within much smaller configurations as well. For instance, at any given Archaeology department people are engaged in teaching, research and excavation. Yet every excavation team will have its own way of conducting fieldwork and excavation traditions that come with fieldwork. What both examples of configurations have in common is that neither of them concern single *communities of practice*, yet there is an apparent relatedness to the practices involved as they seem to revolve around the same styles and discourses.[136] These '*constellations of practices,*' as Wenger calls them (*ibid.*, 127) transcend the level of a single *community of practice*, and from an archaeological perspective, can produce a similar precipitation of material culture without necessarily referring to the same social units:

> *"…Styles and discourses are aspects of the repertoire of a practice that are exportable. Elements of style and discourse can be detached from specific enterprises. They can be imported and exported across boundaries, and reinterpreted and adapted in the process of being adopted within various practices* […] *Because styles and discourses can spread across an entire constellation, they can create forms of continuity that take on a global character. However, styles and discourses are not practices in themselves. They are available material – resources that can be used in the context of various practices. As material for the negotiation of meaning and the formation of identities, styles and discourses can be shared by multiple practices. But that does not mean that they are integrated in these various practices in the same way once they are put in the service of different local enterprises. In the course of producing their own histories, therefore, communities of practice also produce and reproduce the interconnections, styles, and discourses through which they form broader constellations…"* Wenger 1998, 129 – 130.

In other words, when we see certain reoccurring traits in the way funerals are performed, especially those that exceed the cemetery level, these not so much reflect well definable social units but much rather *constellations of practice*. Various *communities of practice* are tied in into these constellations and may indeed take the form of single households, kin groups or perhaps even a form of community that comprises several of these smaller social units. However, only occasionally do these smaller *communities of practice* surface in a clear archaeological way. The urns with distinct decoration from Beegden (Fig. 5.6) might for instance represent such a *community of practice*.

Wenger's concept of a *constellation of practice* not only explains why we see certain recurring traits in the mortuary process transpire over extended geographical areas, as styles and discourses are exportable elements that may take on a global character (Wenger 1998, 130), it also provides a way of looking at the apparent variation in the way funerary practices are performed. As can be read from the excerpt in the above, Wenger stresses that styles and discourses form the perfect material for the negotiation of *meaning*, but that these are not necessarily integrated in the exact same way in practices throughout a *constellation of practice*: people will have adapted these elements in a way that made

136 Having overlapping styles and discourses concerns one of the characteristics of Wenger's *constellations of practice* (Wenger 1998, 127). Whereas a '*discourse*' is hard to grasp from an archaeological perspective, '*style*' in fact concerns one of the few elements of the distant past that archaeology can detect.

sense to them at that specific point in time. We can see this idea perfectly reflected in the present dataset with the two *antenna* daggers from the respective cemeteries of Haps and Someren-Waterdael I (Section 5.5). Found some 40 kilometres apart, both daggers accompanied the cremated remains of a decedent in the grave. In this sense, they both reflect the desire of the mourners to unite the decedent with this specific object in death. However, the example from Haps was still sheathed and put in the grave unscathed while the example from Someren had already accompanied the corpse on the pyre, as a result of which its burnt relics were found mixed with the cremated remains. Eventually, what we see here is the same idea or discourse about the dead person that should be accompanied with a dagger, but the integration of the discourse is different.

The example of the antenna daggers also points at the relevance of both *time* and *relativity* in relation to practice. Here we briefly return to Bourdieu's main critique on the totalized scientist-perspective on practice since such a perspective disregards the very purpose of (social) practice itself. As *meaning* is constantly re(negotiated) and (re) produced through (social) practice, this also means that *meaning* is of a fleeting nature: as at every single funeral a different person was buried, different mourners carried out the necessary practices and a different audience would have been present to witness the spectacle, so would *meaning* have slightly differed at every single occasion someone was laid to rest, as would the integration of styles and discourses. Though every funeral would have been carried out in accordance with the mutual *habitus* of the mourners present and will therefore have showed similarities with other funerals, it however is the unique composition of the gathering itself that turned every funeral into a unique event. In this sense, it is no surprise that as archaeologists we observe slight differences in the material precipitation of these events, even within the confinements of single cemeteries.

7.2 The origin of urnfield mortuary practices in view of a practice-based approach

7.2.1 What's in a name?

But how do notions about *constellations of practice* and the fleeting nature of meaning generated through social practice tie into the current discourse about urnfields representing a distinct funerary tradition? Before this question can even be approached, another simple question needs to be addressed first: What makes an urnfield *an urnfield?* Or in other words: Which combination of funerary practices is generally believed to be unique for the urnfields? Obviously the cremation rite and use of urns as the containers for the cremated remains play an important part in what the term 'urnfield' entails (Harding 2001, 319; Gerritsen 2003, 124). Also the notion that these concern groups of graves or cemeteries in a fixed point in the landscape is a returning element in the definitions provided for the term 'urnfield' (Harding 2000, 112-113; 2001, 319; Gerritsen 2003, 124; Hessing/Kooi 2005, 631). Taken together, the characteristics of Late Bronze Age and Early Iron Age cemeteries in the Lower-Rhine-Basin indeed show many resemblances to what is believed to be a funerary tradition that was wide spread across Europe at the time of the Late Bronze Age:

> "...*Urnfield* [Monument class or category]. *A group or cemetery of inurned cremations buried in pits dug into the ground distinctive of the European Late Bronze Age Urnfield Tradition, but also found in areas of northern Europe. The majority of cemeteries are*

> *open sites, in many cases constructed on or around an earlier round barrow. A few, however, are contained within a ditched enclosure. These tend to be smaller examples of up to several dozen burials…"* – The concise Oxford dictionary of Archaeology – (Darvill 2002, 448)

Despite the fact that many cemeteries included in the present study tick most, if not all, boxes mentioned in definition above, the notion that in the Lower-Rhine-Basin the 'urnfield rite' gradually developed out of local traditions has been around for half a century already (Verwers 1969; Roymans/Kortlang 1999; Gerritsen 2003; Hessing/Kooi 2005). Nevertheless, Late Bronze Age (and Early Iron Age) funerary rites are still often being considered as rather distinct compared to what came before and what followed after (Roymans/Kortlang 1999; Gerritsen 2003, 124; Hessing/Kooi 2005, 631).

Gerritsen, for one, argues that the concentration of the dead in urnfields represents a phase of increasing segregation of the dead from the living (Gerritsen 2003, 147). He sees this development as opposed to Middle Bronze Age barrows that find themselves more dispersed across the landscape and the later smaller sized Middle Iron Age cemeteries. He also argues that in the Late Bronze Age and Early Iron Age the urnfields functioned as the centres of religious practice and cult whereas in the Middle- and Late Iron Age special enclosed open-air sanctuaries come into being that take over this function of the urnfields. These latter arguments finally lead Gerritsen to distinguish between Late Bronze Age and Early Iron Age '*burial communities*' and Middle- /Late Iron Age '*cult communities*' (Gerritsen 2003, 193). A comparable emphasis on the importance of the urnfields in the social organisation of the landscape can be read from the quintessential book chapter by Roymans and Kortlang (1999) who place these burial grounds at the very "…*centre of the land cultivated and inhabited by the living community…*" (Roymans/Kortlang 1999, 40; See Section 8.1 for an elaborate discussion).

Additionally, as was argued in the introduction of this dissertation (Section 1.4.4), the urnfield period is often presented as a period of minimalised social stratification as most urnfield graves lack the grave goods that have the quality to signify these differences (Childe 1950, 200; Roymans 1991, 73; Kristiansen 1998, 113). This in contrast to warriorhood idioms believed to have been prevalent in Middle Bronze Age Europe (Kristiansen/Larson 2005; Vandkilde 2014) as well as to the elites that sporadically begin to surface in the archaeological record from the Early Iron Age onwards (Schumann/Van der Vaart-Verschoof 2017).

It seems hardly appropriate to argue that between the Middle Bronze Age and Middle Iron Age no changes occurred in the way in which local communities were organised and how these communities perceived the world around them. Also, the importance of burial grounds to Late Bronze Age/Early Iron Age communities as emphasised by Roymans and Kortlang (1999) as well as by Gerritsen (2003) is evident. But for the Lower-Rhine-Basin, when close attention is paid to the practices underlying the mortuary process as is developed throughout this respective time-span, how contrasting is the urnfield funerary rite really when compared to the Middle Bronze Age or the later Iron Age? As demonstrated in Section 5.2, the use of an urn was only deemed a prerequisite for a minority of the cemeteries included in the present study. Though the overall share of urn graves in Late Bronze Age and Early Iron Age cemeteries is substantially higher than for most Middle Bronze Age barrows or later Iron age cemeteries, still a majority of the graves included in the present study concern urnless cremation graves. As a consequence, an urnless cremation grave from the Late Bronze Age can hardly be distinguished from an urnless cremation grave dating to the Middle Bronze Age, the Late Iron Age, or even the Early Medieval period for that matter. In the light of the above, true meaning as the product of social practice itself would still have differed at every occasion a decedent was laid to rest. At the same time, however, as will be argued in the following, the practice of cremation and the subsequent burial of the cremated remains surrounded by the other dead in fixed places in the landscape hint at persistent ideas about how the dead related to each other and to the land. Ideas that predate the emergence of urnfields and, as will be argued in the following, probably already found their inception as early as the eighteenth century BC.

7.2.2 Early beginnings?

Even though in Central Europe the emergence of urnfields seems to have gone hand in hand with the cremation rite gaining momentum (Harding 2000, 77, tab. 3.1), in the Lower-Rhine-Basin cremation as a way of dealing with the corpse had already become the dominant funerary rite in many places long before the first urnfields occurred. As early as the late third millennium BC, cremation was occasionally practiced next to the dominant inhumation rite (Drenth/Lohof 2005, 436; fig. 19.3; Theunissen 2009, 84-85; fig. 3.29) and from the eighteenth century BC onwards Middle Bronze Age barrows occur wherein most (Van Giffen 1937b; Bourgeois/Fontijn 2015) if not all (Louwen/Fontijn 2019) graves concern cremation graves. At the recently excavated barrow group of Apeldoorn-Wieselseweg, for example, no less than 17 cremation graves were unearthed that all dated between the seventeenth and sixteenth century BC (Bourgeois/Fontijn 2015) in respectively two barrows that have only been excavated for about one quarter (Louwen/Fontijn 2019). Men, women and non-adults are all represented among the interred individuals (Smits 2019). Also, there are some strong indications that for both 'Mound 2' and '3' already several "flat" cremation graves must have been present before these respective locations were "monumentalised" with a burial mound (Louwen *et al.* 2019a, 125; Louwen *et al.* 2019b, 152). In addition, at Garderen-Bergsham, situated some 15 kilometres west of Apeldoorn-Wieselseweg, Van Giffen had already excavated a barrow group in the 1930's that produced no less than 30 cremation graves (Van Giffen 1937b), dating between the eighteenth and fifteenth century BC (Bourgeois/Fontijn 2015, 51-53). In essence, barrow groups like that of Apeldoorn-Wieselseweg and Garderen-Bergsham can already be considered as cremation grave cemeteries on themselves.

It should however be noted that despite these early examples of barrows displaying an absolute dominance of cremation graves, for the Low Countries it would indeed take until the Late Bronze Age for the cremation rite to completely replace inhumation as a way of dealing with the dead body (Theunissen 2009, 84; Drenth/Lohof 2005, 436-437). For the present dataset, the cemetery of Gasteren is perhaps a good example where we can see the transition from inhumation to cremation (from a totalized scientist-perspective) being completed in the latest phase of the Middle Bronze Age with the placing of the last inhumation graves in the flanks of 'Mound 37' (Section 6.5). Nevertheless, with regards to the definition(s) of an 'urnfield' presented in the above, barrow groups such as Garderen-Bergsham and Apeldoorn-Wieselseweg show that grouped cremation graves in a fixed place in the landscape already occurred in the first half of the Middle Bronze Age. Urnfields therefore do not concern a totally new phenomenon in this regard. Neither does the urning of cremated remains represent a totally new practice, as in the Lower-Rhine-Basin urns as the containers for cremated remains too, already occur from the eighteenth century BC onwards (Bourgeois 2013, 36; fig. 3.7). However, before it can be argued that cemeteries known as urnfields evolve out of practices that find their origin early in the second millennium BC, there are still two important presumptions in our current discourse that need to be addressed. The first assumption is that the Middle Bronze Age mortuary process was *selective* instead of *inclusive*. The second assumption is that there is a substantial decline both in mound construction as well in interment in older barrows roughly between 1400 and 1100 BC. In the following, both presumptions will subsequently be re-evaluated in the light of new (excavation) data and a large corpus of radiocarbon dates that have become available in the last two decades.

7.2.3 Presumption 1: The selectiveness of the Middle Bronze Age mortuary process

Except for the cremation rite gradually becoming the dominant funerary rite in the course of the Middle Bronze Age, there is another important difference between the earlier Beaker Periods (Late Neolithic – Early Bronze Age) when funerary practices are concerned. Whereas for the Corded Ware and Bell Beaker barrows it is evident that only a selection of the original population would finally be buried in an archaeological visible way (Lohof 1994, 113; Bourgeois 2013, 11), Middle Bronze Age barrows display substantially higher numbers of graves (Drenth/Lohof 2005, 451). Also, non-adults start to make up substantial shares of the decedents interred in barrows (*e.g.* Theunissen 2009, tab. 3.16), earning them the designation of '*family barrows*' (Drenth/Lohof 2005, 451). However, despite the apparent inclusivity Middle Bronze Age barrows might display, it is still assumed these barrows only represent a selection of the original population. In the most recent studies shares as low as 10-15% are even being mentioned (Theunissen 2009, 105; Gerritsen 2003, 121; 236). This is in stark contrast with the apparent *inclusivity* of the later urnfields (Section 6.2; 7.3.2). But where is this assumption really based on? And more importantly, is it true? Especially in the light of sites like Garderen-Bergsham (Van Giffen 1937b) and Apeldoorn-Wieselseweg (Louwen/Fontijn 2019) there seems to be no reason to assume on basis of the number of graves as well as on the sex and age of the decedents (Smits 2019) that not everyone was allowed a final resting place in a barrow. Scanning through the literature back in time in search for the origin of the mentioned 10-15%, the latest person to have addressed the issue is Gerritsen (2003, 121). Gerritsen provides no further explanation, only to have relied heavily on the then recent study on Middle Bronze Age societies by Theunissen (1999[137]). Theunissen, indeed mentions that for the entire Early- and Middle Bronze Age the share of people that would finally be buried in barrows did not exceed 15% of the original population (Theunissen 2009, 104-105). It is probably by this description that Gerritsen decided to add the lower threshold of 10% to his estimate. However, Theunissen does neither elaborate on how she came by the presumed 15% (Theunissen 2009, 104-105). For the funerary data, Theunissen on her turn relied on the work by Lohof (1991; 1994). However, when Lohof mentions 15% in relation to the representativeness of the burial record, he is solely referring to the Early Bronze Age (Lohof 1994, 112). His calculation, as he states, is highly hypothetical and even within

137 Reissued in 2009.

the same paragraph he mentions that the Middle Bronze Age (A) signifies a broadening of selection criteria (*idem.*). It seems that over the years some important nuances accidentally got lost in translation with regards to the selectiveness of the Middle Bronze Age mortuary process. Also, recent estimates about the representativeness of the current barrow record in the Low Countries suggest that only about 30% of the original amount of barrows that once dotted the landscape finally made it to our records (Bourgeois 2013, 40). One could argue that the later urnfields would have been prone to the same destructive taphonomic processes as Middle Bronze Age barrows were. However, whereas most urnfield graves were dug into the virgin soil, many Middle Bronze Age graves actually concern interments in mounds above ground (Lohof 1991; 1994; Theunissen 2009; Bourgeois 2013). This means that when a Middle Bronze Age barrow was levelled, most if not all graves would literally have been wiped of the face of the earth. In this regard, urnfield graves have a much better chance of survival as is testified by the many cemeteries unearthed since the beginning of the so-called *essen*-archaeology (Section 3.4.2; Gerritsen 2003, 22).

Just to state matters clearly, it is not argued here that from the eighteenth century BC onwards all of a sudden everyone in the entire Lower-Rhine-Basin was buried in barrows and that selection did not take place at all. However, what is argued is that inclusive cremation grave cemeteries in a fixed point in the landscape already occur as early as the beginning of the Middle Bronze Age and that urnfields do not represent a totally new phenomenon in these regards. Even more so, when is zoomed in on the more detailed funerary practices reflected in Middle Bronze Age cremation graves, there are striking resemblances with the practices observed for the later urnfields such as the urning of cremated remains (Theunissen 2009, 81-82; Bourgeois 2013, 36; fig. 3.7) the mixing of cremated remains of multiple individuals into one grave (Theunissen 2009, 98; Smits 2019, 180) and the provision of grave goods in the form of accessory pottery and (personal) dress items (Theunissen 2009, 87). Even the placing of pottery sherds in graves is a practice regularly observed for cremation graves dating to the Middle Bronze Age (Theunissen 2009, 87; Gerritsen 2003, 121; Louwen *et al.* 2019b, 141). In sum, it seems that changes that occurred in the mortuary process of the early Middle Bronze Age echo all the way through the second millennium BC to find their culmination in cemeteries later to become known as urnfields. In other words, it could be argued that early Middle Bronze Age barrow groups like that of Apeldoorn-Wieselseweg have all the hallmarks of being an urnfield in the making. However, before such a statement can finally be made, there still is one last presumption that needs to be addressed.

7.2.4 Presumption 2: The '1400-1100 BC decline' in mound construction and burial in mounds

Traditionally, in the Low Countries the Middle Bronze Age has been divided into the two sub periods of the Middle Bronze Age A, between 1800 and 1500 BC, and the Middle Bronze Age B, between 1500 and 1100 BC (Drenth/Lohof 2005). This distinction is unique for the Low Countries and is predominantly based on developments in funerary practices (Fokkens 2001; Fontijn 2002, 9) such as the nature of surrounding features of barrows and the ratios between cremation, inhumation and secondary burials (see Drenth/Lohof 2005 for an elaborate discussion). A recent re-evaluation of this model in the light of (new) radiocarbon dates suggests that many of these elements previously regarded as distinctive for specific episodes of the Middle Bronze Age actually appear to be more or less contemporaneous (Bourgeois 2013, 37). In his encompassing study of barrow landscapes in the Low Countries, Bourgeois argues that the Middle Bronze Age as a whole marks a period of intensified mound construction, mound restoration and reuse of (older) funerary mounds (Bourgeois 2013, 165-167). What he however also notes, is that from 1400 BC onwards the intensity of mound construction and (re)use for burial not only wavers but actually decreases, only to pick up pace again in the Late Bronze Age in the form of urnfield mounds (Bourgeois 2013, 38). When urnfields gradually evolve out of Middle Bronze Age funerary practices, one would however expect to see the above mentioned early hallmarks of urnfields to come through in this period, not to decline. But how should the decline in mound construction and (re)use of these mounds then be explained?

First, it is important to note that the research by Bourgeois revolves around 589 burial mounds throughout the present day Netherlands that have been selected for their sheer quality of being (well excavated) barrows (Bourgeois 2013, 9). These are *par excellence* isolated barrows, dispersed barrow groups and barrow alignments, *not* urnfields. As he states himself, the chronology he created on basis of radiocarbon dates is restricted to the tradition of barrow construction (Bourgeois 2013, 38). Second, the chronological framework for urnfields in the Lower-Rhine-Basin is still predominantly based on typo-chronologies predating the second science revolution in archaeology with the invention of radiocarbon dating. Only sporadically has radiocarbon dating been applied in the second half of the twentieth century in urnfield research to refine these typo-chronological schemes (*e.g.* Kooi 1979; Verlinde 1987) and the very programme that was actually aimed at the purpose of finetuning the existing typo-chronologies (surprisingly) only uses uncalibrated radiocarbon dates (Lanting/Van der Plicht 2003; 2005).

Over the last two decades commercial archaeology has added substantially to the existing corpus of radiocarbon dates of urnfield graves. Spread out over dozens of excavation reports, a more or less equal amount of radiocarbon dates can be collected. The analyses concerned were not only aimed at graves containing clear typo-chronological markers, but especially at cremated remains from graves that did not produce any of these markers. For *all* 689 sites included in the present study[138] have the available radiocarbon dates been collected and put together in Appendix II. In total these concern 437 radiocarbon dates, 268 of which come from graves included in the present dataset. To sketch a reliable picture of the longevity of urnfields it was decided to include *all* available dates of late prehistoric graves found at sites that produced graves dating to the Late Bronze Age and Early Iron Age. Returning to the period of supposed decline in mound construction, Figure 7.1 shows a selection of calibrated radiocarbon dates for the cemeteries included in the present study. As perfectly illustrated in this figure, from the northern Netherlands with cemeteries like Gasteren, all the way to the southern Netherlands with cemeteries like Maastricht-Ambyerveld it appears that the period between 1400 and 1100 BC is actually

"hiding" among the urnfields.[139] De Mulder has observed comparable trends for the cemeteries located in the Scheldt-Basin (De Mulder 2011, 200). In the light of these radiocarbon dates it seems that in the course of the Middle Bronze Age cremation grave cemeteries in the form of barrows are gradually replaced by more extensive clusters of

138 This list can be considered complete up to the year of publication of 2016.

139 Hessing and Kooi already note that some graves in the northern Netherlands predate 1100 BC (Hessing/Kooi 2005, 636).

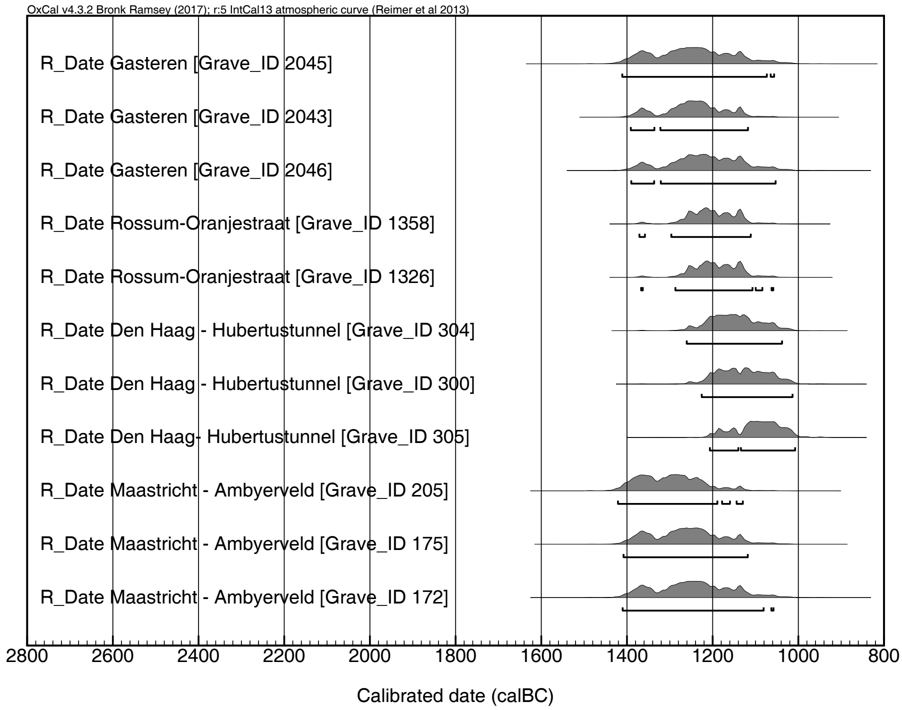


Fig. 7.1: A selection of graves in the present dataset that produced radiocarbon dates largely predating 1100 BC. The cemeteries concerned are located throughout the present day Netherlands: Gasteren (northern Netherlands); Rossum (eastern Netherlands); Den Haag (western Netherlands) and; Maastricht (southern Netherlands) indicating these early radiocarbon dates do not concern mere local exceptions. For a complete overview of radiocarbon dates of cremation grave cemeteries in the Netherlands see Appendix II.

cremation graves and that the presumed decline in mound construction and secondary burial in fact concerns a steady continuation of funerary practices. Even more so, since not uncommonly both Middle Bronze Age barrows and Late Bronze Age cremation graves are found within the same burial grounds (see for example Figs. 6.17; 8.5-6).

7.2.5 Cremation grave cemeteries in the making

To conclude, from the beginning of the Middle Bronze Age onwards in the area of the Lower-Rhine-Basin barrows start to occur where most, if not all decedents have been cremated before interment. Men, women and non-adults, all are represented among the interred individuals and not uncommonly have their cremated remains been put in urns. As argued, the way in which these barrows or barrow groups are organised already show the hallmarks of cremation grave cemeteries in a fixed point in the landscape. Additionally, from the fourteenth century BC onwards new cremation graves are not only dug into already existing mounds but are gradually placed on themselves, yet still in groups, and covered by individual monuments of smaller sizes. As argued in Section 6.5 urnfields were not always founded in empty landscapes, on the contrary. Cases like Gasteren (Section 6.5; Van Giffen 1945) are good examples of urnfields that seem to have gradually "grown out" of already existing Middle Bronze Age burial grounds. Perhaps the ongoing addition of new graves in urnfields can be seen as a gradual substitution of the practices of mound restoration and mound reuse as so evidently observed for the earlier Middle Bronze Age (Lohof 1991; 1994; Theunissen 2009; Bourgeois 2013) and reflects upon comparable notions of the related dead. As will be argued in the following, this growing emphasis on the related dead not only stems from the way in which burial grounds were organised from the Middle Bronze Age onwards, but are in fact reflected in the very fabric of the funerary practices themselves.

7.3 Personhood and the social dead

7.3.1 Setting the stage

In Chapter 2 it was argued that the (or a) mortuary process revolves around the changing roles of the decedent (*cf.* Hertz 1907; Van Gennep 1909) and that throughout the mortuary process ideologically charged statements are made that are arranged within a narrative (*cf.* Fowler 2013), or discourse (*cf.* Foucault 1969; Wenger 1998), about this transformation of the decedent into her/his new role. Unlike anthropologists who are still able to witness this narrative played out in its entirety, as archaeologists we have to make do with the very end station, which is the grave. The tacit bones and objects we encounter in urnfield graves however still hold clues that hint at the meaning behind the practices, or more precise, how meaning was generated through practice. The osteological analyses presented in Chapters 4 and 6 for example tell us in what capacity (*i.e.* sex and age) the decedent left the realm of the living. Objects (Chapter 5) on their turn, though in funerals their functions might have been manifold (Fowler 2013), also possess the capacity to signify certain *personae* (Strathern 1988; Brück 2004; 2006; Brück/Fontijn 2013; Fowler 2004; 2013). Without presupposing to reconstruct exact meaning as it was once perceived by the original human actors, it might prove worthwhile to take a closer look to the array of both people as objects represented in urnfield graves, and how these two interconnect, in order to find out which statements were being made throughout the play of the metamorphosing decedent.

7.3.2 Personhood and humans

Starting with the '*who,*' in Section 6.2 it was argued that the urnfield mortuary process was rather indiscriminative when it came to the sex or age of the decedent. Not only are all age categories and both sexes represented (Section 6.2), overall they also seem to have been treated in equal fashion. For example, all could be buried centrally within funerary monuments (Tab. 6.6) and all could be provided with articles like accessory pottery or pieces of jewellery (Tab. 5.7). It is certainly not argued here that the death of a child would have made no other impact to a community as the ending of a life fully lived, only that on basis of sex and age none seem to have been denied a place among the other dead. On basis of this observation, it may be argued that even the smallest of children were regarded as having personalities of their own and for that matter were fully counted among the members of a community. This latter observation also stems from the fact that more than 75% of the infant category (0-3 years of age) received a grave of their own, even 83.5% when the entire non-adult category is concerned (Section 6.2). At the same time, it remains remarkable that of all the graves that contained the cremated remains of multiple individuals, 80.4% concern combinations of adults and non-adults (Section 4.4.3). Though children clearly already enjoyed their share of *personal* autonomy, the dominance of 'adults/non-adults combinations' in mixed graves also reflects a certain desire to merge their person(hood) with that of an adult counterpart in death. This form of fused personhood will be returned to later on when the various relations between the dead will be further explored (Section 7.4). But in order to do so, it is first necessary to learn more about the possible relations between a decedent and the objects she or he was provided with in the context of the grave.

7.3.3 Personhood and objects

With regards to objects, the present research initially seems to confirm the current image about the urnfields representing a "poor" funerary tradition in the sense that grave goods usually lack in these graves. When urns are excluded from the count, only 13.7 percent of the graves yielded one or more objects (Section 5.3). As demonstrated, accessory pottery is by far the best represented category of objects among the grave goods, only to be followed by a much smaller share of graves that produced (mostly metal) objects related to personal adornment and/or clothing (Tab. 5.5). Weapons and tools only entered the grave with the highest of exceptions, and especially the former category, seems restricted to a small group of graves dating to the Early Iron Age (Section 5.3.3). Even when the dataset would have included all Late Bronze Age/Early Iron Age graves that are known today within the entire Lower-Rhine-Basin, still only a small share of Early Iron Age graves would eventually stand out for their abundance of (mostly metal) grave goods (Van der Vaart-Verschoof 2017a/b). The question however is whether the lack of grave goods therefore also signifies democratic (Childe 1950, 200) or egalitarian societies (Kristiansen 1998, 113; Roymans 1991, 73). In the following it will be argued that the absence of grave goods does not necessarily indicate differences in wealth or status between decedents, but that this general lack of grave goods merely tells us that these differences not *needed* to be emphasised.

First, it is again important to state that the role(s) of objects throughout the mortuary process could have been manifold. Like with the coin in the example from classic Greece (Fig. 2.1; Section 2.3.2), objects could for instance function as vehicles in the metaphorical journey of the decedent to another world or state of being. The accessory pottery found in some 9% of the graves in the present dataset (Tab. 5.5) could very well have functioned in such a capacity when it is assumed these vessels, cups, bowls and plates once contained food and drink meant to nourish the decedent during her/his journey to the hereafter. Objects could also have functioned as gifts from the mourners to the decedent or as representations of certain soci(et)al values. Both these latter examples however already concern certain reifications of the social relations of the decedent and as such already emphasise the importance of not seeing objects as "just objects" but to appreciate them for their social qualities.

One of these social qualities is the capacity of objects to signify a certain social value, role or status. An object like a sword might for instance indicate "warriorhood" or "strength" while lavish metal jewellery could point at "wealth." This is probably exactly why urnfield graves are generally believed to signify egalitarian societies (Kristiansen 1998,) as the objects able to indicate these social qualities simply lack in these graves. However, especially in the case of funerals, the absence of evidence is certainly no evidence for absence as funerals are *par excellence* about changing roles (*cf.* Hertz 1907; Van Gennep 1909; Metcalf/Huntington 1991). Changing roles also implicates that one role is laid down and another is picked up (Van Gennep 1909). Objects, as the potential bearers of symbolic meaning (*cf.* Kopytoff 1986), form important insignias at these occasions. A *crown*, or more commonplace, a *wedding ring* are good examples. When a happy couple gets married the exchange of wedding rings and the subsequent wearing of the rings indicate both sides of the marriage are no longer considered to be single: they laid down the social status of being single and adapted the new social status of being married. Throughout the marriage the ring around the finger of the spouse is a constant reminder of the married status and the *persona* of the spouse and is recognised as such by a wide audience. However, in the case of a divorce the wedding ring leaves the finger from the spouse again as an indication she or he laid down the role of spouse, and with it, the social status of being married. Though the dissolution of the marriage is in fact arranged by signing the divorce papers, to the outside world the removal of the wedding ring from the finger is the most clear sign that both parties involved resumed their former status of being single.

Like a divorce, death too brings about an instant change of social roles as it has the irreversible quality of stripping the decedent from her/his former social status of being alive. In the process it also brings about a renegotiation of social roles (*cf.* Hertz 1907), not only when it comes to the social roles of the decedent, but as much to the social roles of the mourners (Metcalf/Huntington 1991; also see Section 2.3) when spouses become widow(er)s or children might become orphans. Along with the changing of social roles, objects associated with these social roles also change owners. In this regard *heirlooms* form just one capacity in which the former possessions of a decedent switch owner. Like with the removal of the wedding ring in a divorce, the separation of a decedent from her/his social insignias might indicate that the roles these insignias represented were laid down at the event of death, or at least did not needed to be emphasised in death. In the present day Netherlands, every year a few thousand people are knighted in the '*Orde van de Nederlandse Leeuw*' for (voluntary) services rendered to society. Decorated people often wear their medal (lintje) with great pride (though only at occasions allowed). However, when decorated people die, their medal is to returned to the state. So in the Netherlands on a yearly basis thousands of people acquire a new social status as 'knight.' But when these people would be excavated by future archaeologists some thousand years from now, there is nothing in their graves that would help determine their former social status as 'Knight in the Orde van de Nederlandse Leeuw.'

Returning to the urnfield graves, when objects that have the quality of emphasising certain social roles (*personae*) or statuses lack inside graves, this merely means that these social personae and statuses not needed to be emphasised. In the light of the above, "not needing to be emphasised" could actually mean that the decedent was deliberately stripped of these social personae in the transformation to her/his new social status of being dead. But when this was indeed the case, how should we then interpret the objects we do encounter in urnfield graves?

7.3.4 Blurring the human-object dichotomy

So far humans and objects have been discussed separately. Though ontologically humans and objects might represent two distinct categories, even today the animate and inanimate are often intertwined and boundaries between the two can get easily obscured. For instance, in our language *ships* are inextricably linked to the human body and character. *Vessel*, from the Latin '*vasculum*' (meaning *vase*), refers to the carrying quality of ships but is at the same time synonym for the conducts of body fluids (*e.g.* blood vessels). Ships are even considered to have a gender as they are ought to be referred to as a 'she.' Even their life paths are linked up with human (female) lives as they are *baptised* for their *maiden* voyage and end their lives in special ship *graveyards*. Another interesting denomination for ships concerns the word of *craft.* With this clear reference to the skill of its (human) makers it underpins the composite and relational nature of these objects. As this modern ship example shows, objects cannot only help constitute a certain *persona* as was argued in the previous section, but they can as much have been considered as having personalities of their own or to function as the metaphorical extensions of human persons.

Brück and Fontijn argue that the *inalienable* character of specific types of objects in this latter notion (*cf.* Godelier 1999), was in fact vital in the way people in the Bronze Age made sense of the world around them and, as a consequence, how they structured the mortuary process (Brück/Fontijn 2013, 206; also see Section 1.4.4). The handful of bronze razors and tweezers in the present dataset might for instance have been regarded as inalienable from their owners, inextricably linked with their character and were therefore deposited in the grave along with their owner. Objects worn on the body, like bronze bracelets (Tab 5.8) could even share the pyre with their owners. However, when the urnfield graves are concerned, other objects that are easily considered to be inalienable from their owner such as swords, almost never end up in the grave but were deposited in rivers (Fontijn 2002). This form of double exclusivity (Fontijn 2019), a specific object buried in a specific place, suggests that their treatment (*practice*) was dictated by their attributed character (*personhood*) and particular kind of life path (Fontijn 2002; Brück/Fontijn 2013, 205). In a sense it seems that in the example of the sword the *inalienable* could become *alienable*. The act of depositing an object like a sword in a river might very well have been a procedure to accomplish such an alienation (Fontijn 2019; *cf.* Bloch/Parry 1989). The other way around, when swords do occasionally start to occur in urnfield graves from the Early Iron Age onwards, we can see that these swords have been subjected to forms of extreme manipulation, even destruction, when swords are completely bent and fragmented before being interred (Van der Vaart-Verschoof 2017a). Perhaps these destructive procedures were needed to 'break' with the conventional procedures of alienation and allow the sword by way of exception in the context of the grave.

As these various examples show, there are different ways to look at the objects interred in urnfield graves. It is important to note that these different ways not necessarily exclude each other, especially when it comes to objects made of metal. In his most recent book Fontijn argues that in Bronze Age Europe the same type of objects were *valued* for both their economic as religious connotation without being mutually exclusive (Fontijn 2019). A bronze neck ring thus not only represents the rare commodity of bronze and the associated social status of its owner. In the context of the grave its inalienable character might have been as much- or perhaps even more important. In this scenario, true value depends on the practice wherein it functioned (Fontijn 2019 *after* Graeber 2005).

Also, in a world vision where objects are ascribed inalienable and human qualities, such objects were possibly used as vehicles to create links between different persons and places (Brück/Fontijn 2013, 206-207). The deliberate fragmentation and incomplete deposition of objects, as so often observed for urnfield graves (Section 5.5), can perhaps best be explained in this light. For the present dataset, the placing of pottery sherds in the grave along with the cremated remains (Sections 5.7.2) probably concerns the most outstanding practice in this regard. The two examples of fitting pottery sherds retrieved from different contexts from the cemeteries of St. Oedenrode-Haagakkers and Geldrop-Genoenhuis (Section 6.3.2) already indicate that parts of the same vessel were deliberately distributed over different localities. In the example from Geldrop-Genoenhuis, the respective pottery sherds even received different treatments (Section 6.3.2; Hissel *et al.* 2007, 184) testifying to the different trajectories these sherds were subjected to since their initial 'break up.' Contemporary evidence from the domestic sphere in the form of (burnt) pottery depositions in and around the house (De Vries 2016, 96) are another testimony to the importance of pottery (sherds) in the cosmologic arena as these depositions are believed to have functioned as metaphorical links with the lifepath of that of the House (Van den Broeke 2002a; Gerritsen 2003, 97). Within this train of thought pottery sherds in funerary contexts possibly concern reified notions about the relatedness of the decedent in the sense that by breaking a pot and distributing the sherds metaphorical links between the grave and other (social) localities related to the decedent were created. A form of passive keepsakes that even today is not uncommon in funerary rites.

As with the cremation rite the human body is in a way *objectified* to a tangible heap of calcined bones (Section 3.2.5), it is possible this notion of distributed personhood also extended to the decedent her-/himself. The representativeness of the amount-, and especially the weight of cremated remains we encounter in urnfield graves has been thoroughly discussed in Section 4.4.2 and it was argued that complete bodies are more often represented than is currently thought (*cf.* Harvig/Lynnerup 2013). It was however also demonstrated extreme low weights of less than 100 gram did occur that cannot be explained otherwise than that these concerned token deposits (*cf.* Wahl 1982, 24). Also, the various examples of double graves whereby cremated remains of multiple individuals were combined into one grave illustrates that cremated remains were indeed used as a substance to negotiate social links between (deceased) individuals. Though for the majority of urnfield graves it is impossible to prove archaeologically portions of cremated remains were deliberately kept out of the grave (see Section 4.4.2 for an elaborate discussion), token deposits did occur which means that something else was done with the remainder of the cremated remains. Whatever "something else" might have been, by dividing cremated remains the decedent her-/himself becomes automatically physically distributed over multiple places. This latter notion might as well have been the very objective of the act of splitting the cremated remains.

The extreme example from the cemetery of Beegden where the remains of no less than seven individuals were found in one single urn could very well be a case in point (Section 4.4.3). The total amount of individuals in this particular case was based on dental records and the number of (nine) petrosal bones belonging to individuals of different sexes and ages; one adult male, three adult females and three non-adults (Roymans/Hoogland 1999, 77). It hardly seems possible these seven individuals all died at the same time and were cremated together. A more logical explanation would be that (some) of the cremated remains of each individual were kept after cremation, finally to be combined into the grave that was excavated at Beegden. As Roymans and Hoogland already argue, this grave could concern an example of an occasion whereby people that split off from another community took (some) of the remains of their late beloved ones to their new home, finally to be interred in what is thought to represent the oldest grave of the Beegden cemetery (Roymans/Hoogland 1999, 82). Based on the total number of petrosal bones from this well preserved grave (*ibid.*, 76), nine out of 14 that should be present in the case of seven individuals, it could be argued that not all seven individuals are represented completely and some remains were indeed buried elsewhere.

In conclusion, the manipulation of both bodies and objects in urnfield graves by acts of burning and deliberate fragmentation strongly suggests that both entities were not just appreciated for being bodies and objects but that these were considered substances that could be used to (re)negotiate relations between people, objects and places. In this view both the human body as the associated objects were not only valued for their intrinsic value but perhaps even more for their power to represent certain social relations. But if this was indeed the case what then constituted the nature of the relations aspired?

7.4 Land, ancestors and the related dead

7.4.1 The dead related to each other

One of the most remarkable elements of the mortuary process involved with the urnfields still is the fact that the cremated dead also needed to be buried. Despite the consuming, transforming and transcending qualities of the cremation fire, the cremation rite itself was clearly deemed as "just" another station along the metaphorical journey of the decedent rather than the termination point. Time and time again it was decided to anchor the last physical remains of a decedent somewhere within the physical world. The fact that this was consistently done in places were a decedent would be surrounded by the other dead again testifies to the notion that the relatedness of the dead was deemed important. In Section 6.5 it was argued that locating a new grave in an urnfield was in fact a very conscious affair and that different notions about the relatedness of the dead were at play simultaneously every time a new grave was added.

First, decedents could already be "merged" before interment by combining the cremated remains into one grave. Second, decedents could be buried within the confinements of the same funerary monument. Third, new monuments and/or graves could be connected to already existing monument by making them overlap or to build them adjacent to one another. And fourth, new graves could be dug into monuments already centuries old. It seems reasonable to assume that these various ways of putting the dead in relation to each other also reflect on different kinds of relationships. What stems from the first way of connecting the dead is that the relation between the various decedents must already have been evident in life. The same would in most occasions have applied to decedents buried within the confinements of single one-phased monuments. As argued, the relationships emphasised in these first two ways of connecting the dead could concern family ties, perhaps mirroring former households (Section 6.5). When the clustering and overlapping of graves is concerned, the contemporaneity of the lives lived becomes however less evident and it is exactly the non-contemporaneity of the graves in the fourth way of connecting the dead that is most apparent.

7.4.2 The dead as ancestors

Even though determining the exact nature of the relationships emphasised in urnfields is problematic from an archaeological perspective, it is evident that very different periods of time between deaths were bridged by the various ways of connecting the dead. The first two "modes of connection" seem to concern relationships that must already have been evident in life, and would therefore still be present as such in the collective memory of the mourners. With regards to monuments already centuries old when reused for burial, there clearly would have been no vivid recollection of the persons initially buried in these monuments. These differences in time past between deaths could hint at different notions about ancestry that were at play simultaneously (Fokkens 2012). Anthropology has provided ample examples of extant communities where ancestors are believed to be omnipresent, and more importantly with regards to the urnfields, where different sorts of ancestors are associated with different episodes of the past and with different origins. Based on a broad scope of anthropological studies on extant horticulturalists/hunter-gatherers around the globe, Mary Helms for example distinguishes between *'emergent ancestors'* and *'first-principle ancestors'* (Helms 1998). *Emergent ancestors* are associated with lineage (a House with capital 'H') while *first-principle ancestors* are associated with creation, primordial source and originations (Helms 1998, 137-138). Comparable notions can be read from Daniel de Coppet's essay on the *'Are'are'* from the island of Malaita where a distinction exists between *'intermediary ancestors'* and *'apical ancestors'* (De Coppet 1985). *Apical ancestors* could be seen as a form of *first-principle* ancestors as they "*…are the origin of the society…"* (De Coppet 1985, 82). *Intermediary ancestors,* though also associated with lineage (*ibid*., 81) are however not entirely the same as *emergent ancestors*. An important difference between the two exists in the fact that *intermediary ancestors* are dead and properly buried while emergent ancestors can also find themselves among the living: they literally emerge out of the House, extending the lineage beyond the temporal (Helms 1998, 137). These various notions about ancestry from current anthropology cannot simply be projected one-on-one on the funerary practices observed for the urnfields. For instance, saying that the initial graves in monuments already centuries old were considered by Late Bronze Age/Early Iron Age people as *apical ancestors* would simply be incorrect as *apical ancestors* were never buried (De Coppet 1985, 82). However, these examples do show how notions about descent and origin can be closely affiliated with different but co-existing notions about ancestry. Also, examples like that of the *'Are'are'* testify to the importance of funerary sites as *intermediary ancestors* are believed to be located in funeral sites where they still have the power to intervene in everyday life to both benefit as well as harm the living, (De Coppet 1985, 81).

Returning to the mortuary practices observed for the present dataset, the efforts people put in creating links between (dead) people, objects and places strongly suggests that the dead were still attributed active and social roles. This latter observation indicates a strong sense of ancestral presence was experienced by people inhabiting the Lower-Rhine-Basin at the time of the urnfields. As derives from the argument in the above concerning Middle Bronze Age funerary practices, this sense of an ancestral presence was no novelty at the brink of the Late Bronze Age but originated much earlier in the Middle Bronze Age (also see Lohof 1991; 1994). It is already from this period onwards that notions about the related dead are not only expressed by the mortuary practices themselves but also in the way in which these notions about relatedness become firmly rooted in the land.

