

# THE PERIODISATION OF THE DUTCH BRONZE AGE: a critical review

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## 1. Introduction<sup>1</sup>

*'The Early Bronze Age starts with the bronze industry of Irish origin and with the industry of Emmen flat axes.'* (*De periodisering*., 1965/66)

This quote defining the beginning of the Dutch Bronze Age could be by no-one else but Jay Butler, more than 40 years now the undisputed expert on bronzes in the Netherlands. The quote dates back 35 years, to 1965 when a conference was organised to define a periodisation for Dutch prehistory.

Since 1965 the periodisation has been revised once, in 1977 by Lanting and Mook who built their case on all <sup>14</sup>C-dates previously published. Several changes were carried through, but the periodic framework remained in tact. True, Lanting and Mook gave the periodisation a very solid absolute dated basis, but they did not discuss the premises of the periodisation, neither did they justify the choices with other arguments than with <sup>14</sup>C-dates. That was of course their aim, so they are not to blame for that, but on the other hand after 35 years, it may be time to evaluate the premises and arguments for period definition.

In this paper I want to discuss those premises and investigate whether they are still valid. In the process of this investigation, changes and amendments that have been suggested in the course of time are evaluated.

## 2. 'Symposium voor Praehistorie van Nederland': the 1965 periodisation

Quite unlike what happened in other countries where often individual researchers were responsible for periodisations the first periodisation of Dutch prehistory was established by a forum of archaeologists during the 8th 'Symposium voor de Praehistorie van Nederland' in December 1965. *Eighteen prominent Dutch archaeologists, at that time almost the entire profession, defined a periodisation that was meant to form a sound basis for reference for the coming decades* (*De periodisering*., 1965/66).

Each period had its own group of specialist referents. J.J. Butler and W. Glasbergen, the two most eminent researchers of the Bronze Age at that time, dealt with this period. They divided the Dutch Bronze Age into an Early, Middle and Late phase. According to their definition, the Early Bronze Age started with the bronze industry of 'Irish' origin and with the industry of Emmen flat axes. The Wageningen hoard, with an early Irish halberd, represented the introduction of bronze to the Netherlands (fig. 3). Until recently these earliest imports were dated around 3650 BP, or 2000 BC cal.

The start of the other phases and the definition of archaeological cultures was almost entirely based on burial data. For the Early Bronze Age the Barbed Wire Beaker Culture and the Hilversum culture were distinguished whereas the Middle Bronze Age started with the Elp culture. For the Late Bronze Age a difference was made between the North and East versus the South of the Netherlands. In the North and the East the Late Bronze Age began with the occurrence of *zweihenkelige Terrine*, the biconical urn, and associated burial forms; in the South the Late Bronze Age started with Urnfield Culture influences, the *Kerbschnittkeramik* and 'long beds' of Goirle and Riethoven type. No specific cultures were defined for the Late Bronze Age.

## 3. The <sup>14</sup>C-revolution: the revision by Lanting and Mook (1977)

The 1965 periodisation had not, at that time, been supported by many <sup>14</sup>C-data. But in the early 1970s many new samples were dated for the beaker research of Lanting and Van Der Waals. At the

Fig. 1. The periodisation of the Early Bronze Age according to Lanting & Mook, 1977: p. 6 and 8. The calibrated dates are added by the author.

| Period                                                  | Definition                                                                                                                                                                                                                                                               | Cultural phenomena                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Early Bronze Age<br>3600-3450 BP<br>(2000 - 1800 BC)    | The Early Bronze Age begins with the first appearance of Barbed-wire pottery                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>• Structureless burial mounds with aprox. N-S oriented graves</li> <li>• Bronze industry of Irish origin, and native production of Emmen-axes</li> <li>• Initial phase of Sögel-Wohlde complex?</li> <li>• Late beaker pottery with barbed-wire decoration</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Middle Bronze Age A<br>3450-3330 BP<br>(1800 - 1500 BC) | The Middle Bronze Age A begins with the appearance of burial mounds with a circular ditch, and with the first appearance of Hilversum and Drakenstein pottery in the Central and Southern Netherlands                                                                    | <ul style="list-style-type: none"> <li>• Structureless barrows and mounds with circular ditches</li> <li>• Sögel-Wohlde complex</li> <li>• Hilversum-Drakenstein pottery</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Middle Bronze Age B<br>3300-3000 BP<br>(1500 - 1100 BC) | The Middle Bronze Age B begins with the appearance of burial mounds with post circles                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>• Burial mounds preponderantly with post circles of various types</li> <li>• Settlements with 3-aisled houses, and "Kümmerkeramik" in the Northern and Northern and Eastern Netherlands</li> <li>• Settlements with mainly 3-aisled houses, and Drakenstein-Laren pottery in the Southern and Central Netherlands</li> <li>• In West-Friesland: burial mounds with ring ditch, and settlements with 3-aisled houses, and "Kümmerkeramik" ("Old-Hoogkarspel"; similar to Laren Pottery)</li> </ul>                                                                                                                                                                                                                                                                                                             |
| Late Bronze Age<br>3000-2600 BP<br>(1100 - 700 BC)      | The Late Bronze Age begins with the first appearance of urn-fields, and of pottery showing influence of the Southern German Urnfield Culture. In the Northern and Eastern Netherlands this earliest stage is characterised by the so-called "long beds" of Gasteren type | <p><i>In the north and east of the country:</i></p> <ul style="list-style-type: none"> <li>• urn-fields with "long beds" of Gasteren type, keyhole- and ring-shaped ditches</li> <li>• urns of Gasteren type, Zweihenkelige Terrinen, biconical urns</li> <li>• settlement with 3-aisled houses</li> <li>• Bronze industry of "Hunze-Ems type"</li> </ul> <p><i>In the south and central regions of the country:</i></p> <ul style="list-style-type: none"> <li>• Urnfields with "long beds" of Goirle and Riethoven types</li> <li>• Pottery showing influence of the Southern German Urnfield culture, and with Kerbschnitt decoration</li> </ul> <p><i>In West-Friesland:</i></p> <ul style="list-style-type: none"> <li>• Settlements with three-aisled houses, and pottery with a pronounced biconical element ("young Hoogkarspel")</li> </ul> |