7.4.3 The ancestors and the land

But why then was this latter emphasis on ancestors and land deemed so important? In the current discourse about the social organisation of the Late Bronze Age/Early Iron Age landscape urnfields feature as territorial markers and the authority of the ancestors was wielded to lay claims on land (Roymans/Kortlang 1999; Gerritsen 2003). Even though De

Coppet's essay also played an important source of inspiration for the construction of the current discourse, it is argued here that the application of De Coppet's observations was used the other way around. The '*Are'are*' perception of the land(scape) is in fact striking as it is believed that people do not own land but land actually owns people (De Coppet 1985, 81). As De Coppet writes: *"…land is clearly not simply soil, but rather an entity always fused with the ancestors, under whose joint authority the living are placed…"* (De Coppet 1985, 81). Each piece of land is considered to have been passed down all the way from the *apical ancestors* to the *intermediary ancestors* to their living descendants and the latter have a constant obligation to take care of the land (*ibid.*). Land they are in fact related to- and owned by descent. In this view, the interplay between the living, the ancestors and the land is quite the opposite of current ideas wherein urnfields functioned as territorial markers (Roymans/Kortlang 1999; Gerritsen 2003) as in such an interpretation the *owning of* land supersedes the sense of *belonging to* the land. Though projecting twentieth century AD Melanesian perceptions of land and ancestors on late prehistoric communities in the Lower-Rhine-Basin is not without its risks, De Coppet's essay still challenges the current view on the role of urnfields in the social organisation of the landscape and a re-evaluation of the evidence at hand is necessary. Therefore, in Chapter 8 will be explored how cemeteries, as the dwelling places of the ancestors, related to the land and to the people living in the land.

8

Ancestral landscapes

8.1 The first holistic approach to urnfields

In the Low Countries, during the 1990's a renewed interest in urnfield research arose that boosted the theorisation of the social structuration of the Late Bronze Age and Early Iron Age landscape. Barely within the time-span of a single decade a holistic approach was developed, bringing together a huge corpus of burial sites, settlement data and deposition practices (Roymans 1991; Roymans/Fokkens 1991; Fontijn 1996a; Fokkens 1997; Roymans/Kortlang 1999; Fontijn 2002; Gerritsen 2003). Ideas developed in this decade still shape the current discourse about the role of the urnfields in relation to the social organisation of the landscape and found their culmination in the quintessential book chapter by Roymans and Kortlang (1999).

Important elements in the model by Roymans and Kortlang in fact revolve around notions of territoriality and a growing pressure on the available land (Roymans/Kortlang 1999). The basis for this model was introduced by Roymans and Fokkens several years earlier (1991) with the initial thesis that urnfields formed important focal points structuring the movement of settlements across the landscape (Fig. 8.1). This in contrast to the dispersed character and relatively short lived use lives of Middle Bronze Age barrows (Roymans/Fokkens 1991, fig. 7). The dichotomy of "stable" urnfields in contrast to "dynamic" settlements is also evident in this model (Van Beek/Louwen 2013, 84) and is for an important part based on the so-called 'wandering farmsteads model' that was being developed simultaneously (Schinkel 1994; 1998) with the renewed interest in urnfields. The latter model tries to explain the open and dispersed character of later Bronze Age and Iron Age settlements on the Pleistocene sands in the south of the Netherlands. It builds upon the assumption that the dozens of late prehistoric farm houses that can be found in relatively small areas actually only reflect one or two contemporaneous farmsteads that regularly, even cyclically, shifted location for no apparent economic reason (Schinkel 1998, 167). This in contrast to urnfields that could be in use for centuries in a row (Roymans/Fokkens 1991, 13). To provide an explanation for the seemingly different way in which the Late Bronze Age/Early Iron Age landscape was organised when compared to the Middle Bronze Age (Roymans/Fokkens 1991, fig. 7), the initial model was refined in the course of the 1990's. It was done so with the additional notion that in the course of the Middle Bronze Age to the Early Iron Age settlement territories become more fixed and decreased drastically in size (Fig. 8.1). The principal argument behind these assumptions is essentially based on the apparent *increase* in the number of burial sites over the same period (Roymans/Kortlang 1999, fig. 2), which, according to Roymans and Kortlang, is indicative for demographical expansion (Roymans/Kortlang 1999, 39). They argue that the increased pressure on land went hand in hand with a changing relationship with the land in the sense that throughout the course of the Middle Bronze Age to the Early Iron Age, claims on land would have gotten more strictly controlled and restricted by kinship-ideology (*ibid.*, 40):

> *"…The cemetery, with its compact and monumental shape and stable location, symbolised the collective identity of each local group. In the small communities living in dispersed farmsteads, the urnfields provided a long-term community focus. They were a fixed reference point providing continuity and stability to the local group, and as such forming a counterbalance to the discontinuities that frequently occurred in the domestic sphere because of the practice of abandonment and small-scale displacement of farmhouses. Moreover, the monumental urnfields functioned as territorial markers. Because of their physical appearance in the rather open landscape at that time, as well as the oral traditions attached to them, the urnfields symbolised the transcendental claim of a local community and its ancestors on a certain territory. This in a period in which the population density increased and in which territoriality became an important principle. As such, the cemeteries played an active role in the territorial ordering of the landscape…"* Roymans/Kortlang 1999, 40.

With their model Roymans and Kortlang were able to bring together decades of settlement and urnfield research and tie in several complex strands of social cosmologic elements of the late prehistoric landscape and explain how these developed on the long term, ranging from settlement dynamics to the role of the ancestors. It is therefore with good reason the model has become so widely accepted. However, it has been more than 20 years since the inception of the original model and many new excavation data as well as new analyses of old excavation data have become available since. Whereas Roymans and Kortlang had to base themselves predominantly on pre-Malta rescue excavations with almost no budgets for analyses such as radiocarbon dating of cremated remains, at present we have large scale excavations at our disposal covering areas the size of which have not been met before (*e.g.* Roessingh/Blom 2012; Blom/Van der Velde 2015) as well as cemeteries of which substantial shares of graves have been radiocarbon dated (*e.g.* Tol 2009; Dyselinck 2013; Mousch 2016). Together these new data begin to sketch a slightly different picture of the long term developments so effectively tied into the model by Roymans and Kortlang (1999). Essential elements in the model such as the pivotal role of burial grounds and the role of the ancestors in structuring the landscape remain, but as will be argued in the following, the time depth of these funerary landscapes, as they will be called, is much deeper, less contrasting in character with preceding and following periods and above all, their very structure suggests these burial grounds transcended notions of territoriality.

8.2 On the longevity of late prehistoric farmsteads

Starting with the non-funerary evidence, an important element of the model by Roymans and Kortlang concerns the dynamic and open character of late prehistoric settlements. As argued, the farmhouses themselves are presumed to have been inhabited for relatively short periods of time. Suggested time spans before 1999 vary between 20-40 years

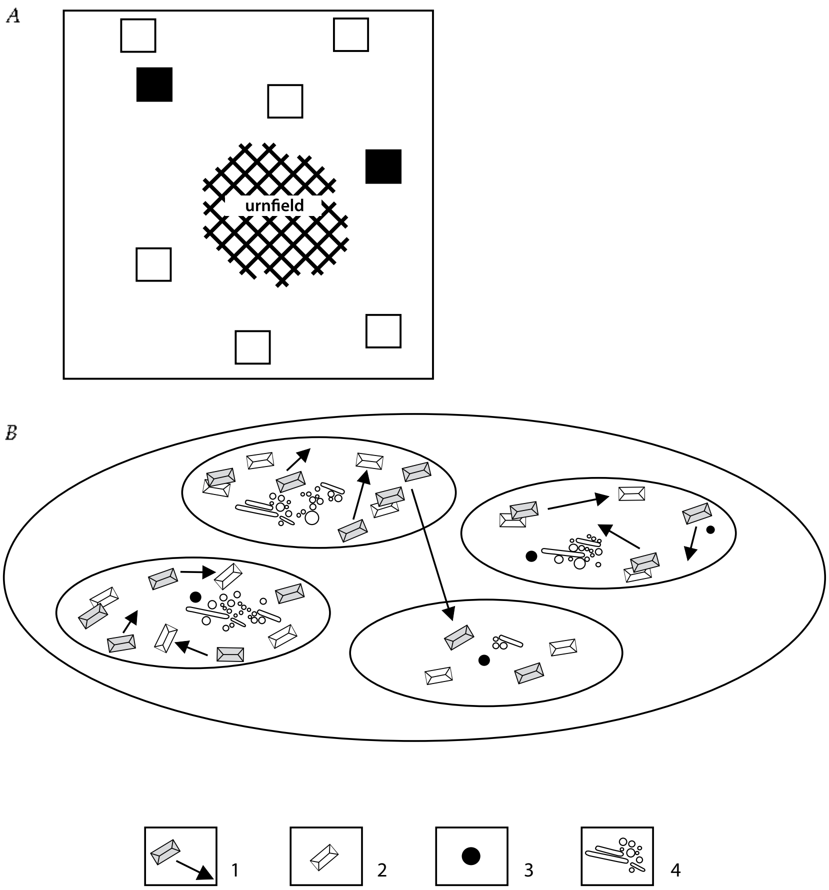


Fig. 8.1: Models by (A.) Roymans/Fokkens (1991) and (B.) Roymans/Kortlang (1999) explaining the relation between urnfields, settlements and territories for the Late Bronze Age and Early Iron Age. The black squares in figure A represent occupied farmsteads (households) while the empty squares represent abandoned farmsteads. In figure B the occupied farmsteads (households) are represented by the grey farmhouses (1.), the white ones (2.) again represent farmsteads of an earlier phase. The black dots (3.) represent so-called 'Middle Bronze Age family barrows' while the urnfields are represented by the agglomerates of longmounds and small round mounds (4.). The ellipses in this figure represent the territories of local groups (Roymans/Kortlang 1999, fig. 10). Figure 8.1 has been published before in Van Beek/Louwen 2013 (fig. 2).

(*e.g.* Roymans/Fokkens 1991, 11; Arnoldussen 2008, table 3.7) and are predominantly based on modern experiments of unsheltered wood (Arnoldussen 2008, 89). Moreover, many houses excavated at Oss-Ussen, the site where the 'wandering farmsteads model' is principally based upon (Schinkel 1994; 1998), are in fact poorly dated by stray pottery sherds in post holes and the resolution required to make any statements on the longevity of the houses concerned simply lack (Jansen *in prep.*). Additionally, recent extensive radiocarbon dating programmes and dendrochronological analyses of post stumps from Bronze Age houses in the Dutch riverine area suggest that even in these damp soils figures of five decades approaching a century for the life span of late prehistoric houses appear

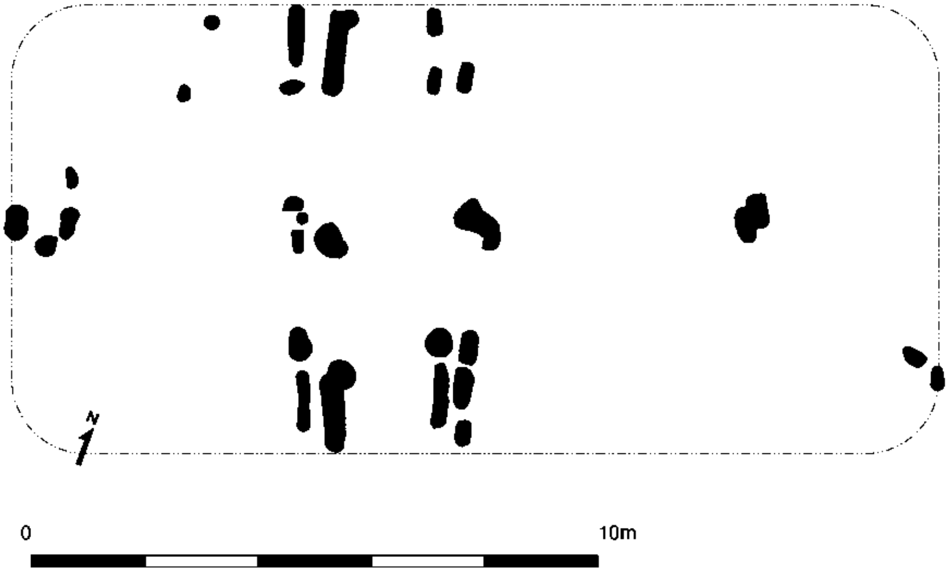


Fig. 8.2: A Middle Iron Age house (structure 173) of the Haps/Oss-Ussen 4 type from the site of Best – Aerle (Southern Netherlands, province of Brabant). As this plan shows all central posts as well as the posts of the entrance have been replaced at a certain point in time. It is also possible that the entire structure was rebuild at the exact same spot as the former house (After: Tol *et al.* 2017, fig. 6.5).

very reasonable (Arnoldussen 2008, 92). Evidence from the same area suggests that people invested in the restoration of their homes (Arnoldussen 2008, 91) and there seems to be no good reason why this would have been different in the Iron Age. Also, for the Middle Bronze Age there are ample examples of houses being rebuilt on the same farmyard (Modderman 1955a, fig. 7; Fokkens 2005, fig. 18.6; Meurkens 2014, fig. 7.20). For the Iron Age too examples exist for the restoration of houses or the rebuilding of houses on the exact same location (Fig. 8.2; Tol *et al.* 2017, 217). All the here mentioned evidence suggests that late prehistoric houses along with the farmyards they were located on were durable places and considered worth investing in. It therefore challenges the current view of later Bronze Age and Iron Age settlements being highly dynamic from a socio-cosmologic point of view (see Jansen *in prep.* for an extensive evaluation of the 'wandering farmsteads model').

8.3 The 'population increase thesis' revisited

Did a substantial increase of the population indeed take place in the course of Middle Bronze Age to the Early Iron Age, and with it, a growing pressure on available land? That is the next question that needs to be addressed before returning to the funerary evidence entirely. To answer this question, it is necessary to examine the model of Roymans and Kortlang in more detail. In the introduction of their model they pose the following (major) assumption:

"…We start with the assumption that there is a territorial structure in Urnfield societies in the Northwest European Plain. Each local community of c. 3 to 6 families has its own territory, which includes an urnfield, a celtic-field complex (in which the dispersed farmsteads are situated), and a peripheral zone of uncultivated land, used for grazing cattle, collecting wood, etc. In the sandy landscapes the urnfields can be used for quantifying and mapping these territories…" Roymans/Kortlang 1999, 37.

As can be read, their assumption is in fact built up from two sub-assumptions. Starting with the last one, the idea of using urnfields as a proxy for defining territories stems from the work of Waterbolk (1987)[140] who sees a correlation between late prehistoric territories and the well documented (late) medieval '*marken.*' These were small collectives of local farmers that jointly governed their communal grounds. The word '*marke*' literally means 'border' or 'divide.'[141] As in the province of Drenthe (northern Netherlands) urnfields and celtic fields seem to cooccur within more or less the same areas as these (late) Medieval *marken*, Waterbolk suspects a certain continuum between the two (Waterbolk 1987).

The next sub-assumption concerns the presumed size of 3-6 families for the communities inhabiting these territories. This thesis is not elaborated upon by Roymans and Kortlang, but we can see these numbers reappear in many a report when population sizes are estimated on basis of urnfield graves (*e.g.* Roymans/Hoogland 1999, 78; Kortlang 1999, 166-167; Schabbink/Tol 2000, 47; Tol 2000, 128) by applying the formula Ascádi and Nemeskéri (1970) developed:

$$P = k \times (D \times e)/t.$$

In this formula '*P*' represent the average population size. '*k*' is a correction factor that can be employed to make up for any uncertainties such as the underrepresentation of specific age or sex categories as well as for taphonomic processes. '*D*' stands for the number of interments while '*e*' represents the average life expectancy for the population under study. Finally, '*t*' represents the number of years the cemetery of study was in use (*cf.* Ascádi/Nemeskéri 1970).

Having stated their initial assumption concerning Late Bronze Age/Early Iron Age territory sizes, Roymans and Kortlang continue with a comparison with the preceding Middle Bronze Age. Since extensive settlement data for this period lack in the Meuse-Demer-Scheldt region, the area the original model was based upon, Roymans and Kortlang use Middle Bronze Age barrows as a proxy to approach the respective territory sizes. They consider barrows less than 1.5 kilometres apart that are not separated by valleys, streams and moors as being part of the same cemetery (Roymans/Kortlang 1999, 38). When the total number of Middle Bronze Age cemeteries is subsequently compared to the number of cemeteries being founded in respectively the Late Bronze Age and Early Iron Age, the Early Iron Age exhibits figures of thrice as many new cemeteries being founded when compared to the Middle Bronze Age. It are these numbers Roymans and Kortlang eventually explain as the evidence for demographical expansion taking

140 Kooi (1979) already operates within the same spirit (See Kooi 1979, 173).

141 English translation by author from the etymology explained in 'Het Drenthe Boek' (Gerding/Hillenga 2007).

place towards the Early Iron Age and as the gradual filling in of the preceding larger and loosely defined open territories of the Middle Bronze Age (*ibid*., 38).

Even though the model is handsomely crafted, as Roymans and Kortlang indicate themselves, the underlying (sub-)assumptions are in fact based on broad brush survey data (*ibid.*, 39). In the light of new insights concerning the representativeness of the barrow record, the time-depth covered by cemeteries known as urnfields and late prehistoric habitation patterns it is however necessary to critically evaluate the assumptions underlying the model.

Starting with the settlement evidence, an extensive inventory of late prehistoric settlement sites and a critical review of existing chrono-typological schemes of house plans substantiated by extensive radiocarbon evidence has yet to be performed (Jansen *in prep*.). This is not only necessary because the thesis of Roymans and Kortlang is predominantly based on funerary evidence, but also in the light of the above mentioned arguments in favour of late prehistoric houses being much more durable structures than was until recently presumed. Next, though the apparent coinciding of (late) Medieval *marken* with the presence of late prehistoric features such as cemeteries and celtic fields might indeed be striking, the strong anachronism between the respective periods remains evident. Especially since the Medieval *marken* originate in an already Christianised landscape the two periods can hardly be compared. Moving to the number of families that supposedly inhabited an urnfield territory, applying the formula of Ascásdi and Nemeskéri (1970) in calculating the original population that would have made use of an urnfield is highly problematic as each and every factor of the formula is dependent on substantial uncertainties. In Section 6.2 the problems involved in approaching the average life expectancy at birth (factor '*e*') on basis of cremation graves have already been discussed. Subsequently, in Section 3.4.1 it was argued that in the Low Countries many parts of the prehistoric landscape have been erased in the last 150 years and that the number of graves we encounter in our excavations almost never reflect the original number of graves (factor '*D*'). Nineteenth century accounts on reclamation activities report hundreds of urns being destroyed (*e.g.* Hermans 1865; Ort 1882) in areas that would only yield modest amounts of graves when excavated in the twentyfirst century (Hakvoort/Van der Meij 2010). Finally, as argued in the above, new radiocarbon dates that have become available in the last 20 years force us to evaluate our ideas about the duration of these cemeteries (factor '*t*'). Though the original formula by Ascádi and Nemeskéri includes a correction factor (factor 'k'), with regards to the urnfields the many uncertainties involved in fact turn this formula into nothing more than a shot in the dark. Overall, assumptions made by Roymans and Kortlang that regard the settlement evidence underlying their model do not seem to hold in the light of these new insights.

Shifting the attention to the funerary evidence, it was already argued that the present barrow record for the Low Countries is hardly representative for the original situation. As mentioned, Bourgeois estimates that our current record probably only includes about 30% of the original amount of barrows that once dotted the Lower-Rhine-Basin (Bourgeois 2013, 40). Recent analysis of LiDAR[142] data for the ice-pushed ridge of the Veluwe in the Central Netherlands seems to prove this thesis since by this pilot study alone the number

142 Light Detection And Ranging.

of barrows for this particular area was almost doubled (Lambers *et al.* 2019). Using Middle Bronze Age barrows as a proxy for the calculation of territory sizes is therefore highly problematic. Also, as the presented radiocarbon dates show (Fig. 7.1; Appendix II), a substantial amount of the Middle Bronze Age dead were actually buried in urnfields.

The need to substantiate the presumed duration of cemeteries with radiocarbon dates also extends to the dataset used by Roymans and Kortlang in approaching the numbers of newly founded urnfields in the Meuse-Demer-Scheldt region. Their (impressive) initial inventory of urnfields yielded almost 400 sites, 210 of which also provided (rough) chronological evidence as to their foundation and duration (Roymans/Kortlang 1999, fig. 1). However, the evidence concerned predominantly consists of typo-chronologic analyses of urns, grave goods and funerary structures. Though it was illustrated in Sections 5.2 and 6.3 that these might indeed be used to give a rough indication for the age of specific graves, these graves often find themselves surrounded by structureless and objectless graves for which these markers are not present. The latter are often "lumped" with the former, unintentionally creating a bias for both the age as well as for the duration of the cemeteries they were retrieved from. Therefore, as the research by Roymans and Kortlang merely concerned a broad brush inventory of known cemeteries, some severe caution is ushered with the assumed age and duration of these cemeteries.

A case in point concerns the cemetery of Sittard-Hoogveld that was initially believed to be an Early Iron Age cemetery based on the high numbers of *Harpstedt*- and *Schräghals*-urns (Tol 2000, 125). After a critical evaluation of the grave goods by the excavator himself it turned out that a portion of the graves not dated to the Early Iron Age, but the Late Iron Age instead (*ibid.*, 131-132). Eventually, the cemetery has been published as an Early Iron Age cemetery that was abandoned only to be reused again in the Late Iron Age (*ibid.*, 131). However, of the 113 graves from this cemetery that have been included in the present study, still 34 graves did not yield any clear typo-chronologic markers as to their relative age. Also, radiocarbon dates associated with *Harpstedt*-urns indicate this kind of urn was used way into the fifth century BC.[143] Moreover, the *cista a cordoni* that was found in this cemetery (Section 5.2) was dated between 450 and 350 BC (Tol 2000, 113), which is in fact exactly in the presumed time gap between the Early Iron Age and Late Iron Age. Additionally, a series of radiocarbon dates specifically targeted at the Late Iron Age graves (Lanting/Van der Plicht 2005, 366) fall within the period between the fourth and first century BC. When the here presented evidence is added up, it seems more likely that the cemetery of Sittard-Hoogveld in fact continued to be used from the Early Iron Age onwards until at least the beginning of the Late Iron Age.

It is argued here that the case of Sittard-Hoogveld is in fact symptomatic for our relatively poor understanding of the duration of cemeteries known as urnfields. Returning to the dataset that formed the basis for the model by Roymans and Kortlang, of the 210 sites included, for only 24 cemeteries are radiocarbon dates available, most of them published after 1999. These radiocarbon dates alone already indicate highly variate time-spans when the duration of these cemeteries is concerned (Appendix II), ranging from the Middle Bronze Age, all the way to the Roman Period. It is not argued here that typo-chronologic markers may not be used as an indication for the age of specific cemeteries as well as for their duration, on the contrary. Neither is it argued here that no new cemeteries

143 It should be noted here that these dates also fall within the Hallstatt-plateau.

were founded in the Early- and Middle Iron Age. What *is* argued here however, is that graves that lack clear typo-chronologic markers may not simply be lumped under the graves that do as this creates a huge bias for both the age as well as the duration of these cemeteries. Radiocarbon dates included in Appendix II show that not only much earlier graves find themselves among the urnfields, but also that these cemeteries can continue much longer than was until recently presumed. The steep decline in the number of new cemeteries being founded in the Middle Iron Age in the figure presented by Roymans and Kortlang (1999, fig. 2) therefore not so much reflects a sudden abandonment of 'the urnfield tradition,' but perhaps a continuation of burial grounds already established in the minds of people as the resting (or dwelling) places of their ancestors. This latter thesis seems to be confirmed by more recent studies into Middle Iron Age cemeteries in relation to older funerary sites (Van Beek/De Mulder 2014, 303-306; Van den Dikkenberg 2018, 43-46).

Returning to the question this section started with, the thesis that the Late Bronze Age/Early Iron Age marks a period of powerful demographic expansion (Roymans/ Kortlang 1999, 38) that prompted changing relationships with- and organisation of the land(scape) does not seem to hold in the light of new archaeological evidence. Based on an ever growing corpus of radiocarbon dates, new insights in the durability of (farm)houses and the duration of cemeteries start to sketch less contrasting views when the Middle Bronze Age is compared to the Late Bronze Age/Early Iron Age and the two respective periods seem practice-wise much more intertwined. Especially with regards to funerary practices, many elements considered as typical for the Late Bronze Age (and Early Iron Age) already find their origin (early) in the Middle Bronze Age. Also, not uncommonly do urnfields seem to have grown out of burial grounds already established in the Middle Bronze Age. This latter observation certainly not counts for all Late Bronze Age cemeteries. Roymans and Kortlang therefore still have a strong point that throughout the Late Bronze Age and Early Iron Age new cemeteries are being founded. Though these new cemeteries can still reflect new communities that establish themselves within the landscape or fissions of communities already present (Roymans/ Kortlang 1999, 40), in the following it will be argued that the filling in of the landscape with (new) burial grounds transcended notions of territoriality.

8.4 The open structure of late prehistoric burial grounds

An interesting notion in the earlier cited definitions of urnfields (Section 7.2) is the fact these would have concerned *open* cemeteries. "Open," in this definition, was used to indicate these cemeteries have no clear boundaries in the form of enclosures. As an affirmation of this statement, at present in the Low Countries no enclosed cemeteries are known that date to the period of the Late Bronze Age/Early Iron Age. In this sense it is remarkable that the open character of the settlements typical for this period also seems to have extended to the structure of the associated burial grounds.

When the association of specific settlements with specific burial grounds is concerned, in the Low Countries there are some good examples available where both features have been excavated in close proximity to each other and a relation between the two seems evident. For the present dataset Someren-Waterdael I (Kortlang 1999), Wijk bij Duurstede-De Horden (Hessing 1989) and the Colmschate area east of Deventer (Van Beek 2009) are good examples of such cases. Though it was argued in the above that the calculation of population sizes remains highly problematic on basis of arguably incomplete urnfield records, for the here mentioned examples the image sketched by Roymans and Kortlang of relatively small communities burying their dead in these cemeteries seems not unfeasible. But how do cemeteries like Weert-Boshoverheide, that are estimated to have contained thousands rather than hundreds of individual graves (Hissel *et al.* 2012, 142) tie into this picture? Especially when is added that within a few kilometres distance from this vast late prehistoric burial ground, several other urnfields are known, some of which more than 300 graves in size (Tol 1998; Hiddink 2010). The sheer amount of graves unearthed in micro-regions like the Weert-area simply do not fit the model of relatively small territories consisting of three to six households.

It must be mentioned here that at the time Roymans and Kortlang published their model, the cemetery of Weert-Boshoverheide was an exceptional case and estimates about its original size were not as high (Bloemers 1993, 14; Van Ginkel 1982, 50-51; Kremer 1996, 15) as the current estimates (Hissel *et al.* 2012, 142). However, the average amount of square metres covered in current excavations has grown substantially in the last two decades and some substantial fragments of late prehistoric cemeteries have been unearthed since. Together these projects start to reveal alternatives to our current perception of how these late prehistoric burial grounds were organised and begin to suspect the cemetery of Weert- Boshoverheide was no exception at all when the size and extent of these burial grounds are concerned. As an illustration, in the following two examples of recent projects will be presented where urnfields ever more take the form of open funerary landscapes.

8.4.1 A funerary landscape at Someren-Waterdael

Throughout this dissertation, the site of Someren-Waterdael I (province of Brabant; Southern Netherlands) has already passed in review several times (Sections 5.2; 5.3; 7.1.3). Excavated in the 1990's it was an exemplary case of the extent of late prehistoric burial sites that could be discovered underneath the (late) Medieval *essen.* The cemetery dates to the Early- and Middle Iron Age (Kortlang 1999, 161-163) and has several remarkable characteristics, the first being the fact that this particular urnfield did not produce one single urn at all. All graves concern (tight) depositions of cremated remains that originally seem to have been placed in separate clusters that over time gradually developed into one large cemetery (*ibid.*, fig. 16). Another remarkable feature of this cemetery seems to have played an important part in this latter narrative. With its impressive length of 145 metres (Kortlang 1999, 145), a monumental long mound links up a small cluster of larger Iron Age mounds in the south to a dense cluster of smaller mounds in the north of the area (Fig. 8.3).

In 2007, less than 400 metres south of the cemetery of Someren-Waterdael I, another cemetery was excavated. The cemetery of Someren-Waterdael III, like that of Waterdael I, must have started in the course of the Early Iron Age and continued well into the Middle Iron Age (Hiddink/De Boer 2011, 130). The latter period certainly not marked the end of the area of Waterdael III to function as burial ground as in western direction a cemetery developed that in time covers the entire period between the late Middle Iron Age to at least the third century AD (Hiddink/De Boer 2011, 154). Even though the Early- to Middle Iron Age cluster and the late Middle Iron Age-Roman Period cluster have been published as two distinct cemeteries, it is remarkable the younger cluster developed adjacent to- and in sight of the older cluster of graves and a slight overlap in time exists between the two clusters. It seems therefore more than justified that the various clusters of graves that can be distinguished for the area of Waterdael III (see Hiddink/De Boer 2011, figs. 6.7 and 7.16)

Fig. 8.3: The funerary landscape at Someren-Waterdael I/III. (After: Kortlang/Van Ginkel 2016, p. 23).

have as a whole been labelled as being part of a *landscape of the dead* (Hiddink/De Boer 2011, 243). Though ebbs and flows in the duration of this funerary landscape will certainly have taken place, the (impressive) series of radiocarbon dated graves cover the entire time-span between ca. 650 BC-400 AD (Hiddink/De Boer 2011, fig. 5.2; table 5.2; 243).

Additionally, the cemetery of Someren-Waterdael I, contemporary with the early phase of Waterdael III, is only located at a minimal distance to the north, about the length of three modern soccer pitches. No graves have been unearthed in the extensively excavated area in between (Kortlang/Van Ginkel 2016, fig. x), suggesting these indeed concerned two separate clusters of graves. However, how must we then interpret the presence of two contemporary and monumental burial sites within such a small area that practically find themselves within shouting distance? And how does this distribution of graves across the landscape relate to notions of territoriality? A remarkable observation with regards to the latter question is again the directionality of the monumental long mound in the cemetery of Someren- Waterdael I (Kortlang 1999, 145). It not only links up clusters of graves within the space of Waterdael I, but when its orientation is followed in southern direction, it directly leads to the contemporary cluster of graves at Waterdael III (Fig. 8.3). Here, it seems that the very orientation of the most monumental structure of the Waterdael I site was designed in such a way, not for the purpose of demarcation, but rather as a link with- and reference to other locations of the dead.

In the next case-study it will become clear that the distances bridged between clusters of graves in the funerary landscape of Someren-Waterdael were not only unexceptional, but that the extent of these funerary landscapes seems unending.

8.4.2 A funerary landscape of Boxmeer-Sterkwijck

Some 40 kilometres northeast of Someren, as the crow flies, between 2007 and 2008 one of the largest late prehistoric funerary sites in the Low Countries was excavated near the village of Boxmeer. By then it was already clear that the site of Boxmeer-Sterkwijck was part of a larger funerary landscape that extended several kilometres along an old branch of the river Meuse (Van der Velde 1998; Blom/Van der Velde 2015, figs. 1.7 and 1.8). The excavation itself covered a length of 1.2 kilometres (Fig. 8.4). Spread out over several clusters 421 cremation graves were unearthed that dated between the Middle Bronze Age and the Roman Period. Attracted by the presence of Middle Bronze Age barrows (Vermue *et al.* 2015, 197-199; fig. 4.12), Late Bronze Age and Early Iron Age graves have been found in all respective clusters (Fig. 8.4).

It is believed that due to various site formation processes the excavated graves still only represent a modest reflection of the original amount of graves that were once located in this particular landscape (Vermue *et al.* 2015, 189). The same notion springs from the prefixed limits of the excavated area. Only in eastern direction could the borders of this funerary landscape be established as here it was once flanked by the river Meuse. For the remaining directions, especially towards the north and south, it was clear the distribution of graves continued well beyond the borders of the excavation. Though the restricted number of radiocarbon dated graves does not allow for affirmation yet, it is likely this landscape zone along the river Meuse was continuously used as burial ground from the Middle Bronze Age onwards well into the Roman Period (*ibid.*, 179).

The sheer size and time-depth are not the only remarkable features of the site of Boxmeer-Sterckwijk as this excavation also provides an unique insight into the very fabric of these funerary landscapes. Starting with its orientation, the distribution of graves seems to follow the course of the river Meuse, that at the time was located closer to the site itself (*ibid.*, 187). It can therefore be argued that the river Meuse provided a certain directionality to the funerary landscape. The role of rivers, streams and valleys as natural routes across the landscape and as important focal points (lines) of orientation is universal and it is not unthinkable these even functioned as infrastructural arteries in the late prehistoric landscape. With intervals of several hundred metres, in the Middle Bronze Age burial mounds were erected along the ancient course of the river Meuse, forming the oldest funerary features in the landscape. From the Late Bronze Age onwards dense clusters of cremation graves developed around these monumental structures, gradually filling in the spaces in between the barrows. Viewing the excavated area as whole, the funerary landscape revealed seems to consist of a repetitional pattern of Middle Bronze

Fig. 8.4: Excavation plan of Boxmeer-Sterckwijk showing all late prehistoric and Roman graves (left) and cut outs (right) of the locations where Middle Bronze Age graves/structures were found (Vermue *et al.* 2015, figs. 4.3 and 4.12).

Age barrows surrounded by dense clusters of younger cremation graves that over time gradually grew closer together (Fig. 8.4). The various clusters of graves still reflect clear notions of which dead belonged together, but one cannot escape the impression that the gradual fusion of these various clusters and the seemingly never ending pattern of repetition indeed transcended notions of territoriality. It is if the new dead were joined in in an overarching community of ancestors. Ancestors, that towards the end of the last millennium BC, must have been overwhelmingly present in the landscape.

8.4.2 Old excavations, "new" funerary landscapes

The directionality of urnfields and their broader connection with the landscape is not an altogether new research theme. The notion of urnfields being located along roads and trackways has been around for a century already (Holwerda 1914; Kooi 1979; Roymans/Hoogland 1999) and even the existence of broader funerary landscapes has been opted on a micro-regional scale (Van Beek 2009). Cases like Someren and Boxmeer seem to confirm this latter thesis and painfully reveal that our image of the past is in fact largely generated by the extent of excavated areas. Projects like Someren and Boxmeer have until recently not been matched in size and their results force us to reconsider excavations of urnfields in the past. Especially since the vast majority of them took place before the Second World War and were completely carried out by hand (Section 3.4.2). It is not argued here that small sized or isolated cemeteries did not occur in later prehistory. However, regarding the fact that most of the 689 cemeteries included in the present inventory are only known by old find reports or stray urns retrieved in reclamation activities (Section 3.4.2; Fig. 3.16), the possibility should be considered that these dots on the map not stand on themselves but were part of larger funerary landscapes.

For example, when the 1920's excavations at Wessinghuizen (Province of Groningen, northern Netherlands) are re-evaluated with the scale of sites like Boxmeer-Sterckwijk in mind, it is very well possible that at the time unknowingly comparable distributions of graves were unearthed. Like at Boxmeer, at Wessinghuizen clusters of Late Bronze Age/Early Iron Age graves were excavated that found themselves about 150 metres apart (Van Giffen 1928; Willems 1935). As at the time the means were restricted, the clusters themselves have not even been investigated entirely, let alone the area in between both respective clusters (Fig. 8.5). But what can still be established is that at Wessinghuizen too, clusters of Late Bronze Age/Early Iron Age graves developed around Middle Bronze Age barrows already present in the landscape, possibly indicating comparable notions of directionality and repetition as was the case at Boxmeer (Fig. 8.4).

Another impressive example of hidden late prehistoric funerary landscapes concerns the Nijmegen area (Province of Gelderland, Central Netherlands). North of the river Waal, at the village of Lent the dense distribution of funerary sites is already striking (Van den Broeke 2002b; 2014), but the present example will focus on the ice-pushed ridge on the Nijmegen side of the river (Fig. 8.6). At the south bank of the river Waal, the ice-pushed ridge of Nijmegen towers impressively above the surrounding landscape. It is therefore no surprise the Romans picked this specific location (Hunnerberg) for the construction of a *castra* as soon as they arrived in 15 BC. After the Batavian revolt in 69 AD, the castra was rebuilt, first in wood but soon after in stone and quickly a thriving *vicus* developed around its walls. The Romans did however not arrive in an empty landscape. For the construction of the castra and related features they largely erased a prehistoric landscape

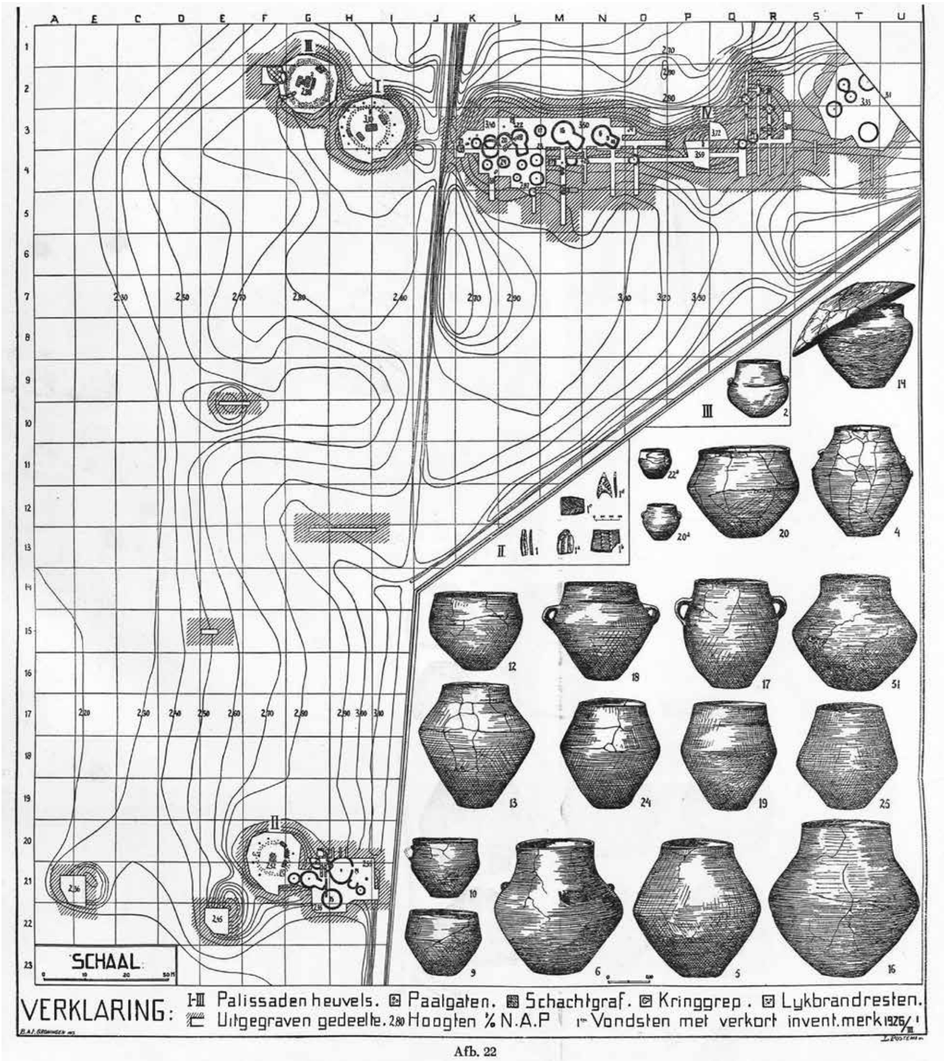


Fig. 8.5: Excavation plan of Wessinghuizen. The grid consists of blocks of 10 x 10 metres. (Willems 1935, fig. 22; © University of Groningen, Groningen Institute of Archaeology).

that consisted of multiple clusters of burial mounds, sitting on the very edge of the ice-pushed ridge. Starting at the present day St.-Maartenskliniek (Gerritsen 2003, no. 292), somewhere in the fifth century BC one could walk down the slope of the ice-pushed ridge towards the modern Valkhof stumbling across some impressive funerary structures every few hundred metres.[144] After an urnfield at St.-Maartenskliniek, one would encounter the stone platforms of Nijmegen-Kops Plateau with additional urnfield (Fontijn 1995; Fontijn/Cuijpers 1999; 2002; Gerritsen 2003, no. 293) followed by the Late Neolithic/Bronze Age barrows of the Hunnerberg, again with additional urnfield (Louwe-Kooijmans 1973; Gerritsen 2003, no. 294). From there, with a bit of luck regarding the timing of our

144 I am grateful to David Fontijn for pointing me at this landscape and taking me to Nijmegen for the actual walk down the slope of the ice-pushed ridge.

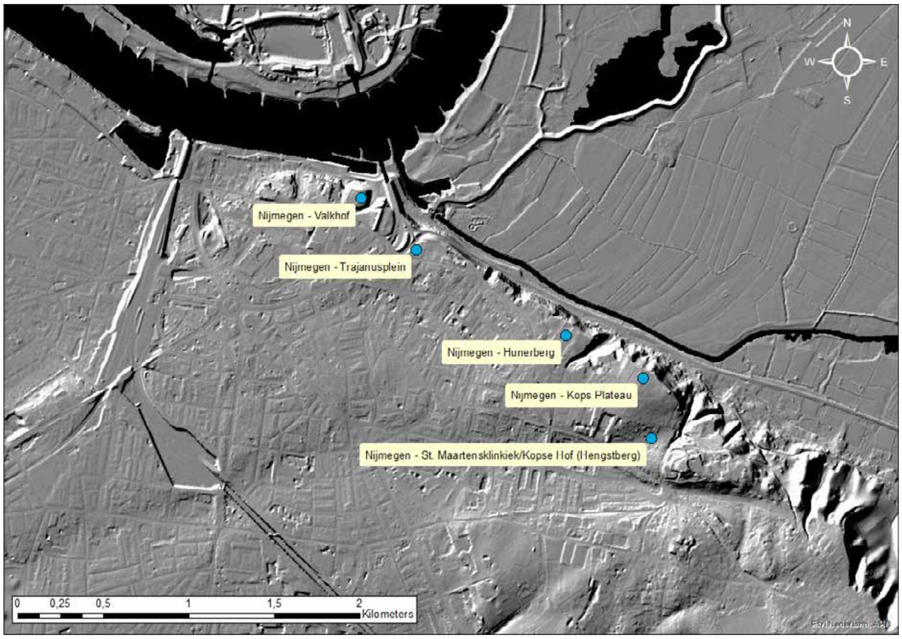


Fig. 8.6: The late prehistoric funerary landscape at Nijmegen. The blue dots all represent locations where over the years graves dating to the period between 1300 and 400 BC have been unearthed (Own work; Background: Esri, HERE, Garmin; Copyright Open StreetMap contributors, and GIS user community).

imaginative walk in the fifth century BC, one would be witnessing the burial of a woman accompanied with wagon parts and weaponry in a small cremation grave cemetery at the modern Trajanusplein (Bloemers 2016). Finally one would arrive down the slope at the modern Valkhof where a Late Bronze Age long mound was located (Fontijn 1996b).

Again, the various burial locations in the Nijmegen example are located so closely together, it is hard to imagine how these various clusters of graves would have functioned as territorial markers. It is true their location(s) at the very edge of the ice-pushed ridge, towering high above the landscape must have been awe-inspiring and probably instilled a certain sense of authority. The question however is to whom such a messaged was directed. Was is to foreign people making their way along the river Waal, or was it more important that the ancestors were granted these seats in the landscape and a more universally recognised sense of ancestral authority was aspired (*cf.* De Coppet 1985)?

8.5 Urnfields as part of ancestral landscapes

New excavation data as well as the substantial amount of radiocarbon dates that have become available over the last two decades force us to review the current discourse about the structuring of the Late Bronze Age and Early Iron Age landscape. As illustrated, urnfields often find themselves to be part of larger funerary landscapes that could sometimes extend for kilometres in a row. These funerary landscapes not uncommonly found their origin in the course of the Middle Bronze Age and could continue to be used as such well into the Late Iron Age, or even the Roman Period. New burial grounds definitely also continued to be founded throughout the period of the Late Bronze Age to the Late Iron

Age and the appearance of cemeteries in the latter period could substantially differ from those of the former period. However, these new cemeteries were not being founded in empty landscapes or within the confinements of ever more strictly defined territories. The *open* character of both the settlements as well as the burial grounds and the persistency with which both respective places were maintained indicate similar demeanours must have existed in the way in which the living environment was experienced. Funerary landscapes such as in the examples from Someren, Boxmeer and Nijmegen also indicate that the presence of the ancestors in the landscape must have been heartfelt. It is therefore argued that people living in the Lower-Rhine-Basin at the time of the urnfields much sooner would have felt a sense of *belonging* to the land, the land were their ancestors were located, instead of *owning* it (*cf.* De Coppet 1985). It is duly noted that the evidence brought forward in this chapter is still of an anecdotical nature with a strong emphasis on the funerary evidence. Yet still, with regards to the social structuration of the late prehistoric landscape, the here presented observations begin to show the makings of what might best be described as *ancestral landscapes*.

9

Breaking and making the ancestors

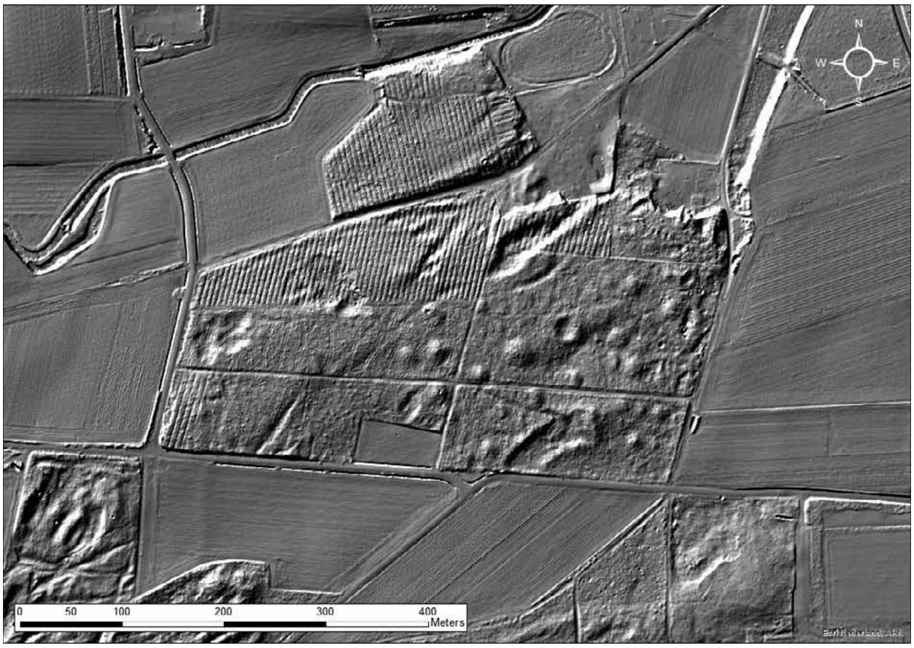
9.1 A fragmented past

9.1.1 A fragmentary record

The main purpose of the present study was to better understand the broad array of funerary practices reflected in urnfield graves. An important underlying assumption was formed by the thesis that urnfield graves represent meaningful composite artefacts that still contain clues about the original motivations that once shaped these intricate archaeological contexts. Even though the sheer abundance of urnfield data in the present day Netherlands provided ample material to work with, it was also argued that these data probably still only reflect the tip of the iceberg and that the urnfield record still only is a fragmentary record (Section 3.4).

As in the late second and early first millennium BC it were especially the higher Pleistocene parts of the landscape that could be inhabited (Section 1.2), by far most cemeteries dating to the Late Bronze Age and Early Iron Age can be found in these particular zones of the landscape. As almost no further sedimentation has taken place in these areas ever since, as a consequence, most urnfields have found themselves in a rather exposed position at the very surface for at least some 2,500 years. Urnfields therefore represent a highly vulnerable cultural heritage as is also testified by analyses of detailed LiDAR data that have recently become available (Fig. 9.1-2). As argued, the great heath reclamations, expanding towns, intensified agriculture as well as 'urn-digging' by (demand of) antiquarians that all took place in the last 150 years or so, have erased large portions of the late prehistoric landscape before it could be documented (Section 3.4). Therefore, before it can even began to reconstruct the (social) organisation of the Late Bronze Age and Early Iron Age landscape it is important one is aware that what is studied is only a modest reflection of the original situation.

Another reason why the present urnfield record is highly fragmentary relates to the excavation means and goals in the past. Up to the implementation of the Valetta Treaty in the early 1990's most urnfields came to light in salvage projects. In many a case by then the damage had already been done resulting in dozens of only fragmentarily excavated cemeteries. Also, up to the Second World War all excavations were carried out by hand, predominantly aimed at mounds still visible in the present landscape. As argued in Section 8.4, the extent of current mechanical excavations start to reveal vast funerary landscapes, an observation that places question marks at the representativity of pre-war



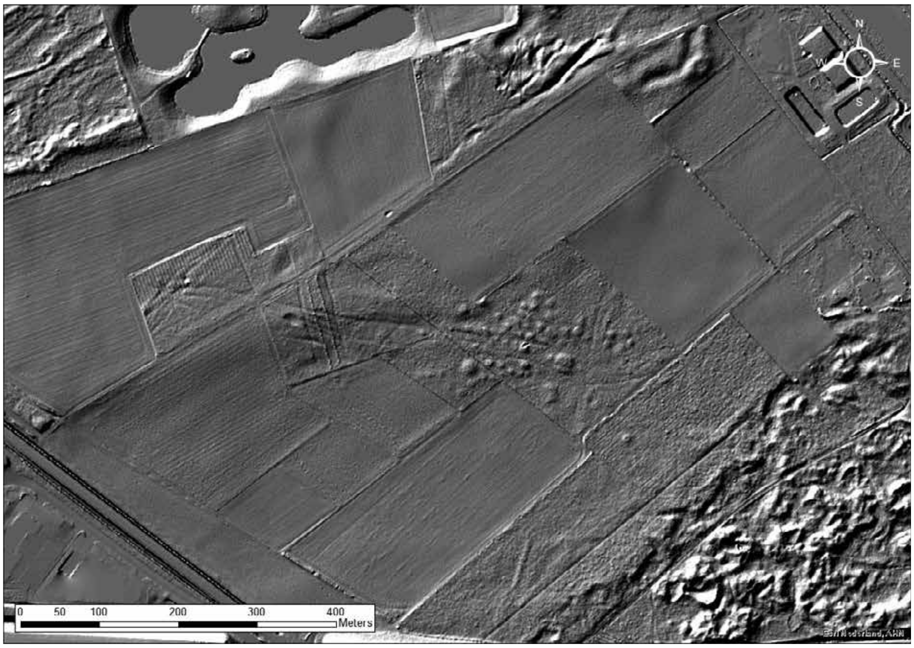


Fig. 9.1-2: The recently discovered remnants of urnfields at Baarlo-De Bong (above) and Venlo-Zaarderheike (below), both located in the southern Netherlands, province of Limburg (Fontijn *et al.* 2019). The Dense Elevation Maps have been produced on basis of the latest generation of LiDAR data (AHN3). Note how agricultural activities have erased the original relief in the surrounding plots and how forestry and sand extraction form an ongoing threat to the mounds still preserved. (Source: Esri, HERE, Garmin; Copyright Open StreetMap contributors, and GIS user community).

excavations in the reconstruction of the Late Bronze Age/Early Iron Age landscape. Again, it is not argued here that small isolated cemeteries did not occur, only that recent excavations challenge images created in the past. Especially since cemeteries *par excellence* are used to reconstruct population sizes that on their turn feature in statements concerning the social organisation of past societies, it is important that the representativity of our data is properly estimated.

Even though the urnfield record indeed still only is a fragmentary record, the theme of 'fragmentation' itself has also resurfaced many times throughout the present study in a completely different respect. As argued (Section 7.3), fragmentation as a *practice* was in fact one of the core elements of the mortuary process concerned with the urnfields and is vital in our understanding of why and how these cemeteries once came to be.

9.1.2 Fragmented bodies

With regards to the dead body the word of "fragmentation" is used here in its broadest meaning since words like "transformation" and "de(con)struction" would also approach the essence of the cremation rite. The word "fragmentation" however also evokes a sense of purpose as it seems the cremation rite not only entailed a metaphorical transcendence of the decedent but arguably also functioned as a means to an end (Section 7.3). In the cremation process the human body is literally fragmented from a whole of flesh into a mass of disarticulated bones. This process of fragmentation by fire is even visually amplified by the many cracks and fissures the burnt bones exhibit after cremation and was perhaps also experienced as such. After cremation it could still be decided to preserve the former whole by keeping the various bones together but further fragmentation by dividing up the bones was a practice that also regularly occurred (Section 4.4.2). Not uncommonly was this latter exercise performed to constitute a new whole (Sections 7.4; 9.2). Also, the fragmentation of the human shape still bearing the physical qualities of the decedent's former person into disarticulated calcined matter could have been experienced as a certain abstraction or anonymisation when the cremation fire turned a *subject* into an *object* (Brück 2004; 2006).

9.1.3 Fragmented objects

In the Late Bronze Age and Early Iron Age only a minority of the decedents would eventually be accompanied with objects in the grave other than an urn (Section 5.3).[145] Accessory pottery is by far the most dominant type of grave gift, followed by a broad array of mostly metal (bronze and iron) articles related to personal hygiene and appearance. Object categories such as tools and weaponry have only been observed with the highest of exceptions (Tab. 5.5). It is remarkable that the entire array of grave goods could be submitted to different forms of manipulation (Tab. 5.8). Though still many objects entered the grave unscathed, a substantial amount of objects appeared to be either burnt or fragmented (or both). The most plausible explanation for the burnt state of many an object is that they were burned along with the corpse in the cremation process. Especially for articles related to personal adornment, it is very well possible these articles were worn by the decedent on the pyre. As burnt pottery also features in other Late Bronze Age and Early Iron Age contexts (Van den Broeke 2002a; De Vries 2016, 96; Gerritsen 2003, 97) the possibility should however also be considered that this object category travelled to the grave from other fiery occasions (Section 5.5).

145 That is the objects made of inorganic material able to withstand 2500 of burial in acidic soils.

With regards to deliberate fragmentation it proved rather difficult to determine whether objects were indeed intentionally broken or that fragmentation occurred by taphonomic processes. However, some clear examples have been observed where parts of objects have been deliberately kept out of the grave, suggesting in these cases fragmentation was indeed intentional. Furthermore, a fair share of graves exhibited varying numbers of intentionally added pottery sherds (Section 5.7.2; Fig. 6.9).

Like the body of the decedent, objects too could be burned and broken. Even though the burning and breaking of objects clearly was not a prerequisite, the frequency with which both forms of manipulation occurred suggest an analogy with the state of the corpse was possibly envisioned in these cases. Furthermore, like with the fragmentation of the body in the cremation process, a fragmented object allows for a redistribution of its respective elements over different places. As will be argued in the following, the here underlined fragmentation of both bodies and objects were a means to an end in the constitution of what might be considered as a *relational identity* (*cf.* Brück/Fontijn 2013).

9.2 The composite dead

If the present study has shown anything, it is that *the* urnfield grave clearly did not exist (Sections 6.3). Cremated remains, urns, accessory pottery, the occasional personal trinket as well as pyre-debris and pottery sherds featured in endless combinations and shapes forming the archaeological contexts we now call ‘urnfield graves.’ At the same time, people would have had clear ideas about what elements should not feature in graves. For example, throughout the Late Bronze Age and Early Iron Age metal axes entered the ground in vast numbers (Fontijn 2002; 2019) but never in association with human remains. Observations like these suspect that in the Late Bronze Age and Early Iron Age worldview there was a right place for the right action (*cf.* Fontijn 2002; 2019).

Returning to the arena of the dead, from the shiniest bronze dress pin to seemingly insignificant chunks of charcoal, every time one of these elements was added to the burnt bones of the decedent it was done so because these were considered to be essential parts of the grave. Clearly, the final composition of the grave must have been thoroughly thought through in the minds of the mourners. Since funerals tend to draw an audience they also form the perfect occasion to (re)negotiate the social roles of the decedent (*cf.* Oestigaard/Goldhahn 2006) and can be read as a narrative about the decedent changing roles (*cf.* Fowler 2013) with the funeral itself (*i.e.* the *interment*) as its completion (Sections 2.4; 7.3): the former *personae* of the decedent are being deconstructed while a new one is constituted by means of funerary rites. The way in which this narrative was played out in urnfield funerals suspects the future identity of the decedent envisioned by the mourners was of a relational nature. First, by joining up cremated remains, pyre-debris and objects inalienable from the decedent’s person (Section 7.3.4) the grave reflects upon the different stations along the metaphorical journey of the decedent to her/his future role. In addition, the fact that decedents could be represented by token deposits (Section 4.4.2) or that parts (*i.e.* cremated remains) derivative from different individuals could also be joined up in one grave (Sections 4.4.2; 6.5) suggest that decedents were no longer regarded as *in*dividuals and their personhood could be merged as well as distributed (*cf.* Brück 2004; 2006; 2019). As argued, this notion possibly also extended to objects linked up with the decedent’s former *personae* (Section 7.3.4). By keeping parts of objects out of the grave or by intentionally adding parts of broken vessels automatically links between the grave and other contexts were being generated. Taken together, the here presented evidence suggests that many practices reflected in urnfield graves were geared towards creating links between the grave and other contexts. These other contexts could very well have concerned other graves but we should be open to the possibility that these other contexts extended the borders of the cemetery.

9.3 From land and ancestors[146] to ancestral lands

But why was it so important that the relational character of the decedent was emphasised in death? As argued in Chapters 7 and 8 the answer to this question probably rests with the new role of a decedent as ancestor. The reason why it is plausible that deceased persons were indeed envisioned to become ancestors lies in the connection with the land (*cf.* De Coppet 1985). The fact that a cremated person also needed to be buried is already remarkable in itself as there are many different ways to dispose of the remains left after cremation. Yet time and time again it was decided to anchor these last physical remains of a former living member of a community somewhere within the physical world. This action alone already suspects these abstracted remains were still attributed a social role as they required a place within the physical world. Additionally, the fact this was consistently done in specific parts of the landscape surrounded by the other dead not only underlines the social qualities of the individual dead but as much the relevance of a *community* of the dead. Examples from anthropology show that when the dead are regarded as ancestors these ideas are often inextricably linked with senses of belonging and a deep connection with the living environment (*e.g.* De Coppet 1985; Helms 1998). By emphasising relations with- and between the various dead was plugged into a deeper connection with the land. As argued (Sections 7.5; 8.1), in contrast to the current discourse about the role of urnfields in the social organisation of the Late Bronze Age and Early Iron Age landscape (Roymans/ Kortlang 1999; Gerritsen 2003) it is unlikely that these actions were motivated by claims on land subject to demographic pressure. Examples from anthropology in fact show that the relation between land and people often works exactly the other way around as people are owned by the land their ancestors are fused with (De Coppet 1985) and the ancestors are attributed great authority over the wellbeing of the living (De Coppet 1985; Helms 1998).

It was also argued that these notions about ancestral presence in the land(scape) are much older than the Late Bronze Age. In the Low Countries, already in the early second millennium BC barrows occur that mostly or even solely contain cremation graves (Louwen/Fontijn 2019) and practice-wise display many of the hallmarks of the later urnfields (Section 7.2). Also, not uncommonly do these mounds gradually develop into extensive cremation grave cemeteries continuing well into the Late Bronze Age and Early Iron Age (Section 7.2; 8.4). Furthermore, the extent of recent excavation projects such as Someren-Waterdael (Kortlang 1999; Hiddink/De Boer 2011) and Boxmeer-Sterckwijk (Blom/Van der Velde 2015) start to reveal open funerary landscapes stretching over several kilometres (Section 8.4). For periods well over a thousand years have cremation graves continuously been added to these landscapes, emphasising the persistent meaning of these places as well as underpinning the importance of the ancestors in connection to the land.

146 After the quintessential book by Theuws and Roymans (1999).

In conclusion, by fragmenting and redistributing both bodies and objects in urnfield mortuary rites new social wholes could be constituted (*cf.* Brück 2019; Fontijn 2019). New social wholes that were anchored in specific zones of the landscape surrounded by numerous other decedents whose deaths could have occurred both only years as well as many centuries earlier. Both the connection to the other dead as well as the deep connection with the land that were effectuated by the situatedness of new founded graves finally suggest the ancestors made up an important part of the fabric of this new social whole.

9.4 The end of the urnfields as we know them

This research is about urnfields. Yet still, up to this point the present study has failed to explain what an urnfield exactly is or why urnfields should be considered as a unique phenomenon in late prehistory. At least for the Lower-Rhine-Basin it are not the urns that make a cemetery an urnfield as even less than half the graves that date to this period actually concern urn graves (Section 5.2). There are even cemeteries counted under the urnfields that did not produce a single urn at all (Kortlang 1999). Neither do urnfields in the Lower-Rhine-Basin represent a typical Late Bronze Age phenomenon (*e.g.* Harding 2000; 2001; Darvill 2002; Cunliffe 2008). In Section 7.3 some definitions of urnfields were discussed, but as was demonstrated in that same section is that none of the qualities that are generally believed to be most typical for the urnfields are indeed unique, at least not in the Lower-Rhine-Basin: (1) the use of urns as the container for cremated remains; (2) the burial of cremated remains in a fixed point in the landscape; (3) the open structure of these burial grounds; and finally (4) their *inclusive* character: these are all elements of the mortuary process that already occurred in the early second millennium BC and continue well beyond what is generally believed to mark the end of the urnfields in the Lower-Rhine-Basin (Hessing/Kooi 2005).

As was already argued by Sørensen and Rebay-Salisbury more than a decade ago (see Section 1.3), what we are in fact dealing with is a late nineteenth/early twentieth century historiographical legacy that has become a concept in itself (Sørensen/Rebay 2008, 57-58). A concept that is leaden with contemporary nationalistic ideologies and, as a result of which, a concept that has become inextricably linked to notions about people, time and geography (Sørensen/Rebay 2008, 65). As the present research has shown, when is focussed on the funerary practices themselves, cemeteries presently known as urnfields exceed these respective notions by far. It can even be argued that our continuous use of the urnfield concept only hampers any research aimed at a better understanding of the practices underlying the intricate compositions urnfield graves in fact are. Though the present research has only focussed on a small corner of Europe, it has demonstrated that the "idea" of urnfields has no further value for our understanding of the funerary practices associated with these cemeteries. Therefore, it is argued here that we should *break* with the term 'urnfield' in any research encumbered with Late Bronze Age and Early Iron Age funerary practices. When we do, this opens up countless possibilities for future research into the widespread distribution of the cremation rite across Europe in the course of the second millennium BC. Especially since this new research will no longer be hampered by century-old nationalistic notions that presuppose the existence of clearly defined cultural groups but instead is able to focus on what funerary archaeology really entails: *meaning generated through social practice* (*cf.* Bourdieu 1977; 1990).

9.5 Epilogue: Why we do the things we do…

Both a philosophical as a very pragmatical heading parades above the last section of this dissertation. Before contemplating an answer to this practically unsolvable question, here I finally shift from the third-person I maintained throughout this dissertation to the first-person. The reason for this is that this last Section will tell a lot about what I have learned myself as a person by studying graves (formerly known as urnfield graves) for four successive years. Before I started my PhD-project I was pretty convinced the research itself was about death and burial in a unique chapter of European prehistory. However, as I found out throughout the years of painstakingly rewriting and rewriting my theoretical framework my research was really about the question: *Why do we do the things we do?* Which makes studying prehistoric grave contexts all of a sudden a very present affair. In all honesty I have to remain guilty of the answer to this question but what I did learn is that true meaning resides in the very act of doing itself. By *doing* we make sense of the world around us as we constantly interact with it, especially with the people that currently make up its population. *Doing* allows us to grow, to learn by experience and to understand and apprehend the ever changing world around us. Especially in the face of death, by *doing* we can try to make some sense of this unapprehensive one true certainty in life. Something that was true then, in the Late Bronze Age and Early Iron Age, and still is today.

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Appendix I Inventory of sites

Guide to Appendix I: Overview of all sites in the Netherlands that produced graves dating to the period of the Late Bronze Age/Early Iron Age

The table below lists all sites in the Netherlands that produced one or more graves dating to the Late Bronze Age and/or Early Iron Age (1100 – 500 BC). The list can be considered up-to-date up to the year of publication of 2016. Sites excavated between 2016 and 2020 are still included in the list, but the gamut of excavation reports published in these latter four years have not been inventoried as extensively as the reports published before 2016. The 75 sites that formed the basis for the present research have been picked from this list (respective site-codes in **bold** and <u>underlined</u> in the first column). References in the 'Literature' column have not been included in the bibliography of this dissertation but can be found in a separate document published in open-access (Link: https://doi.org/10.17026/dans-xvn-8bph).

This appendix only provides some very basic information about the sites it includes, but surely forms a good basis for any future research aimed at delving into the richness of the Dutch dataset.

List of variables

Site-code: Unique code assigned to all sites included in the present inventory. Every site-code is constituted by a combination of country (NL) – province (*e.g.* FR) – inventory number. To avoid confusion with inventories carried out earlier, it was decided to copy the original inventory number into the code-system employed in the present study. For example: The site of 'Bornwird' in the province of Friesland is represented by nr. '11' in Kooi's 1979 inventory. Its new site-code therefore is 'NL-FR-011.' In cases of sites discovered in a certain province after the publication of the last inventory, these sites were assigned the first number available for the respective province. For example: The first number handed out by Kooi (1979) for cemeteries located in the province of Drenthe was '16' (cemetery of Anderen, NL-DR-016 in the present inventory), since he started counting in the province of Groningen. Therefore, in the present inventory site-codes 'NL-DR-001' – 'NL-DR-014' were assigned to cemeteries discovered after 1979.

Toponym: Name by which a certain site is known.
x-coord.: x-coordinate (Dutch **R**ijks**D**riehoeksstelsel)
y-coord.: y-coordinate (Dutch **R**ijks**D**riehoeksstelsel)

Acc.:	**Acc**uracy of the respective coordinates. Often it proved difficult to determine the exact location of specific cemeteries. Coordinates indicated with 'OK' may be considered (fairly) accurate. About coordinates indicated with 'UN' (uncertain) some serious doubts exist whether these coordinates indeed represent the exact location of the find(s).
Archis:	Archis (3.0) is the Dutch National online database for archaeological sites in the Netherlands (https://archis.cultureelerfgoed.nl). The numbers indicated in this column correspond with the original observation numbers in the former version of Archis (2.0). These numbers can however still be used to track sites in the latest version of Archis (3.0).
Year:	The year(s) the original research or observation(s) took place
Q:	Quality labels (After: De Mulder 2011, see Section 3.4.3 for a key to the different labels)
Period:	Period the respective cemetery was in use. It should be noted that only positive observations such as radiocarbon dates or clear typo-chronological markers have been included in this column. The original use-life of a certain cemetery may therefore deviate from the period indicated in this column. LNEO: Late

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-FR-011	Bornwird	192800	594300	OK	238647	< 1913
NL-FR-012	Donkerbroek	214200	561600	UN	-	1925
NL-FR-013	Langendijk	214000	554000	UN	-	1928
NL-FR-014	Oosterwolde	215700	555390	OK	238264	1924; 1925; 1971
NL-FR-015	Weper	220100	559800	UN	-	1928
NL-GR-001	Lutsborgsweg	236700	575500	UN	-	1944
NL-GR-002	Haren(d)ermolen	237800	574100	UN	-	1922
NL-GR-003	Achterholte	267120	565060	OK	39913	1939
NL-GR-004	Uitwedsmee	266850	562600	UN	-	1959
NL-GR-005	Wessinghuizen	267300	564500	UN	-	1927
NL-GR-006	Jipsinghuizen	272000	557400	UN	-	1939
NL-GR-007	Laudermarke	272300	548100	UN	-	1922; 1932
NL-GR-008	Wollinghuizen	272500	554000	UN	-	1920
NL-GR-009	Wedderveer	267790	567670	OK	18327; 39916; 39917	1943
NL-GR-010	Uiterburen	254750	578350	OK	39528	1910
NL-GR-011	Smeerling – Galbaren	268160	561050	OK	17679	1974(?)
NL-DR-016	Anderen	241700	559900	UN		1936
NL-DR-017	Anlo	244150	561800	UN	11752?; 11838?	1957-58
NL-DR-018	Annen	244100	564200	OK	238684	1977
NL-DR-019	Balloërveld [also known as 'Overdijksveld']	240600	559700	OK	34730	1939
NL-DR-020	Eext	245200	558100	UN		1926
NL-DR-021	"bij Hunebed D XI(II)"	243500	561200	UN		1927; 1928
NL-DR-022	Eexterveld	243900	558500	UN		1928

Neolithic (2900-2000 BC); EBA: Early Bronze Age (2000-1800 BC); MBA: Middle Bronze Age (1800-1100 BC); LBA: Late Bronze Age (1100-800 BC); EIA: Early Iron Age (800-500 BC); MIA: Middle Iron Age (500-250 BC); LIA: Late Iron Age (250-12 BC); ROM: Roman Period (12 BC-470 AD). LBA-EIA: respective cemetery was in use throughout the Late Bronze Age and Early Iron Age; LBA/EIA: respective cemetery definitely dates to the period between 1100-500 BC but the definite age could not be narrower determined. URN: The respective grave or site has the hallmarks of Late Bronze Age/Early Iron Age graves/cemeteries but the available evidence does not exclude other periods as well.

Inventory: The most recent inventory the respective cemetery was already part of. The inventories concerned can be found in the bibliography. Note: 'Van Beek 2009' refers to an unpublished list of sites dr. Roy van Beek inventoried for his dissertation (Van Beek 2009), for which I am very grateful.

Literature: Publications in which the respective cemetery is either published or in which at least some prove of existence is put forward. Though extensive, this list still is not complete.

Q	Period	Inventory	Literature
C	LBA?	Kooi 1979; 11	Van Giffen 1913; 1919; Waterbolk 1966: 25, note 14; Elzinga 1973: 29
B	LBA/EIA	Kooi 1979; 12	Boeles 1927; Waterbolk 1966: 25; Elzinga 1973: 29
A	EIA	Kooi 1979; 13	Van Giffen 1929: 37-60
A	LBA/EIA	Kooi 1979; 14	Boeles 1927; Van Giffen 1925: 152-157; 1930: 35-36, fig. 24; Elzinga 1973: 29-47
A	EIA	Kooi 1979; 15	Van Giffen 1929: 37-60; 1930: fig. 64
C	EIA	Kooi 1979; 1	-
A	LBA/EIA	Kooi 1979; 2	Van Giffen 1922: 41-57; Van Giffen 1930; Mollema *et al.* 2012: 13-19
A	LBA/EIA	Kooi 1979; 3	Van Giffen 1939: 71-103
B	EIA	Kooi 1979; 4	Van der Waals 1972-73: 167-182
A	LBA – EIA	Kooi 1979; 5	Van Giffen 1928: 49-86; Willems 1935, afb. 22
A	LBA – EIA	Kooi 1979; 6	Van Giffen 1939: 71-103
A	LBA – EIA (MIA?)	Kooi 1979; 7	Van Giffen 1935: 47-87; Van Giffen 1930: 35-36, fig. 22
A	LBA/EIA	Kooi 1979; 8	Van Giffen 1920: 33-59; Van Giffen 1930: 35-36, fig. 23
A	LBA/EIA	Kooi 1979; 9	Van Giffen/Waterbolk 1949: 49-119
C	EIA	Kooi 1979; 10	Harsema 1969: 194-205
A	LBA-EIA	-	Groenendijk 1987: 133-147
C	LBA/EIA	Kooi 1979; 16	-
A	LBA/EIA	Kooi 1979; 17	Waterbolk 1957: 23-34; Waterbolk 1959: 189-198
B	EIA/MIA	Kooi 1979; 18	-
A	LBA/EIA	Kooi 1979; 19	Van Giffen 1941: 101-141
C	LBA	Kooi 1979; 20	-
A	LBA/EIA	Kooi 1979; 21	Van Giffen 1944: 127-129
B	EIA	Kooi 1979; 22	Van Giffen 1944: 130-133

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-DR-023	Eext – Eexterhalte	244150	556500	UN		1940; 1952
NL-DR-024	Eext – Vijzelkampen/Zwanemeer	247300	560000	UN		1950
NL-DR-025	Eexterhalte (II)	244100	557000	UN		1952
NL-DR-026	Gasteren	241580	561340	OK	34714; 239288	1939
NL-DR-027	Schipborg	241000	564600	UN		1922; 1923; 1926
NL-DR-028	Peelo	234570	560320	OK	238400	1936
NL-DR-029	Emelang	231940	538600	OK	12164	1952
NL-DR-030	Hooghalen	234900	550000	UN	35086?	1947
NL-DR-031	Laaghalen	231200	544400	UN	33349?	1897; 1962
NL-DR-032	Makkum	232100	540500	UN		1895
NL-DR-033	Noord Hijkerveld	229100	547300	UN		1930; 1937
NL-DR-033a	Noord Hijkerveld (II)	229700	547400	UN		1937; 1952-1953
NL-DR-034	Vossenberg	233380	537120	OK	33623	1929
NL-DR-035	Wijster	231400	538700	UN	12180?	1926; 1958; 1959
NL-DR-036	Zuid Hijkerveld	227000	546400	UN		1930
NL-DR-037	Borger	249400	549600	UN	239045?	1891; 1908; 1922
NL-DR-038	Buinen – Hoornseveld	251000	551800	OK	238088	1889; 1970-71
NL-DR-039	Drouwen	249220	552820	OK	40289; 238434; 238435; 238437	1892; 1939; 1941; 1951-52
NL-DR-040	Ees	250500	547700	UN		1894
NL-DR-041	Meindersveen	247000	550000	OK	214031	1930
NL-DR-042	De Valsteeg	246460	525530	OK	238442	1944
NL-DR-043	Diever	218600	541450	OK		1929
NL-DR-044	Diever (II)	218600	541300	UN	238448	1962
NL-DR-045	Wapse	215750	541660	OK	12115; 238447	1931; 1955
NL-DR-046	Dwingelo – Dwingelo	220580	538850	OK	238453; 33728	1914; 1930; 1969; 1971; 1972
NL-DR-047	Angelslo	258400	533900	UN		1931; 1932; 1964; 1965
NL-DR-048	Angelslo (II)	259500	533900	UN		1964; 1965
NL-DR-049	Bargeroosterveld	261000	532300	UN	33465?	1936; 1955
NL-DR-050	Emmerhout	259200	534600	UN		1933; 1954
NL-DR-051	Emmerveld	255000	535900	UN		1934
NL-DR-052	Erica (Hankenberg/ Hankenbossien?)	257950	529450	OK	238455	1944; 1954
NL-DR-053	Kamperesje	256370	538600	OK	33835	1920
NL-DR-054	Noord Barge – Hoge Loo	256750	532760	OK	238118; 40299; 238459	1920; 1935; 1949; 1972; 1973
NL-DR-055	Noord Barge	255500	532500	OK	238460	1955

Q	Period	Inventory	Literature
A	EIA	Kooi 1979; 23 (IX)	Brunsting 1942: 109-111; Waterbolk 1957: 23-34; Kooi 1979: 111-113
A	EIA – MIA	Kooi 1979; 24 (XIII)	Kooi 1979: 120-124
A	LBA/EIA	Kooi 1979; 25 (IX)	Kooi 1979: 111-113
A+	MBA – MIA	Kooi 1979; 26	Van Giffen 1941: Afb. 35; Van Giffen 1945: 69-121
C	LBA/EIA	Kooi 1979; 27	-
A	LBA/EIA	Kooi 1979; 28	Van Giffen 1938: 110-114; 1939: 128-129
B	EIA (MIA?)	Kooi 1979; 29	Beijerinck 1924: 35-44; Van Giffen 1954: 159-180
B	LBA	Kooi 1979; 30	Van Giffen/Glasbergen 1947: 367
C	LBA – EIA	Kooi 1979; 31	Pleyte 1880: 82?
C	EIA	Kooi 1979; 32	-
B	LBA/EIA	Kooi 1979; 33	-
A	LBA	Kooi 1979; 33a	Van Giffen 1939: 119-140; Van der Veen *et al.* 1989
A	EIA	Kooi 1979; 34	Beijerinck 1924: 35-44: fig. 1; Van Giffen 1930: 35-36, fig. 24a
B	LBA/EIA	Kooi 1979; 35	Beijerinck 1924: 35-44; Van Es 1967
C	LBA/EIA	Kooi 1979; 36	-
C	LBA/EIA	Kooi 1979; 37	-
A	LBA/EIA	Kooi 1979; 38 (III)	Kooi 1979: 55-77
A	LBA – EIA	Kooi 1979; 39 (V)	Van Giffen 1943: 93-139; Kooi 1979: 90-104
C	LBA/EIA	Kooi 1979; 40	-
B	LBA/EIA	Kooi 1979; 41	Jaarverslag Drents Museum
D	LBA/EIA	Kooi 1979; 42	-
B	EIA	Kooi 1979; 43	Van Giffen 1930: fig. 7f
B	EIA	Kooi 1979; 44	-
A	LBA – EIA	Kooi 1979; 45	Van Giffen 1936: 76-94; Waterbolk 1957: 42-67
A	LBA/EIA	Kooi 1979; 46	Kooi 1973: 133-148
A	LBA/EIA	Kooi 1979; 47	Bursch 1937: 41-66; Arnoldussen/Scheele 2012: 153-185
A	LBA/EIA	Kooi 1979; 48	Arnoldussen/Scheele 2012: 153-185; Ruiter/Swart-Poelman 1967: 191-207
A	EIA (MIA?)	Kooi 1979; 49	Van Giffen 1938: 91-118
A	LBA – EIA	Kooi 1979; 50	Arnoldussen/Scheele 2012: 153-185; Kooi 2008: 327-373; Bursch 1937: 53-56
B	EIA (MIA?)	Kooi 1979; 51	Van Giffen 1944: 93-144
A	LBA/EIA	Kooi 1979; 52	Van Giffen 1948: 85-135
A	EIA	Kooi 1979; 53	Van Giffen 1924: 134 – 163; 1930: 35-36, fig. 21; Museumverslag Drents Museum
A	LBA -EIA (MIA?)	Kooi 1979; 54 (I)	Van Giffen 1934: 85-116; 1937: 85-86; Kooi 1972: 143; Kooi 1973: 74; Harsema 1976: 52-55; Kooi 1979: 10-52; Arnoldussen/Albers: 149-169
B	LBA/EIA	Kooi 1979; 55	-

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-DR-056	Weerdingerveld	256300	537000	UN		1926
NL-DR-057	Westenes	253800	533300	UN		1935
NL-DR-058	Emmen – De Wolfsbergen	257300	536130	OK	238464	1870-71; 1956-58
NL-DR-059	Darp	209800	532300	UN		1911; 1924
NL-DR-060	Havelte – Koningskamp	212660	532380	OK	18980	1969; 1972
NL-DR-061	Norg – De Vledders/Fledders	226260	561300	OK	617	1939; 1953
NL-DR-062	Langelo	226200	567300	UN		1933
NL-DR-063	Noordse Veld	230200	566000	UN		1934
NL-DR-064	Westervelde	225800	563600	UN		1876-77
NL-DR-065	Zuidvelde	225400	560600	UN		1938
NL-DR-066	Urnenveld van Driest and “Eppies Bergje”	254700	540900	OK	22124; 18980	1872-1935; 1937
NL-DR-067	Exlo	254110	545680	OK	18867	1902
NL-DR-068	Odoorn	253500	540700	UN		1858
NL-DR-069	Rosselwal	253820	542460	OK	18926	1957
NL-DR-070	Valthe	255750	540690	OK	19071; 33849; 33850; 33838	1924; 1926; 1928
NL-DR-071	Valtherschans	256200	542000	UN		1893; 1936
NL-DR-072	Oosterhesselen – Hunnenkerkhof	245240	530810	OK	238532	1842-43; 1848; 1960
NL-DR-073	Oosterhesselen – Bergakkers	245700	529200	OK	33576	1966
NL-DR-074	Peize	228800	574000	UN		1900
NL-DR-075	Roderes	224360	569770	OK	238562; 214030	1935
NL-DR-076	Ballo	239400	558400	UN		1933
NL-DR-077	Deurze	237200	555000	UN		1948
NL-DR-078	Elderslo	238700	553400	UN		1940
NL-DR-079	Grollerholt	241950	549180	OK	238570	1949; 1968
NL-DR-080	Kampsheide	237700	557300	OK	36411	1963
NL-DR-081	Nijlande	238800	555100	UN		1939
NL-DR-082	Rolde	239750	555700	OK	238573	1955
NL-DR-083	Dongelsdijk	241000	556000	OK	33340	1959
NL-DR-084	Tumulibos	237900	556900	UN		1933-34
NL-DR-085	Anholt	224900	532800	UN		1962
NL-DR-086	Fluitenberg	227300	528900	UN		1941
NL-DR-087	Ruinen	220200	530800	OK	238582	1958
NL-DR-088	Den Hool	250400	527100	UN		1937
NL-DR-089	Diphoorn	251300	531800	UN		1936
NL-DR-090	Erm	251400	530300	UN		1909
NL-DR-091	Ermerveld	250500	529600	UN		1938
NL-DR-092	Holsloot	249930	528620	OK	238594; 33579	1939-56
NL-DR-093	Sleen-Zweelo	248306	537264	OK	238587	1934

Q	Period	Inventory	Literature
B	EIA (MIA?)	Kooi 1979; 56	Van Giffen 1926: 67-98
C	EIA	Kooi 1979; 57	-
A	LBA – EIA	Kooi 1979; 58 (VI)	Kooi 1979: 96-104
C	EIA	Kooi 1979; 59	-
A	LBA – EIA	Kooi 1979; 60 (IV)	Kooi 1972a: 133-145; Kooi 1972b: 143; Kooi 1979: 77-90.
A	EIA	Kooi 1979; 61 (X)	Kooi 1979: 113-116
C	LBA/EIA	Kooi 1979; 62	-
A	EIA	Kooi 1979; 63	Van Giffen 1918: 135-175; 1920: 122-146; 1936: 75-140; 1949: 93-148
C	EIA	Kooi 1979; 64	-
A	LBA	Kooi 1979; 65	Van Giffen 1940: 209-213; 1941: 101-141
B	LBA – EIA	Kooi 1979; 66	Cuijpers 1993; Van Giffen 1939: 120-123
C	LBA/EIA	Kooi 1979; 67	-
C	LBA/EIA	Kooi 1979; 68	-
C	LBA/EIA	Kooi 1979; 69	-
C	LBA/EIA	Kooi 1979; 70	-
C	LBA/EIA	Kooi 1979; 71	Kooi 1979: 151
B	LBA/EIA (MIA?)	Kooi 1979; 72 (XII)	Van der Scheer 1843: 183-185; Janssen 1849; Van Giffen 1960: col. 244, 264; 1961: col. 35; Kooi 1977: 205-212; 1979: 118-120
A	LBA/EIA	Kooi 1979; 73 (XI)	Kooi 1979: 116-118; Harsema 1968: 195-196
C	LBA/EIA	Kooi 1979; 74	-
B	LBA/EIA	Kooi 1979; 75	Van Giffen 1937: 67-88
A	LBA – MIA	Kooi 1979; 76	Van Giffen 1935: 67-122
A	LBA/EIA	Kooi 1979; 77	Kooi 1979: 160
A	LBA/EIA	Kooi 1979; 78	Brunsting 1942: 100-103; Van Giffen 1942: 89-119
C	LBA/EIA	Kooi 1979; 79	Kooi 1979: 150
B	LBA/EIA	Kooi 1979; 80	-
A	LBA – EIA	Kooi 1979; 81	Van Giffen 1941: 101-141
A	LBA/EIA	Kooi 1979; 82	Waterbolk 1958: 18-20; Van der Sanden/Van Vlisteren 1993: 21-46
B	LBA/EIA	Kooi 1979; 83	Waterbolk 1961
A	LBA/EIA (MIA?)	Kooi 1979; 84	Van Giffen 1936: 75-140
B	EIA	Kooi 1979; 85	-
A	EIA (MIA?)	Kooi 1979; 86	Van Giffen: 1943: 98-101
A	EIA	Kooi 1979; 87	Waterbolk 1959: 202-203; Waterbolk 1965: 34-53
B	EIA (MIA)	Kooi 1979; 88 (XIV)	Van Giffen 1939: 119-140; Kooi 1979: 124-126
C	EIA	Kooi 1979; 89	-
C	LBA/EIA	Kooi 1979; 90	-
B	EIA	Kooi 1979; 91	Van Giffen 1940: 180-216
A	LBA – EIA	Kooi 1979; 92	Van Giffen 1941: 101-141; Clason 1959: 207-219
A	LBA – EIA	Kooi 1979; 93	Van Giffen 1936: 75-140

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-DR-094	Sleen	250580	533140	OK	238592	1947; 1948
NL-DR-095	(Sleen-)Westerveld	248500	532550	OK	33537	1937
NL-DR-096	Vledder-Koelingsveld	211720	543000	OK	12121; 38389	1937
NL-DR-097	Noordseveld	230800	565100	UN		1919
NL-DR-098	Noordseveld (II)	230700	564800	UN		1930
NL-DR-099	Noordseveld (III)	230600	565600	UN		1917; 1919; 1944
NL-DR-100	Oudemolen	238300	562600	UN		1933
NL-DR-101	Oudemolen (II)	238000	564200	UN		1954
NL-DR-102	Rhee	233750	561700	OK	33214	1936
NL-DR-103	Tinaarlo (bij Hunebed D V)	238250	566100	UN		1936
NL-DR-104	Philadelphia	236500	567300	UN		1937
NL-DR-105	Elpernoordeveld	240700	546050	OK	33806	1932
NL-DR-106	Elperzuiderveld	239300	544000	OK	12144	1936
NL-DR-107	Garminge	238400	537900	UN		1932
NL-DR-108	Zwiggelte	236700	542800	UN		1950
NL-DR-109	Annertol	242400	566100	UN		1921
NL-DR-110	Tienelsweg	239700	568000	UN		1936
NL-DR-111	Kazerne	242500	567500	OK	238658	1939
NL-DR-112	Zuidwolde – Kerkenbos/Ekelberg	225587	519852	OK		1899; 1954
NL-DR-113	Aalden	243320	535800	OK	302214	1938
NL-DR-114	Gelpenberg	243600	535500	OK	33527	1938
NL-DR-115	Benneveld	247400	532600	UN		1973
NL-DR-116	Meppen	243740	533650	OK	33533	1936
NL-DR-117	Wezup	245200	535400	OK	302208	1952
NL-DR-118	Zweelo	246700	535000	UN		1883-84
NL-DR-001	Gieten – Eexterweg	246753	558695	OK	436541	<2013
NL-DR-002	Loon	237475	558800	OK	46703	1991; 1997; 1999
NL-DR-003	Peelo – Kleuvenveld	235360	559500	OK	238030	1980
NL-DR-004	Dalen – Molenakkers	247120	524180	OK	300234	1994
NL-DR-005	Dalen – De Spil	247200	523750	OK	55696	2002
NL-DR-006	Emmen – Noorbarger Es IV	256036	533455	OK	55513	2000
NL-DR-007	Midlaren – De Bloemert	241415	570747	OK	436887	<2010
NL-DR-008	Lhee – Dwingeloose Heide	223100	536500	OK	300069	1998
NL-DR-009	Dwingelo – Lheeweg	221440	538770	OK		2017
NL-DR-010	Anlo – Molenes	243890	562560	UN		1985
NL-DR-011	Dalen – Westakkers	247040	524280	OK	300235	1989
NL-DR-012	Valthe – Valtherspaan	255350	539360	OK	19098	1920
NL-DR-013	Borger – Drouwenerstraat	253200	548500	OK		1987
NL-DR-014	Vredenheim	239950	552400	OK	238569	1940
NL-OV-001	Venebrugge/Wielen	244900	507650	OK		1925

Q	Period	Inventory	Literature
A	LBA – EIA	Kooi 1979; 94 (II)	Kooi 1979: 26-55
A	EIA	Kooi 1979; 95	Van Giffen 1938: 556-548; Van Giffen 1939: 119-140
A	LBA – EIA	Kooi 1979; 96	Van Giffen 1938: 331 – 384
A	LBA – EIA	Kooi 1979; 97	Van Giffen 1918: 135-175; 1920: 122-146;1936: 75-140; 1949: 93-148
A	URN	Kooi 1979; 98	Van Giffen 1918: 135-175; 1920: 122-146;1936: 75-140; 1949: 93-148
A	EIA (MIA?)	Kooi 1979; 99	Van Giffen 1918: 135-175; 1920: 122-146;1936: 75-140; 1949: 93-148
C	LBA/EIA	Kooi 1979; 100	-
A	EIA	Kooi 1979; 101	Waterbolk 1954; Lanting 1973
A	EIA	Kooi 1979; 102	Van Giffen 1938: 91-118; Van Giffen 1940: 192-200
B-D	LBA	Kooi 1979; 103	-
C	URN	Kooi 1979; 104	-
A	LBA/EIA	Kooi 1979; 105	Van Giffen 1934: 85-116
A	LBA/EIA	Kooi 1979; 106	Van Giffen 1938: 91-118
A	LBA – EIA	Kooi 1979; 107	Van Giffen 1934: 85-116
B-D	LBA/EIA	Kooi 1979; 108	-
A	LBA	Kooi 1979; 109	Van Giffen 1923: 156 – 205
C	EIA	Kooi 1979; 110	-
C	EIA	Kooi 1979; 111	-
B	LBA – EIA	Kooi 1979; 112 (VII)	Kooi 1979: 104-108
A	LBA/EIA	Kooi 1979; 113	Van Giffen 1940: 180-216
B	URN	Kooi 1979; 114	Van Giffen 1940: 180-216
B-D	URN	Kooi 1979; 115	-
A	EIA	Kooi 1979; 116	Van Giffen 1938: 91-118; Kimmig 1964: 48-50, fig. 26,1 and 38,1
A	LBA – EIA	Kooi 1979; 117 (VIII)	Kooi 1979: 108-111
C	LBA/EIA	Kooi 1979; 118	-
A	EIA – MIA	-	Veldhuis/Blom 2013
B	LBA – EIA	-	Bongers/Jelsma 2012
B	LBA	-	Kooi 1996: 432
A	MIA	-	Harsema 1995: 49-52
A	BA – EIA	-	De Wit 2003
A	MBA – MIA	-	De Wit 2002
B	URN	-	Nicolay 2006: 57-62
B+	LBA	-	-
A	LBA	-	-
A	LBA/MIA	-	Jager 1985: 245
A	MIA	-	Kooi 1994
B	MBA-B/LBA	-	Waterbolk 1962: 9-46
A+	MBA-B/LBA	-	Lanting *et al*. 2001: 80-84
A	EIA/MIA	-	Van Giffen 1942: 103-108
C	URN	Verlinde 1987; 1	-

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-OV-002	Baalder	239580	511170	OK		1975
NL-OV-003	Mariënberg	235650	503740	OK		1975
NL-OV-003II	Hardenberg – Mariënberg (II)	235600	503550	OK	45928; 29766	1978-80; 1984-85
NL-OV-003III	Hardenberg – Mariënberg (III)	235650	503860	OK	13606	1982/83
NL-OV-004	Stegeren	230450	505560	OK	1264	1965-67
NL-OV-005	Ommen – De Ruyterstraat	225800	504200	OK	13111	1955
NL-OV-006	Varsen	222970	503910	OK	21572; 45384	1971; 1973; 1991; 2009
NL-OV-007	Herfte	207580	502250	OK		1957
NL-OV-008	Olst – Den Nul	204000	485740	OK	4916	1962
NL-OV-009	Deventer – Rande	206130	478000	OK		1936
NL-OV-010	Diepenveen – Kolkbos	207700	478200	OK		< 1965
NL-OV-011	Deventer – Hogebosch/Platvoet	205650	476600	OK	1257; 2455	1956
NL-OV-012	Deventer – Colmschate (Banekaterveld)	212200	473600	OK	1260	1927; 1960
NL-OV-013	Sprengenberg	222850	484780	OK	1268	1910
NL-OV-014	Nijverdal	227400	488050	OK	13077	1923
NL-OV-015	Hulsen	229540	490100	OK	13089	1947
NL-OV-016	Scharlebelt	231280	489930	OK	1270	1950; 1970
NL-OV-017	Daarle – Zuidberg	234500	492500	OK		1942
NL-OV-018	Hooge Hexel – Braambelt	234000	491000	OK	13230	< 1940
NL-OV-019	Wierdense Es	235800	486500	OK		1927
NL-OV-020	De Wever	236050	484750	OK	3691	1933-37
NL-OV-021	Enter – Kornegoor	236000	480000	OK		1951
NL-OV-022	Enter – Julianiastraat 46	236080	479520	OK		1934
NL-OV-023	Enter Esch – Rohaan	235200	478800	OK	4944	1934
NL-OV-024	Noord Elsen	232400	477800	OK	43992	1923
NL-OV-025	Elsen – Friezenberg	231240	476200	OK	13278	1976; 1977
NL-OV-026	Elsen – Bovenberg	232310	476060	OK	2591	1966
NL-OV-027	Elsen – Kelberg/Groningeresch	232540	475240	OK	2628	1955
NL-OV-028	Hof Daalwijk	231940	474080	OK	1282	1932
NL-OV-029	Markelerberg	230300	471800	OK		< 1940
NL-OV-030	Stokkum (I and II)	232300	469600	OK	2368; 4892; 13598	1912; 1930; 1981-83
NL-OV-031	De Whee	235420	472670	OK		1975
NL-OV-032	De Haarbelt	242720	476600	OK		< 1961
NL-OV-033	Bornerbroek – 'De hoge dam'	241640	480730	OK	2698	1926-27
NL-OV-034	Zendersche Esch	246460	480400	OK	3689	1967
NL-OV-035	De Waarbeek' or 'het Pruisische Veld'	252000	475000	UN	1289; 2897	1846-1930
NL-OV-036	Langenberg	251600	463100	OK		1973
NL-OV-037	Zendvelderveld	254850	460750	OK		< 1938; 1989

Q	Period	Inventory	Literature
B	URN	Verlinde 1987; 2	JROB 1975: 74
A+	LBA	Verlinde 1987; 3	JROB 1975: 12-13; Verlinde 1975
A+	LBA?	Verlinde 1987; 3II	JROB 1978: 61-62; 1979: 75; 1980: 56; Verlinde 1982: 185-188
A+	LBA?	Verlinde 1987; 3III	JROB 1982: 62: 1983: 52
B+	URN	Verlinde 1987; 4	Van Es 1967
D	EIA?	Verlinde 1987; 5	Hijszeler 1956
A+	LBA	Verlinde 1987; 6	Goutbeek and Wijnberger 1972; JROB 1971: 12; 1973: 13-14; 1991: 72; Verlinde 1972; 1973; 1992; RAAP-rapport 2322
C	URN	Verlinde 1987; 7	-
B	URN	Verlinde 1987; 8	Hijszeler 1964
C	URN	Verlinde 1987; 9	Hermsen/Van der Wal 2012: 98-99
B	EIA	Verlinde 1987; 10	Hermsen/Van der Wal 2012: 98-99
B	URN	Verlinde 1987; 11	Hermsen/Van der Wal 2012: 97-98
A+	URN	Verlinde 1987; 12	Mulder 1889?: 12-14; Butter 1935: 120-122; Modderman 1960; Van Tent 1974; Hermsen/Van der Wal 2012: 100-103.
B	URN	Verlinde 1987; 13	Hijszeler 1961: 29-30
C	URN	Verlinde 1987; 14	Ter Kuile 1924: XXIII; Hijszeler 1961: 5
A	URN	Verlinde 1987; 15	Hijszeler 1948: Fig. 8; 1961: 29
C	URN	Verlinde 1987; 16	Verlinde 1970
D	URN	Verlinde 1987; 17	Eshuis 1955
C	URN	Verlinde 1987; 18	-
C	URN	Verlinde 1987; 19	Ter Kuile 1934
C	URN	Verlinde 1987; 20	Hijszeler 1961: 67-68
C	URN	Verlinde 1987; 21	-
C	URN	Verlinde 1987; 22	-
C	URN	Verlinde 1987; 23	-
A+	URN	Verlinde 1987; 24	Holwerda 1924: 44-55; Holwerda 1925: 80-86; Bursch 1942; Hijszeler 1961: 41-42
A+	URN	Verlinde 1987; 25	JROB 1976: 14-15; 1977: 29-30
C	URN	Verlinde 1987; 26	-
C	URN	Verlinde 1987; 27	-
C	URN	Verlinde 1987; 28	Hijszeler 1961: 40; Verlinde 1969
C	URN	Verlinde 1987; 29	Hijszeler 1961: 40
A+	URN	Verlinde 1987; 30	Braat 1931: 13-18; Hijszeler 1961: 42-43; Verlinde 1969; JROB 1981: 56; 1982: 115; 1983: 106; Verlinde 1982: 188-191
A	URN	Verlinde 1987; 31	Verlinde 1975
B	URN	Verlinde 1987; 32	Hijszeler 1961
B	URN	Verlinde 1987; 33	-
C	URN	Verlinde 1987; 34	Hijszeler 1967
B+	URN	Verlinde 1987; 35	Sloet tot Oldhuis 1854: 245-246; Ter Kuile 1909: 22-23; Eigen Erf, mei 1929: 132; Hijszeler 1961: 30-35; Eising 1976; 1977
D	URN	Verlinde 1987; 36	Kok 1973: 108-109
B	URN	Verlinde 1987; 37	Het Vaderland 17-6-1938; Stroink 1962: 67

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-OV-038	Het Markslag'	256800	462100	OK		1908
NL-OV-039	Lonneker	262200	475400	OK	2892	1929
NL-OV-040	Glane	265300	473200	OK		1910
NL-OV-042	Oelemars	267700	475860	OK	2868	1918
NL-OV-043	Losser – Scholtinkstraat	266100	475650	OK	1308	1968
NL-OV-044	Losser – Hof Boersmit	265800	476100	OK	2888	1914
NL-OV-045	Losser – Hof Honinglo	266300	477800	OK		1932
NL-OV-046	Het Fleer (Hof Horrekotte)	261800	478200	OK	1311	1870-1954
NL-OV-047	De Lutte – Elzahoeve	261900	483600	OK		1950
NL-OV-048	De Lutte – Hof Molthof	264800	483050	OK	3688	1955
NL-OV-049	De Lutte – Hof De Aust (also known as Losser – De Aust)	266200	482600	OK	2813; 130366	1914; 1952
NL-OV-050	Oldenzaal – De Tij	258700	482150	OK	2649; 2716	> 1900; 1947
NL-OV-051	Oldenzaal – De Zandhorst	258100	482000	OK	2717; 2760	> 1900; 1948; 1976
NL-OV-052	Gammelke	256500	482100	OK	2763; 2922; 2719; 9999	1852; > 1900; 1971
NL-OV-053	Deurningen	255800	480800	OK	2925	1912
NL-OV-054	Saasveld – 'Saasvelder Molen'	250300	483200	OK		< 1909
NL-OV-056	Saasveld – Hondeveld	253300	484300	OK	2899	1938
NL-OV-057	Weerselo	255150	485200	OK		< 1960
NL-OV-058	Lemselo	257200	484100	OK	2915	1908
NL-OV-059	Rossum (-Oranjestraat)	259560	486000	OK	2389	1911; 1981; 2005; 2006; 2007
NL-OV-062	De Borchert'	264620	489080	OK	2947	1972
NL-OV-063	Denekamp	265350	488200	OK		1936
NL-OV-064	Rooden Mors'	267700	490500	OK		1922/23
NL-OV-066	Nutter	257600	494560	OK	13358	1900
NL-OV-067	De Bielenbelt'	256400	493000	OK		< 1925
NL-OV-068	Valkenberg'	255950	491800	OK		1924-1950
NL-OV-069	Agelo – Zonnenberg	256660	491150	OK	13429	1972
NL-OV-070	Agelo – Jaagoppersveld	255600	490540	OK		1826-1949; 1970
NL-OV-071	Mariaparochie – 'De Laokenbelt'	245100	489200	OK		1915
NL-OV-072	Tubbergen – 'Hilbertshaar'	248200	491900	OK	2371	< 1946
NL-OV-073	Albergen/ Fleringen – 'Monnikenbraak'	249600	489450	OK	13271; 13705	1847; 1888; 1900-1950
NL-OV-074	Tubbergen – Fleringen- 'Herinckhave'	250300	489680	OK		1979
NL-OV-075	Tubbergen – 'de Haar'	250500	491000	OK	2377	< 1940
NL-OV-076	Reutum – 'Vrielinks Molen'	254200	487500	OK	2373	1920-1935
NL-OV-077	Haarle	254800	492200	OK	2324; 3346; 13405	1844-1934; 1917

Q	Period	Inventory	Literature
B	URN	Verlinde 1987; 38	Ter Kuile 1909: 21; Hijszeler 1961: 28
C	URN	Verlinde 1987; 39	-
C	URN	Verlinde 1987; 40	Stroink 1966: 65
B+	URN	Verlinde 1987; 42	Hijszeler 1961: 37; Verlinde 1974: 93
C	URN	Verlinde 1987; 43	Anderson 1970
C	URN	Verlinde 1987; 44	Ter Kuile 1924: XXIII
D	URN	Verlinde 1987; 45	Stroink 1966: 65
C	URN	Verlinde 1987; 46	Ter Kuile 1909: 19-20; Hijszeler 1961: 36-37
B	URN	Verlinde 1987; 47	-
C	URN	Verlinde 1987; 48	Hijszeler 1961: 35-36; Van Es/Verlinde 1977; 48/78
A+	LBA – MIA	Verlinde 1987; 49	Ter Kuile 1924: XXIII; Hijszeler 1961: 35-36; 1962: 5-20; Hijszeler/Verlinde 1978
A+	LBA – EIA	Verlinde 1987; 50	Ort 1901: 145; Holwerda 1907; Ter Kuile 1909: 16; Hijszeler 1951; 1961: 37-39
A	LBA	Verlinde 1987; 51	Ort 1901: 145; Holwerda 1907; Ter Kuile 1909: 16; Hijszeler 1961: 37-39; Hijszeler/Verlinde 1975
A	LBA	Verlinde 1987; 52	Lijst 1852; Pleyte 1885; Pl VII/p17-18; Röring 1909: 284-285; Ter Kuile 1924: XXIII; Hijszeler 1961: 37-39; Verlinde 1973
C	URN	Verlinde 1987; 53	-
D	URN	Verlinde 1987; 54	Ter Kuile 1909: 15-16; Hijszeler 1961: 63-64
C	URN	Verlinde 1987; 56	Stork 1845?; Ter Kuile 1909: 14-15; Hijszeler 1961: 61-63
C	URN	Verlinde 1987; 57	Verlinde 1988: 48
C	URN	Verlinde 1987; 58	Ter Kuile 1909: 16; Hijszeler 1961: 61-62
A+	LBA – MIA	Verlinde 1987; 59	ARC-rapport 187; BAAC-rapport 05.261-06.131
A+	URN	Verlinde 1987; 62	Verlinde 1973
C	URN	Verlinde 1987; 63	-
C	URN	Verlinde 1987; 64	Hijszeler 1961: 21
B	URN	Verlinde 1987; 66	Ter Kuile 1909: 12?
C	URN	Verlinde 1987; 67	Ter Kuile 1924: XXIII
C	URN	Verlinde 1987; 68	Hijszeler 1961: 22
C	URN	Verlinde 1987; 69	-
B	URN	Verlinde 1987; 70	Molhuysen 1844: 169-185; Pleyte 1885: 16/fig. VII, 1 and 2; Ter Kuile 1909: 10-12; Hijszeler 1961: 22-28; Modderman 1970: 98
D	URN	Verlinde 1987; 71	Arrenberg 1784; Dagblad van het Oosten 4-12-1965; Hijszeler 1961: 45-46
B+	URN	Verlinde 1987; 72	Hijszeler 1961: 44-45
B+	URN	Verlinde 1987; 73	Arrenberg 1784; Boom 1847: 89; Enschedesche Courant 14-3-1878; Mulder 1889: 1-15; Ter Kuile 1909: 13-14; Röring 1909: 285-286; Ter Kuile 1924: XXIII-XXIV; Hijszeler 1961: 47-51; Butler/Regteren-Altena 1964
B	URN	Verlinde 1987; 74	-
C	URN	Verlinde 1987; 75	-
C	URN	Verlinde 1987; 76	Ter Kuile 1924: XXIII; Hijszeler 1961: 45
A+	URN	Verlinde 1987; 77	Molhuysen 1844: 179; Pleyte 1885; Mulder 1889: 14; Holwerda 1907; Ter Kuile 1909: 2-8; Holwerda 1918; Van Deinse 1925: 412-420; Bursch 1942: fig. 33/35; Hijszeler 1961: 52-58; Desittere 1968: 61/fig. 72

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-OV-078	Vasse – 'Vasser grafveld'	254500	493000	OK		1900-1930; 1930
NL-OV-079	Vasse	253140	493730	OK	1321	1933
NL-OV-080	Manderveen	250950	495840	OK	1325	1950; 1951
NL-OV-082	Mander I	252730	497120	OK		1959-60
NL-OV-083	Mander II	252800	496800	OK		1950
NL-OV-084	Mander III	253200	496700	OK	22227	1960
NL-OV-086	Vasse	254080	494470	OK	13579	1982
NL-OV-087	Beuningen	265600	485900	OK	13585	1934 (1982)
NL-OV-088	Colmschate – Kloosterlanden (Hunneperweg)	210680	473320	OK	13816	1985
NL-OV-089	Colmschate – 't Bramelt (Hondsroos)	211260	472810	OK	29837; 31007	1988; 1996
NL-OV-090	Deventer – Zweedse Tunnel	210597	473592	OK	416049	2006
NL-OV-091	Enschede – Oldenzaalsestraat	258000	473000	OK	4636	9999
NL-OV-092	Hengelo/Borne – Schild Es (De Veldkamp)	248500	478590	OK	427713; 428285	2008
NL-OV-093	Schalkhaar-Baarler Mars	210600	476500	OK		1998
NL-OV-094	Raalte – De Zegge	216540	488600	OK	22449	1993
NL-GL-A1-1/ B2-1/2	Ermelo – Groevenbeekse Heide	169700	477500	OK	41497; 40925	1932; 1992
NL-GL-A1-2	Putten – Postweg/ Drieseweg	170710	474760	OK	42085	1934; 1970
NL-GL-A1-3	Putten – Putterbos/ Emmalaan	171020	475280	OK	29855	1971; 1973
NL-GL-A1-4	Putten – Krachtighuizen – Kleverheim	170500	473270	OK	42118	1932
NL-GL-A1-5	Putten – Huinen – Straatweg	170200	471000	OK		1880-85; 1931-32
NL-GL-A1-6	Garderen – Boeschoten	175040	470150	OK		1910-40; 1994-97
NL-GL-A1-7	Garderen – Ouwendorp/ Ringelbos	178350	470550	OK	42066; 42188; 42177	1953
NL-GL-A1-8	Nieuw Milligen – Legerplaats	181150	470450	OK		1889
NL-GL-A1-9	Meerveld – Turfweg	179780	471690	OK		1930
NL-GL-A1-10	Zeumeren/Wencop – Wencopperweg/ Harselaar-Zuid	170520	464070	OK		2004
NL-GL-A1-11	Roekel – Roekelsche Zand	178500	455750	OK		1821-24
NL-GL-A1-12/ B1-2	Lunteren/Wekerom – Leperkoen	173420	457070	OK	7417?	1841; 1848; 1985(?)
NL-GL-A1-13	Lunteren – De Veenen/ Goorsteeg/ Buurtbosch-Lunterense Heide	172800	454400	OK		1929-30; 1940
NL-GL-A1-14	Ede – Hondslog – Vossenberg	176200	454800	OK	7518	1923-30
NL-GL-A1-15	Ede – Ederheide – Hessenweg	176540	451780	OK		1953-86
NL-GL-A1-16	Ede – Zuid Ginkel	178640	450200	OK	30816	1948; 1968

Q	Period	Inventory	Literature
A	URN	Verlinde 1987; 78	Molhuysen 1844: 179; Ter Kuile 1909: 8-10; Bursch 1933: 60-63; Van Heek 1937; Hijszeler 1961: 52-58; Hijszeler 1966: 31 (Note 56)
C	URN	Verlinde 1987; 79	Hijszeler 1961: 58
A	URN	Verlinde 1987; 80	Hijszeler 1961: 44; 1963
A	URN	Verlinde 1987; 82	Hijszeler 1960: 247; Hijszeler 1966: 47-49
A	URN	Verlinde 1987; 83	-
A	LBA	Verlinde 1987; 84	Hijszeler 1961: 47; 1961b: 239; 1962: 173
A+	LBA	Verlinde 1987; 86	Verlinde 1984: Fig.6b
D	URN	Verlinde 1987; 87	-
A	LBA/ LIA – ROM	Verlinde 1987; 88	Van Beek 2009; Hermsen/van der Wal 2012
A+	EIA	-	Verlinde 1989: 49-50; Verlinde 1997: 237-238; Cuijpers 1991; Louwen 2008; Van Beek 2009: 176-179; Hermsen/Van der Wal 2012: 106 – 114.
B	EIA	-	Vermeulen *et al*. 2009: 16-19; Hermsen/Van der Wal 2012
C	URN	-	-
A	LBA	-	RAAP-rapport 1700; 2105
B+	EIA/MIA	-	Hermsen/Van der Wal 2012: 99-100
A+	EIA-MIA	-	Verlinde 1994; Van Beek 2009: 436-439
B	LBA – EIA	Verlinde/Hulst 2010; A1-1/B2-1/B2-2	Bezaan 1932: 53-54; Modderman 1974: 10-14; Klok 1982: 77; JROB 1986: 149; ROB – Archeologische Routes in Nederland, 14, 1997
A	LBA	Verlinde/Hulst 2010; A1-2	AKrGelderland 1970-1984: 151
B	EIA – MIA	Verlinde/Hulst 2010; A1-3	JROB 1971:19; 1973: 77; Hulst 1973 (NKNOB); Klok 1988: 59 (Putten 30)/fig. 15
B	LBA	Verlinde/Hulst 2010; A1-4	Bezaan 1932: 55/fig. 36
B	URN	Verlinde/Hulst 2010; A1-5	Pleyte 1887: 75; Bezaan 1932: 54-55
B	EIA	Verlinde/Hulst 2010; A1-6	Holwerda 1912a: 73; Bezaan 1932: 55/fig. 35; Metz 1975: 28/fig. 26; ROB-intern verslag 1995
B	EIA	Verlinde/Hulst 2010; A1-7	ROB-Opgravingsnieuws nov. 1953; Gelre 1954
C	EIA	Verlinde/Hulst 2010; A1-8	Pleyte 1887: 82; Catalogus RMO 1908; Klok 1982: 17
B	LBA	Verlinde/Hulst 2010; A1-9	-
A	MIA	Verlinde/Hulst 2010; A1-10	Oude Rengerink 2004
B	(LBA – ?)EIA	Verlinde/Hulst 2010; A1-11	Staring 1822: 447-453; Reuvens 1826: 138-146
B	EIA	Verlinde/Hulst 2010; A1-12/B1-2	Janssen 1856: 25; Pleyte 1889: 58-60/fig. XV.9-10, 12 and fig. XVI,2(?); Brongers 1976: 123
B	EIA	Verlinde/Hulst 2010; A1-13	Bellen (agenda 1929-30); JRMO 1940: 150; Bursch 1942: 60/ fig. 29:1-2
B	EIA – MIA	Verlinde/Hulst 2010; A1-14	Pleyte 1887: 57-58; Bellen (agenda); JRMO 1930; Bursch 1933b; 58/fig. 54; JROB 1985: 123
B	LBA	Verlinde/Hulst 2010; A1-15	JROB 1984: 121; 1985: 121
A	EIA	Verlinde/Hulst 2010; A1-16	NKNOB 1968: 62; JROB 1968: 10; AKrGelderland 1968, Gelre 65, 1971: xvi-xvii

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-GL-A1-17	Bennekom – De Laar	175200	446200	OK		1840; 1863; 1928; 1935; 1960
NL-GL-A1-18/ B2-10/11	Bennekom – Oostereng/ Boschbeek/ Panoramahoeve	178750	446520	OK		1854; 1911; 1929-30; 1953-55; 1971
NL-GL-A1-19/ C21	Wageningen – Hamelakkers – Koenenlaan	175600	442500	OK		1963-65
NL-GL-A1-20	Velp – Daalhuizen	194500	445600	OK		1887
NL-GL-A1-21	Velp – Pinkenberg/ Gasthuisveld	195650	446550	OK		1885; 1930
NL-GL-A1-22	Rheden – Worth Rheden/ Voorheide	198100	446670	OK		1920; 1924
NL-GL-A1-23	Rheden – Heuven/ Rhedensche Enk	199000	447700	OK		1830; 1858; 1894
NL-GL-A1-24	Deelen – Hooiweg	190400	452250	OK	42623	1860; 1878; 1880; 1882; 1883
NL-GL-A1-25	Eerbeek – Coldenhovenseweg	201080	456650	OK	7878	1931
NL-GL-A1-26	Loenen – Zilven/ Dalenk	198250	457350	OK		1933
NL-GL-A1-27	Hoenderloo – Dabbelo	187630	460850	OK		1920; 2006
NL-GL-A1-28	Ugchelen – Herenhul	193200	465400	OK	42616	1872-73
NL-GL-A1-29	Apeldoorn – Loolaan	193500	470600	OK	31526	1839-1871; 1973
NL-GL-A1-30	Hoog Soeren – Molenweg	188920	470450	OK	45633	1900; 1906; 1924; 1930; 1936; 1988; 2002
NL-GL-A1-31	Vaassen – Veenweg	195040	477700	OK	30557; 41920	1939; 1971; 1986
NL-GL-A1-32	Niersen (Vaassen-Elspeterweg)	190940	476740	OK		1895; 1910; 1992
NL-GL-A1-33	Vaassen – Rollekootsche Veld/ Gortelseweg	192270	478600	OK		1941; 1948
NL-GL-A1-34	Emst – Woeste Berg/ Lange Weg	191850	482140	OK		1932; 1970
NL-GL-A1-35	Emst – Laarstraat	194460	482980	OK		1928
NL-GL-A1-36	Wissel – Achterste Molen	192750	484000	OK		1847
NL-GL-A1-37	Gortel – Gortelse Bos	188500	480000	OK		1911
NL-GL-A1-38	Elspeet – Elspeterbos	184000	478400	OK		1911; 1930-40
NL-GL-A1-39	Nunspeet – Hemelsche Berg	182220	483920	OK		1930-40
NL-GL-A1-40	Twello – Schokkenkamp	202200	471800	OK	32920	1995; 2007
NL-GL-A1-41	Elspeet – Vierhouterweg	182760	478710	OK		2008
NL-GL-A1-42	Ede – Maanen/ Verlengde Parkweg	172987	448597	OK		1975

Q	Period	Inventory	Literature
B	EIA	Verlinde/Hulst 2010; A1-17	Heldring and Graadt Jonckers 1841: 73-74; Janssen (aantekeningen) 1863-67 (Kramer-Clobus 1978): 457-458; Pleyte 1887: 52, fig. XIII, 2-6; Bellen 1928; NKNOB 15 mrt 1960; Kimmig 1962/63: 85-87/fig. 12; Van Heeringen 1999: 81-83
A	(LBA-?)EIA	Verlinde/Hulst 2010; A1-18	Pleyte 1889: 53/fig. XIII,8-9; Bellen (agenda) 1929; Bursch 1933a: 26-38; 1933b: 51-56; NKNOB 1972: 131-132; Modderman 1954: 44/fig. 19
B	(LBA-?)EIA	Verlinde/Hulst 2010; A1-19	NKNOB 1963: 228-229; Hulst 1967: 169-172/fig. 4-5
C	LBA	Verlinde/Hulst 2010; A1-20	JRMO 1886-87: 44; Pleyte 1887: 39, fig. IX, 2-3; Kerkkamp 1938: 11; Gelre 1946: Xl,sub 13
C	EIA	Verlinde/Hulst 2010; A1-21	Pleyte 1887: 39; Kerkkamp 1938: 13; Kerkkamp 1962: 67-69/94
A	EIA	Verlinde/Hulst 2010; A1-22	JRMO 1924: 77; Holwerda 1925: 114/122; Gelre 1946: XL, sub 15/fig.3; Kerkkamp 1962: 71/73/103
C	LBA – EIA	Verlinde/Hulst 2010; A1-23	Reuvens (postuum) 1845: 69; Pleyte 1887: 40, fig. IX,4-8; Kerkkamp 1938: 11/13; Gelre 1946: XL, sub 14
B	EIA	Verlinde/Hulst 2010; A1-24	Pleyte 1887: 62-65/fig. XVII; Craandijk 1884: 33-41; Holwerda 1907: fig, IV,12; Elzinga 1956: 31; Addink-Samplonius 1983: 87-94
C	URN	Verlinde/Hulst 2010; A1-25	Te Hennepe 1980:; Aantekeningen gemeentearchief Brummen + bericht ‘De Morgen’1931; JROB 1988: 131
C	LBA	Verlinde/Hulst 2010; A1-26	Moerman 1970: 10; JROB 1988: 199 (!! P199 does not exist)
B	URN	Verlinde/Hulst 2010; A1-27	Moerman 1969: 22/Map 2
C	LBA	Verlinde/Hulst 2010; A1-28	JRMO 1872: 7; RMO inventaris 1872: 124; Pleyte 1874: fig. 1-3; Pleyte 1887: 76; Heidinga 1984: 170-171
B	LBA – EIA	Verlinde/Hulst 2010; A1-29	Heldring and Graadt Jonckers 1841: 178; Janssen 1850: 326; JROB 1973 (1975): 13
B	IA	Verlinde/Hulst 2010; A1-30	Holwerda 1907a; 1907b: titelplaat 1-2/fig. IV,7; Van Giffen 1937: 15-17; Westerheem 52 (2003): 220/fig. 5
A	EIA – MIA	Verlinde/Hulst 2010; A1-31	Jaarverslag ROB 1986: 82-83
B	EIA – MIA	Verlinde/Hulst 2010; A1-32	Holwerda 1911a: 1-4
B	URN	Verlinde/Hulst 2010; A1-33	JRMO 1941: 7; Modderman 1948; Brongers 1972: fig. 9; Brongers 1976: 56-72/104-113/fig. 15
B	LBA	Verlinde/Hulst 2010; A1-34	Butter 1935; JROB 1970: 9-10; Casparie/Groenman-Van Waateringe 1980: 36-38
B	URN	Verlinde/Hulst 2010; A1-35	Van Giffen 1930: 74-76/fig. 65
C	URN	Verlinde/Hulst 2010; A1-36	Pleyte 1887: 90, fig. XXIV,10
C	LBA	Verlinde/Hulst 2010; A1-37	Holwerda 1912b: 74; Bursch 1942: fig. 32
C	LBA	Verlinde/Hulst 2010; A1-38	Holwerda 1912b: 74; Bursch 1942: fig. 32
C	URN	Verlinde/Hulst 2010; A1-39/B2-17	-
B	URN	Verlinde/Hulst 2010; A1-40	ROB-rapport VRT 95
B	EIA	Verlinde/Hulst 2010; A1-41	Van de Graaf 2008
B	EIA	Verlinde/Hulst 2010; A1-42	-

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-GL-A2-4	Brummen – Eerbeekseweg/ Engelenburgerlaan	207227	455926	OK	434684	1846; 2011
NL-GL-B1-1	Roekel – Roekelsche Bos/ Wekerom	177000	455000	OK		<1889
NL-GL-B1-3	Ugchelen – Koppelsprengen	191650	465100	OK		1947
NL-GL-B1-4	Vaassen – Hertenkamp	192200	480300	OK	41851	1909
NL-GL-B1-5	Emst – Hanendorp	193100	481100	OK		1910
NL-GL-B2-3	Garderen – Bergsham	175600	470800	OK		1840; 1935
NL-GL-B2-4	Garderen – Hooiweg	177500	470500	OK		1930-40
NL-GL-B2-5-7	Meerveld – Solse Berg	179000	471600	OK		1931
NL-GL-B2-8	Ermelo – Ermelosche Heide	174840	478460	OK	30842; 40961	1952
NL-GL-B2-9	Bennekom – Hullenberg	175750	445330	OK		1953-54; 1910; 1976
NL-GL-B2-12	Wageningen – Berg	176500	443300	OK		1927
NL-GL-B2-13	Voorst – Appensche Veld	204400	465900	OK		1846
NL-GL-B2-14	Niersen – Galgenberg	191210	479020	OK	41884; 41890; 41894; 41917	1907
NL-GL-B2-15	Vaassen – Wildweg	192170	479040	OK		1941
NL-GL-B2-16	Heerde – Koerberg	200000	491500	OK		1926
NL-GL-C15	Ede – Zonneoordlaan	173530	452370	OK	22260	1991
NL-GL-C16	Ede – Hullenberg	174420	452370	OK		1990
NL-GL-C17	Ede – Verlengde Maanderweg	173700	449400	OK		1946
NL-GL-C19	Ede – Frankeneng/ Schuttersteeg	170850	449520	OK	30574; 7668; 17025	1986
NL-GL-C24	Renkum – Oosterbeek/ Westerbouwing	185180	443180	OK		1979
NL-GL-C25	Arnhem – Weezenstraat/ Ruiterstraat	190800	443950	OK		1958
NL-GL-C26	Velp – Biesdelselaan/ Rembrandtlaan	195800	446000	OK		1928
NL-GL-C28a	Beekbergen – Hulleweg	195860	463320	OK		1953
NL-GL-C30	Wenum – Zwolseweg	193900	474950	OK		1941
NL-GL-001	Aalten – Watertoren/ kerkhof	236800	439000	OK	1215	1941-42
NL-GL-002	Aalten – 't Loohuis	239050	437980	OK		1934
NL-GL-003	Barlo – Blauwe Kamp/ Kiefskamp	237850	440550	OK	1213; 3464	1952-72
NL-GL-004	Barlo – Schaarsheide/ Meinen	238300	442250	OK	7008; 13594	1938

Q	Period	Inventory	Literature
A+	EIA-MIA	Verlinde/Hulst 2010; A2-4	Pleyte 1887: 50-51/fig. XII,3; JROB 1989: 146; ADC-rapport 2721
C	IA	Verlinde/Hulst 2010; B1-1	Pleyte 1887: 57/fig. XV,5-6
B	URN	Verlinde/Hulst 2010; B1-3	Waterbolk 1954: 95
B	IA	Verlinde/Hulst 2010; B1-4	Holwerda 1910; 1925: fig. 24
B	EIA/MIA	Verlinde/Hulst 2010; B1-5	Holwerda/Evelein 1911: 18; Bourgeois 2013
B	EIA	Verlinde/Hulst 2010; B2-3	Pleyte 1887: 70/fig. 19,3; Van Giffen 1937
B	LBA(-EIA?)	Verlinde/Hulst 2010; B2-4	-
B	URN	Verlinde/Hulst 2010; B2-5/B2-6/B2-7	Bursch 1933: 69-76
B	URN	Verlinde/Hulst 2010; B2-8	Modderman 1954: 24-25
B	LBA – EIA	Verlinde/Hulst 2010; B2-9	Pleyte 1887: 51/fig. XIII,1; Holwerda 1910b: 54
B	EIA	Verlinde/Hulst 2010; B2-12	Remouchamps 1928: 58-74
B	URN	Verlinde/Hulst 2010; B2-13	Janssen 1846: 354-360; Pleyte 1889:88; NKNOB 1977: 255-256; Modderman 1984: 57-59
B	LBA	Verlinde/Hulst 2010; B2-14	Holwerda 1908: 8/fig.III,3b-c; Klok 1982: 30
B	URN	Verlinde/Hulst 2010; B2-15	JRMO 1941:7
B	EIA	Verlinde/Hulst 2010; B2-16	Remouchamps 1928: 58-74/fig. 30/32
C	EIA	Verlinde/Hulst 2010; C15	-
C	URN	Verlinde/Hulst 2010; C16	-
C	EIA	Verlinde/Hulst 2010; C17	Gelre 1949, p. lxvi-lxvii
C	EIA	Verlinde/Hulst 2010; C19	JROB 1986: 153
C	EIA	Verlinde/Hulst 2010; C24	JROB 1979: 108
C	EIA	Verlinde/Hulst 2010; C25	NKNOB (mei) 1958; Borman 1984: 211/fig. 6
C	EIA	Verlinde/Hulst 2010; C26	JRMO 1928: 9; Kerkkamp 1938: 13; Gelre 1946: ixl-xl, sub 12; Kerkkamp 1962: 73
C	URN	Verlinde/Hulst 2010; C28a	-
C	URN	Verlinde/Hulst 2010; C30	-
B	URN	Van Beek 2009	Vons-Comis 1978
C	URN	Van Beek 2009	Vons-Comis 1978
B	LBA(/EIA?)	Van Beek 2009	Vons-Comis 1978; Swart-Poelman xxxx: nos. 101 and 171; NKNOB 1959
C	URN	Van Beek 2009	Vons-Comis 1978

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-GL-005	Haart – De Kroon/ Kroondijk	240900	436420	OK	1220	1932
NL-GL-006	Haart – Den Bosch	241250	436920	OK		1821
NL-GL-007	Heurne – Ongena	238400	435200	OK		1962(?)
NL-GL-008	Apeldoorn – Uddeler Heegde	184000	474750	OK		2013
NL-GL-009	Uddel – Heegderweg/ Aardhuisweg	182315	474492	OK		2013
NL-GL-010	Hupsel – Luttikes/ Hupselsche Veld/ Hunenbulten	240100	453700	OK	30823; 122201; 3272	1971-72
NL-GL-011	Loo – Nieuw Bisperink	244030	459470	OK	122208	1938; 1935-1952
NL-GL-012	Loo – Ticheloven	243200	459200	OK	122207	1920’s
NL-GL-013	Neede – Needse Berg	237100	462650	OK	137512	1898-1975
NL-GL-014	Olden Eibergen – Kormelinksbulten/ Boakersbulten	239900	456900	OK	1229	1922-1975
NL-GL-015	Olden Eibergen – Lettinksbusken	239350	456780	OK	122214	1920’s
NL-GL-016	Ruurlo – Kattenberg	224800	456460	OK		1780
NL-GL-017	Ewijk – Keizershoeve II	179887	430877	OK	435055	2010
NL-GL-018	Drempt	208700	446600	OK		1923
NL-GL-019	Steenderen – Steenderdiek	210300	453850	OK	429051	2002
NL-GL-020	Veldwijk – Konijnenbelten/ op ten Noort Bos	217700	459950	OK		1885
NL-GL-021	Zelhem – Wolfersveen/ Pottenbult	223800	448100	OK		1941
NL-GL-022	Meteren – De Plantage	148800	431000	OK	435510	2010
NL-GL-023	Berg en Dal – De Vier Perken	190484	426237	OK	425789	2010
NL-GL-024	Groesbeek – Hüsenhoff	193504	421361	OK	433494	2010
NL-GL-025	Brammelo – Vregelinkshoek	244800	463700	OK		1940
NL-GL-026	Huissen – Agropark	191250	436250	OK	428199	2008
NL-GL-027	Almen – Landgoed Termeulen	217500	463500	OK		1892
NL-GL-028	Epse – Klembergen	211150	470750	OK		1834
NL-GL-029	Epse – Olthof Noord	211150	471900	OK		2005; 2009
NL-GL-030	Epse – Waterdijk Noord	210265	471770	OK	45608	2000
NL-GL-031	Epse – Waterdijk II	210630	471425	OK		2002
NL-GL-032	Eefde – Erve Springop	212800	465950	OK		1800’s
NL-GL-033	Gorssel – Erve ‘t Boschloo	209250	466900	OK		1925
NL-GL-034	Quatre Bras – De Haar	211175	467200	OK		1834
NL-GL-035	Quatre Bras – Kappenbulten	210625	466800	OK		1834
NL-GL-036	Lent – Lentseveld/ Waalsprong	187770	430780	OK	436597	2006-2009
NL-GL-037	Lent – Steltsestraat/ Waalsprong	188640	430655	OK	417272; 47117; 50199	2000-2001; 2004
NL-GL-038	Lent – Zuiderveld-Oost/ Stationsweg (Ressen)	187555	433020	OK	46477; 436852	2002; 2006; 2015-17

Q	Period	Inventory	Literature
B	URN	Van Beek 2009	Willems 1935: 45
C	URN	Van Beek 2009	Vons-Comis 1978; Swart-Poeman xxxx: no. 172(?)
B	URN	Van Beek 2009	Jaarverslag ROB 1968: 46; Vons-Comis 1978
A+	LBA/ROM	-	Louwen *et al.* 2013; 2014
A+	LBA/EIA	-	Diependaal *et al.* 2015: 66
B	URN	Van Beek 2009	NKNBOB 1972: 33-34; Verlinde 1974 (BROB24); Vons-Comis 1978; Borman 1981: 55
B	URN	Van Beek 2009	Jaarverslag RMO 1938: 4 (Holwerda); Verlinde 1974 (BROB 24); Borman 1978: fig. 34
C	URN	Van Beek 2009	Bokma 1961, no. 4
C	LBA	Van Beek 2009	Vons-Comis 1978; Swart-Poelman xxxx: nos. 67, 166 and 167.
B	URN	Van Beek 2009	NKNOB 1957: 256; Vons-Comis 1978; Borman 1978: 51
C	URN	Van Beek 2009	-
C	URN	Van Beek 2009	Staring van den Wildenborch 1822: 447-453; Kamer-Clobus 1978; Borman 1978: 54; 1981: 24; Vons-Comis 1978; Swart-Poelman: no. 29; Scholte-Lubberink/Lohof 1998: no. 165
A+	EIA-MIA	-	ADC-rapport 3150
C	EIA	Van Beek 2009	Hulst/Verlinde 1987: 187-188; Borman 1978: 60-61; fig. 47
A+	EIA	Van Beek 2009	RAAP-rapport 1105; 1793
C	URN	Van Beek 2009	Swart-Poelman xxxx: no. 30; Scholte-Lubberink/Lohof: no. 158; Van der Kleij: no. 1
A	EIA-MIA	Van Beek 2009	Verlinde 1974 (BROB 24); Borman 1978: 59 -65
A+	LBA-MIA	-	ADC-rapport 2713
B	MBA-IA	-	Theunissen/De Kort 2010
A+	EIA-MIA	-	ADC-rapport 2687
D	URN	Van Beek 2009	-
A+	LBA/EIA	-	ARC-publicaties 215; ADC-rapport 1393
D	URN	Van Beek 2009	Van der Kleij 2003, 6-7; Van Beek 2009, 228
C	URN	Van Beek 2009	Hermsen/Van der Wal 2012: 114; Pleyte 1887: 6-7/fig. I; De Graaf 1926; Van der Kleij 2003: 12-13; Scholte-Lubberink/Lohof 1998: cat. No. 1
A+	EIA	Van Beek 2009	Hermsen/Van der Wal 2012
A	MBA-B/LBA	-	Hermsen/Van der Wal 2012: 115; Appels 2002: 18
A+	LBA	Van Beek 2009	Hermsen/Van der Wal 2012: 115 – 116; ADC-rapport 142
C	LBA?	Van Beek 2009	Borman 1978: 57; Swart-Poelman xxxx: no. 86, 88; Van der Kleij 2003: no. 4
C	URN	Van Beek 2009	De Graaf 1926; Van der Kleij 2003: no. 13
D	URN	Van Beek 2009	De Graaf 1926; Van der Kleij 2003: no. 9; Borman 1978: 56-57
C	URN	Van Beek 2009	De Graaf 1926; Van der Kleij 2003: no. 9; Borman 1978: 56-57; Scholte-Lubberink/Lohof 1998: no. 2; Swart-Poelman xxxx: no. 169
A+	EIA-MIA	-	Archeologische Berichten Nijmegen 24
A+	EIA/MIA	-	Archeologische Berichten Nijmegen 1: 28; 8; Van den Broeke 2014: 162-164
A+	(1) MBA-B; (2) EIA-MIA	-	Archeologische Berichten Nijmegen 3; 15; Van den Broeke 2014: 165-166

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-GL-039	Lent – Schoolstaat	188055	430451	OK	47100	1990's?
NL-GL-040	Oosterhout – Oosterhoutsedijk	186628	431442	OK	425582	2011
NL-GL-041	Silvolde – Ulftseweg 114	223720	435500	OK	18664	1989
NL-GL-042	Ulft – De Pol	222680	433900	OK		1963
NL-GL-043	Ulft – Vendeliers	222940	434070	OK	222940	1985
NL-GL-044	Wieken – Hoge Rokken	222100	431620	OK	222100	1800's; <1914; 1931-32; 1965
NL-GL-045	Lievelde – Erve Kots	237600	448900	OK		1937
NL-GL-046	Groenlo – Avest	239200	453200	OK	1230	?
NL-GL-047	Elst – Westeraam/ Parklaan	187965	436950	OK	403945	2005
NL-GL-048	Huppel – Erve Meerdink	247130	445880	OK	7075	1950
NL-GL-049	Ratum – Muggenhoek	253450	445700	OK		<1915
NL-GL-050	Winterswijk – Molen de Bataaf/ Hunenbulten	248300	444000	OK		1783; 1910; 1942; 2013
NL-GL-051	Angerlo	207120	446200	OK	207120	1969
NL-GL-052	Bronsbergen – Stokebrand	210670	459000	OK		1933; 1972
NL-GL-053	Bronsbergen – Harenberg	211250	458750	OK		1900
NL-GL-054	Warnsveld – Kremerskamp	212340	461650	OK		1990's
NL-GL-055	Zutphen – Laaksche Veld	212195	459930	OK		1998
NL-GL-056	Zutphen – Looërenk (Meierink)	213750	459900	OK		1997; 2010
NL-GL-057	Zutphen – Voorsterallee	212816	463080	OK	432291	2008
NL-GL-058	Dukenburg – Malderburchtstraat	185450	423880	OK	31859	1962
NL-GL-059	Didam	204930	438200	OK	1361	< 1975
NL-GL-060	Meteren – De Bogen	146510	430322	OK		1999
NL-GL-061	Overasselt – Schatkuilsestraat	182250	421790	OK		2003
NL-GL-062	Wijchen (Woezik) – De Pas	177860	425500	OK	25788	1967
NL-GL-063	Lent – Castiliëstraat	187800	431200	OK		2010
NL-GL-064	Lent – Laauwikstraat-Zuid	188500	430880	OK	48100	1996-2001
NL-GL-065	Lent – Smitjesland	188000	431750	UN		1996-2001
NL-GL-066	Oosterhout – De Eeuwige Lente	186500	432300	UN		1996-2001
NL-GL-067	Epse – Waterdijk III	210540	471380	OK		2014
NL-GL-068	Twello – De Schaker	204830	471510	OK		2013
NL-GL-069	Hengelo – Winkelskamp	218375	450625	OK		2015
NL-GL-070	Nijmegen – Valkhof	188300	428900	OK		1900's (early)
NL-GL-071	Nijmegen – Trajanusplein	188625	428600	OK	15309	1975
NL-GL-072	Epse – Azink Oost	210921	471925	OK	56102 (Omnr.)	2013
NL-GL-073	Passewaaij – Oude Tielseweg	155650	431475	UN		1993-1994
NL-GL-074	Geldermalsen – Middengebied/ Murman	148010	432120	UN		1992
NL-GL-280	Dreumel – Kavelberg	159300	429240	OK	7452	1984
NL-GL-281	Wijchen – Wezelse Berg	178150	426250	UN		9999

Q	Period	Inventory	Literature
A+	EIA	-	Archeologische Berichten Nijmegen 1:29; Van den Broeke 2014: 166
B	EIA	-	-
B	EIA-MIA	Van Beek 2009	JROB 1991: 146
B	URN	Van Beek 2009	Vons-Comis 1978
B	EIA	Van Beek 2009	AKRO-Gelderland 1986
B	IA	Van Beek 2009	Vons-Comis 1978; AKRO-Gelderland 1966-67; NKNOB 1967: 28
B	LBA	Van Beek 2009	Vons-Comis 1978; Swart-Poelman xxxx: no. 43; AKRO-Gelderland 1970-84
C	LBA	Van Beek 2009	Borman 1978: 60.
A+	EIA	-	ADC-rapport 468
C	URN	Van Beek 2009	-
C	URN	Van Beek 2009	Swart-Poelman xxxx: no. 173; JRMO 1942; NKNOB 1915: 228
C	LBA/EIA	Van Beek 2009	Swart-Poelman xxxx: no. 83; AKRO-Gelderland 1970-84; 1990-91; Vons-Comis 1978; Borman 1978: 57; Verlinde 1974 (BROB24); RAAP-rapport 2827
B	EIA	Van Beek 2009	Borman 1978: fig. 46; AKRO-Gelderland 1969; JROB 1969: 48.
B	LBA	Van Beek 2009	Van der Kleij 2003: cat. No. 7; Swart-Poelman xxxx: no. 69; AKRO-Gelderland 1970-84; Scholte-Lubberink/Lohof 1998: no. 165
C	URN	Van Beek 2009	Van der Kleij 2003: cat. No. 7
C	URN	Van Beek 2009	Van der Kleij 2003: cat. No. 20; Scholte-Lubberink/Lohof 1998: no. 205
A	LBA	Van Beek 2009	Bouwmeester 2000, 16; Groothedde 2001, 78-79
A+	EIA-LIA	Van Beek 2009	BAAC-rapport 00.068; Zutphense Archeologische Publicaties 70
A	MIA?	-	Zutphense Archeologische Publicaties 45; 60
B	LBA	-	NKNOB 1963: 32-33
B	LBA	-	Borman 1978: 47-50, fig. 32
A+	LBA/EIA	-	Meijlink/Kranendonk 2002: 206 – 236 (RAM87)
B	LBA/EIA	-	RAAP-rapport 1201
B	LBA/IA	-	NKNOB 1967: 28-29; AKRO-Gelderland 1966-67: XXXV
A+	EIA-MIA	-	Archeologische Berichten Nijmegen Briefrapport 111
A+	LBA-MIA	-	Archeologische Berichten Nijmegen 1:22-23; Van den Broeke 2014: 166-167
A	LBA	-	Archeologische Berichten Nijmegen 1:21
A	LBA/EIA	-	Archeologische Berichten Nijmegen 1:27
A+	LBA	-	BAAC-rapport A-14.0052
A+	LBA-EIA	-	Archol-rapport 260
A(+)	EIA-LIA	-	Archol-rapport 283
B	LBA	-	Fontijn 1996: 41-42
A+	EIA/MIA	-	Bloemers 1986: 75-95; 2016: 21-34
A	LBA/EIA	-	-
B	EIA/MIA	-	Lanting/van der Plicht 2005: 350
B+	EIA/MIA	-	Hulst 1999: 41-49; Van den Broeke 2014: 168-169
B	EIA	Gerritsen 2003; 280	Hulst 1986: 144-145
C	EIA	Gerritsen 2003; 281	Roymans 1991: 8-89

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-GL-282	Wijchen – Molenberg	178800	424550	OK	4175	1975
NL-GL-283	Wijchen – Valendries	179650	424150	OK	11426; 39194; 40688	1959
NL-GL-284	Wijchen – Alverna	180150	424400	OK	32376; 32380	1955
NL-GL-285	Wijchen – Hernenseweg	181500	423000	UN		9999
NL-GL-286	Wijchen – Bullenkamp	182250	422250	UN		1960's?
NL-GL-287	Overasselt	182000	422000	UN		1904
NL-GL-288	Overasselt – Broekberg	184700	421770	OK	7697	1986
NL-GL-289	Heumen	185000	421000	UN		9999
NL-GL-290	Groesbeek – Wolfsberg	191500	420500	UN		9999
NL-GL-291	Nijmegen – Goffertpark	185900	426200	UN		9999
NL-GL-292	Nijmegen – St. Maartensklinkiek/ Kopse Hof (Hengstberg)	190000	427500	UN		9999
NL-GL-293	Nijmegen – Kops Plateau	189950	427850	OK	29705	1986
NL-GL-294	Nijmegen – Hunerberg	189500	428100	OK		1951-67
NL-GL-295	Nijmegen/Oosterhout – Van Boetzelaarstraat	186500	432000	OK		1997
NL-GL-296	Bemmel	190350	434080	OK	6792	1975
NL-GL-297	Stokkum	211200	432280	OK	1221	1975
NL-UT-001	Rhenen – Koerheuvel/ Watertoren	167110	441810	OK	31978	1938; 1990; 1993
NL-UT-002	Remmerden – Larikshof	165262	443284	OK	413523	2008
NL-UT-003	Rhenen – Lijstereng/ Autoweg	166900	442610	OK	43411	1978
NL-UT-004	Rhenen – De Eekhoorn/ Utrechtsestraatweg	166840	441300	OK	43593	1992
NL-UT-005	Elst – Het Bosje	162520	444375	OK	414725	1999; 2005-2008
NL-UT-006	Amersfoort – De Lichtenberg/ Amersfoortse Berg	153700	461810	OK	30915	1954
NL-UT-007	Austerlitz – Postweg	148700	456880	OK	18835	9999
NL-UT-008	Maarn – Maarnse Grindweg	154540	451410	OK	26292	1971
NL-UT-009	Stameren	152160	452220	OK	26305	9999
NL-UT-010	Doorn – Nieuw Sterkenburg/ Beukenrode	150320	450280	OK	26526	1902
NL-UT-011	Amerongen – Koningin Wilhelminaweg	159720	445860	OK	26730	1968
NL-UT-012	Wijk bij Duurstede – De Horden	151000	443000	OK		1977-87
NL-UT-013	Woudenberg – Den Treek	153360	456190	OK	26323; 26298	1954
NL-UT-014	Leusden – Leusderheide	152500	458500	UN		1878
NL-UT-015	Amersfoort – Doornseweg/ Laan 1914	154000	460400	OK	422127; 26275	1985; 2009
NL-NH-001	Hilversum – Aardjesberg/ Erfgooierslaan/Westerheide	141100	473300	OK	1489; 1490	1856
NL-NH-002	Warmenhuizen	108000	523000	OK	17719	1989
NL-NH-003	Hoogkarspel – Tumuli [Watertoren]	140640	523210	OK	9222	1966-78

Q	Period	Inventory	Literature
B	EIA	Gerritsen 2003; 282	Janssen 1975: 15-21
B	EIA – MIA	Gerritsen 2003; 283	Modderman 1960/1961: 551-553
C	EIA	Gerritsen 2003; 284	Roymans 1991: 8-89?; BROB 28: 40-41 (No. 217+218); Collection Bloemen
C	EIA	Gerritsen 2003; 285	Collection Museum Kam
C	EIA	Gerritsen 2003; 286	Collection Museum Kam
C	MIA	Gerritsen 2003; 287	Kimmig 1962/1963: 57; De Laet 1979: 479
B	LBA – EIA	Gerritsen 2003; 288	CAA 46A 39N; Hulst 1987: 207
C	LBA	Gerritsen 2003; 289	Collection Museum Kam
C	EIA	Gerritsen 2003; 290	Collection Museum Kam
C	LBA – EIA	Gerritsen 2003; 291	Collection Museum Kam
C	LBA – EIA	Gerritsen 2003; 292	Modderman 1951
A+	MBA – MIA	Gerritsen 2003; 293	Fontijn/Cuypers 1999: 33 – 67; 2002: 157 – 189; Fontijn 1995
A	LBA – EIA	Gerritsen 2003; 294	Louwe Kooijmans 1973: 87 – 125
A	LBA (-EIA?)	Gerritsen 2003; 295	Van den Broeke 1999: 26-31
C	EIA	Gerritsen 2003; 296	CAA; Bredie 1975
C	EIA	Gerritsen 2003; 297	RMO
A	LBA – EIA	-	Van Heeringen 1999 (BROB 43); AKRO-Utrecht 1990-91: 58-59; 1992-93: 58-60; JROB 1990: 174; 1993: 164-165
A+	EIA-MIA	-	Archol-rapport 114
B	EIA	-	Delfin 1978: 14; Van Tent: 43; AKRO-Utrecht 1970-79: 51-52
B	MIA	-	JROB 1992: 170-171; AKRO-Utrecht 1992-93: 61
A+	EIA-MIA	-	Archol-rapport 63; 84; 128
B	EIA	-	Modderman 1955 (BROB 6): 58-59
C	URN	-	-
A	EIA-MIA	-	Lanting/Van der Waals 1971: 93-127
C	URN	-	-
C	URN	-	Pleyte 1889: 5
B	EIA/MIA	-	NKNOB 1968: 54
A+	(M)BA/EIA	-	Hessing 1989 (BROB 39); Hessing/Steenbeek 1990 (BROB 40)
A+	MBA-URN	-	Modderman 1955 (BROB 6): 59-65
B	LBA-MIA	-	Pleyte 1889: 7-8; Van Dijk/Van den Heuvel 2012: 129-133
B	URN	-	Van Tent 1985: 8-9; Wijker 2011; Van Dijk/Van den Heuvel 2012: 128-129
B	LBA/EIA	-	Janssen 1856: xx-xx; Addink-Samplonius 1983; Wimmers 1988; Cruysheer 2014: 2-6
C	EIA-MIA	-	-
A	MBA-B/LBA?	-	Bakker 1979; Roessingh 2018: 136-144.

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-ZH-001	Den Haag – Hubertustunnel	82169	458232	OK	418152	2002
NL-BR-134	Halsteren	78310	392360	OK	13976	1937; 1966
NL-BR-135	(Etten-)Leur – Hoogakker	105190	400675	OK	33023	1903
NL-BR-136	Oosterhout (Vraggelen/ De Contreien)	116034	406955	OK	433979; 47346; 435044; 435048	1975; 2008; 2010; 2012
NL-BR-137	Gilze en Rijen – Airport	123500	397500	UN	36831?	< 1940
NL-BR-138	Gilze en Rijen – Verhoven	123000	396000	OK	36820	1905
NL-BR-139	Strijbeek – Strijbeekse Heide	115375	389875	OK	36958	1937
NL-BR-140	Rijsbergen – Tiggelt	106300	390500	OK	36974	1811; 1972
NL-BR-141	Zundert – Kleine Beek	105040	388700	OK	36973	1969
NL-BR-142	Baarle-Nassau – Witte Bergen	119100	382000	OK	36962	< 1908
NL-BR-143	Baarle-Nassau – Wolvenven	119250	383250	UN		9999
NL-BR-144	Baarle-Nassau – Diericxven	119000	384000	UN		9999
NL-BR-145	Baarle-Nassau – Reuthse Bergen/ Ulicootse Heide	119999	383750	OK	36960	< 1908
NL-BR-146	Baarle-Nassau – Molenheide	121850	383000	OK		9999
NL-BR-147	Baarle-Nassau – De Dekt	121700	383500	UN		9999
NL-BR-148	Baarle-Nassau – Bedafse Heide/ Veldbraak	125300	383640	OK	36991	9999
NL-BR-149	Baarle-Nassau – Tommelse Heide	122900	382800	UN		1930
NL-BR-150	Alphen – Molenheide	125950	387810	OK	137680	1843; 1938
NL-BR-151	Alphen – Keutelberg	127750	388400	UN		<1949
NL-BR-152	Riel – Brakel/ Brakelse Akkers	127800	391250	OK	36881	<1842
NL-BR-153	Riel – Rielsche Heide/ Alphense weg	129025	392475	OK	36864	1938
NL-BR-154	Goirle – Papenmoerke	129290	389440	OK	36887	1841-42
NL-BR-155	Goirle – Hoogeind	131450	392600	OK	34011; 36638	1924; 1965
NL-BR-156	Goirle – Abcoven	134300	393800	OK	36758; 14476	1934-40
NL-BR-157	Hilvarenbeek – Nonnenbossen (Rovertsebergen?)	135425	387700	OK	36701	1913
NL-BR-158	Hilvarenbeek – Appelberg	135500	383500	UN		9999
NL-BR-159	Hilvarenbeek – Laag Spul	138150	387450	OK	31293	1957; 1969
NL-BR-160	Diessen – Groenstraat	139000	386500	UN		9999
NL-BR-161	Moergestel – Molenakkers	139120	392430	OK	14257	1972
NL-BR-162	Tilburg – Molenstraat	134500	397600	UN		<1994
NL-BR-163	Tilburg	134000	396500	UN		9999
NL-BR-164	Tilburg – Wandelbos (Zandsche Bosschen)	130790	398975	OK	36501	1955
NL-BR-165	Berkel-Enschot – Ekelbos (Eikenbosch?)	137860	397860	UN	44903	<1966
NL-BR-166	Berkel-Enschot	138000	399500	UN		9999
NL-BR-167	Berkel-Enschot – Akkerweg	138600	400200	OK	224014; 32646	1992

Q	Period	Inventory	Literature
A+	LBA	-	Haagse Oudheidkundige Publicaties 9; Bulten/Opbroek 2014 (Metaaltijden 1)
C	URN	Gerritsen 2003; 134	Meex 1972: 51; Beex 1966: 19
D	URN	Gerritsen 2003; 135	Meex 1972: 56
A+	LBA – MIA (ROM)	Gerritsen 2003; 136	Verwers/Beex 1978: 9; BAAC-rapport A-08-0180; ADC-rapport 2750; Veselka/ Lemmers 2014: 151-158
C	EIA	Gerritsen 2003; 137	-
C	EIA	Gerritsen 2003; 138	Verhagen 1984: 64-65
B	EIA – MIA	Gerritsen 2003; 139	Bursch 1937
C	EIA	Gerritsen 2003; 140	Verhagen 1984: 68; 1994; 64-
C	EIA	Gerritsen 2003; 141	Beex 1969
C/D	URN	Gerritsen 2003; 142	Meex 1972: 43; Verhagen 1997: 31
C/D	URN	Gerritsen 2003; 143	Meex 1972: 43; Verhagen 1997: 30
C/D	URN	Gerritsen 2003; 144	Meex 1972: 43; Verhagen 1997: 30
C/D	URN	Gerritsen 2003; 145	Meex 1972: 43; Verhagen 1997: 14/29-30
B	URN	Gerritsen 2003; 146	Beex 1984b: 111-113: Verhagen 1997: 23-28
C	EIA – MIA	Gerritsen 2003; 147	Verhagen 1997: 17-20/51-54
C	EIA – MIA	Gerritsen 2003; 148	Verhagen 1984; 1997: 20-23
C	EIA	Gerritsen 2003; 149	Verhagen 1997: 31: Beex 1984
C	MBA/MIA	Gerritsen 2003; 150	Hermans 1865; Willems 1935: 34-35; Peeters 1978; Verhagen 1984; 1997: 37-47
C	LBA?	Gerritsen 2003; 151	Verhagen 1997: 47-50
C	EIA	Gerritsen 2003; 152	Hermans 1865; Willems 1935: 34-35; Peeters 1978; Verhagen 1997: 63-73
C	EIA	Gerritsen 2003; 153	Verhagen 1997: 73-75; Beex 1984
C	URN	Gerritsen 2003; 154	Meex 1972: 49
A	LBA – EIA	Gerritsen 2003; 155	Remouchamps 1926; Verwers 1966
C	EIA/MIA	Gerritsen 2003; 156	Meex 1972: 48
C	URN	Gerritsen 2003; 157	Beex 1970: 24
C/D	URN	Gerritsen 2003; 158	Beex 1970: 24
A	LBA (EIA?)	Gerritsen 2003; 159	Modderman 1957/1958: Verwers 1975
C/D	URN	Gerritsen 2003; 160	Beex 1970: 25
A	EIA	Gerritsen 2003; 161	Verwers 1981
C	EIA	Gerritsen 2003; 162	Verwers 1994: 29
D	MIA?	Gerritsen 2003; 163	see Gerritsen 2003, 294
C	EIA	Gerritsen 2003; 164	Peeters 1973
C	EIA	Gerritsen 2003; 165	Meex 1972: 48
C/D	LBA – EIA	Gerritsen 2003; 166	Meex 1972: 48
A	EIA – MIA	Gerritsen 2003; 167	Kleij/Verwers 1994: 131-133

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-BR-168	Oisterwijk – Beukendreef (Voorste Stroom)	140320	398465	OK	39010; 36514	1914-1925; 1952
NL-BR-169	Esch – Hoogkeiteren	147270	402780	OK	31241	1959
NL-BR-170	Loon op Zand	132380	405660	OK	46774	1991
NL-BR-171	Boxtel	149963	400841	OK	48502	1939
NL-BR-172	Sint-Michielsgestel – Geenenberg	152925	404750	OK	36158	1890
NL-BR-173	Sint-Michielsgestel – Heilig Weike (Dommelakker)	152800	405000	OK	36123	1835
NL-BR-174	Empel – Armen Hoogaard	148500	414600	OK	36183	1766; 1859-1860
NL-BR-175	Rosmalen – Heines	151500	413700	OK	36086	1935
NL-BR-176	Berlicum – Middelrode	158820	408520	OK	13954	<1930's; 1967
NL-BR-177	Oss – Ussen	162900	419600	OK	33880	1977-1979
NL-BR-178	Oss – IJsselstraat	165830	421100	OK	33607	1974
NL-BR-179	Oss – Vorstengraf	167417	416041	OK	39089; 411649	1933; 1997
NL-BR-180	Berghem – (Oss-)Zevenbergen	168010	416083	OK	35984; 410923; 36048; 14154; 426772	1966; 2004; 2007
NL-BR-181	Deursen/ Ravenstein – Dennenburg	171650	423800	OK	35650	1858-1932
NL-BR-182	Ravenstein – Deursen (-Rondestraat)	171560	423840	OK	13975	<1978
NL-BR-183	Ravenstein – Herpen/ Herpsebrug	172750	420450	OK	43624	>1950
NL-BR-184	Ravenstein – Herper Duinen	170380	418800	OK	35243	1927
NL-BR-185	Schaijk	173060	416560	OK	35261	1937
NL-BR-186	Mill – Ten Hove	181100	410400	OK	32523	1932
NL-BR-187	Uden – Slabroeksche Heide	169900	412600	OK	37006	1923; 2005; 2010; 2016
NL-BR-188	Beers – Groot Linden/ Kraaienbergse Plas	184750	418000	OK	33735	1986
NL-BR-189	Beers – Kraaienberg	185070	418440	OK	32003	1974
NL-BR-190	Beers – Dommelsvoort	185550	416400	OK	31137; 38767	1928; 1995
NL-BR-191	Cuijk – Galberg	188600	417000	OK	32132	1853
NL-BR-192	Cuijk – Heeswijkse Kampen	187880	416440	OK	31715; 435704; 32186; 32082; 45793	1980-1989
NL-BR-193	Cuijk – St.Martinuskerk/ Korte Molenstraat	189110	415680	OK	14752	1964-1966
NL-BR-194	Cuijk – Haanwijk (Haanshof)	188900	413600	OK	32128	1853
NL-BR-195	Haps – Laarakker	189008	411852	OK	408671	1968
NL-BR-196	Haps – Kamps Veld	187500	411200	OK	31345	1959-1967
NL-BR-197	Oeffelt – Hoogland	192500	411500	UN		1849
NL-BR-198	Boxmeer – Hoge Dijk	193770	407800	OK	31485; 52106	1900; 2001

Q	Period	Inventory	Literature
B	URN	Gerritsen 2003; 168	Meex 1972: 62
A	LBA – EIA (ROM)	Gerritsen 2003; 169	Van den Hurk 1980
C	EIA	Gerritsen 2003; 170	Verwers 1994: 29
C	LBA/EIA	Gerritsen 2003; 171	Meex 1972: 46
C	URN	Gerritsen 2003; 172	Meex 1972: 58
C	URN	Gerritsen 2003; 173	Meex 1972: 58
C	EIA	Gerritsen 2003; 174	Meex 1972: 48; Beex 1970
C	EIA	Gerritsen 2003; 175	Beex 1970: 32
B+	MIA?	Gerritsen 2003; 176	Beex 1968; Meex 1972: 45
A+	EIA – MIA	Gerritsen 2003; 177	Van der Sanden 1987; 1998
A	EIA – MIA	Gerritsen 2003; 178	Wesseling 1993
A+	MBA – EIA	Gerritsen 2003; 179	Holwerda 1934; Bursch 1937; Fokkens/Jansen 1998; Jansen/Fokkens 1999: 85-90; Fokkens/Jansen 2004; Jansen/Fokkens 2007
A+	(LNEO-)EIA	Gerritsen 2003; 180	Verwers 1966; Fokkens *et al.* 2009; Fontijn *et al.* 2013
C	EIA – MIA	Gerritsen 2003; 181	RMO; coll. A. Stuart (Wijchen); Hermans 1865(?); Verwers 1981(?)
C	MIA	Gerritsen 2003; 182	Verwers 1981
C	URN	Gerritsen 2003; 183	Meex 1972: 63; Brabants Heem 1950: 94
C	EIA	Gerritsen 2003; 184	Beex 1968
B	LBA – EIA	Gerritsen 2003; 185	Van Giffen 1949
C	URN	Gerritsen 2003; 186	Meex 1972: 59
A+	EIA – MIA (ROM)	Gerritsen 2003; 187	Remouchamps 1924; Van Wijk/Jansen 2010; Jansen *et al* 2011; Jansen/Van der Vaart-Verschoof *in prep.*
A+	LBA	Gerritsen 2003; 188	Fokkens/Smits 1989
C	EIA	Gerritsen 2003; 189	Verwers/Beex 1978: 17-18
C	EIA/ROM	Gerritsen 2003; 190	RMO; Meex 1972: 34
C	EIA	Gerritsen 2003; 191	Hermans 1865: 4; Meex 1972: 47; Beex 1967: 67
B	LBA – EIA	Gerritsen 2003; 192	Koolen/De Wit 1981; Hessing *et al.* 1989; ADC-rapport 1173: 70-71
B	EIA	Gerritsen 2003; 193	Bogaers 1966; Verwers 1990: 48
C	LBA/EIA	Gerritsen 2003; 194	Hermans 1865; Meex 1972: 47
C	URN	Gerritsen 2003; 195	Beex 1970: 136
A	MBA; EIA – MIA	Gerritsen 2003; 196	Verwers 1972
D	EIA	Gerritsen 2003; 197	Hermans 1865
B	URN	Gerritsen 2003; 198	Meex 1972: 46

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-BR-199	Boxmeer – Maasdijk	194150	407520	OK	31451; 52104	1931-1934; 2001
NL-BR-200	Sambeek (- Oude Waranda)	194800	405670	OK	292325	1980
NL-BR-201	Vierlingsbeek – Vliegenberg (Den Bosch)	199200	399800	OK	32490; 32479; 32484	1861; 1927
NL-BR-202	Vierlingsbeek – Het Roozendaal	191830	396325	OK	32421; 32425; 32426; 32485; 32487; 53023	>1949; 1954; 2003
NL-BR-203	Oploo – De Weyer	188850	402750	OK	31866	1864
NL-BR-204	Oploo	188100	402250	OK	45451	>1949
NL-BR-205	Veghel – Scheifelaar	166350	401844	OK	412000	1991
NL-BR-206	Erp – Vossenberg	173169	398700	OK	416249; 416251	1950
NL-BR-207	Gemert – Kranebraken	176740	394410	OK	30194	1956
NL-BR-208	Milheeze (I)	183750	390300	UN		9999
NL-BR-209	Milheeze (II)	182000	390500	UN		9999
NL-BR-210	Sint-Oedenrode – Haagakkers	162550	397700	OK	29798	1970 – 1972
NL-BR-211	Nijnsel – Huisakker	161675	395750	OK	14207	1963
NL-BR-212	Beek en Donk – Hoge Berg	171500	393120	OK	33018	1932
NL-BR-213	Lieshout	169200	391030	OK	33139	1930's
NL-BR-214	Nuenen – Rulle (Gerwensche Heide)	167400	389800	OK	33142	1920
NL-BR-215	Nuenen – Haneven	167500	384200	OK	44564	1863
NL-BR-216 (= NL-BR-217?)	Mierlo – Galgeven	169185	382425	OK	30223	<1950
NL-BR-217	Mierlo – Molenheide	170300	382700	OK	33051	<1950
NL-BR-218	Mierlo – Het Loo	170760	382740	UN		9999
NL-BR-219	Mierlo/Helmond	173000	385000	UN		9999
NL-BR-220	Mierlo-Hout – Snippenscheut	172080	386300	OK	34913	1992-1993
NL-BR-221	Deurne – Sint Jozefsparochie	182700	384675	OK	32687	<1837
NL-BR-222	Asten	178615	379160	OK	33058	9999
NL-BR-223	Someren – Waterdael I	178200	377580	OK	21626; 34789	1990-1992
NL-BR-224	Someren – Philips Kampeerterrein	175000	379150	OK	33071	1953; 1962
NL-BR-225	Someren – Kraaijenstark	173625	374050	OK	32790	1939
NL-BR-226	Someren – Hoenderboom	172550	377860	OK	30342	1865
NL-BR-227	Leende – Valkenhorst	163588	374311	UN		9999
NL-BR-228	Leende – Leenderheide	163750	378500	UN		9999
NL-BR-229	Leende – Klokkeven	164000	371125	OK	53680; 53484; 53683; 53677	9999
NL-BR-230	Eindhoven – Meerhoven	155000	384500	UN		2000's
NL-BR-231	Eindhoven – Tarfsven/ Welschap	155500	383250	OK	33316	<1950
NL-BR-232	Eindhoven – Engelsbergen	159650	382700	OK	200046	<1938

Q	Period	Inventory	Literature
C	URN	Gerritsen 2003; 199	Meex 1972: 46
C	EIA	Gerritsen 2003; 200	see Gerritsen 2003, 295
C	LBA/EIA	Gerritsen 2003; 201	Desittere 1968: 130
B	EIA	Gerritsen 2003; 202	RMO (Vr.0.1; Vr.0.3)
C	LBA/EIA	Gerritsen 2003; 203	Meex 1972: 62
D	URN	Gerritsen 2003; 204	Meex 1972: 62
A	EIA/MIA	Gerritsen 2003; 205	Kleij/Verwers 1994: 133-134
C	URN	Gerritsen 2003; 206	Meex 1972: 48
C	EIA	Gerritsen 2003; 207	NKNOB 1956: 195
C	EIA	Gerritsen 2003; 208	Meex 1972: fig. 17-6; CAA (Centraal Archeologisch Archief); RMO
D	URN	Gerritsen 2003; 209	Meex 1972: 59
A	LBA – MIA	Gerritsen 2003; 210	Van der Sanden 1981
A+	MIA	Gerritsen 2003; 211	Hulst 1964
C	LBA – EIA	Gerritsen 2003; 212	CAA; RMO; Desittere 1968: fig. 42.4
D	EIA	Gerritsen 2003; 213	Meex 1972: 56; Beex 1971
C	LBA?	Gerritsen 2003; 214	Beex 1969
C	LBA – EIA	Gerritsen 2003; 215	Hermans 1865: 100; Beex 1969
D	URN	Gerritsen 2003; 216	Meex 1972: 58
C	LBA	Gerritsen 2003; 217	Beex 1966
C/D	MIA	Gerritsen 2003; 218	see Gerritsen 2003, 295
C/D	URN	Gerritsen 2003; 219	Meex 1972: 58
A+	EIA – MIA	Gerritsen 2003; 220	Tol 1999
C	LBA – EIA	Gerritsen 2003; 221	Beex 1984
C	LBA/EIA	Gerritsen 2003; 222	Meex 1972: 43
A+	EIA – MIA	Gerritsen 2003; 223	Kortlang 1999
A	EIA	Gerritsen 2003; 224	Modderman 1955 (BROB 6); 1962/1963
B	EIA	Gerritsen 2003; 225	Kam 1956
D	URN	Gerritsen 2003; 226	Meex 1972: 64
C/D	URN	Gerritsen 2003; 227	Iven/Van Gerven 1974: 25
C/D	URN	Gerritsen 2003; 228	Iven/Van Gerven 1974: 25
D	URN	Gerritsen 2003; 229	Iven/Van Gerven 1974: 25
B	EIA – MIA	Gerritsen 2003; 230	see Gerritsen 2003, 295
D	URN	Gerritsen 2003; 231	Arts 1994: 31
C	URN	Gerritsen 2003; 232	Beex 1967: 188

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-BR-233	Eindhoven – Lievendaal	160275	383300	OK	33155	<1950
NL-BR-234	Eindhoven – Rijks Psychiatrische Inrichting	159050	386350	OK	33313	<1930
NL-BR-235	Best – Aerlesche Hei/ Industrieterrein	155000	388000	OK	33307	1933-1934
NL-BR-236	Best – Bestsebergen	157440	389325	OK	33252	1847
NL-BR-237	Oirschot	149900	389890	OK	36256	1950
NL-BR-238	Wintelre – Roestenberg	151375	382150	OK	33320	<1845
NL-BR-239	Veldhoven – Toterfout-Halve Mijl	151930	381010	OK	33372	1948-1951
NL-BR-240	Veldhoven – Zonderwijk	154325	380910	OK	33439	<1964
NL-BR-241	Veldhoven – Vlasroot	156200	377520	UN		<1900
NL-BR-242	Veldhoven – Heibloem	154400	377400	OK	14070; 33894; 13577; 14401(?)	1844; 1910; 1948; 1953; 1957
NL-BR-243	Knegsel – Huismeer	152500	379600	OK	34001; 33993	1845; 1951
NL-BR-244	Knegsel – Huisakker (De Beemd)	152240	378740	OK	29939	1983
NL-BR-245	Knegsel – Knegselse Hei	150850	378600	OK	31346	1934-1935
NL-BR-246	Knegsel (- Oude Dijk)	152700	378100	UN		1955
NL-BR-247	Eersel – De Hees	151500	375900	OK	33916	<1964
NL-BR-248	Eersel – Schadewijk	152460	375340	OK	29943	<1964
NL-BR-249	Duizel – Kerkakkers	148550	375750	OK	36322	<1964
NL-BR-250	Valkenswaard – Het Gegraaf	159430	375180	OK	53486	1908; 1954
NL-BR-251	Riethoven – Duivelsberg	157000	374750	OK	34051	<1963
NL-BR-252	Riethoven – Keersopperdijk/ Einderheide	156400	374600	OK	34030	1910; 1913
NL-BR-253	Riethoven – Walik/ Hobbelerheide	152900	373900	OK	31318	1950
NL-BR-254	Riethoven – Boshoven	153450	372500	OK	34077	1950?
NL-BR-255	Westerhoven – Goorbroek (Braambosch)	157030	373190	OK	34058	<1960
NL-BR-256	Westerhoven – Loveren	156220	371960	OK	14022	<1960
NL-BR-257	Bergeijk – De Bucht	153850	370550	OK	33678	1989
NL-BR-258	Bergeijk – De Paal	152400	371800	OK	31208	1959-1960
NL-BR-259	Bergeijk – Bergerheide	152660	371560	OK	411421	1974
NL-BR-260	Bergeijk – Witreit	147070	369950	OK	14397; 36393	1935; 1964
NL-BR-261	Bergeijk – De Maaij	154000	365400	OK	34168	1905
NL-BR-262	Luykgestel – Boscheind	147825	366850	OK	36442	1845
NL-BR-263	Luykgestel	148250	365300	OK	36445	1845-1905
NL-BR-264	Hapert (I)	145300	369350	OK	35117; 424136	<1964
NL-BR-265	Hapert (II)	146900	370900	UN		<1964
NL-BR-266	Hapert (III) (Panberg)	147525	372340	OK	36389	<1964
NL-BR-267	Hapert – De Pan	147000	374800	UN		<1964
NL-BR-268	Hapert/Eersel	147150	374800	OK	31299	<1964

Q	Period	Inventory	Literature
C	URN	Gerritsen 2003; 233	Bursch 1950: 9; Beex 1967: 188
C	URN	Gerritsen 2003; 234	Beex 1967b: 188
A	LBA – EIA	Gerritsen 2003; 235	Willems 1935: 33
C	LBA/EIA	Gerritsen 2003; 236	Willems 1935: 41
C	EIA	Gerritsen 2003; 237	Beex 1966
C	EIA	Gerritsen 2003; 238	Meex 1972: 71
A	EIA	Gerritsen 2003; 239	Glasbergen 1954a/b; Theunissen 1993
C	LBA	Gerritsen 2003; 240	Beex 1968
D	URN	Gerritsen 2003; 241	Beex 1968
A	LBA – EIA	Gerritsen 2003; 242	Modderman/Louwe Kooijmans 1966
B	MBA – EIA	Gerritsen 2003; 243	Beex 1952a; Hijszeler 1952; Theunissen 1999: 68-69
B	MIA	Gerritsen 2003; 244	CAA
A	LBA	Gerritsen 2003; 245	Braat 1936
C	MIA?	Gerritsen 2003; 246	Beex 1968: 123-126
D	URN	Gerritsen 2003; 247	Beex 1964: 10
C	URN	Gerritsen 2003; 248	Beex 1964: 10
C	LBA	Gerritsen 2003; 249	Beex 1964: 10
A	LBA – EIA	Gerritsen 2003; 250	Evelein 1909; Brunsting/Verwers 1975
C	LBA	Gerritsen 2003; 251	Beex 1963: 134
A	LBA – (EIA?)	Gerritsen 2003; 252	Evelein 1910; Holwerda 1913
B	LBA – (EIA?)	Gerritsen 2003; 253	Beex 1963
B	LBA – EIA	Gerritsen 2003; 254	Slofstra 1977
C	URN	Gerritsen 2003; 255	Bannenberg 1960
C	MIA	Gerritsen 2003; 256	Bannenberg 1960
A	EIA	Gerritsen 2003; 257	Theuws 1991
A	LBA – EIA	Gerritsen 2003; 258	Modderman 1967: Desittere 1968: 118-119
C	LBA – MIA	Gerritsen 2003; 259	CAA; RMO
B	LBA – EIA	Gerritsen 2003; 260	Van Giffen 1937
C	LBA/EIA	Gerritsen 2003; 261	Rahir 1928: 47
C	LBA – EIA	Gerritsen 2003; 262	Stroobant 1903; Willems 1935: 39: De Loë 1931; Desittere 1968: 124
C	LBA/EIA	Gerritsen 2003; 263	Hermans 1865: 80-82
D	URN	Gerritsen 2003; 264	Beex 1964: 104
C	URN	Gerritsen 2003; 265	Beex 1964: 104
C	URN	Gerritsen 2003; 266	Beex 1964: 104
C	URN	Gerritsen 2003; 267	Beex 1964: 104
C	EIA	Gerritsen 2003; 268	Beex 1964

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-BR-269	Hapert (IV)	146700	375900	OK		1857
NL-BR-270	Bladel – Achterste Hoef	143600	372570	OK	36425	1973
NL-BR-271	Bladel – Egypte	143400	374200	OK	36374	1937
NL-BR-272	Bladel – Schaapskuitje	143000	377000	UN		1970's
NL-BR-273	Bladel – Fransche Hoef	141150	376335	OK	35044; 35073	1973
NL-BR-274	Hulsel – Kouwenberg/ Kermisberg	140950	378520	OK	36306	1857
NL-BR-275	Hoogeloon – Honshoef	145760	379350	OK	404874	1951; 1963
NL-BR-276	Hoogeloon – Kabouterberg	147500	379300	OK	405559	9999
NL-BR-277	Hoogeloon – Kattenberg	144820	377380	OK		1910; 1957
NL-BR-278	Hoogeloon – Hoogpoort	146325	376825	OK	36314; 36316	1947-1951
NL-BR-279	Hoogeloon – Broekenseind	150300	378500	UN		<1964
NL-BR-001	Nistelrode – Zwarte Molen	167810	412383	OK	416022	2004
NL-BR-002	Nistelrode – Korteveld	167800	413670	OK	13945	1975
NL-BR-003	Boxmeer – Maasbroeksche Blokken	192800	408000	OK	36765	1997; 1998
NL-BR-004	Geldrop – Genoenhuis/ Grondwal	166044	379807	OK	430485	2004; 2009
NL-BR-005	Heesch	165457	415118	OK	406480	2003
NL-BR-006	Berghem (Oss) – De Geer	167071	421983	OK	409719	2001; 2002
NL-BR-007	Son en Breugel – Ekkersrijt – IKEA	161090	389827	OK	438948	2006; 2007
NL-BR-008	Vierlingsbeek – Vrijthof	198200	401175	OK		2013
NL-BR-009	Boxmeer – Sterckwijk	193250	408750	OK		2007-2009
NL-BR-010	Zundert – Mencia Sandrode	104850	387800	OK		2003
NL-BR-011	Breda – Steenakker	110000	401200	OK		1995-2001
NL-BR-012	Breda – Huifakker	110500	401000	OK		1995-2001
NL-BR-013	Breda – Emerakker	110900	401000	OK		1995-2001
NL-BR-014	Someren – Waterdael III	178400	376900	OK		2006-2008
NL-BR-015	Grave – De Zittert	178300	418980	OK	38865	1990
NL-LI-298	Mook – Mooker Schans	189220	418680	OK	15502; 15851; 417878; 418312	1956; 2007
NL-LI-299	Mook – Molenhoek	189700	419600	UN	15852?	9999
NL-LI-300	Mook – Bisselt	190950	419100	OK	15808; 7096; 7098; 7099; 7100;	1981; 1983
NL-LI-301 (= NL-LI-303?)	Mook – Hotel De Plasmolen	192000	416700	OK	15921	9999
NL-LI-302	Middelaar – Heikantse Weg	191650	415550	OK	15906	1960
NL-LI-303 (= NL-LI-301?)	Middelaar – Kromven	192230	416250	OK	15914	1934
NL-LI-304	Gennep – Zelderheide	198700	412900	UN		9999
NL-LI-305	Gennep – Ijsheuvel	199100	411200	OK	15438	<1960

Q	Period	Inventory	Literature
D	URN	Gerritsen 2003; 269	Beex 1964: 103
C	LBA – EIA	Gerritsen 2003; 270	Roymans 1975: 33-38
C	LBA/EIA	Gerritsen 2003; 271	Roymans 1975: 39
C	URN	Gerritsen 2003; 272	Roymans 1975: 39
C	URN	Gerritsen 2003; 273	Roymans 1975: 39
C	URN	Gerritsen 2003; 274	Bogaers 1967: 180
C	LBA/EIA	Gerritsen 2003; 275	Beex 1964: 102; 1970: 47
C	LBA/EIA	Gerritsen 2003; 276	Beex 1964: 103
C	URN	Gerritsen 2003; 277	Modderman 1955: 57: Beex 1964: 103
D	MIA	Gerritsen 2003; 278	Modderman 1960/1961: 550: Beex 1964: 103
D	URN	Gerritsen 2003; 279	Beex 1964: 103
A+	EIA/MIA	-	Archolrapport 48, p. 85-86
B	LBA	-	AKRO-Brabant 1974-1976
A	MBA/IA/ ROM	-	RAM 64; 76
A+	EIA	-	AACpublicatie 29; 53
A+	LBA	-	Archolrapport 24
A+	MBA/LBA; EIA/MIA	-	Archolrapport 19
A+	(M)IA	-	Rapportages ACEH 51/52
A+	EIA/MIA	-	ADC-Rapport 3847
A+	LBA-EIA	-	ADC-Monografie 18
A+	LBA-MIA	-	Synthegra-rapport 2003-145
A+	LBA-MIA	-	RAM 102
A	EIA-ROM	-	RAM 102
A	EIA-MIA	-	RAM 102
A+	EIA-MIA	-	ZAR 42
B	LBA/EIA	-	-
C	LBA/EIA	Gerritsen 2003; 298	see Gerritsen 2003, 297; ADC-rapport 1765
C	LBA/EIA	Gerritsen 2003; 299	see Gerritsen 2003, 297
C	LBA/EIA	Gerritsen 2003; 300	CAA 46B 15N
C	LBA/EIA	Gerritsen 2003; 301	Bonefanten Museum
C	EIA	Gerritsen 2003; 302	CAA
C	LBA/EIA	Gerritsen 2003; 303	Collection Museum Kam
D	URN	Gerritsen 2003; 304	see Gerritsen 2003, 297
D	URN	Gerritsen 2003; 305	see Gerritsen 2003, 297

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-LI-306	Heijen – Op den Berg	196720	408870	UN		9999
NL-LI-307	Heijen – Schaafschen Hof	197930	408290	UN	16036	1942
NL-LI-308	Afferden	197000	407000	UN		9999
NL-LI-309	Afferden – Lakei	201340	407130	OK	16112; 16113; 16046	1905; 1965
NL-LI-310	Siebengewald – Heereven	204320	405050	OK	15255	1977
NL-LI-311	Bergen – Galgenberg	205700	396600	UN		9999
NL-LI-312	Bergen – Wellerlooi	207000	394000	UN		9999
NL-LI-313	Well – De Hamert	210200	392900	UN		1913
NL-LI-314	Wanssum	201560	394800	OK	28131; 28132	1972; 1973
NL-LI-315	Meerlo – Sint Goarkapel	202760	392920	OK	28434; 28437	1964
NL-LI-316	Meerlo – Swolgen	205000	389500	UN		1939
NL-LI-317	Meerlo – Tienraai	203000	389000	OK	28317	1914; 1924; 1937
NL-LI-318	Venray – Rosakker	200400	390900	OK	28261	1900
NL-LI-319	Venray – Hoogriebroek	198610	390910	OK	32731; 32615; 32617	1942; 1958
NL-LI-320	Venray – Overbroek	196200	388800	OK	32522; 32517	1923; 1947
NL-LI-321	Venray/Oirlo – Boddenbroek	201050	390900	OK	28245	1920’s
NL-LI-322	Venray – Caste(n)rayse Berg	198400	389000	OK	32609	1930-1940
NL-LI-323	Venray – Kempkensbergen	189700	391000	UN		9999
NL-LI-324	Venray – Merselo-Testrik	190200	393200	OK	32492	1920
NL-LI-325	Blitterswijck	205100	393900	OK	28124	1941
NL-LI-326	Blitterswijck – Galgenberg	206900	392020	OK	440741	1985
NL-LI-327	Broekhuizen – Het Broek	206000	389000	UN		9999
NL-LI-328	Horst – Konijnswaranda	202530	385890	OK	28928; 28929	
NL-LI-329	Horst – Hegelsom	200600	383740	OK	15322	1979; 1983
NL-LI-330	Sevenum – De Steeg	198150	378650	OK	28604	1970
NL-LI-331	Grubbenvorst – (de Tomben)	206700	384500	OK	29001	<1931
NL-LI-332	Grubbenvorst – Bij Marianne	206500	382950	OK	29062	<1881; 1930’s
NL-LI-333	Grubbenvorst – Loovendaal	206500	381900	UN		1961
NL-LI-334	Grubbenvorst – Californië	205000	381400	UN		9999
NL-LI-335	Blerick/Grubbenvorst – De Römer	205650	378890	OK	31025	1881
NL-LI-336	Velden – De Bong	209550	382650	OK	1416; 23977	1974
NL-LI-337	Venlo – Jammerdaalse Hei	209960	373220	OK	30945; 31198	1964
NL-LI-338	Tegelen (-Steijlerstraat)	206630	372300	OK	15254	1979
NL-LI-339 (= NL-LI-340?)	Baarlo – De Bong 1	202640	372140	OK	31196; 31300	1926

Q	Period	Inventory	Literature
C	URN	Gerritsen 2003; 306	RMO (1943)
C	URN	Gerritsen 2003; 307	RMO (1943)
C	URN	Gerritsen 2003; 308	RMO (1943)
C	LBA – (EIA?)	Gerritsen 2003; 309	Beckers/Beckers 1940: 225
C	LBA	Gerritsen 2003; 310	see Gerritsen 2003, 297
C	URN	Gerritsen 2003; 311	RMO (1943)
C	EIA	Gerritsen 2003; 312	Collection Goltzius museum
A	EIA	Gerritsen 2003; 313	Holwerda 1914
C	LBA	Gerritsen 2003; 314	Desittere 1968: 131; Bloemers 1973: 20-22; 1975: 29-33
A	EIA	Gerritsen 2003; 315	Verwers, G.J. 1966; Verwers, W.H.J., 1976
C	EIA	Gerritsen 2003; 316	RMO (S.1.0.3); Beckers/Beckers 1940: 227-230
C	EIA	Gerritsen 2003; 317	RMO (T.0.1); Meex 1972: 58
D	URN	Gerritsen 2003; 318	Meex 1972: 70
C	EIA	Gerritsen 2003; 319	Collection museum Venray
C	EIA	Gerritsen 2003; 320	Holwerda 1924: 21; Meex 1972: 70
D	URN?	Gerritsen 2003; 321	Meex 1972: 70
D	URN	Gerritsen 2003; 322	Meex 1972: 70
B/C/D	URN?	Gerritsen 2003; 323	Meex 1972: 70
D	URN?	Gerritsen 2003; 324	Meex 1972: 70
C	EIA	Gerritsen 2003; 325	CAA 52E, 10Z
C	EIA	Gerritsen 2003; 326	RMO (1938): Meex 1972: 58
B/C/D	URN	Gerritsen 2003; 327	Meex 1972: 47
C	LBA – EIA	Gerritsen 2003; 328	Collection Oudheidkamer Horst
A	EIA	Gerritsen 2003; 329	Bloemers/Willems 1980/81: 37-39; Willems 1983: 366-368; Willems/Groenman-Van Waateringe 1988
C	EIA	Gerritsen 2003; 330	Willems 1983: 227
C	URN	Gerritsen 2003; 331	Meex 1972: 51; RMO (1941)
C	EIA	Gerritsen 2003; 332	Ort 1882: 457; RMO (I 1940/11)
C	URN	Gerritsen 2003; 333	Meex 1972: 50: NKNOB 1961: col. 58
C	EIA	Gerritsen 2003; 334	Collection Goltzius museum
C	LBA – EIA	Gerritsen 2003; 335	Ort 1882: 453: collection RMO
B	EIA	Gerritsen 2003; 336	Bloemers 1975: 29; RMO (I 1923/10.1); Stoepker 1993: 324; 1994: 203
B	EIA	Gerritsen 2003; 337	Hulst 1964
B	EIA	Gerritsen 2003; 338	Bloemers/Willems 1980/1981: 43-44
C	EIA	Gerritsen 2003; 339	Braat 1935: CAA 58E 38N and 32N

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-LI-340 (= NL-LI-339?)	Baarlo – De Bong 2	203000	371000	OK	31287	1882
NL-LI-341	Baarlo (- Keizersbaan)	204000	370000	OK	27545	1879
NL-LI-342	Helden – Vliegert	196250	375900	OK	121327; 28589	<1940
NL-LI-343	Helden – Koningslust	196000	375480	OK	28595	1938
NL-LI-344	Helden – Zandberg	198900	372100	UN		<1937
NL-LI-345	Helden – Lorbaan	194800	374500	UN		9999
NL-LI-346	Kessel – Hout (Begijnenberg)	203630	368900	OK	31283	1933
NL-LI-347	Kessel – Hoeve Sint-Jan	201290	368420	OK	15424; 38413	1970; <1984
NL-LI-348	Reuver	203530	366520	OK	15465	1981
NL-LI-349	Reuver – De Bercken	203160	367080	OK	28412	1970's
NL-LI-350	Beesel – Dreesen Campken	201340	365050	OK	15577	1905; 1981
NL-LI-351	Beesel – Walberg	201540	365470	OK	21294	1992
NL-LI-352	Swalmen – Heide	201100	361300	OK		1970
NL-LI-353	Swalmen – Moutfabriek	200320	360940	OK	31520	1963
NL-LI-354	Swalmen – Heistraat	201200	359880	OK	31529	1968
NL-LI-355	Swalmen – Bosstraat	202200	360900	OK	31559	1929-1935; 1936
NL-LI-356	Kesseleik – Mussenberg	198600	364700	OK	28702; 27105	1927
NL-LI-357	Kesseleik	198820	366300	OK	1428	<1979
NL-LI-358	Kesseleik – Steenbos	198740	365950	OK	29133; 28710	9999
NL-LI-359	Heythuysen – Heibloem	190500	368000	UN		9999
NL-LI-360	Heythuysen – Bisschop	191520	361740	OK	31467; 31853	1951
NL-LI-361	Nunhem – St. Elizabeth	193820	362700	OK	28771	1966
NL-LI-362	Haelen – Bedelaar	192370	360460	OK	31757; 38444	?; 1973
NL-LI-363	Neer – Boshei	194800	363400	UN		9999
NL-LI-364	Buggenum – Heerweg	196000	360750	UN		9999
NL-LI-365	Roermond – Mussenberg	195867	354280	OK	36698; 46549	1997; 2000
NL-LI-366	Roermond	198020	357030	OK	31829	1971
NL-LI-367	Melick en Herkenbosch – Het Haldert	203270	352700	OK	34818	1960?
NL-LI-368	Melick en Herkenbosch – De Heistert	201500	354500	OK	33370; 31497	1836-1840
NL-LI-369	Melick en Herkenbosch – Landelaan	203010	352030	OK	15282	<1979
NL-LI-370	Montfort – Genouwe	196500	347500	UN		9999
NL-LI-371	Vlodrop – Tristelbosch	202425	348400	OK	15785; 28823	1986
NL-LI-372	Vlodrop	205500	351000	OK	34866	1931
NL-LI-373	Posterholt – Het Vinke/ Eremietenberg	202530	347930	OK	35139; 9646; 30944	1981

Q	Period	Inventory	Literature
C	LBA	Gerritsen 2003; 340	Desittere 1968: 124; CAA 58E 39N
D	URN	Gerritsen 2003; 341	Meex 1972: 57
C	EIA	Gerritsen 2003; 342	Beckers/Beckers 1940: 226; Meex 1972: 53; RMO (I 1942/12.1-6, I 1942/7.2-12)
C	EIA	Gerritsen 2003; 343	RMO (I 1920/2.1-3); CAA 58B 18 N; 52 N
C	EIA	Gerritsen 2003; 344	RMO (I 1937/12.9)
B/C/D	URN	Gerritsen 2003; 345	Meex 1972: 52
C	EIA	Gerritsen 2003; 346	Bonefanten Museum
B+	LBA-EIA	Gerritsen 2003; 347	Willems 1983: 216-220
B	EIA	Gerritsen 2003; 348	Willems 1983: 226-227; RMO (I 1937/8.60)
B	EIA	Gerritsen 2003; 349	Stoepker 1993: 304
B	LBA – EIA	Gerritsen 2003; 350	Desittere 1968: 117; Willems 1983: 214-218
B	EIA	Gerritsen 2003; 351	Stoepker 1992: 184; 1993: 304
B	MIA	Gerritsen 2003; 352	Lanting/Van der Waals 1974: 92-93
B	EIA	Gerritsen 2003; 353	Lanting/Van der Waals 1974: 90-92
A	EIA	Gerritsen 2003; 354	Lanting/Van der Waals 1974: 85-90
A	LBA – EIA	Gerritsen 2003; 355	Lanting/Van der Waals 1974: 74-85
C	EIA	Gerritsen 2003; 356	CAA 58B 10Z
C	EIA	Gerritsen 2003; 357	Bloemers/Willems 1980/1981: 42-43
B	LBA – EIA; ROM	Gerritsen 2003; 358	Stoepker *et al.* 1988: 64
C	EIA	Gerritsen 2003; 359	RMO; Bonefanten Museum
B	LBA – EIA	Gerritsen 2003; 360	Hijszeler 1951: 122-123; Harsema 1973; RAM 214; RMO
C	EIA	Gerritsen 2003; 361	CAA; Harsema 1973
C	LBA – EIA	Gerritsen 2003; 362	Harsema 1973: 149
B/C/D	EIA	Gerritsen 2003; 363	Harsema 1973
C	EIA	Gerritsen 2003; 364	Collection Museum Leudal
A+	EIA	Gerritsen 2003; 365	Schabbink/Tol 2000; Lohof 2001
C	EIA	Gerritsen 2003; 366	CAA 58D 26N; Bloemers 1973: 31-32
C	EIA	Gerritsen 2003; 367	Bonefanten Museum; Lupak/Smeets 1989
C	LBA – EIA	Gerritsen 2003; 368	Gootzen 1988; Verhart 2016: 52-61
C	EIA	Gerritsen 2003; 369	Bloemers/Willems 1980/1981: 42
C	EIA	Gerritsen 2003; 370	RMO (M.J.0. 6-7)
B	LBA – EIA	Gerritsen 2003; 371	Beckers/Beckers 1940: 225; Stoepker 1987: 236-239; Lupak/Smeets 1989
A	LBA – (EIA)	Gerritsen 2003; 372	Bursch 1936
A	LBA – EIA	Gerritsen 2003; 373	Willems 1983: 221-225

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-LI-374	Posterholt (near Annadaal)	198280	346400	OK	15402	1971
NL-LI-375	Sint Odiliënberg	196500	349120	OK	34741; 35004	<1940
NL-LI-376	Echt – Putbroek	197000	345000	UN		<1940; 1979
NL-LI-377	Beegden	191150	356170	OK	434454; 27757	1986-1987
NL-LI-378	Panheel	188460	354830	OK	34542; 34567	1972
NL-LI-379	Thorn	185810	353530	OK	34467; 416540; 416543; 416564	1971; 2009
NL-LI-380 (= NL-LI-383?)	Grathem/ Baexem	187190	360490	OK	34590; 34575; 34594; 34568; 27635	1967; 1968; 1970
NL-LI-381	Hunsel – Oude Postbaan	184650	355800	UN	34426?	1931
NL-LI-382	Ell – Weerenbroek	181000	358000	OK	34241	9999
NL-LI-383 (= NL-LI-380?)	Baexem – Bergheide	187130	360490	OK	34609	1987
NL-LI-384	Nederweert – Eind-Leveroij	182320	364020	OK	121172	1889; 1952
NL-LI-385	Weert – Kampershoek/ Raak/ Klein-Leuken	178550	364700	OK	36696	1996-1998; 2006
NL-LI-386	Weert – Boshoverheide	173000	362000	OK	15795; 15288; 15358; 15368; 15369; 1379; 1381; 31649; 33665; 34197; 34211; 34215; 34226	1881-82; 1967-1994
NL-LI-387	Sittard – Hoogveld [sites 3, 4, 8 and 9]	187560	336050	OK	432323	1998
NL-LI-388	Schinveld	197450	330310	OK	35264; 35271	1970
NL-LI-389	Nieuwenhagen – Heide	201000	325000	OK	35274	1937
NL-LI-390	Geleen (Hoge Kanaalweg)	182730	335160	OK	15789	1983
NL-LI-391	Stein – Kerkweg	181270	330670	OK	35607	1930
NL-LI-392	Stein – Graetheide	183400	336800	UN		1926
NL-LI-393	Stein – Keerenderkerkweg	181150	330900	OK	32519; 32521; 32568	1927; 1962-1963
NL-LI-394	Stein – Sanderboutlaan	181800	331390	OK	1471; 35194; 35225; 33524	1926; 1957; 1968
NL-LI-395	Maastricht – Randwijck	177950	315500	OK		1997
NL-LI-396	Maastricht – Withuisveld	179370	318365	OK		1994-1995
NL-LI-397	Maastricht – Vroendaal	179110	315870	OK	40796	1999
NL-LI-001	Reuver – Aan de Witte Steen	206360	365260	OK	51899	2004
NL-LI-002	Echt – Hamveld	187868	345260	OK	400823	2005

Q	Period	Inventory	Literature
C	EIA	Gerritsen 2003; 374	Bonefanten Museum
C	LBA	Gerritsen 2003; 375	Desittere 1968: 127: Beckers/Beckers 1940: 25
C	EIA	Gerritsen 2003; 376	Bloemers/Willems 1980/1981: 45; Beckers/Beckers 1940: 225-227
A+	EIA	Gerritsen 2003; 377	Roymans 1999
B	LBA – EIA	Gerritsen 2003; 378	Bloemers 1973: 28-31
A+	EIA	Gerritsen 2003; 379	Bloemers 1973: 33; BAAC-rapport 05.0289
B	LBA – EIA	Gerritsen 2003; 380/383	Bloemers 1968: 66; 1970: 66; 1971/1972
C	LBA	Gerritsen 2003; 381	Desittere 1968: 123
C	EIA	Gerritsen 2003; 382	Bonefanten Museum
B	LBA – EIA	Gerritsen 2003: 383	CAA; Stoepker 1988: 173
B	EIA	Gerritsen 2003; 384	Appelboom 1952
A+	EIA/MIA	Gerritsen 2003; 385	Tol 1998b; Hiddink 2010
A+	LBA – EIA	Gerritsen 2003; 386	Bloemers 1971/72: 29-30; 1973: 20-22; 1975: 31-33; 1988; Bloemers/Willems 1980/81: 42-44; Willems 1983: 225-226; 1984: 368-372; Kremer 1996; Hissel *et al.* 2012
A+	EIA/MIA; LIA	Gerritsen 2003; 387	Tol 2000; Scholte-Lubberink 1998
C	EIA	Gerritsen 2003; 388	Bloemers 1973: 32-33
B+	LBA – EIA	Gerritsen 2003; 389	Ypeij 1955 (BROB 6); Beckers/Beckers 1940: 226-227
C	(LBA?) – EIA	Gerritsen 2003; 390	Willems 1984: 366
C	LBA – EIA	Gerritsen 2003; 391	Beckers/Beckers 1940: 191-196
C	MIA	Gerritsen 2003; 392	Beckers/Beckers 1940: 181-191
B	LBA/EIA	Gerritsen 2003; 393	Beckers/Beckers 1940: 58; Schuyf/Verwers 1976
B	LBA – EIA	Gerritsen 2003; 394	Schuyf/Verwers 1976
B+	EIA?	Gerritsen 2003; 395	Dijkman 1997
A+	LBA – (EIA?)	Gerritsen 2003; 396	Dijkman 1995
A+	EIA	Gerritsen 2003; 397	Dijkman/Hulst 2000; Dijkman 2000
C	LBA	-	-
A	LBA/EIA	-	ZAR 24

Site-code	Toponym	x-coord.	y-coord.	Acc.	Archis	Year
NL-LI-003	Sint Joost – Brantstraat	191060	347500	OK	434527	1990
NL-LI-004	Sint Joost – Vulensbeek	191350	347150	OK	421829	1989
NL-LI-005	Sint Joost – Het Vonderen/ Rijksweg	191450	349500	OK	434662; 422739	1989
NL-LI-006	Maastricht – Ambyerveld (Hagerhof)	179636	320130	OK	416346	2009-2010
NL-LI-007	Ospel – Waatskamp	183375	367250	OK	418797	1995
NL-LI-008	Arensgenhout – Diepestraat	186581	322722	OK	430001; 430334	2008
NL-LI-009	Panningen – Beekstraat	196736	371542	OK	54779	2004
NL-LI-010	Lerop – G1 Lerop/ Jongenhof	196700	354100	OK	417384	2004
NL-LI-011	Asenray – Melickerbosweg	200241	354733	OK	423976	2006
NL-LI-012	Roermond – Provincialeweg (N293-Zuid)	199000	353500	OK	404074	2005
NL-LI-013	Elsloo – Aelserhof	181660	328842	OK	411391	2007
NL-LI-014	Born – De Langere weg	186750	338500	OK	50992	2000
NL-LI-015	Lomm – Hoogwatergeul	208709	383762	OK	431024	2007-2008
NL-LI-016	Maastricht – Lanakerveld	174750	320100	OK		2007
NL-LI-017	Weert – Laarveld	176500	364050	OK		2007
NL-LI-018	Maastricht – Oosderveld	178000	313500	OK		1999-2002
NL-LI-019	Venlo – Trade Port Noord/ Floriade	205728	379923	OK	417434; 417245; 31024	1940; 2007-2008
NL-LI-020	Weert – Kampershoek Noord	178450	365100	OK		2006-2007
NL-LI-021	Brunssum – Brunssummer Heide	198891	325924	OK	35260; 35262; 35467; 436680	<1940; 2013
NL-LI-022	Swalmen – Hillenraad	201220	359500	OK	31553	1937; 1972
NL-LI-023	Schimmert	185850	324600	OK	38827	<1940: 1935?
NL-LI-024	Echt – De Berk/ Kelvinweg	189500	347500	UN		2010 – 2015
NL-LI-025	Diergaarde (Koningsbosch) – Aan de school	195650	341530	OK	35036	1962
NL-LI-026	Horn	193520	358340	OK	15705	1982
NL-LI-027	Maastricht – Horlogiersdreef	174080	317000	OK	35329	1963
NL-LI-028	Blerick – Baarlosestraat/ Zalzerskampweg	207300	374750	OK	32570	1993; 2003
NL-LI-029	Venlo – Zaarderheike	205600	378900	OK		2017-2020

Q	Period	Inventory	Literature
C	URN	-	-
C	URN	-	-
C	URN	-	-
A+	LBA	-	BAAC-rapport 07.0030; 08.0487
C	LBA/EIA	-	-
A	EIA/MIA	-	RAAP-rapport 2102
A	LBA/EIA	-	RAAP-rapport 1116
A+	MBA?	-	ADC-rapport 453
B	LBA/EIA	-	GAR 401
A+	LBA/EIA	-	BAAC-rapport 2005-024
A+	EIA/MIA	-	Archol-rapport 113
A	LBA/IA	-	ADC-rapport 78
A+	MBA-EIA; LBA-ROM	-	ADC-rapport 2333
A	LBA/EIA	-	Archol-rapport 100
A+	(EIA)MIA-LIA	-	Archol-rapport 127
A	LBA-EIA	-	Mildner/Wetzels 2005
A+	LBA/EIA	-	ADC-rapport 1204
A+	MIA	-	Hiddink 2010
B	LBA/EIA	-	Beckers/Beckers 1940: 226-227; BRAM 20
A	LBA/EIA	-	Lanting/Van der Waals 1974: 69-74
C	EIA/MIA	-	Beckers/Beckers 1940: 218/224
A+	LBA(-EIA?)	-	Grontmij *in prep.*
C	EIA	-	Hulst 1962: 52
C	LBA/EIA	-	-
C	EIA	-	-
B	LBA/IA	-	BAAC rapport 03.110/03.141
A+	EIA	-	-

Appendix II Radiocarbon dates

Guide to Appendix II: Overview of radiocarbon dates available for Late Bronze Age/ Early Iron Age cremation grave cemeteries in the Netherlands

The table below contains the results of a literature survey of all available radiocarbon dates for cremation grave cemeteries in the present day Netherlands that produced graves dating to the period of the Late Bronze age (1100 – 800 BC) and Early Iron age (800-500 BC). The survey was performed in the autumn of 2018 and can be considered up to date up to that point in time. The condition for a site to be included in this list was that it needed to have produced at least one grave that on basis of typo-chronological grounds or (preferably) a radiocarbon date could be assigned to what is traditionally regarded as the urnfield period in the Netherlands (Gerritsen 2003, 15; Hessing/Kooi 2005). To gain a better understanding of the use-life and longevity of these burial grounds, graves from these sites that produced a radiocarbon date pre- (*e.g.* Gasteren; Haps) or postdating (*e.g.* Weert-Laarveld; Lomm-Hoogwatergeul) the period between 1100 and 500 BC have also been included in this list. It was decided to leave out the Roman period, but this latter period is definitely represented quite often among the sites listed in the table below. All radiocarbon dates have been calibrated with the latest calibration curve (*IntCal 13 atmospheric curve*; Reimer *et al.* 2013).

List of variables

Site/
Toponym: Site name corresponding with its publication or original inventory (also see Appendix I).

Site-code: Code-system employed throughout the present study: Country – Province – Site-number. Site number corresponding with the original inventories (see Appendix I).

ID: Unique Grave-ID assigned to all graves included in the present study (see Section 3.2 and database). When a radiocarbon date in the table below is not accompanied with a Grave-ID this means that the grave concerned is not part of the selection of graves forming the basis for the present study (Table 3.2).

Labcode: Unique code assigned by the laboratory the radiocarbon date was performed.
* Another radiocarbon date is available for this particular grave: "**"
** Second radiocarbon date available for this particular grave
*** Third radiocarbon date available for this particular grave (and so forth)

BP: Radiocarbon age (years before 1950)

+/-: Error margin in years

From: Years calibrated BC/AD

To: Years calibrated BC/AD

%: Certainty (2 sigma)

Site/Toponym	Site-code	ID	Labcode	BP	+-	From	To
Oosterwolde	NL-FR-014	-	GrN-10441	2805	55	-1111	-834
Smeerling	NL-GR-011	-	GrN-14540*	2970	70	-1398	-1005
Smeerling	NL-GR-011	-	GrA-14991**	2825	40	-1115	-860
Laudermarke	NL-GR-007	-	GrA-23978*	2900	40	-1216	-976
Laudermarke	NL-GR-007	-	GrA-24171**	2860	40	-1189	-916
Dalen – Molenakkers	NL-DR-004	-	GrA-28073	2255	35	-398	-206
Anlo – Molenes	NL-DR-010	-	GrA-11256*	2970	40	-1371	-1051
Anlo – Molenes	NL-DR-010	-	GrA-13549**	2945	35	-1261	-1039
Anlo – Molenes	NL-DR-010	-	GrN-13336	2115	35	-347	-45
Dalen – Westakkers	NL-DR-011	-	GrN-29740*	2520	40	-798	-521
Dalen – Westakkers	NL-DR-011	-	GrA-29330**	2320	40	-511	-214
Valthe – Valtherspaan	NL-DR-012	-	GrA-17797	3090	50	-1489	-1220
Borger – Drouwenerstraat	NL-DR-013	-	GrA-17601	3065	40	-1420	-1222
Borger – Drouwenerstraat	NL-DR-013	-	GrA-17602	3045	40	-1414	-1135
Vredenheim	NL-DR-014	-	GrA-18978	2430	40	-753	-404
Anlo	NL-DR-017	-	GrA-16026*	2980	60	-1392	-1024
Anlo	NL-DR-017	-	GrN-6870**	2965	65	-1392	-1005
Anlo	NL-DR-017	-	GrN-7419	2920	50	-1263	-976
Anlo	NL-DR-017	-	GrA-16025*	2890	60	-1257	-916
Anlo	NL-DR-017	-	GrN-6748**	2860	35	-1127	-919
Anlo	NL-DR-017	-	GrN-14333	2380	120	-795	-204
Gasteren – Overdijkseveld	NL-DR-019	-	GrA-19084	2830	60	-1192	-837
Gasteren – Overdijkseveld	NL-DR-019	-	GrA-19086	2700	50	-972	-796
Eexterveld	NL-DR-022	-	GrN-10749	2345	35	-537	-363

Sample: Material sampled for radiocarbon dating:

BONE:	Bone collagen/Apatite
CH:	Charcoal
CR:	Cremated remains
TOOTH:	Tooth enamel
WOOD:	Wood

Literature: Original publication of radiocarbon date

Remarks: Metadata and additional information to radiocarbon date. If known, the original feature-/find number of the grave concerned is provided.

%	Sample	Literature	Remarks
95.4	CR	Lanting/vd Plicht 2003: 217	Feature ID: 1971:43; Circular ditch with opening; Urn: Doppel-konus with fingertip impressions on the shoulder
95.4	CH	Lanting/vd Plicht 2003: 215	Feature ID: 'g' and 'f'; Keyhole-shaped monument
95.4	CR	Lanting/vd Plicht 2003: 215	Feature ID: 'g; and 'f'; Keyhole-shaped monument
95.4	CR	Lanting/vd Plicht 2005: 339	Feature ID: 1932/VII.34; Lanting/vd Plicht doubt the outcome since the urn was found within a quadrangular ditch: switched in depot?
95.4	CR	Lanting/vd Plicht 2005: 339	Feature ID: 1932/VII.34; Lanting/vd Plicht doubt the outcome since the urn was found within a quadrangular ditch: switched in depot?
95.4	CR	Lanting/vd Plicht 2005: 341	Feature ID: no. 100; Quadrangular ditch
95.4	CR	Lanting/vd Plicht 2003: 163; Jager 1985: 245	Barrel-shaped urn
95.4	CH	Lanting/vd Plicht 2003: 164; Jager 1985: 245	Barrel-shaped urn
95.4	CH	Lanting/vd Plicht 2005: 340; Jager 1985: 245	Charcoal from brandgrube
95.4	CH	Lanting/vd Plicht 2005: 341; Kooi 1994	Feature ID: vdnr. 29 [Archis: 300235]; Quadrangular ditch
95.4	CR	Lanting/vd Plicht 2005: 341; Kooi 1994	Feature ID: vdnr. 29 [Archis: 300235]; Quadrangular ditch
95.4	CR	Lanting/vd Plicht 2003: 163	Feature ID: PMD1920/7.6; Urn with cylindric neck; Bronze needle (Per III); Grave supposedly found in stone cist
95.4	CR	Lanting/vd Plicht 2003: 164; 213	Buried next to Mound XI; Barrel-shaped urn; Cremated remains belong to a dog
95.4	CR	Lanting/vd Plicht 2003: 213	Buried next to Mound XI; Gasteren urn: Child and dog buried together
95.4	CR	Lanting/vd Plicht 2003: 219	Feature ID: Assen, 1941/VII.1/1a; Harpstedt urn
95.4	CR	Lanting/vd Plicht 2003: 214	Feature ID: No. 156; Vledder longmound (i)
95.4	CH	Lanting/vd Plicht 2003: 214	Feature ID: No. 156; Vledder longmound (i)
95.4	CH	Lanting/vd Plicht 2003: 214	Feature ID: No. 180; Vledder longmound; Charcoal from cremation (No. 180) in annex c of longmound b
95.4	CR	Lanting/vd Plicht 2003: 214	Feature ID: No. 155; Vledder longmound (h)
95.4	CH	Lanting/vd Plicht 2003: 214	Feature ID: No. 155; Vledder longmound (h)
95.4	CH	Lanting/vd Plicht 2003: 220	Charcoal from bottom inhumation grave
95.4	CR	Lanting/vd Plicht 2003: 216	Feature ID: No. 6; Longmound unspecified
95.4	CR	Lanting/vd Plicht 2003: 216	Feature ID: No. 7; Longmound unspecified
95.4	CH	Lanting/vd Plicht 2005: 341	Feature ID: Z4; Charcoal was sampled from pyre underneath Iron age mound

Site/Toponym	Site-code	ID	Labcode	BP	+-	From	To
Eext – Zwanemeer	NL-DR-024	-	GrA-23632	2380	50	-751	-377
Eext	NL-DR-025	-	GrN-6750*	2785	35	-1012	-839
Eext	NL-DR-025	-	GrA-10876/ 11675/ 13329**	2710	25	-905	-811
Gasteren	NL-DR-026	2093	GrA-16017	3100	45	-1492	-1232
Gasteren	NL-DR-026	2045	GrA-17795	3010	60	-1412	-1057
Gasteren	NL-DR-026	2043	GrA-16282	3005	40	-1392	-1118
Gasteren	NL-DR-026	2046	GrA-17796	2990	50	-1391	-1054
Gasteren	NL-DR-026	2041	GrA-17793	2980	60	-1392	-1024
Gasteren	NL-DR-026	2088	GrA-10877/80	2900	40	-1216	-976
Gasteren	NL-DR-026	2042	GrA-16022	2860	50	-1207	-906
Gasteren	NL-DR-026	-	GrA-15461	2860	50	-1207	-906
Gasteren	NL-DR-026	-	GrA-21705	2380	50	-751	-377
Wijster – Emelange	NL-DR-029	-	GrN-17427	2255	20	-393	-211
Hijken ‘Hooghalen’	NL-DR-033a	-	GrA-19092	3050	50	-1427	-1131
Hijken ‘Hooghalen’	NL-DR-033a	-	GrA-19093	2960	45	-1369	-1021
Hijken ‘Hooghalen’	NL-DR-033a	-	GrN-17422	2430	35	-751	-404
Buinen – Hoornse Veld	NL-DR-038	2105	GrN-6686*	2940	55	-1373	-980
Buinen – Hoornse Veld	NL-DR-038	2105	GrA-14528**	2760	40	-1002	-826
Drouwen-1939	NL-DR-039	2158	GrA-19044	2865	45	-1193	-917
Wapse	NL-DR-045	2274	GrN-10439*	2885	55	-1221	-918
Wapse	NL-DR-045	2274	GrA-19039**	2855	45	-1192	-906
Wapse	NL-DR-045	2375	GrN-10534*	2875	35	-1192	-931
Wapse	NL-DR-045	2375	GrA-16279**	2820	40	-1111	-855
Wapse	NL-DR-045	2340	GrN-6869	2860	35	-1127	-919
Wapse	NL-DR-045	2333	GrA-19040*	2835	45	-1127	-852
Wapse	NL-DR-045	2333	GrN-10440**	2770	80	-1127	-798
Wapse	NL-DR-045	2322	GrN-7418	2805	35	-1050	-847
Wapse	NL-DR-045	2306	GrA-16278	2780	40	-1017	-830
Wapse	NL-DR-045	2253	GrN-10438	2780	40	-1017	-830
Wapse	NL-DR-045	2382	GrA-11672/741*	2545	30	-801	-549
Wapse	NL-DR-045	2382	GrN-6397**	2390	35	-734	-394
Wapse	NL-DR-045	2311	GrN-6868*	2580	40	-822	-550
Wapse	NL-DR-045	2311	GrA-11669/71**	2535	30	-798	-546
Wapse	NL-DR-045	2374	GrA-18976/ 19430	2515	30	-793	-541
Emmen – Angelslo	NL-DR-047(?)	-	GrA-19068	2810	45	-1107	-842
Emmerhout	NL-DR-050	-	GrN-9235	3005	55	-1408	-1058
Emmerhout	NL-DR-050	-	GrN-6398	2935	35	-1257	-1019
Erica	NL-DR-052	-	GrA-14527	2840	40	-1121	-903
Noordbarge	NL-DR-054	2618	GrN-7205	2815	35	-1073	-850

%	Sample	Literature	Remarks
95.4	CR	Lanting/vd Plicht 2005: 341	Quadrangular ditch
95.4	CH	Lanting/vd Plicht 2003: 217	Circular ditch; Urn: Doppel-konus
95.4	CR	Lanting/vd Plicht 2003: 217	Circular ditch; Urn: Doppel-konus
95.4	CR	Lanting/vd Plicht 2003: 192	Feature ID: 105; Graf_105; Cenral grave in Bronze age mound with post-circle; Charred coffin with cremated remains
95.4	CR	Lanting/vd Plicht 2003: 162; 213	Feature ID: 56; Gasteren urn
95.4	CR	Lanting/vd Plicht 2003: 162; 213	Feature ID: 54; Gasteren urn; Bronze needle
95.4	CR	Lanting/vd Plicht 2003: 162; 213	Feature ID: 57; Gasteren urn
95.4	CR	Lanting/vd Plicht 2003: 162; 214	Feature ID: 52; Vledder longmound
95.4	CR	Lanting/vd Plicht 2003: 162; 214	Feature ID: 100; Vledder longmound
95.4	CR	Lanting/vd Plicht 2003: 162; 214	Feature ID: 53; Vledder longmound
95.4	CR	Lanting/vd Plicht 2003: 164; 252	Feature ID: 1939/VII.53 (Graf_026); Barrel-shaped urn
95.4	CR	Lanting/vd Plicht 2005: 342	Feature ID: M24, vdnr. 1 "Iron age mound"
95.4	CH	Lanting/vd Plicht 2005: 345	Feature ID: Tumulus IV; vdnr. 8; Secondary burial; Bronze fragments and blue glass beads
95.4	CR	Lanting/vd Plicht 2003: 164; 213	Secondary grave in Mound 1; Barrel-shaped urn
95.4	CR	Lanting/vd Plicht 2003: 213	Secondary grave in Mound 1; Urn with cylindric neck
95.4	CH	Lanting/vd Plicht 2005: 343	Charcoal from pyre underneath 'iron age mound'
95.4	CH	Lanting/vd Plicht 2003: 214	Feature ID: 14; Keyhole-shaped monument; Urn: Doppel-konus
95.4	CR	Lanting/vd Plicht 2003: 214	Feature ID: 14; Keyhole-shaped monument; Urn: Doppel-konus
95.4	CR	Lanting/vd Plicht 2003: 219	Feature ID: Graf_008/Graf_008a; Stone-cist; Urn: Terrinen (zweihenklig); Bronze razor and Bronze tweezers
95.4	CH	Lanting/vd Plicht 2003: 217	Feature ID: No. 39 (W.28); Circular ditch; Urn: Zylinderhals
95.4	CR	Lanting/vd Plicht 2003: 217	Feature ID: No. 39 (W.28); Circular ditch; Urn: Zylinderhals
95.4	CH	Lanting/vd Plicht 2003: 215	Feature ID: No. 118 (W.145); Keyhole-shaped monument
95.4	CR	Lanting/vd Plicht 2003: 215	Feature ID: No. 118 (W.145); Keyhole-shaped monument
95.4	CH	Lanting/vd Plicht 2003: 217	Feature ID: No. 86 (W.102); Circular ditch; Urn: Doppel-konus
95.4	CR	Lanting/vd Plicht 2003: 217	Feature ID: No. 62 (W.94); Circular ditch; Urn: Doppel-konus
95.4	CH	Lanting/vd Plicht 2003: 217	Feature ID: No. 62 (W.94); Circular ditch; Urn: Doppel-konus
95.4	CH	Lanting/vd Plicht 2003: 217	Feature ID: No. 65 (W.81); Circular ditch; Urn: Doppel-konus
95.4	CR	Lanting/vd Plicht 2003: 216	Feature ID: No. 88 (W.65); Longmound unspecified
95.4	CH	Lanting/vd Plicht 2003: 217	Feature ID: No. 3 (W.4); Circular ditch; Urn: Zylinderhals
95.4	CR	Lanting/vd Plicht 2003: 170; 219	Feature ID: No. 130 (W.152); Circular ditch; Harpstedt urn
95.4	CH	Lanting/vd Plicht 2003: 170; 219	Feature ID: No. 130 (W.152); Circular ditch; Harpstedt urn
95.4	CH	Lanting/vd Plicht 2003: 219	Feature ID: No. 58 (W.70); Circular ditch; Harpstedt urn
95.4	CR	Lanting/vd Plicht 2003: 219	Feature ID: No. 58 (W.70); Circular ditch; Harpstedt urn
95.4	CR	Lanting/vd Plicht 2003: 219	Feature ID: No. 133 (W.144); Urn: Doppel-konus
95.4	CR	Lanting/vd Plicht 2003: 216	Feature ID: 1961; 96; Longmound unspecified
95.4	CH	Lanting/vd Plicht 2003: 214	Feature ID: 1966; 38; Noordbarge longmound
95.4	CH	Lanting/vd Plicht 2003: 214	Feature ID: 1966; 37; Noordbarge longmound
95.4	CR	Lanting/vd Plicht 2003: 214	Keyhole-shaped monument: 'staketselkransje'
95.4	CH	Lanting/vd Plicht 2003: 214	Feature ID: No. 188; Keyhole-shaped monument; Urn

Site/Toponym	Site-code	ID	Labcode	BP	+-	From	To
Noordbarge	NL-DR-054	2770	GrN-7417	2815	55	-1120	-835
Noordbarge	NL-DR-054	2692	GrN-7416	2780	35	-1008	-838
Noordbarge	NL-DR-054	2576	GrA-18970	2770	40	-1009	-828
Noordbarge	NL-DR-054	2661	GrN-7385*	2725	55	-996	-802
Noordbarge	NL-DR-054	2661	GrA-19096**	2640	45	-901	-771
Noordbarge	NL-DR-054	2668	GrN-7206	2710	50	-975	-798
Noordbarge	NL-DR-054	2609	GrA-18971	2700	45	-967	-798
Noordbarge	NL-DR-054	2821	GrA-18972	2645	40	-897	-785
Noordbarge	NL-DR-054	2879	GrA-27923	2495	35	-790	-490
Emmen – Wolfsbergen	NL-DR-058	-	GrA-19043	2830	45	-1121	-851
Darp	NL-DR-059	-	GrA-22344	2490	35	-788	-486
Havelte	NL-DR-060	-	GrN-6685	2745	35	-976	-815
Odoorn – Eppiesbergje	NL-DR-066	-	GrA-19088	2550	50	-811	-520
Odoorn	NL-DR-068?	-	GrA-18975	2655	45	-906	-782
Oosterhesselen – Hunnenkerkhof	NL-DR-072	-	GrA-23478	2435	40	-754	-405
Balloërveld [Ballo]	NL-DR-076	-	GrA-18967	3070	40	-1421	-1226
Balloërveld [Ballo]	NL-DR-076	-	GrA-23458	2290	40	-408	-208
Balloërveld [Ballo]	NL-DR-076	-	GrA-29327	2165	40	-361	-100
Elderslo	NL-DR-078	-	GrA-23465	2470	45	-769	-428
Elderslo	NL-DR-078	-	GrA-23466	2410	45	-751	-397
Ruinen	NL-DR-087	-	GrN-6867*	2510	50	-798	-432
Ruinen	NL-DR-087	-	GrA-28551**	2400	40	-749	-395
Ruinen	NL-DR-087	-	GrA-28071	2505	40	-795	-490
Ruinen	NL-DR-087	-	GrA-27929	2470	40	-768	-430
Holsloot	NL-DR-092	-	GrA-19416*	3075	45	-1432	-1221
Holsloot	NL-DR-092	-	GrN-1563**	3060	70	-1495	-1116
Holsloot	NL-DR-092	-	GrA-18968*	2980	60	-1392	-1024
Holsloot	NL-DR-092	-	GrN-1561**	2880	70	-1266	-856
Holsloot	NL-DR-092	-	GrA-19552	2620	45	-902	-591
Vledder	NL-DR-096	-	GrN-7100*	3080	45	-1435	-1223
Vledder	NL-DR-096	-	GrA-19407**	2980	45	-1382	-1051
Vledder	NL-DR-096	-	GrN-6149	2960	35	-1276	-1051
Vledder	NL-DR-096	-	GrA-11667	2930	40	-1258	-1011
Vledder	NL-DR-096	-	GrN-6153	2850	35	-1117	-918

%	Sample	Literature	Remarks
95.4	CH	Lanting/vd Plicht 2003: 219	Feature ID: No. 557; Cremation grave, no urn
95.4	CH	Lanting/vd Plicht 2003: 217	Feature ID: No. 383; Circular ditch; Cremated remains without urn
95.4	CR	Lanting/vd Plicht 2003: 216	Feature ID: No. 75; Longmound unspecified
95.4	CH	Lanting/vd Plicht 2003: 217	Feature ID: No. 314; Circular ditch; Urn; RW II/ Jastorf b (conic-shaped)
95.4	CR	Lanting/vd Plicht 2003: 217	Feature ID: No. 314; Circular ditch; Urn; RW II/ Jastorf b (conic-shaped)
95.4	CH	Lanting/vd Plicht 2003: 217	Feature ID: No. 328; Circular ditch; Cremated remains without urn
95.4	CR	Lanting/vd Plicht 2003: 216	Feature ID: No. 157; Longmound unspecified
95.4	CR	Lanting/vd Plicht 2003: 217	Feature ID: No. 676; Circular ditch; Urn
95.4	CR	Lanting/vd Plicht 2005: 343	Feature ID: No. 1031; Quadrangular ditch
95.4	CR	Lanting/vd Plicht 2003: 214	Feature ID: 1957/III.6; Keyhole-shaped monument; Urn: Doppel-konus
95.4	CR	Lanting/vd Plicht 2005: 341	RW-1 vessel, Latène dagger, bronze armrings and iron arrowheads
95.4	CH	Lanting/vd Plicht 2003: 216	Feature ID: No. 75; Longmound unspecified
95.4	CR	Lanting/vd Plicht 2003: 170; 219	Feature ID: No. 19; Schräghals urn (with 'dellen' decoration) from top of Eppies Bergje
95.4	CR	Lanting/vd Plicht 2003: 219	Urn: Zylinderhals; Catalogue no. [BAI.1941/XII.54] not in list Kooi 1979, 155
95.4	CR	Lanting/vd Plicht 2005: 344	Feature ID: Vdnr. 21; Quadrangular ditch
95.4	CR	Lanting/vd Plicht 2003: 213	Gasteren urn from top Tumulus 6
95.4	CR	Lanting/vd Plicht 2005: 340	North of Mound 6; Quadrangular ditch; Eierbecher and Ruinen – Wommels 2
95.4	CR	Lanting/vd Plicht 2005: 340	Iron age Mound 29 (fig. 12c); Quadrangular ditch: Segelohrringe
95.4	CR	Lanting/vd Plicht 2005: 341	Feature ID: Graf(?) 22; Quadrangular ditch
95.4	CR	Lanting/vd Plicht 2005: 341	Feature ID: Graf(?) 23; Quadrangular ditch
95.4	CH	Lanting/vd Plicht 2005: 344	Feature ID: Vdnr. 109; Structure 109; Dug into quadrangular ditch; RW-1 vessel
95.4	CR	Lanting/vd Plicht 2005: 344	Feature ID: Vdnr. 109; Structure 109; Dug into quadrangular ditch; RW-1 vessel
95.4	CR	Lanting/vd Plicht 2005: 344	Feature ID: Vdnr. 17; Structure 211; Circular ditch; Urn
95.4	CR	Lanting/vd Plicht 2005: 344	Feature ID: Vdnr. 71; Structures 142 and 143; 2 overlapping quadrangular ditches
95.4	CR	Lanting/vd Plicht 2003: 164; 214	Tumulus 4; Barrel-shaped urn from mound with post-circle
95.4	CH	Lanting/vd Plicht 2003: 164; 214	Tumulus 4; Barrel-shaped urn from mound with post-circle
95.4	CR	Lanting/vd Plicht 2003: 162; 214	Feature ID: No. 10; Longmound 2; Vledder-type
95.4	CH	Lanting/vd Plicht 2003: 162; 214	Feature ID: No. 10; Longmound 2; Vledder-type
95.4	CR	Lanting/vd Plicht 2003: 170; 216	Feature ID: No. 3; Schräghals urn (with 'dellen' decoration) from longmound unspecified
95.4	CH	Lanting/vd Plicht 2003: 214	Feature ID: No. 185; Vledder longmound (VIII)
95.4	CR	Lanting/vd Plicht 2003: 214	Feature ID: No. 185; Vledder longmound (VIII)
95.4	CH	Lanting/vd Plicht 2003: 214	Feature ID: No. 296a; Vledder longmound (XIII)
95.4	CR	Lanting/vd Plicht 2003: 214	Feature ID: No. 296f; Vledder longmound (XIII)
95.4	CH	Lanting/vd Plicht 2003: 214	Feature ID: No. 230; Vledder longmound (IX)

Site/Toponym	Site-code	ID	Labcode	BP	+-	From	To
Vledder	NL-DR-096	-	GrN-11666	2750	40	-996	-816
Vledder	NL-DR-096	-	GrA-19553	2550	45	-808	-540
Vledder	NL-DR-096	-	GrA-19097	2495	45	-792	-431
Zeijen – Noordse Veld	NL-DR-099	-	GrA-26599	2480	35	-775	-431
Zeijen – Noordse Veld	NL-DR-099	-	GrN-7396	2375	35	-728	-388
Zeijen – Noordse Veld	NL-DR-099	-	GrN-17472	2325	20	-408	-378
Zeijen – Noordse Veld	NL-DR-099	-	GrA-26600	2310	35	-429	-211
Zeijen – Noordse Veld	NL-DR-099	-	GrA-26602	2280	35	-404	-209
Oudemolen	NL-DR-101	-	GrA-11263*	2460	50	-763	-414
Oudemolen	NL-DR-101	-	GrN-17473**	2345	35	-537	-363
Oudemolen	NL-DR-101	-	GrA-14597*	2390	50	-751	-386
Oudemolen	NL-DR-101	-	GrN-7398**	2305	30	-409	-235
Oudemolen	NL-DR-101	-	GrA-22796***	2295	45	-428	-203
Oudemolen	NL-DR-101	-	GrN-6866	2360	30	-536	-383
Oudemolen	NL-DR-101	-	GrN-7397	2295	30	-406	-231
Oudemolen	NL-DR-101	-	GrN-15886	2260	35	-399	-207
Elper Noordeveld	NL-DR-105	-	GrN-10442	2715	30	-913	-810
Elper Noordeveld	NL-DR-105	-	GrA-18977	2540	40	-803	-541
Annertol	NL-DR-109	-	GrA-19405	3050	45	-1422	-1133
Annertol	NL-DR-109	-	GrA-19082	3020	50	-1409	-1122
Annertol	NL-DR-109	-	GrA-19083	2990	45	-1387	-1057
Varsen	NL-OV-006	1382	GrA-49792	2825	40	-1115	-860
Varsen	NL-OV-006	1383	GrA-49790	2815	40	-1107	-848
Varsen	NL-OV-006	1384	GrA-49793	2795	40	-1044	-840
Varsen	NL-OV-006	1385	GrA-50139	2720	55	-995	-800
Markelo – Friezenberg	NL-OV-025	-	GrN-9937	2480	55	-776	-416
Losser – Oelemars	NL-OV-042	-	GrN-7445	2495	60	-792	-430
Losser – Oelemars	NL-OV-042	-	GrN-7446	2410	60	-756	-396
Rossum (-Oranjestraat)	NL-OV-059	1358	GrA-39367	2980	30	-1372	-1112
Rossum (-Oranjestraat)	NL-OV-059	1326	GrA-39365	2975	30	-1368	-1059
Rossum (-Oranjestraat)	NL-OV-059	1320	GrA-40002	2810	30	-1050	-895
Rossum (-Oranjestraat)	NL-OV-059	1323	GrA-40003	2805	35	-1050	-847
Rossum (-Oranjestraat)	NL-OV-059	1329	GrA-39366	2770	30	-997	-839
Rossum (-Oranjestraat)	NL-OV-059	1372	GrA-39360	2740	30	-971	-816
Rossum (-Oranjestraat)	NL-OV-059	1315	GrA-40000	2405	30	-733	-400
Tubbergen – Hilbertshaar	NL-OV-072	-	GrA-17586	3005	40	-1392	-1118

%	Sample	Literature	Remarks
95.4	CH	Lanting/vd Plicht 2003: 216	Feature ID: No. 271; Longmound unspecified
95.4	CR	Lanting/vd Plicht 2003: 170; 217	Feature ID: No. 141; Schräghals urn (with 'dellen' decoration)
95.4	CR	Lanting/vd Plicht 2003: 170; 217	Feature ID: No. 13; Schräghals urn (with 'dellen' decoration)
95.4	CR	Lanting/vd Plicht 2005: 346	Feature ID: Tumulus 66; No. 1; Secondary burial
95.4	CH	Lanting/vd Plicht 2005: 346	Feature ID: Tumulus 47; No. 7; Charcoal from pyre underneath 'iron age mound'
95.4	CH	Lanting/vd Plicht 2005: 346	Feature ID: Tumulus 68; No. 6; Urnless cremation grave
95.4	CR	Lanting/vd Plicht 2005: 346	Feature ID: Tumulus 66 (annex); No. ?; Urnless crematio grave in annex Tumulus 66
95.4	CR	Lanting/vd Plicht 2005: 346	Feature ID: Tumulus 28; No. 29; Urnless cremation grave
95.4	CR	Lanting/vd Plicht 2003: 170; 219	Harpstedt urn; Secondary burial in Tumulus 13
95.4	CH	Lanting/vd Plicht 2003: 170; 219	Harpstedt urn; Secondary burial in Tumulus 13
95.4	CR	Lanting/vd Plicht 2005: 344	Feature ID: Tumulus 4; vdnr. 14; "Iron age mound"; Charcoal from pyre; Segelohrringe (4x)
95.4	CH	Lanting/vd Plicht 2005: 344	Feature ID: Tumulus 4; vdnr. 14; "Iron age mound"; Charcoal from pyre; Segelohrringe (4x)
95.4	CR	Lanting/vd Plicht 2005: 344	Feature ID: Tumulus 4; vdnr. 14; "Iron age mound"; Charcoal from pyre; Segelohrringe (4x)
95.4	CH	Lanting/vd Plicht 2005: 344	Feature ID: Tumulus 1; vdnr. 10; "Iron age mound"; Charcoal from pyre
95.4	CH	Lanting/vd Plicht 2005: 344	Feature ID: Tumulus 2; vdnr. 9; "Iron age mound"; Charcoal from pyre
95.4	CH	Lanting/vd Plicht 2005: 344	Feature ID: Tumulus 3; vdnr. 15; "Iron age mound"; Charcoal from pyre
95.4	CH	Lanting/vd Plicht 2003: 219	Feature ID: 1932/X.37; Urn: cylindric neck
95.4	CR	Lanting/vd Plicht 2003: 219	Feature ID: 1932/X.15; Urn: coninc-shaped
95.4	CR	Lanting/vd Plicht 2003: 164; 213	Feature ID: 1921/VII.1; vdnr. 1; Secondary burial in top H2; Barrel-shaped urn; 2 bronze needles and 1 pair of bronze tweezers
95.4	CR	Lanting/vd Plicht 2003: 213	Feature ID: 1921/VII.7; vdnr. 9; Secondary burial in top H1; Gasteren urn
95.4	CR	Lanting/vd Plicht 2003: 213	Feature ID: 1921/VII.8; vdnr. 10; Secondary burial in top H1; Gasteren urn
95.4	CR	Hielkema 2014: 24	Feature ID: S155
95.4	CR	Hielkema 2014: 24	Feature ID: S201
95.4	CR	Hielkema 2014: 24	Feature ID: S205
95.4	CR	Hielkema 2014: 24	Feature ID: S298
95.4	CH	Lanting/vd Plicht 2003: 219	Feature ID: No. 12; Eared cup from pit with cremated remains
95.4	CH	Lanting/vd Plicht 2003: 219	Feature ID: No. 198 (Verlinde 1987); Urn: Doppel-konus
95.4	CH	Lanting/vd Plicht 2003: 170; 219	Feature ID: No. 197 (Verlinde 1987); Harpstedt urn
95.4	CR	De Wit/Bergsma 2008: 19	Feature ID: 4_39_131
95.4	CR	De Wit/Bergsma 2008: 24	Feature ID: 2_33_34
95.4	CR	De Wit/Bergsma 2008: 20	Feature ID: 1_29_17
95.4	CR	De Wit/Bergsma 2008: 23	Feature ID: 2_22_29
95.4	CR	De Wit/Bergsma 2008: 14	Feature ID: 2_30_45
95.4	CR	De Wit/Bergsma 2008: 19	Feature ID: 7_32_185
95.4	CR	De Wit/Bergsma 2008: 23	Feature ID: 1_8_8
95.4	CR	Lanting/vd Plicht 2003: 163; 219	Feature ID: No. 466 (Verlinde 1987); Bronze needle

Site/Toponym	Site-code	ID	Labcode	BP	+-	From	To
Fleringen – Monnikenbraak	NL-OV-073	-	GrA-17383	2950	60	-1384	-996
Vasse	NL-OV-086	1040	GrN-11970*	2990	35	-1383	-1111
Vasse	NL-OV-086	1040	GrA-17381**	2870	50	-1208	-917
Colmschate – Kloosterlanden (Hunneperweg)	NL-OV-088	1814	INDET_03	2925	35	-1222	-1013
Colmschate – Kloosterlanden (Hunneperweg)	NL-OV-088	1806	GrN-13587	2760	60	-1047	-806
Colmschate – Kloosterlanden (Hunneperweg)	NL-OV-088	1810	INDET_01	2230	35	-385	-203
Colmschate – Kloosterlanden (Hunneperweg)	NL-OV-088	1813	INDET_02	1810	30	128	323
Colmschate – Kloosterlanden (Hunneperweg)	NL-OV-088	1815	INDET_04	1770	35	136	377
Hengelo/Borne – Schild Es (De Veldkamp)	NL-OV-092	1396	GrA-43692	2785	35	-1012	-839
Hengelo/Borne – Schild Es (De Veldkamp)	NL-OV-092	1389	GrA-44112	2770	35	-1001	-835
Hengelo/Borne – Schild Es (De Veldkamp)	NL-OV-092	1386	GrA-44118	2725	40	-972	-806
Schalkhaar	NL-OV-093	-	GrA-11680*	2520	40	-798	-521
Schalkhaar	NL-OV-093	-	GrN-24172**	2420	100	-801	-239
Raalte – De Zegge	NL-OV-094	-	GrA-27021	2525	40	-799	-538
Raalte – De Zegge	NL-OV-094	-	GrA-26543	2490	40	-789	-431
Raalte – De Zegge	NL-OV-094	-	GrA-26784	2460	35	-759	-416
Raalte – De Zegge	NL-OV-094	-	GrA-26537	2470	35	-768	-430
Raalte – De Zegge	NL-OV-094	-	GrA-26535	2435	40	-754	-405
Raalte – De Zegge	NL-OV-094	-	GrA-26539	2425	40	-752	-402
Apeldoorn – Uddeler Heegde	NL-GL-008	-	GrM-12324	2742	15	-916	-836
Apeldoorn – Uddeler Heegde	NL-GL-008	-	GrM-12326	2715	15	-902	-822
Steenderen – Steenderdiek	NL-GL-019	1737	INDET_07	2664	48	-917	-786
Steenderen – Steenderdiek	NL-GL-019	1739	INDET_08	2522	28	-794	-543
Steenderen – Steenderdiek	NL-GL-019	1730	INDET_05	2517	32	-794	-540
Steenderen – Steenderdiek	NL-GL-019	1731	INDET_06	2493	28	-777	-519
Meteren – De Plantage	NL-GL-022	1597	SUERC-37112/ GU-25442	2940	30	-1257	-1044
Meteren – De Plantage	NL-GL-022	1637	SUERC-37116/ GU-25443	2475	30	-771	-431
Meteren – De Plantage	NL-GL-022	1642	SUERC-37117/ GU-25444	2470	30	-768	-431
Meteren – De Plantage	NL-GL-022	1631	SUERC-37110/ GU-25440	2445	30	-753	-410

%	Sample	Literature	Remarks
95.4	CR	Lanting/vd Plicht 2003: 163; 219	Feature ID: No. 530 (Verlinde 1987); Bronze razor
95.4	CH	Lanting/vd Plicht 2003: 215	Feature ID: Graf_03; Keyhole-shaped monument
95.4	CR	Lanting/vd Plicht 2003: 215	Feature ID: Graf_03; Keyhole-shaped monument
95.4	INDET.	Van Beek 2009: 164	Feature ID: Graf_10; Cremation grave, no urn
95.4	CH	Lanting/vd Plicht 2003: 219; Van Beek 2009: 164	Feature ID: Graf_02; Cremation grave, no urn
95.4	INDET.	Van Beek 2009: 164	Feature ID: Graf_06; Cremation grave, no urn
95.4	INDET.	Van Beek 2009: 164	Feature ID: Graf_09; Cremation grave, no urn
95.4	INDET.	Van Beek 2009: 164	Feature ID: Graf_11; Cremation grave, no urn
95.4	CR	Scholte-Lubberink 2010: 23	Feature ID: Graf_024_(S183); Urnless cremation grave; Circular ditch (closed)
95.4	CR	Scholte-Lubberink 2010: 23	Feature ID: Graf_006_(S69_74); Urn; Circular ditch (closed)
95.4	CR	Scholte-Lubberink 2010: 23	Feature ID: Graf_002_(S121); Urnless cremation grave in Elsen-type longmound
95.4	CH?	Lanting/vd Plicht 2005: 348	Cremated remains found on spoil heap; Peaty context
95.4	CR	Lanting/vd Plicht 2005: 348	Cremated remains found on spoil heap; Peaty context
95.4	CR	Lanting/vd Plicht 2005: 347	Feature ID: Vdnr. 6; Quadrangular ditch
95.4	CR	Lanting/vd Plicht 2005: 347	Feature ID: Vdnr. 9; Quadrangular ditch
95.4	CR	Lanting/vd Plicht 2005: 347	Feature ID: Vdnr. 7; Quadrangular ditch
95.4	CR	Lanting/vd Plicht 2005: 347	Feature ID: Vdnr. 26; Quadrangular ditch
95.4	CR	Lanting/vd Plicht 2005: 347	Feature ID: Vdnr. 12; Quadrangular ditch
95.4	CR	Lanting/vd Plicht 2005: 347	Feature ID: Vdnr. B; Quadrangular ditch
95.4	CR	Verpoorte et al. 2020, tab. 2	Feature ID: S8.1_v336; Urnless cremation grave; (Burnt) pottery and Feature ID: fragment of bronze saw-like object
95.4	CR	Verpoorte et al. 2020, tab. 2	Feature ID: S14.4_v525; Urnless cremation grave; Circular ditch with opening
95.4	CR	Van Straten 2010: 48	Feature ID: Graf_14_(S859)
95.4	CR	Van Straten 2010: 48	Feature ID: Graf_25_(S871)
95.4	CR	Van Straten 2010: 48	Feature ID: Graf_01_(S52)
95.4	CR	Van Straten 2010: 48	Feature ID: Graf_04_(S69)
95.4	BONE	Jezeer/Verniers 2012: Bijlage 6	Feature ID: INH01_(S122.1.2): Inhumation grave
95.4	CR	Jezeer/Verniers 2012: Bijlage 6	Feature ID: Graf_45_(S140.1.14)
95.4	BONE	Jezeer/Verniers 2012: Bijlage 6	Feature ID: INH02_(Meta): Inumation grave
95.4	CR	Jezeer/Verniers 2012: Bijlage 6	Feature ID: Graf_38_(S127.2.140)

Site/Toponym	Site-code	ID	Labcode	BP	+-	From	To
Meteren – De Plantage	NL-GL-022	1621	SUERC-37111/ GU-25441	2400	30	-731	-399
Groesbeek – Hüsenhoff	NL-GL-024	1523	SUERC-34624/ GU-24167	2465	30	-764	-430
Groesbeek – Hüsenhoff	NL-GL-024	1508	SUERC-34623/ GU-24166	2435	30	-751	-406
Huissen – Agropark	NL-GL-026	1495	INDET_10	2580	40	-822	-550
Huissen – Agropark	NL-GL-026	1496	INDET_11	2450	40	-756	-410
Huissen – Agropark	NL-GL-026	1490	INDET_09	2420	40	-751	-401
Epse – Waterdijk Noord	NL-GL-030	1937	GrN-19063	3010	45	-1397	-1118
Epse – Waterdijk II	NL-GL-031	1939	KIA-30757	2875	30	-1189	-936
Epse – Waterdijk II	NL-GL-031	1940	KIA-30758	2875	24	-1124	-944
Epse – Waterdijk II	NL-GL-031	1949	KIA-30761	2845	25	-1107	-923
Epse – Waterdijk II	NL-GL-031	1946	KIA-30760	2810	25	-1025	-901
Epse – Waterdijk II	NL-GL-031	1943	KIA-30759	2745	25	-970	-826
Lent – Lentseveld/ Waalsprong	NL-GL-036	1431	GrA-47313	2510	35	-794	-524
Lent – Lentseveld/ Waalsprong	NL-GL-036	1436	GrA-47591	2470	40	-768	-430
Lent – Lentseveld/ Waalsprong	NL-GL-036	1435	GrA-47272	2455	40	-757	-413
Lent – Lentseveld/ Waalsprong	NL-GL-036	1434	GrA-47271	2425	40	-752	-402
Lent – Lentseveld/ Waalsprong	NL-GL-036	1433	GrA-47590	2405	40	-750	-397
Lent – Steltsestraat	NL-GL-037	1442	GrA-18410	2540	35	-801	-543
Lent – Steltsestraat	NL-GL-037	1443	GrA-18408	2490	35	-788	-486
Lent – Steltsestraat	NL-GL-037	1456	GrA-18292	2460	50	-763	-414
Lent – Zuiderveld-Oost/ Stationsweg (Ressen)	NL-GL-038	1476	GrA-21635	2710	80	-1107	-768
Lent – Zuiderveld-Oost/ Stationsweg (Ressen)	NL-GL-038	1479	GrA-45271	2485	40	-784	-431
Lent – Zuiderveld-Oost/ Stationsweg (Ressen)	NL-GL-038	1478	GrA-45274	2360	40	-731	-368
Lent – Zuiderveld-Oost/ Stationsweg (Ressen)	NL-GL-038	1483	GrA-45827	2235	35	-389	-204
Lent – Schoolstraat	NL-GL-039	1429	GrA-18379 or GrA-18397	2490	35	-788	-486
Zutphen – Looërenk (Meierink)	NL-GL-056	1754	GrN-49737	2570	35	-811	-551
Zutphen – Looërenk (Meierink)	NL-GL-056	1767	GrN-49730	2545	45	-805	-540
Zutphen – Looërenk (Meierink)	NL-GL-056	1757	GrN-49734	2495	40	-792	-434
Zutphen – Looërenk (Meierink)	NL-GL-056	1760	GrN-49732	2495	35	-790	-490
Zutphen – Looërenk (Meierink)	NL-GL-056	1778	KIA-30763	2445	25	-751	-410
Zutphen – Looërenk (Meierink)	NL-GL-056	1758	GrN-50127	2410	45	-751	-397

%	Sample	Literature	Remarks
95.4	CR	Jezeer/Verniers 2012: Bijlage 6	Feature ID: Graf_27_(S126.1.111)
95.4	CH	Geerts/Veldman 2012: 67; Bijlage VI	Feature ID: CR28_(S23.11)
95.4	CH	Geerts/Veldman 2012: 65; Bijlage VI	Feature ID: CR10_(S9.11)
95.4	CR	Bergsma/Stokkel 2011: 22	Feature ID: Grave_S4.10
95.4	CR	Bergsma/Stokkel 2011: 22	Feature ID: Grave_S6.07
95.4	CR	Bergsma/Stokkel 2011: 13	Feature ID: Grave_S2.27
95.4	CR	Appels 2002: 18	Feature ID: Graf_01
95.4	CR	Van Beek 2009: 424	Feature ID: Graf_02
95.4	CR	Van Beek 2009: 424	Feature ID: Graf_03
95.4	CR	Van Beek 2009: 424	Feature ID: Graf_12
95.4	CR	Van Beek 2009: 424	Feature ID: Graf_09
95.4	CR	Van Beek 2009: 424	Feature ID: Graf_06
95.4	BONE	Van den Broeke et al. 2011: 27	Feature ID: Graf_2_(S24.1); Inhumation grave
95.4	CR	Van den Broeke et al. 2011: 36	Feature ID: Graf_7_(S25.3)
95.4	BONE	Van den Broeke et al. 2011: 35	Feature ID: Graf_6_(S25.2); Inhumation grave
95.4	BONE	Van den Broeke et al. 2011: 31	Feature ID: Graf_5_(S25.1); Inhumation grave
95.4	CR	Van den Broeke et al. 2011: 30	Feature ID: Graf_4_(S21.1)
95.4	BONE	Lanting/vd Plicht 2003: 227	Feature ID: Sl 2.8.9; Grave_8.2; Inhumation grave
95.4	BONE	Lanting/vd Plicht 2003: 227	Feature ID: Sl 2.2.35; Grave_2.2; Inhumation grave
95.4	CR	Lanting/vd Plicht 2003: 227	Feature ID: Sl 2.1.29; Cremation grave, no urn
95.4	CR	Van den Broeke 2003: 9	Feature ID: 2002_Graf_2
95.4	BONE	Van den Broeke et al. 2010: 137	Feature ID: 2006_Graf_2_(S16.34)
95.4	BONE	Van den Broeke et al. 2010: 135	Feature ID: 2006_Graf_1_(S16.51)
95.4	CR	Van den Broeke et al. 2010: 139	Feature ID: 2006_Graf_6_(S17.18)
95.4	BONE	Lanting/vd Plicht 2003: 227; Van den Broeke 2014: 166	Feature ID: Sh 1.1. P24; Inhumation grave; Labcode in one of the publications must be wrong
95.4	CR	Van Straten/Fermin 2012: 91	Feature ID: Graf_01
95.4	CR	Van Straten/Fermin 2012: 91	Feature ID: Graf_15
95.4	CR	Van Straten/Fermin 2012: 91	Feature ID: Graf_04
95.4	CR	Van Straten/Fermin 2012: 91	Feature ID: Graf_07
95.4	CR	Van Straten/Fermin 2012: 91	Feature ID: Graf_34
95.4	CR	Van Straten/Fermin 2012: 91	Feature ID: Graf_05

Site/Toponym	Site-code	ID	Labcode	BP	+-	From	To
Zutphen – Looërenk (Meierink)	NL-GL-056	1756	GrN-50126	2380	60	-756	-368
Zutphen – Looërenk (Meierink)	NL-GL-056	1772	KIA-30762	2290	25	-404	-235
Zutphen – Looërenk (Meierink)	NL-GL-056	1780	KIA-30764	2270	25	-400	-211
Meteren – De Bogen	NL-GL-060	1487	GrN-15463*	2790	60	-1110	-818
Meteren – De Bogen	NL-GL-060	1487	GrN-16058**	2790	60	-1110	-818
Meteren – De Bogen	NL-GL-060	1485	GrA-16055*	2360	50	-750	-258
Meteren – De Bogen	NL-GL-060	1485	GrA-16517**	2300	50	-488	-204
Meteren – De Bogen	NL-GL-060	1486	GrA-14294*	2320	30	-429	-235
Meteren – De Bogen	NL-GL-060	1486	GrA-16057**	2280	60	-485	-181
Lent – Castiliëstraat	NL-GL-063	1428	GrA-49784	2490	35	-788	-486
Lent – Castiliëstraat	NL-GL-063	1427	GrA-49729	2445	35	-755	-409
Lent – Laauwikstraat-zuid	NL-GL-064	1406	GrA-11992	2350	50	-746	-232
Lent – Smitjesland	NL-GL-065	1416	GrA-16979	2985	50	-1389	-1051
Lent – Smitjesland	NL-GL-065	1415	GrA-16977	2920	50	-1263	-976
Lent – Smitjesland	NL-GL-065	1417	GrA-16980	2915	45	-1258	-979
Epse – Waterdijk III	NL-GL-067	1953	GrA-63031	2770	30	-997	-839
Epse – Waterdijk III	NL-GL-067	1955	GrA-63033	2710	30	-910	-809
Epse – Waterdijk III	NL-GL-067	1952	GrA-63030	2695	30	-901	-806
Epse – Waterdijk III	NL-GL-067	1956	GrA-63035	2680	30	-897	-802
Epse – Waterdijk III	NL-GL-067	1954	GrA-63032	2605	30	-825	-768
Twello – De Schaker	NL-GL-068	1746	Poz-63270	2800	80	-1193	-808
Twello – De Schaker	NL-GL-068	1751	Poz-63272	2730	70	-1044	-795
Twello – De Schaker	NL-GL-068	1750	Poz-63269	2570	35	-811	-551
Twello – De Schaker	NL-GL-068	1752	Poz-63271	2545	35	-803	-544
Twello – De Schaker	NL-GL-068	1748	Poz-63244	2520	35	-795	-540
Hengelo – Winkelskamp	NL-GL-069	-	Poz-81874	2465	30	-764	-430
Hengelo – Winkelskamp	NL-GL-069	-	Poz-81876	2365	30	-537	-387
Hengelo – Winkelskamp	NL-GL-069	-	Poz-81875	2270	30	-400	-210
Hengelo – Winkelskamp	NL-GL-069	-	Poz-81877	2115	30	-341	-49
Hengelo – Winkelskamp	NL-GL-069	-	Poz-81926	2110	30	-204	-46
Nijmegen – ‘Estel’ [Trajanusplein]	NL-GL-071	-	GrA-22969	2490	50	-790	-430
Passewaaij – Oude Tielseweg	NL-GL-073	-	GrN-14968*	2495	40	-792	-434
Passewaaij – Oude Tielseweg	NL-GL-073	-	GrN-13444**	2420	40	-751	-401
Geldermalsen [-Middengebied/Murman]	NL-GL-074	-	UtC-6094	2475	38	-771	-430

%	Sample	Literature	Remarks
95.4	CR	Van Straten/Fermin 2012: 91	Feature ID: Graf_03
95.4	CR	Van Straten/Fermin 2012: 91	Feature ID: Graf_28
95.4	CR	Van Straten/Fermin 2012: 91	Feature ID: Graf_36
95.4	BONE	Lanting/vd Plicht 2003: 227	Feature ID: Graf 3; Inhumation grave; Sword/rapier
95.4	TOOTH	Lanting/vd Plicht 2003: 227	Feature ID: Graf 3; Inhumation grave; Sword/rapier
95.4	TOOTH	Lanting/vd Plicht 2005: 349	Feature ID: Graf 5; Inhumation grave
95.4	BONE	Lanting/vd Plicht 2005: 349	Feature ID: Graf 5; Inhumation grave
95.4	BONE	Lanting/vd Plicht 2005: 349	Feature ID: Graf 6; Inhumation grave
95.4	TOOTH	Lanting/vd Plicht 2005: 349	Feature ID: Graf 6; Inhumation grave
95.4	CR	Daniël 2012: 12	Feature ID: Graf_2_(S1.2); Urnless cremation grave
95.4	CR	Daniël 2012: 11	Feature ID: Graf_1_(S1.1); Cremated remains in pit accompa-nied with part of a pottery vessel
95.4	BONE	Lanting/vd Plicht 2005: 349	Feature ID: 'Grave_5.P10; Double inhumation grave of two individuals (one on top of the other); Sample was taken from bone of upper individual
95.4	CR	Lanting/vd Plicht 2003: 164; 221	Feature ID: Si 1.8.P1.21 (v/d Broeke 2001, fig. 8.2); Laren(-like) urn
95.4	CR	Lanting/vd Plicht 2003: 164; 221	Feature ID: Si 1.7.P37.95 (v/d Broeke 2001, fig. 8.1); Laren(-like) urn
95.4	CR	Lanting/vd Plicht 2003: 164; 221	Feature ID: Si 1.7.P6.45/47 (v/d Broeke 2001, fig. 8.3); Laren(-like) urn
95.4	CR	Mousch 2016: 41	Feature ID: Graf_102
95.4	CR	Mousch 2016: 41	Feature ID: Graf_104
95.4	CR	Mousch 2016: 41	Feature ID: Graf_101
95.4	CR	Mousch 2016: 41	Feature ID: Graf_105
95.4	CR	Mousch 2016: 41	Feature ID: Graf_103
95.4	CR	Meurkens 2014: 199	Feature ID: Graf_56_(S2433)
95.4	CR	Meurkens 2014: 199	Feature ID: Graf_83_(S2622)
95.4	CR	Meurkens 2014: 199	Feature ID: Graf_75_(S2427)
95.4	CR	Meurkens 2014: 199	Feature ID: Graf_94_(S2552)
95.4	CR	Meurkens 2014: 199	Feature ID: Graf_73_(S2509)
95.4	CR	Van der Leije 2018: 61	Feature ID: S916; Urnless cremation grave
95.4	CR	Van der Leije 2018: 61	Feature ID: S926; Urnless cremation grave
95.4	CR	Van der Leije 2018: 61	Feature ID: S952; Urnless cremation grave
95.4	CR	Van der Leije 2018: 61	Feature ID: S894; Urnless cremation grave
95.4	CR	Van der Leije 2018: 61	Feature ID: S950; Urnless cremation grave
95.4	CR	Lanting/vd Plicht 2005: 350	Wagon grave
95.4	CR	Lanting/vd Plicht 2005: 350	Isolated cremation grave
95.4	CH	Lanting/vd Plicht 2005: 350	Isolated cremation grave
95.4	BONE	Lanting/vd Plicht 2005: 348	*Hocker*-grave of a child

Site/Toponym	Site-code	ID	Labcode	BP	+-	From	To
Elst – Het Bosje	NL-UT-005	-	Poz-30372	2420	30	-748	-402
Elst – Het Bosje	NL-UT-005	-	Poz-30371	2295	35	-409	-211
Wijk bij Duurstede – De Horden	NL-UT-012	1645	GrN-14679	2500	50	-794	-431
Wijk bij Duurstede – De Horden	NL-UT-012	1698	GrN-15989	2495	35	-790	-490
Wijk bij Duurstede – De Horden	NL-UT-012	-	GrN-14684	2450	30	-754	-411
Wijk bij Duurstede – De Horden	NL-UT-012	1710	GrN-14681	2440	80	-778	-399
Wijk bij Duurstede – De Horden	NL-UT-012	1711	GrN-14680	2390	50	-751	-386
Den Haag – Hubertustunnel	NL-ZH-001	304	GrA-51697	2945	35	-1261	-1039
Den Haag – Hubertustunnel	NL-ZH-001	300	GrA-51715	2930	35	-1226	-1014
Den Haag – Hubertustunnel	NL-ZH-001	305	GrA-51949	2905	30	-1207	-1008
Geldrop – Genoenhuis/ Grondwal	NL-BR-004	917	Poz-12962*	2570	35	-811	-551
Geldrop – Genoenhuis/ Grondwal	NL-BR-004	917	Poz-12922**	2505	35	-792	-519
Geldrop – Genoenhuis/ Grondwal	NL-BR-004	893	Poz-12845	2440	30	-751	-408
Geldrop – Genoenhuis/ Grondwal	NL-BR-004	915	Poz-12961	2545	35	-803	-544
Heesch	NL-BR-005	-	KIA-20903	2744	24	-969	-827
Berghem (Oss) – De Geer	NL-BR-006	-	GrA-19970	2530	60	-806	-431
Son en Breugel – Ekkersrijt – IKEA	NL-BR-007	-	GrA-39999	2265	30	-399	-209
Boxmeer – Sterckwijk	NL-BR-009	-	SUERC-52941	3335	30	-1691	-1528
Boxmeer – Sterckwijk	NL-BR-009	-	SUERC-52945	2458	29	-756	-415
Boxmeer – Sterckwijk	NL-BR-009	-	SUERC-52949	2434	29	-751	-406
Boxmeer – Sterckwijk	NL-BR-009	-	SUERC-52950	2411	24	-729	-403
Boxmeer – Sterckwijk	NL-BR-009	-	SUERC-52946	2247	29	-394	-206
Boxmeer – Sterckwijk	NL-BR-009	-	SUERC-52947	2243	29	-391	-206
Boxmeer – Sterckwijk	NL-BR-009	-	SUERC-52948	2184	29	-361	-172
Breda – Steenakker	NL-BR-011	288	AA-52381	2210	50	-395	-164
Someren – Waterdael III	NL-BR-014	1974	GrA-43398	2550	35	-804	-546
Someren – Waterdael III	NL-BR-014	1960	GrA-43417	2500	35	-791	-511
Someren – Waterdael III	NL-BR-014	1978	GrA-43340	2495	35	-790	-490
Someren – Waterdael III	NL-BR-014	1984	GrA-43671	2490	30	-781	-511
Someren – Waterdael III	NL-BR-014	1977	GrA-43454	2480	35	-775	-431
Someren – Waterdael III	NL-BR-014	1957	GrA-43449	2465	35	-764	-430
Someren – Waterdael III	NL-BR-014	1991	GrA-43450	2460	35	-759	-416
Someren – Waterdael III	NL-BR-014	1979	GrA-43669	2445	35	-755	-409
Someren – Waterdael III	NL-BR-014	1987	GrA-43684	2440	30	-751	-408

%	Sample	Literature	Remarks
95.4	CR	Meurkens 2009: 63	Feature ID: Graf_03; Brandgruben grab with unburnt vessel on foot
95.4	CR	Meurkens 2009: 61	Feature ID: Graf_02; Brandgruben grab with unburnt vessel
95.4	CH	Lanting/vd Plicht 2003: 226	Feature ID: Graf 1C; Harpstedt urn with Schraghals accessory vessel
95.4	CH	Lanting/vd Plicht 2003: 226	Feature ID: Grab_58; Cremation grave, no urn
95.4	CH	Lanting/vd Plicht 2003: 226-227	Feature ID: Vdnr. 634-2-10; Cremation grave absent urn found among cremation graves from the Roman period
95.4	CH	Lanting/vd Plicht 2003: 226	Feature ID: Grab_73; Cremated remains and sherds of a Harpstedt (urn?)
95.4	CH	Lanting/vd Plicht 2003: 226	Feature ID: Grab_74; Cremation grave, no urn
95.4	CR	Bulten/Opbroek 2014: 62	Feature ID: Graf_14_(S5029)
95.4	CR	Bulten/Opbroek 2014: 62	Feature ID: Graf_10_(S4087)
95.4	CR	Bulten/Opbroek 2014: 62	Feature ID: Graf_15_(S8011)
95.4	CR	Hissel et al. 2007: 109; 317	Feature ID: Graf_027
95.4	CH	Hissel et al. 2007: 109; 317	Feature ID: Graf_027
95.4	CH	Hissel et al. 2007: 109; 317	Feature ID: Graf_003
95.4	CR	Hissel et al. 2007: 109; 317	Feature ID: Graf_025
95.4	CH	Van Beek 2004: 45-46	Feature ID: Graf_06; Urnless cremation grave; Circular ditch
95.4	CR	Jansen/Van Hoof 2003: 56	Feature ID: S18.23; Isolated cremation grave
95.4	CR	De Jong/Beumer 2011: 79	Feature ID: S10.051; Urn found in vicinity Bronze age barrow
95.4	CR	Blom/vd Velde 2015: Bijlage II	Feature ID: Graf_018; Double circular ditch
95.4	CR	Blom/vd Velde 2015: Bijlage II	Feature ID: Graf_129; Urnless cremation grave
95.4	CR	Blom/vd Velde 2015: Bijlage II	Feature ID: Graf_393; Urnless cremation grave
95.4	CR	Blom/vd Velde 2015: Bijlage II	Feature ID: Graf_398; Urnless cremation grave
95.4	CR	Blom/vd Velde 2015: Bijlage II	Feature ID: Graf_227; Urnless cremation grave
95.4	CR	Blom/vd Velde 2015: Bijlage II	Feature ID: Graf_124; Urnless cremation grave
95.4	CR	Blom/vd Velde 2015: Bijlage II	Feature ID: Graf_402; Urnless cremation grave
95.4	CH	Koot/Berkvens 2004: Tabel 2.2	Feature ID: Graf_43
95.4	CR	Hiddink/De Boer 2011: 115	Feature ID: Graf_649
95.4	CR	Hiddink/De Boer 2011: 115	Feature ID: Graf_606
95.4	CR	Hiddink/De Boer 2011: 115	Feature ID: Graf_656
95.4	CR	Hiddink/De Boer 2011: 115	Feature ID: Graf_965
95.4	CR	Hiddink/De Boer 2011: 115	Feature ID: Graf_655
95.4	CR	Hiddink/De Boer 2011: 115	Feature ID: Graf_600
95.4	CR	Hiddink/De Boer 2011: 115	Feature ID: Graf_601
95.4	CR	Hiddink/De Boer 2011: 115	Feature ID: Graf_955
95.4	CR	Hiddink/De Boer 2011: 115	Feature ID: Graf_969

Site/Toponym	Site-code	ID	Labcode	BP	+-	From	To
Someren – Waterdael III	NL-BR-014	1963	GrA-43338	2440	35	-754	-407
Someren – Waterdael III	NL-BR-014	1972	GrA-43399	2435	35	-752	-406
Someren – Waterdael III	NL-BR-014	1990	GrA-43342	2435	35	-752	-406
Someren – Waterdael III	NL-BR-014	1959	GrA-43336	2425	35	-751	-403
Someren – Waterdael III	NL-BR-014	1985	GrA-43673	2420	35	-751	-401
Someren – Waterdael III	NL-BR-014	1976	GrA-43452	2420	35	-751	-401
Someren – Waterdael III	NL-BR-014	1988	GrA-43683	2410	30	-739	-401
Someren – Waterdael III	NL-BR-014	1968	GrA-43339	2370	35	-728	-385
Oosterhout (Vraggelen/ De Contreien)	NL-BR-136	71	SUERC-37664	2735	30	-968	-814
Oosterhout (Vraggelen/ De Contreien)	NL-BR-136	41	SUERC-39356	2510	35	-794	-524
Oosterhout (Vraggelen/ De Contreien)	NL-BR-136	83	SUERC-37907	2510	35	-794	-524
Oosterhout (Vraggelen/ De Contreien)	NL-BR-136	66	SUERC-37660	2490	30	-781	-511
Oosterhout (Vraggelen/ De Contreien)	NL-BR-136	39	SUERC-37659	2370	30	-540	-388
Goirle	NL-BR-155	3198	GrA-19127	2830	45	-1121	-851
Goirle	NL-BR-155	3196	GrA-19124	2790	45	-1050	-831
Goirle	NL-BR-155	3197	GrA-19126	2760	45	-1007	-817
Laag Spul	NL-BR-159	3150	GrN-6951	2885	35	-1196	-940
Laag Spul	NL-BR-159	3151	GrN-6952	2800	35	-1043	-846
Laag Spul	NL-BR-159	3188	GrN-6956	2795	30	-1016	-846
Laag Spul	NL-BR-159	3185	GrN-6955	2790	35	-1018	-839
Oss – Ijsselstraat	NL-BR-178	-	GrA-27031	2460	35	-759	-416
Oss – Ijsselstraat	NL-BR-178	-	GrA-27029	2450	35	-756	-411
Oss – Ijsselstraat	NL-BR-178	-	GrA-27030	2340	35	-536	-264
Oss – Vorstengraf	NL-BR-179	-	GrA-19978	-	-	-801	-413
Oss – Vorstengraf	NL-BR-179	-	GrA-19979	-	-	-793	-411
Oss – Vorstengraf	NL-BR-179	-	GrA-55555	2785	30	-1007	-845
Oss – Vorstengraf	NL-BR-179	-	GrA-55551	2500	30	-788	-537
Berghem – (Oss-) Zevenbergen	NL-BR-180	-	GrA-41260*	2550	35	-804	-546
Berghem – (Oss-) Zevenbergen	NL-BR-180	-	INDET_12**	2520	35	-795	-540
Berghem – (Oss-) Zevenbergen	NL-BR-180	-	GrA-41264***	2490	35	-788	-486
Berghem – (Oss-) Zevenbergen	NL-BR-180	-	GrA-42261****	2445	35	-755	-409
Berghem – (Oss-) Zevenbergen	NL-BR-180	-	GrA-27851*	2555	40	-808	-543

%	Sample	Literature	Remarks
95.4	CR	Hiddink/De Boer 2011: 115	Feature ID: Graf_618
95.4	CR	Hiddink/De Boer 2011: 115	Feature ID: Graf_647
95.4	CR	Hiddink/De Boer 2011: 115	Feature ID: Graf_680
95.4	CR	Hiddink/De Boer 2011: 115	Feature ID: Graf_604
95.4	CR	Hiddink/De Boer 2011: 115	Feature ID: Graf_967
95.4	CR	Hiddink/De Boer 2011: 115	Feature ID: Graf_651
95.4	CR	Hiddink/De Boer 2011: 115	Feature ID: Graf_974
95.4	CR	Hiddink/De Boer 2011: 115	Feature ID: Graf_642
95.4	CR	Roessingh/Blom 2012: Bijlage C14	Feature ID: CR071
95.4	CR	Roessingh/Blom 2012: Bijlage C14	Feature ID: CR041
95.4	CR	Roessingh/Blom 2012: Bijlage C14	Feature ID: CR083
95.4	CR	Roessingh/Blom 2012: Bijlage C14	Feature ID: CR066
95.4	CR	Roessingh/Blom 2012: Bijlage C14	Feature ID: CR039
95.4	CR	Lanting/vd Plicht 2003: 222	Feature ID: No. 23; Urnless cremation associated with longmound of Goirle type
95.4	CR	Lanting/vd Plicht 2003: 222	Feature ID: No. 20; Urnless cremation associated with longmound of Goirle type
95.4	CR	Lanting/vd Plicht 2003: 222	Feature ID: No. 22; Urnless cremation associated with longmound of Goirle type
95.4	CH	Lanting/vd Plicht 2003: 222	Feature ID: No. 46; Circular ditch; Cremation grave absent urn
95.4	CH	Lanting/vd Plicht 2003: 222	Feature ID: No. 48; Urnless cremation associated with longmound of Goirle type
95.4	CH	Lanting/vd Plicht 2003: 224	Feature ID: No. 144; Grobkeramik
95.4	CH	Lanting/vd Plicht 2003: 222	Feature ID: No. 137; Circular ditch; Cremation grave absent urn
95.4	CR	Lanting/vd Plicht 2005: 364	Feature ID: No. 22; Urn grave
95.4	CR	Lanting/vd Plicht 2005: 363	Feature ID: No. 3; Quadrangular ditch; Torque
95.4	CR	Lanting/vd Plicht 2005: 363	Feature ID: No. 21; Cremains in decorated bowl
95.4	CR	Jansen/Fokkens 2007: 53	Feature ID: S68.57; Urnless cremation grave; Circular ditch; BP date not mentioned in publication: calibration was performed by means of an older calibration curve
95.4	CR	Jansen/Fokkens 2007: 53	Feature ID: S68.59; Urnless cremation grave; Circular ditch; BP date not mentioned in publication: calibration was performed by means of an older calibration curve
95.4	WOOD	Van der Vaart-Verschoof 2017: 195	Chieftain's grave of Oss: sword's handle?
95.4	CR	Van der Vaart-Verschoof 2017: 195	Chieftain's grave of Oss
95.4	CH	Fontijn et al 2013: 115-116	Feature ID: Mound 7; 2007; V189; Central find assembledge of Mound 7: Pyre; Yoke(?) decorated with 100's of bronze studs
95.4	CR	Fontijn et al 2013: 115-116; Van der Vaart-Verschoof 2017: 205	Feature ID: Mound 7; 2007; V151; Schräghals-urn associated with central find assembledge of Mound 7
95.4	CH	Fontijn et al 2013: 115-116	Feature ID: Mound 7; 2007; V209; Central find assembledge of Mound 7: Pyre; Yoke(?) decorated with 100's of bronze studs
95.4	CH	Fontijn et al 2013: 115-116	Feature ID: Mound 7; 2007; V190; Central find assembledge of Mound 7: Pyre; Yoke(?) decorated with 100's of bronze studs
95.4	CH	Van Wijk et al. 2009: 102; Van der Vaart-Verschoof 2017: 201	Feature ID: Mound 3; 2004; Charred planks; [Core of wood] Central find assembledge of Mound 3: Charred wood, 1 piece of cremated bone and a few metal fragments

Site/Toponym	Site-code	ID	Labcode	BP	+-	From	To
Berghem – (Oss-) Zevenbergen	NL-BR-180	-	GrA-27852**	2460	40	-761	-415
Uden – Slabroeksche Heide	NL-BR-187	-	GrA-48681*	2470	35	-768	-430
Uden – Slabroeksche Heide	NL-BR-187	-	GrA-51473**	2465	30	-764	-430
Uden – Slabroeksche Heide	NL-BR-187	-	GrA-51471***	2430	30	-750	-405
Uden – Slabroeksche Heide	NL-BR-187	-	GrA-32776****	2430	15	-730	-411
Uden – Slabroeksche Heide	NL-BR-187	-	GrA-51443*****	2425	30	-749	-403
Uden – Slabroeksche Heide	NL-BR-187	-	GrA-51475******	2425	30	-749	-403
Uden – Slabroeksche Heide	NL-BR-187	-	GrM-12319	2006	15	-46	50
Uden – Slabroeksche Heide	NL-BR-187	-	GrM-12321	2014	15	-49	26
Uden – Slabroeksche Heide	NL-BR-187	-	GrM-12318	1935	15	24	124
Uden – Slabroeksche Heide	NL-BR-187	-	GrM-12078	1903	15	65	130
Uden – Slabroeksche Heide	NL-BR-187	-	GrM-12079	1845	15	126	231
[Beers] – Groot Linden	NL-BR-188	-	GrN-14676	2935	30	-1225	-1028
Haps	NL-BR-196	3008	GrN-5687	3200	70	-1633	-1295
Haps	NL-BR-196	2997	GrA-19117	3090	45	-1442	-1228
Haps	NL-BR-196	2978	GrN-5689	3010	45	-1397	-1118
Haps	NL-BR-196	2995	GrA-19116	3165	45	-1530	-1301
Haps	NL-BR-196	3000	GrA-19121	3130	45	-1499	-1285
Haps	NL-BR-196	2991	GrA-19123	2920	50	-1263	-976
Haps	NL-BR-196	2998	GrA-19564	2530	45	-802	-519
Haps	NL-BR-196	3060	GrA-27158	2385	40	-746	-386
Haps	NL-BR-196	3065	GrN-5736	-	-	-	-
St. Oedenrode – Haagakkers	NL-BR-210	526	GrA-19649	2910	60	-1266	-926
St. Oedenrode – Haagakkers	NL-BR-210	506	GrN-10501	2845	40	-1124	-904
St. Oedenrode – Haagakkers	NL-BR-210	519	GrN-10503	2815	50	-1112	-844
St. Oedenrode – Haagakkers	NL-BR-210	522	GrN-10504	2650	55	-969	-596
St. Oedenrode – Haagakkers	NL-BR-210	510	GrN-10502	2635	50	-916	-594
St. Oedenrode – Haagakkers	NL-BR-210	502	GrN-10500	2495	35	-790	-490

%	Sample	Literature	Remarks
95.4	CH	Van Wijk et al. 2009: 102; Van der Vaart-Verschoof 2017: 201	Feature ID: Mound 3; 2004; Charred planks; [Bark-side of wood] Central find assembledge of Mound 3: Charred wood, 1 piece of cremated bone and a few metal fragments
95.4	CH	Van den Broeke 2014: 166	Feature ID: S16.2; Inhumation grave; 3 bronze omega bracelets; 2 bronze ankle-rings; 1 iron pin; Personal hygiene-kit with bronze tweezers and little pin, probably originally in leather bag sealed off with an amber bead
95.4	CH	Van den Broeke 2014: 166	Feature ID: S16.2; *Idem.*
95.4	CH	Van den Broeke 2014: 166	Feature ID: S16.2; *Idem.*
95.4	CH	Van den Broeke 2014: 166	Feature ID: S16.2; *Idem.*
95.4	CH	Van den Broeke 2014: 166	Feature ID: S16.2; *Idem.*
95.4	CH	Van den Broeke 2014: 166	Feature ID: S16.2; *Idem.*
95.4	CR	Jansen/vd Vaart-Verschoof *in prep*.	Feature ID: S30.10_v134
95.4	CR	Jansen/vd Vaart-Verschoof *in prep*.	Feature ID: S24.6_v95
95.4	CR	Jansen/vd Vaart-Verschoof *in prep*.	Feature ID: S24.5_v45
95.4	CR	Jansen/vd Vaart-Verschoof *in prep*.	Feature ID: S24.7_v101
95.4	CR	Jansen/vd Vaart-Verschoof *in prep*.	Feature ID: S24.21_v107
95.4	CH	Lanting/vd Plicht 2003: 224	Drakenstein or Grobkeramik Urn
95.4	CH	Verwers 1972: 158	Feature ID: Grab_070_1; Published as: 1250 +/- 70 v.Chr. (before calibration was introduced)
95.4	CR	Lanting/vd Plicht 2003: 196	Feature ID: O1; Grab 162; Laren(-like) urn; Double post-setting
95.4	CH	Lanting/vd Plicht 2003: 164; 221	Feature ID: H4; Grab 218; Laren(-like) urn
95.4	CR	Lanting/vd Plicht 2003: 196	Feature ID: O1; Grab 136; Double post-setting
95.4	CR	Lanting/vd Plicht 2003: 196	Feature ID: O3; Grab 319; Double post-setting; Key-hole-shaped monument
95.4	CR	Lanting/vd Plicht 2003: 164	Feature ID: H10; Grab 440; Laren(-like) urn
95.4	CR	Lanting/vd Plicht 2003: 224	Feature ID: O2; Grab 239; Double post-setting
95.4	CR	Lanting/vd Plicht 2005: 361	Feature ID: Vdnr. 108; Grab 108; Quadrangular ditch
-	CH	Verwers 1972: 23	Feature ID: Grab_133; Published as: 1190 +/- 35 v.Chr. (before calibration was introduced); BP date not mentioned in publication of Verwers
95.4	CR	Lanting/vd Plicht 2003: 164; 221	Feature ID: No. 63; Grave_63; Laren(-like) urn
95.4	CH	Van der Sanden 1981: 325	Feature ID: Grave_29b; Circular ditch with opening(!)
95.4	CH	Lanting/vd Plicht 2003: 223	Feature ID: No. 45; Grave_45; Circular ditch; Cremation grave absent urn
95.4	CH	Lanting/vd Plicht 2003: 223	Feature ID: No. 52; Grave_52; Circular ditch; Cremation grave absent urn
95.4	CH	Van der Sanden 1981: 325	Feature ID: Grave_33
95.4	CH	Lanting/vd Plicht 2003: 222	Feature ID: No. 23; Grave_23; Circular ditch; Cremation grave absent urn

Site/Toponym	Site-code	ID	Labcode	BP	+-	From	To
St. Oedenrode – Haagakkers	NL-BR-210	494	GrN-10499	2430	30	-750	-405
Nijnsel	NL-BR-211	-	GrA-27143	2480	40	-775	-430
Nijnsel	NL-BR-211	-	GrA-27142	2465	40	-765	-428
Nijnsel	NL-BR-211	-	GrA-27145	2405	35	-747	-397
Nijnsel	NL-BR-211	-	GrA-27144	2400	40	-749	-395
Mierlo-Hout	NL-BR-220	327	GrN-19885	2570	80	-893	-416
Mierlo-Hout	NL-BR-220	334	GrN-19886	2500	30	-788	-537
Mierlo-Hout	NL-BR-220	364	GrN-20595	2495	35	-790	-490
Someren – Waterdael	NL-BR-223	443	GrA-26612*	2555	45	-810	-540
Someren – Waterdael	NL-BR-223	443	GrN-22196**	2420	40	-751	-401
Someren – Waterdael	NL-BR-223	420	GrN-22195	2520	30	-795	-542
Someren – Waterdael	NL-BR-223	400	GrN-22194	2510	30	-791	-540
Someren – Waterdael	NL-BR-223	437	GrA-26610	2495	40	-792	-434
Someren – Waterdael	NL-BR-223	440	GrA-27023	2465	35	-764	-430
Someren – Waterdael	NL-BR-223	402	GrA-26609	2460	40	-761	-415
Someren – Waterdael	NL-BR-223	379	GrN-22200	2440	30	-751	-408
Someren – Waterdael	NL-BR-223	441	GrA-27024	2440	35	-754	-407
Someren – Waterdael	NL-BR-223	378	GrA-26785	2410	35	-748	-398
Someren – Waterdael	NL-BR-223	432	GrN-22197	2320	50	-703	-206
De Heibloem	NL-BR-242	-	GrA-19132	2990	45	-1387	-1057
De Heibloem	NL-BR-242	-	GrA-19115	2820	45	-1114	-847
Knegsel	NL-BR-243	-	GrN-1028/34*	3090	30	-1427	-1277
Knegsel	NL-BR-243	-	GrA-15844**	3030	50	-1412	-1127
Maastricht – Ambyerveld	NL-LI-006	205	LTL8403A	3045	50	-1422	-1130
Maastricht – Ambyerveld	NL-LI-006	175	LTL8414A	3017	50	-1409	-1119
Maastricht – Ambyerveld	NL-LI-006	172	LTL8412A	3009	55	-1411	-1059
Maastricht – Ambyerveld	NL-LI-006	223	LTL8411A	2989	55	-1395	-1050
Maastricht – Ambyerveld	NL-LI-006	204	LTL8402A	2981	45	-1383	-1052
Maastricht – Ambyerveld	NL-LI-006	193	LTL8426A	2958	45	-1369	-1018
Maastricht – Ambyerveld	NL-LI-006	222	LTL8408A	2951	50	-1371	-1009
Maastricht – Ambyerveld	NL-LI-006	230	LTL8415A	2949	60	-1383	-981
Maastricht – Ambyerveld	NL-LI-006	196	LTL8401A	2944	45	-1277	-1012
Maastricht – Ambyerveld	NL-LI-006	203	LTL8424A	2942	50	-1369	-1002
Maastricht – Ambyerveld	NL-LI-006	179	LTL8416A	2938	50	-1289	-998
Maastricht – Ambyerveld	NL-LI-006	185	LTL8420A	2934	55	-1368	-946
Maastricht – Ambyerveld	NL-LI-006	212	LTL8429A*	2931	45	-1263	-1005

%	Sample	Literature	Remarks
95.4	CH	Lanting/vd Plicht 2003: 223	Feature ID: No. 13; Grave_13a; Circular ditch with opening; Bowl-shaped urn with comb-brush decoration
95.4	CR	Lanting/vd Plicht 2005: 362	Feature ID: No. 7I; Quadrangular ditch
95.4	CR	Lanting/vd Plicht 2005: 362	Feature ID: No. 6; Quadrangular ditch
95.4	CR	Lanting/vd Plicht 2005: 362	Feature ID: No. 8; Quadrangular ditch
95.4	CR	Lanting/vd Plicht 2005: 362	Feature ID: No. 7II; Quadrangular ditch
95.4	CH	Lanting/vd Plicht 2003: 223; 2005: 361	Feature ID: M10-32-1; No. 1; Longmound unspecified; Cremation grave, no urn
95.4	CH	Lanting/vd Plicht 2003: 223; 2005: 361	Feature ID: M12-5-1; No. 17; Quadrangular ditch; Cremation grave, no urn; grave was dug into the ditch
95.4	CH	Lanting/vd Plicht 2003: 223	Feature ID: M33-1-1; Graf 140; Circular ditch with opening; Cremation grave, no urn
95.4	CR	Lanting/vd Plicht 2005: 364	Feature ID: Structure 175; Grave_175; Longmound of the Someren type; Cremation grave, no urn
95.4	CH	Lanting/vd Plicht 2003: 223	Feature ID: 12-146-1; No. 175; Grave_175; Longmound of the Someren type; Cremation grave, no urn
95.4	CH	Lanting/vd Plicht 2003: 223	Feature ID: 9-47-2; No. 108; Grave_108; Circular ditch with opening; Cremation grave, no urn; dug into the circular ditch
95.4	CH	Lanting/vd Plicht 2003: 223	Feature ID: 7-14-1; No. 48; Grave_48; Circular ditch (with opening?); Cremation grave, no urn
95.4	CR	Lanting/vd Plicht 2005: 364	Feature ID: Structure 158; Grave_158; Quadrangular ditch
95.4	CR	Lanting/vd Plicht 2005: 364	Feature ID: Structure 169; Grave_169; Quadrangular ditch
95.4	CR	Lanting/vd Plicht 2005: 364	Feature ID: Structure 50; Grave_050; Quadrangular ditch
95.4	CH	Lanting/vd Plicht 2003: 223	Feature ID: 39-981-1; No. 4; Grave_04; Circular ditch with opening; Cremation grave, no urn
95.4	CR	Lanting/vd Plicht 2005: 364	Feature ID: Structure 171; Grave_171; Quadrangular ditch
95.4	CR	Lanting/vd Plicht 2005: 364	Feature ID: Structure 3; Grave_003; Small longmound
95.4	CH	Lanting/vd Plicht 2003: 224	Feature ID: 19-402-1; Grave_148; Cremation grave, no urn
95.4	CR	Lanting/vd Plicht 2003: 222	Urnless cremation associated with longmound of Riethoven type
95.4	CR	Lanting/vd Plicht 2003: 222	Zylinderhals urn associated with longmound of Riethoven type
95.4	CH	Lanting/vd Plicht 2003: 164; 196	Feature ID: Tumulus E; No. 6; Laren(-like) urn
95.4	CR	Lanting/vd Plicht 2003: 164; 196	Feature ID: Tumulus E; No. 6; Laren(-like) urn
95.4	CR	Dyselinck 2013: 136	Feature ID: U20_S127
95.4	CR	Dyselinck 2013: 136	Feature ID: B22_S243
95.4	CR	Dyselinck 2013: 136	Feature ID: B19_S229
95.4	CR	Dyselinck 2013: 136	Feature ID: U39_S202
95.4	CR	Dyselinck 2013: 136	Feature ID: U19_S125
95.4	CR	Dyselinck 2013: 136	Feature ID: U8_S054
95.4	CR	Dyselinck 2013: 136	Feature ID: U38_S195
95.4	CR	Dyselinck 2013: 136	Feature ID: U46_S249
95.4	CR	Dyselinck 2013: 136	Feature ID: U11_S085
95.4	CR	Dyselinck 2013: 136	Feature ID: U18_S123
95.4	CR	Dyselinck 2013: 136	Feature ID: B26_S276
95.4	CR	Dyselinck 2013: 136	Feature ID: B32_IVO27
95.4	CR	Dyselinck 2013: 136	Feature ID: U28_S176

Site/Toponym	Site-code	ID	Labcode	BP	+-	From	To
Maastricht – Ambyerveld	NL-LI-006	212	LTL8428A**	2876	45	-1207	-926
Maastricht – Ambyerveld	NL-LI-006	200	LTL8427A	2914	50	-1260	-943
Maastricht – Ambyerveld	NL-LI-006	234	LTL8417A	2950	45	-1283	-1013
Maastricht – Ambyerveld	NL-LI-006	221	LTL8407A	2938	45	-1269	-1007
Maastricht – Ambyerveld	NL-LI-006	209	LTL8404A	2930	50	-1279	-980
Maastricht – Ambyerveld	NL-LI-006	216	LTL8406A	2902	45	-1221	-941
Maastricht – Ambyerveld	NL-LI-006	210	LTL8405A	2901	45	-1221	-940
Maastricht – Ambyerveld	NL-LI-006	181	LTL8399A	2897	45	-1219	-937
Maastricht – Ambyerveld	NL-LI-006	235	LTL8433A	2893	45	-1215	-936
Maastricht – Ambyerveld	NL-LI-006	198	LTL8421A	2891	50	-1217	-930
Maastricht – Ambyerveld	NL-LI-006	171	LTL8410A	2890	60	-1257	-916
Maastricht – Ambyerveld	NL-LI-006	207	LTL8422A	2883	55	-1220	-917
Maastricht – Ambyerveld	NL-LI-006	199	LTL8400A	2881	45	-1208	-931
Maastricht – Ambyerveld	NL-LI-006	227	LTL8432A	2880	45	-1207	-930
Maastricht – Ambyerveld	NL-LI-006	173	LTL8413A	2845	50	-1194	-896
Maastricht – Ambyerveld	NL-LI-006	183	LTL8419A	2841	60	-1195	-845
Maastricht – Ambyerveld	NL-LI-006	219	LTL8430A	2841	45	-1189	-896
Maastricht – Ambyerveld	NL-LI-006	243	07-MAAY.B034*	2880	30	-1192	-939
Maastricht – Ambyerveld	NL-LI-006	243	LTL8418A**	2760	50	-1014	-811
Maastricht – Ambyerveld	NL-LI-006	195	LTL8423A	2734	45	-992	-807
Maastricht – Ambyerveld	NL-LI-006	224	LTL8431A	2731	40	-975	-807
Elsloo – Aelserhof	NL-LI-013	-	INDET_13	2455	30	-756	-413
Lomm – Hoogwatergeul	NL-LI-015	-	SUERC-28707	2995	35	-1383	-1116
Lomm – Hoogwatergeul	NL-LI-015	-	SUERC-28703	2245	35	-395	-204
Lomm – Hoogwatergeul	NL-LI-015	-	SUERC-28701	2220	35	-381	-201
Lomm – Hoogwatergeul	NL-LI-015	-	SUERC-28702	2170	35	-361	-113
Lomm – Hoogwatergeul	NL-LI-015	-	SUERC-28700	2140	35	-355	-54
Weert – Laarveld	NL-LI-017	556	Poz-25934	2460	35	-759	-416
Weert – Laarveld	NL-LI-017	553	Poz-25931	2405	35	-747	-397
Weert – Laarveld	NL-LI-017	554	Poz-25932	2300	35	-411	-211
Weert – Laarveld	NL-LI-017	555	Poz-25933	2290	35	-407	-210
Weert – Laarveld	NL-LI-017	546	Poz-25930	2290	40	-408	-208
Weert – Laarveld	NL-LI-017	537	Poz-25883	2285	35	-406	-210
Weert – Laarveld	NL-LI-017	544	Poz-25928	2285	35	-406	-210
Weert – Laarveld	NL-LI-017	545	Poz-25929	2250	35	-396	-206
Weert – Laarveld	NL-LI-017	548	Poz-26000	2220	35	-381	-201
Weert – Laarveld	NL-LI-017	542	Poz-25887	2210	35	-380	-194
Weert – Laarveld	NL-LI-017	543	Poz-25888	2200	35	-371	-179

%	Sample	Literature	Remarks
95.4	CR	Dyselinck 2013: 136	Feature ID: U28_S176
95.4	CR	Dyselinck 2013: 136	Feature ID: U15_S089
95.4	CR	Dyselinck 2013: 136	Feature ID: U50_S273
95.4	CR	Dyselinck 2013: 136	Feature ID: U37_S193
95.4	CR	Dyselinck 2013: 136	Feature ID: U24_S164
95.4	CR	Dyselinck 2013: 136	Feature ID: U32_S181
95.4	CR	Dyselinck 2013: 136	Feature ID: U26_S171
95.4	CR	Dyselinck 2013: 136	Feature ID: B28_IVO23
95.4	CR	Dyselinck 2013: 136	Feature ID: U51_S278
95.4	CR	Dyselinck 2013: 136	Feature ID: U13_S087
95.4	CR	Dyselinck 2013: 136	Feature ID: B18_S203
95.4	CR	Dyselinck 2013: 136	Feature ID: U22_S154
95.4	CR	Dyselinck 2013: 136	Feature ID: U14_S088
95.4	CR	Dyselinck 2013: 136	Feature ID: U43_S228
95.4	CR	Dyselinck 2013: 136	Feature ID: B20_S240
95.4	CR	Dyselinck 2013: 136	Feature ID: B30_IVO25
95.4	CR	Dyselinck 2013: 136	Feature ID: U35_S191
95.4	CR	Dyselinck 2013: 136	Feature ID: U59_IVO21
95.4	CR	Dyselinck 2013: 136	Feature ID: U59_IVO21
95.4	CR	Dyselinck 2013: 136	Feature ID: U10_S072
95.4	CR	Dyselinck 2013: 136	Feature ID: U40_S211
95.4	CR	Van Wijk 2008: 25	Urnless cremation grave
95.4	CR	Gerrets/de Leeuwe 2011: Bijlage 4	Feature ID: Graf A3 [S71.15]; Urn grave
95.4	CR	Gerrets/de Leeuwe 2011: Bijlage 4	Feature ID: Graf D25 [S45.21]; Cremated remains and burnt vessel buried in pit in 'cult-place'; Latène bracelet; Burnt bones of pig
95.4	CR	Gerrets/de Leeuwe 2011: Bijlage 4	Feature ID: Graf D18 [S46.12]; Cremated remains on bottom of pit; Vessel upside-down on top of cremains; Iron nails of shoe?; Buried in 'cult-place'
95.4	CR	Gerrets/de Leeuwe 2011: Bijlage 4	Feature ID: Graf D11 [S45.39]; Cremated remains buried in pit just outside 'cult-place'
95.4	CR	Gerrets/de Leeuwe 2011: Bijlage 4	Feature ID: Graf D28 [S45.32]; Urn grave (Schrägrand?); Two latène bracelets; Buried in 'cult-place'
95.4	CR	Tol 2009: 109	Feature ID: Graf_23
95.4	CR	Tol 2009: 107	Feature ID: Graf_20
95.4	CR	Tol 2009: 108	Feature ID: Graf_21
95.4	CR	Tol 2009: 108	Feature ID: Graf_22
95.4	CR	Tol 2009: 104	Feature ID: Graf_13
95.4	CR	Tol 2009: 99	Feature ID: Graf_04
95.4	CR	Tol 2009: 103	Feature ID: Graf_11
95.4	CR	Tol 2009: 103	Feature ID: Graf_12
95.4	CR	Tol 2009: 105	Feature ID: Graf_15
95.4	CR	Tol 2009: 102	Feature ID: Graf_09
95.4	CR	Tol 2009: 102	Feature ID: Graf_10

Site/Toponym	Site-code	ID	Labcode	BP	+-	From	To
Weert – Laarveld	NL-LI-017	541	Poz-25886	2195	35	-369	-174
Weert – Laarveld	NL-LI-017	550	Poz-25956	2190	35	-368	-169
Weert – Laarveld	NL-LI-017	539	Poz-25885	2185	35	-370	-164
Venlo – Trade Port Noord/ Floriade	NL-LI-019	-	SUERC-25235 (GU-19725)	2715	35	-924	-806
Venlo – Trade Port Noord/ Floriade	NL-LI-019	-	SUERC-25233 (GU-19723)	2485	35	-782	-433
Venlo – Trade Port Noord/ Floriade	NL-LI-019	-	SUERC-25234 (GU-19724)	2475	35	-771	-431
Weert – Kampershoek Noord	NL-LI-020	626	GrA-44599	2445	35	-755	-409
Weert – Kampershoek Noord	NL-LI-020	629	GrA-44597	2410	35	-748	-398
Weert – Kampershoek Noord	NL-LI-020	628	GrA-44596	2395	35	-738	-396
Weert – Kampershoek Noord	NL-LI-020	627	GrA-44600	2385	35	-731	-393
Swalmen [Heistraat]	NL-LI-354	-	GrN-7420	2675	55	-971	-776
Vlodrop	NL-LI-372	-	GrA-19415	2885	45	-1210	-933
Vlodrop	NL-LI-372	-	GrA-19659	2870	60	-1223	-901
Vlodrop	NL-LI-372	-	GrA-19417	2850	45	-1192	-902
Vlodrop	NL-LI-372	-	GrA-19418	2820	50	-1116	-844
Beegden	NL-LI-377	314	GrA-19130	2515	45	-799	-489
Beegden	NL-LI-377	313	GrA-19129	2505	45	-796	-434
Beegden	NL-LI-377	309	GrA-19128	2500	45	-794	-432
Beegden	NL-LI-377	324	GrA-19411	2490	50	-790	-430
Weert – Kampershoek	NL-LI-385	-	GrA-15467	2570	60	-840	-490
Weert – Klein Leuken	NL-LI-385	-	GrA-15468	2550	70	-825	-430
Weert – Klein Leuken	NL-LI-385	-	GrA-15470	2460	60	-767	-411
Weert – Boshoverheide	NL-LI-386	-	GrN-6871	2750	50	-1005	-811
Weert – Boshoverheide	NL-LI-386	-	GrN-15338	2645	35	-895	-787
Sittard – Hoogveld (Site 4)	NL-LI-387	799	GrA-15190/471	2480	45	-776	-430
Sittard – Hoogveld (Site 4)	NL-LI-387	873	GrA-23439	2280	45	-407	-205
Sittard – Hoogveld (Site 4)	NL-LI-387	875	GrA-23440	2270	35	-401	-208
Sittard – Hoogveld (Site 4)	NL-LI-387	877	GrN-25439	2270	20	-397	-233
Sittard – Hoogveld (Site 4)	NL-LI-387	889	GrN-25437	2220	35	-381	-201
Sittard – Hoogveld (Site 4)	NL-LI-387	885	GrN-25441	2205	25	-362	-201
Sittard – Hoogveld (Site 4)	NL-LI-387	878	GrA-23433	2200	40	-381	-171
Sittard – Hoogveld (Site 4)	NL-LI-387	869	GrA-23438	2190	40	-380	-120
Sittard – Hoogveld (Site 4)	NL-LI-387	884	GrA-23444	2135	45	-357	-46
Sittard – Hoogveld (Site 3)	NL-LI-387	-	GrA-15829	2980	50	-1387	-1047
Sittard – Hoogveld (Site 8)	NL-LI-387	-	GrA-15366	3050	60	-1434	-1126
Sittard – Hoogveld (Site 9)	NL-LI-387	-	GrA-23473	2565	45	-817	-541

%	Sample	Literature	Remarks
95.4	CR	Tol 2009: 101	Feature ID: Graf_08
95.4	CR	Tol 2009: 106	Feature ID: Graf_17
95.4	CR	Tol 2009: 100	Feature ID: Graf_06
95.4	CH	Hakvoort/vd Meij 2010: Bijlage 10	Feature ID: Graf_56; Harpstedt urn
95.4	CH	Hakvoort/vd Meij 2010: Bijlage 10	Feature ID: Graf_74; Harpstedt urn
95.4	CH	Hakvoort/vd Meij 2010: Bijlage 10	Feature ID: Graf_17; Circular ditch with opening; Harpstedt urn? (Besmeten)
95.4	CR	Hiddink 2010: 53	Feature ID: Graf_801
95.4	CR	Hiddink 2010: 53	Feature ID: Graf_804
95.4	CR	Hiddink 2010: 53	Feature ID: Graf_803
95.4	CR	Hiddink 2010: 53	Feature ID: Graf_802
95.4	CH	Lanting/vd Plicht 2003: 223	Feature ID: 1968;4; Circular ditch with opening; Harpstedt-urn
95.4	CR	Lanting/vd Plicht 2003: 222	Feature ID: Bonnefantenmuseum 192; Kerbschnitt-urn
95.4	CR	Lanting/vd Plicht 2003: 222	Feature ID: RMO I 1932/1.1; Kerbschnitt-urn
95.4	CR	Lanting/vd Plicht 2003: 225	Feature ID: Bonnefantenmuseum 136; Urn: Doppel-konus accompanied by a Deckeldose
95.4	CR	Lanting/vd Plicht 2003: 225	Feature ID; Bonnefantenmuseum 1674; Urn grave
95.4	CR	Lanting/vd Plicht 2003: 223	Feature ID: No. 10; Longmound unspecified; Urn grave
95.4	CR	Lanting/vd Plicht 2003: 223	Feature ID: No. 9; Longmound unspecified; Schräghals
95.4	CR	Lanting/vd Plicht 2003: 222	Feature ID: No. 3; Circular ditch; Schräghals urn
95.4	CR	Lanting/vd Plicht 2003: 222	Feature ID: No. 21; Circular ditch; Schräghals urn
95.4	CR	Lanting/vd Plicht 2003: 225	Feature ID: Graf 178; Isolated cremation grave with urn
95.4	CR	Lanting/vd Plicht 2003: 225	Feature ID: Vdnr. V1834; Cremation grave, no urn
95.4	CR	Lanting/vd Plicht 2003: 225	Feature ID: Vdnr. V1838; Cremation grave, no urn
95.4	CH	Lanting/vd Plicht 2003: 225	Charcoal from kerbschnitt bowl containing cremated remains
95.4	CH	Lanting/vd Plicht 2003: 225	Feature ID: V10076; Cremation grave, no urn
95.4	CR	Lanting/vd Plicht 2003: 224	Feature ID: Graf 32; Bronze Rippenzite, bronze needle(?) and more metal
95.4	CR	Lanting/vd Plicht 2005: 366	Feature ID: Graf 23; Urn grave
95.4	CR	Lanting/vd Plicht 2005: 366	Feature ID: Graf 25; Urn grave
95.4	CH	Lanting/vd Plicht 2005: 366	Feature ID: Graf 30; Brandgrube
95.4	CH	Lanting/vd Plicht 2005: 366	Feature ID: Graf 113; Urn grave
95.4	CH	Lanting/vd Plicht 2005: 366	Feature ID: Graf 85; Brandgrube
95.4	CR	Lanting/vd Plicht 2005: 366	Feature ID: Graf 35; Brandgrube
95.4	CR	Lanting/vd Plicht 2005: 366	Feature ID: Graf 16; Brandgrube
95.4	CR	Lanting/vd Plicht 2005: 366	Feature ID: Graf 82; Urn grave
95.4	CR	Lanting/vd Plicht 2003: 221	Feature ID: M122-27-4; Isolated cremation grave
95.4	CR	Lanting/vd Plicht 2003: 222	Feature ID: M145-1-10; Circular ditch; 1 of 2 concentrations of cremated remains located closely together
95.4	CR	Lanting/vd Plicht 2005: 366	Feature ID: No. 301; Associated with large quadrangular ditch (35 x 35 m)

Site/Toponym	Site-code	ID	Labcode	BP	+-	From	To
Sittard – Hoogveld (Site 9)	NL-LI-387	-	GrA-23476	2400	45	-751	-393
Sittard – Hoogveld (Site 9)	NL-LI-387	-	GrA-23475	2205	45	-388	-169
Stein	NL-LI-391	-	GrA-12262/63	2945	35	-1261	-1039
Maastricht – Randwijck	NL-LI-395	-	GrN-23273	2500	60	-794	-430
Maastricht – Withuisveld	NL-LI-396	152	GrA-1710	2760	40	-1002	-826
Maastricht – Vroendael	NL-LI-397	122	GrA-14842	2600	40	-839	-556

%	Sample	Literature	Remarks
95.4	CR	Lanting/vd Plicht 2005: 366	Feature ID: No. 303; Associated with large quadrangular ditch (35 x 35 m)
95.4	CR	Lanting/vd Plicht 2005: 366	Feature ID: No. 302; Associated with large quadrangular ditch (35 x 35 m)
95.4	CR	Lanting/vd Plicht 2003: 225	Robenhausien-graf'; Cremation grave, no urn
95.4	CR	Hulst/Dijkman 1997: 62	
95.4	CH	Lanting/vd Plicht 2003: 224	Feature ID: Graf_17; Urn: Doppel-konus
95.4	CR	Lanting/vd Plicht 2003: 224	Feature ID: Graf_02; Schräghals urn

Dutch summary

Inleiding

Urnenvelden vormen misschien wel de meest talrijke nalatenschap van de late prehistorie in de Lage Landen. Zoals de naam al doet vermoeden, bestaan deze grafvelden hoofdzakelijk uit crematiegraven en met name op de hogere zandgronden zijn vele honderden exemplaren bekend. Een enkel grafveld omvat al gauw enkele tientallen, zo niet honderden crematiegraven. Mede door deze alomtegenwoordigheid staat de periode van de Late Bronstijd en Vroege IJzertijd (ca. 1100 – 500 v.Chr.) ook wel bekend als de 'Urnenveldenperiode.' Daarnaast betreffen de urnenvelden een alles behalve lokaal fenomeen: in een gebied dat zich uitstrekt van de Karpaten tot aan de Noordzee en van Noord Duitsland tot aan Sicilië werden tegen het einde van de Bronstijd de doden doorgaans eerst gecremeerd alvorens ze werden begraven. Het is daarom niet verwonderlijk dat urnenvelden in het verleden al regelmatig onderwerp van studie zijn geweest. De eerste studies waren nog voornamelijk inventariserend van aard maar geleidelijk aan is de onderzoek focus verschoven naar een meer holistische benadering en worden de urnenvelden inmiddels een belangrijke sociale- en kosmologische rol toegekend in de organisatie van het laat prehistorische (cultuur-)landschap.

Probleemstelling

Een rode draad door de gehele onderzoeksgeschiedenis heen is dat het grafritueel behorend bij de urnenvelden doorgaans als 'arm' en 'simpel' wordt omschreven. Op het eerste gezicht is dit ook een treffende omschrijving aangezien de graven zelf vaak niet meer dan een urn of kuiltje gevuld met uiteenlopende hoeveelheden crematieresten voorstellen. Grafgiften als kleine aardewerken potjes en bekers zijn eerder bij uitzondering dan bij regel meegegeven en zaken als metalen sieraden komen maar uiterst zelden voor. Het grotendeels ontbreken van duidelijke sociale *insignia* in urnenveldgraven heeft uiteindelijk geleid tot de these dat samenlevingen uit de Late Bronstijd en Vroege IJzertijd een grotendeels egalitair karakter moeten hebben gehad.

Maar kan een graf of grafveld wel worden gezien als de afspiegeling van de sociale structuur van een gegeven samenleving? Dat is min of meer de vraag die het vertrekpunt vormde voor het onderzoek gepresenteerd in deze dissertatie. Sociologen als Robert Hertz en Arnold van Gennep wezen begin twintigste eeuw al op het belang van de reeks handelingen zelf die uiteindelijk samen een begrafenis (Hertz) of andere sociale transitie (Van Gennep) opmaken. De zaken die een archeoloog in een gegeven grafcontext aantreft stellen in wezen niets meer voor dan het residu van deze reeks handelingen. Het is echter juist in deze reeks handelingen waarin het narratief over de transitie die de overledene in de ogen van de rouwende gemeenschap doormaakte werd uitgespeeld. Wanneer vervolgens het werk van een derde Franse socioloog uit de eerste helft van de twintigste eeuw erbij wordt gehaald, ontstaat geleidelijk aan een heel ander perspectief op de funeraire archeologie in algemene zin: Marcel Mauss beargumenteerde namelijk dat de menselijke 'persoon' alles behalve statisch is en zelden geheel op zichzelf staat. In menig mensbeeld is de menselijke persoon composiet (denk aan lichaam en ziel), verweven met anderen (denk aan een huwelijk) of zelfs verweven met objecten (denk aan een trouwring). Vertaald naar de context van het graf, vertegenwoordigen de fysieke overblijfselen van de overledene en de objecten die haar of hem zijn meegegeven niet simpelweg de dode zelf, maar representeren zij evengoed, of zelfs des te meer, de sociale banden van de overledene. In zekere zin reflecteren graven en grafvelden dan ook wel degelijk op de sociale structuur van een gegeven groep mensen, maar op een geheel andere wijze dan op basis van 'status' alleen.

Vraagstelling en methoden

De hypothese voor het onderhavige onderzoek luidde dan ook: 'Urnenveldgraven zijn betekenisvolle samengestelde artefacten.' Als doel werd gesteld om de begravingspraktijken gemoeid met de urnenvelden vanuit bovenbeschreven perspectief opnieuw te bekijken om zodoende de rol van de urnenvelden in de sociale organisatie van het laat prehistorische (cultuur-)landschap beter te begrijpen. Voor het onderzoek werden vier simpele en oplosbare vragen opgesteld:

1. *Welke objecten werden geselecteerd om mee te geven in het graf?*
2. *Hoe werden menselijke resten en objecten behandeld voor depositie in het graf?*
3. *Hoe werden menselijke resten en objecten in het graf gepositioneerd?*
4. *Hoe werden graven in relatie tot andere graven geplaatst?*

Een grondige inventarisatie van het Nederlandse databestand resulteerde uiteindelijk in een kleine 700 locaties waar graven uit de Late Bronstijd en/of Vroege IJzertijd zijn gevonden. Ongeveer de helft van deze sites zijn bij opgravingen aan het licht gekomen en voor iets meer dan 200 sites bleek de kwaliteit van de data voldoende om bovenstaande onderzoeksvragen daadwerkelijk te onderzoeken. Uiteindelijk werden als testcase 75 grafvelden verspreid door het diverse landschap van het huidige Nederland geselecteerd voor nader onderzoek. Voor deze selectie geldt dat ongeveer de helft van de sites na de invoering van het Verdrag van Malta (1992) is opgegraven. In totaal waren de geselecteerde grafvelden goed voor 3.182 gepubliceerde graven. Al deze graven zijn vervolgens ingevoerd in een speciaal voor het onderhavige onderzoek ontworpen database (Microsoft-Access 2007-2010). Ieder afzonderlijk graf is getest op een reeks van meer dan 45 variabelen die stuk voor stuk relateerden aan de hierboven gestelde onderzoeksvragen.

Resultaten

De analyse van de graven leverde een aantal interessante waarnemingen op. Om te beginnen bij de behandeling van de overledene zelf, werd afgaande op een klein percentage inhumatiegraven niet iedereen gecremeerd. Crematie was absoluut de norm (3137/3182), maar met name vanaf de Vroege IJzertijd in het rivierengebied komen grafvelden voor waar crematie en inhumatie naast elkaar werden gepraktiseerd. Mannen, vrouwen en kinderen bevinden zich onder de geïnhumeerde individuen en geen van de inhumatiegraven bevatten een categorie grafgiften die niet in crematiegraven zijn gevonden. Strontiumisotopen-analyse wees uit dat ongeveer de helft van de geïnhumeerde individuen is begraven in dezelfde regio als waar men is opgegroeid. Slechts een klein deel is aantoonbaar elders opgegroeid. Voor deze laatste categorie geldt echter dat in de gebieden van herkomst crematie ook nog steeds de norm was. Geslacht, leeftijd en herkomst kunnen dus geen van allen worden aangewezen als de reden waarom deze mensen niet gecremeerd zijn. Een sluitende verklaring is dan ook nog niet gevonden. Opvallend is wel dat inhumatiegraven opduiken in hetzelfde gebied en in dezelfde periode als de eerste duidelijke elitegraven (de zogeheten vorstengraven). Wat de verklaring voor de afwijkende lijkbehandeling ook mag zijn, duidelijk is dat vanaf de Vroege IJzertijd rond de grote rivieren het geoorloofd wordt om af te wijken van het gangbare grafritueel van de voorgaande eeuwen. Een waarneming die meer aandacht verdient in toekomstig onderzoek.

Aangekomen bij de crematiegraven, bleek voor 1507 graven een vorm van osteologische analyse voorhanden te zijn. De beschikbare indicaties voor geslacht en leeftijd bevestigden het inclusieve karakter van de urnenvelden aangezien mannen, vrouwen en kinderen (individuen jonger dan 15 jaar) in de te verwachten ratio's aanwezig waren. Afgaand op de hoge verbrandingsgraad van de botten die bij veruit de meeste individuen is waargenomen, werden crematies doorgaans grondig uitgevoerd. De totale gewichten van de crematieresten per graf liepen zeer uiteen (0.1 gram – 3407 gram). Hoewel voor een klein aantal graven wel degelijk kon worden vastgesteld dat men met opzet slechts een klein deel van de crematieresten heeft bijgezet in het graf, is beargumenteerd dat het aannemelijk is dat compleet vertegenwoordigde lichamen veel vaker voorkomen dan voorheen werd aangenomen. Tot slot kon in tenminste 51 gevallen met zekerheid worden vastgesteld dat meerdere individuen in een graf vertegenwoordigd waren.

Ook de analyse van de in het graf meegegeven objecten leverde een aantal interessante inzichten op. Zo bleken uiteindelijk niet eens de helft van de bekeken crematiegraven daadwerkelijk urngraven te betreffen. In totaal was in 13,5% van de graven een object aanwezig anders dan een urn. Klein vaatwerk, al dan niet verbrand, is veruit de best vertegenwoordigde categorie objecten (9,15% van de graven). Vaak gaat het om kleine geoorde kommen of bekers en kleine potjes. De tweede best vertegenwoordigde categorie objecten wordt gevormd door sierraden en andere aan het lichaam gerelateerde objecten zoals scheermessen en pincetten. Veel van deze objecten zijn gemaakt van brons of ijzer, maar barnsteen, glas en been zijn ook vertegenwoordigd. Gereedschap en wapens zijn alleen bij hoge uitzondering aangetroffen in graven. Opvallend is dat voor alle geïnventariseerde objecten geldt dat ze zowel verbrand als onverbrand voorkomen en zowel intact als intentioneel gebroken (hoewel deze laatste conditie zich heel moeilijk onomstotelijk laat vastleggen). Het tijdstip waarop de overledene van de betreffende objecten werd voorzien in het grafritueel als geheel (crematie of bijzetting in graf) en het al dan niet manipuleren van de objecten lijken handelingen te zijn geweest die open waren voor interpretatie.

Aangekomen bij de gekozen manier van bijzetting is een enorme variatiebreedte te bespeuren onder de geselecteerde grafvelden. Zoals gezegd betreft niet eens de helft van de graven daadwerkelijk urngraven en komen bijzettingen van bundels crematieresten al dan niet vergezeld van brandstapelresten ook vaak voor. Kleine (2-6 meter) ronde kringgreppels als grafmonument, vanaf de Vroege IJzertijd regelmatig voorzien van een opening, zijn door het gehele studiegebied het vaakst waargenomen. Langbedden van diverse vormen en groottes komen eveneens door het gehele studiegebied en de gehele Late Bronstijd en Vroege IJzertijd voor, zij het in veel kleinere aantallen dan de ronde kringgreppels. Daarnaast is een aantal meer specifiekere vormen van grafmonumenten waargenomen die meer tijdsgebonden lijken te zijn zoals de vierkante greppels die richting het einde van de Vroege IJzertijd in vrijwel het gehele studiegebied opduiken of de sleutelgatvormige greppels en langbedden met gepaarde houten palen over de assen van het monument die kenmerkend zijn voor de eerste helft van de Late Bronstijd in Noord Nederland. Geen van de hiergenoemde grafmonumenten was exclusief voor een bepaald geslacht of leeftijd aangezien mannen, vrouwen en kinderen in vrijwel alle monumenttypes zijn waargenomen.

Ook in de precieze plaatsing van de bijzettingen zelf zijn een aantal noemenswaardige zaken geobserveerd. Zo bevatte tenminste tien procent van de monumenten meer dan een graf, een percentage dat origineel veel hoger zal zijn geweest wanneer de gehavende staat van veel van de grafvelden in ogenschouw wordt genomen. Daarnaast bevat menig grafveld meerdere duidelijke clusters van graven, niet zelden met meerdere elkaar oversnijdende grafmonumenten. Enkele duidelijke voorbeelden zijn aanwijsbaar waar graven clusteren rond oudere grafmonumenten, met name grafheuvels uit de Midden Bronstijd. Wanneer hier de eerdergenoemde 51 graven aan worden toegevoegd die bewezen de resten van meer dan een individu bevatten, ontstaat de indruk dat het grafritueel van de Late Bronstijd en Vroege IJzertijd voor een belangrijk deel geënt lijkt te zijn op het benadrukken van relaties tussen doden. Deze relaties betroffen duidelijk niet alleen sociale banden tussen mensen die elkaar tijdens het leven gekend (kunnen) hebben, maar reikten evengoed tot in een ver verleden.

Discussie en conclusies

In veel opzichten vormen bovenbeschreven resultaten stof tot nadenken. Terugkerend naar het vertrekpunt van het onderhavige onderzoek, het ogenschijnlijk armetierige grafritueel behorend bij de urnenvelden, bevestigen de resultaten inderdaad het ontbreken van duidelijke sociale *insignia* in de vorm van grafgiften. Zoals eerder betoogd, moeten begrafenissen echter eerder worden gezien als een sociale transitie in plaats van alleen de portrettering van de overledene in haar of zijn voormalige sociale rol(len). De ware betekenis van de zaken die een archeoloog aantreft in de context van het graf ligt besloten in de reeks handelingen die ten grondslag hebben gelegen aan de totstandkoming van de betreffende grafcontext. Handelingen betekenisvol voor de uitvoerders van het grafritueel zelf en om diezelfde eenvoudige reden niet reproduceerbaar in het heden (*cf.* Bourdieu). Dit is waarschijnlijk ook exact de reden waarom *hét* urnenveldgraf niet bestaat en er zoveel variatie in handelingen waarneembaar is op basis van de vele verschijningsvormen van urnenveldgraven. Toch staan wij in het heden niet geheel met lege handen aangezien we wel in staat zijn om op basis van de inhoud van graven vast te stellen wat *niet* als belangrijk of betekenisvol werd geacht in de context van het graf. Het gegeven dat urnenveldgraven doorgaans weinig tot geen sociale *insignia* bevatten kan bijvoorbeeld worden gelezen als een signaal dat de betreffende sociale rollen of *personae* niet hoefden te worden benadrukt of zelfs dat deze met het sterven werden afgelegd.

Dat de doden daarnaast nog wel degelijk een sociale rol vervulden blijkt uit de manier waarop men de doden in relatie tot elkaar plaatsten en als toegevoegde dimensie: in relatie tot een specifieke plaats. Er bestaan veel manieren om zich te ontdoen van de as van een dierbare overledene, toch werd er keer op keer voor gekozen om deze laatste fysieke resten te begraven en als het ware te verankeren in het landschap omringd door de andere doden. Zowel doden die elkaar bij leven gekend (kunnen) hebben als wel doden die door de tijd soms eeuwen van elkaar gescheiden zijn. Het zou hierbij om verschillende vormen van voorouders kunnen gaan: voorouders geassocieerd met oorsprong en voorouders geassocieerd met de eigen bloedlijn (*cf.* DeCoppet; Helms). In voorgaande studies zijn de urnenvelden dan ook wel weggezet als zogeheten '*territorial markers*' waarbij de autoriteit van de voorouders werd aangewend als legitimering van de eigen aanwezigheid in een specifiek gebied. In deze dissertatie is echter betoogd dat het aannemelijk is dat de hele wisselwerking tussen voorouders en land exact andersom werkte en mensen aan eens specifiek gebied (land) toebehoorden (*cf.* DeCoppet) en in de dood terug dienden te keren naar dat specifieke land (de aarde).

Wanneer men de urnenvelden ziet als de plaats waar de doden voorouders worden en terugkeren naar de grond waaruit men uiteindelijk ook is voortgekomen, is het wellicht ook beter te begrijpen waarom urnenvelden nooit scherp begrensd zijn met een fysieke barrière als een greppel of hekwerk en waarom in recente grootschalige opgravingen steeds vaker oneindige begravingslandschappen aan het licht komen. Grafvelden zoals recentelijk te Boxmeer zijn opgegraven kunnen nauwelijks graf-'veld' worden genoemd aangezien ze eerder langgerekte begravingszones vormen die, in het geval van Boxmeer, zich voor meer dan twee kilometer kunnen uitstrekken en een tijdsdiepte kennen van meer dan twee millennia. Binnen deze zones komen weliswaar duidelijke clusters begravingen voor, vaak rond een veel oudere grafheuvel, maar de doden zijn in dergelijke landschappen nooit verder weg dan enkele tientallen meters.

In het licht van al deze bevindingen heeft het aloude begrip 'urnenveld' inmiddels dusdanig aan waarde en betekenis ingeboet, dat het zeer de vraag is of de term niet beter achterwege gelaten kan worden in toekomstige studies naar de aard en genese van deze begravingslandschappen. Geheel in lijn met de voortgang van de Wetenschap in algemene zin geldt ook voor de urnenvelden these dat het uiteindelijk een kwestie is van 'maken en breken…'

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"…the person I am, are the parts that I play…" as the song goes that inspired the motto of this book. For all of you, I hope I keep playing my parts well.

BREAKING AND MAKING THE ANCESTORS

Towards the capstone of the European Bronze Age, in an area stretching from the Carpathians in the East to the North Sea in the West, vast cremation grave cemeteries occur that are perhaps better known as 'urnfields.' Today some 700 of these burial sites have come to light in the Netherlands alone.

In this corner of Europe, also known as the 'Lower-Rhine-Basin,' these cemeteries are often characterised by vast collections of small burial mounds under which the cremated remains of decedents were buried in small shaft-like pits. In many a case the cremated remains had been put in urns first, providing these cemeteries with their very name.

Though rich in numbers, urnfield graves are often described as 'poor' and 'simple' as only in rare occasions decedents were provided with grave gifts. However, when close attention is paid to the actions involved in the creation of these seemingly simple graves, they in fact reveal a richness in funerary practices that on their turn hint a complex and intricate mortuary process.

This book delves into the wealth of funerary practices reflected in more than 3,000 urnfield graves excavated throughout the Netherlands in order to reconstruct the mortuary process associated with the urnfields in this particular part of Europe. Together these graves tell interesting stories about how the dead related to each other, how plain and simple objects could be used as metaphors in the creation of relational and ancestral identities and how the dead were inextricably linked to the land.

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