same time Lanting gathered as much data about the prehistory of the Netherlands as possible, and published a number of fundamental studies on the Late Neolithic and the Early Bronze Age (notably Lanting, 1969; 1973).

Though they were not made explicit this time, the axioms of the 1977 scheme remained the same as in 1965. Therefore only the contents shifted following revised dating, but the framework itself was not challenged and actually has not been challenged until now. Thus a brief description of the 1977 periodisation (fig. 1) gives us a good impression of the present scheme.

The Wageningen hoard still implicitly marked the beginning of the Bronze Age, but the barbed wire beaker pottery became the defining element. The dates for barbed wire beakers fall in the range of 3650 to 3450 BP (Lanting & Mook, 1977: p. 99), which in calibrated dates is the period between 2000 and 1800 BC. Probably because many bronze types cross cut period boundaries — and therefore are a difficult object group to use for periodisation — they virtually disappeared from the scheme. The burial data, already dominant in the 1965 scheme, became even more prominent, although settlement data were added.

Lanting and Mook introduced a division of the Middle Bronze Age into two phases, an A and a B phase. This division was predominantly made on the basis of the burial data. The Middle Bronze Age A begins with the occurrence of barrows with circular ditches around them. In the south and central Netherlands Hilversum or Drakenstein pottery is present in the graves. In the north a number of graves contain bronzes of the Sögel-Wohlde complex, but typical pottery is absent from the definition. Houses were absent in the list of cultural phenomena of phase Middle Bronze Age A, although the Dodewaard and Zijderveld houses were already known. The early date of the Dodewaard house (c. 1728–1628) was dismissed by Lanting & Mook as probably contaminated, though it is not stated why they thought that (Lanting & Mook, 1977: p. 121).

Phase B begins with the occurrence of post-circles around barrows. At the settlement level, houses are recognised in all regions of the Netherlands. These houses are predominantly three-aisled, but Lanting's careful formulation 'mainly 3-aisled houses' allows for the round 'houses' that had been recognised in the south. In the north and east, settlement pits contain *Kümmerkeramik* and in the south and central Netherlands Drakenstein-Laren pottery. For West-Friesland a separate pottery group was recognised (Bakker *et al.*, 1977), Hoogkarspel pottery, that had much affinity with the north and east, but also developed its own regional characteristics.

The Late Bronze Age begins, as in most of our surrounding countries, with the development of urnfields. The so-called 'long beds' — as a contrast with the generally circular ditches of most of the urnfield barrows — are considered the oldest elements, both in the north and in the south. Distinct pottery types are present in the graves, but much more difficult to recognise in settlements. Late Bronze Age settlements are scarce anyway, compared to the relative abundance of known settlements from the Middle Bronze Age. Only in West-Friesland Late Bronze Age settlements have been found in numbers. Here also a distinct pottery style developed, the Late Hoogkarspel pottery (see fig. 6).

The end of the Late Bronze Age is determined by the new elements of the Early Iron Age, of which in 1977 the *Schrägrandurne* was considered to be the best datable one. Apart from this pottery the 'royal' wagon graves of Oss and Wijchen marked the beginning of the Early Iron Age. For the north of the Netherlands Lanting & Mook have found no positive criterion to mark a transition (1977: p. 9). Here the 'royal' graves of the southern urnfields are absent. From the definitions given by Lanting & Mook (1977: p. 9) it is quite clear that the Iron Age is the most difficult period to subdivide because suitable criteria are lacking. In the urnfields most types of ditches and pottery remain in use for several centuries.

#### 4. The premises of the periodisation

It is interesting, and quite unusual for such a project, that in 1965 the premises for the Dutch periodisation were explicitly stated. There were four important points of departure aimed at making the framework of the periodisation as secure as possible. The proponents did not want to set up a scheme which would have to be changed shortly afterwards. Of course, within the basic framework of main periods shifts and additions could be expected, but the framework itself needed to be secure. Since it has not collapsed or even wobbled in thirty-five years, one is apt to think that its foundation was secure. Nevertheless, a critical inspection of the underlying premises may be useful in order to see whether the framework can survive another few decades.

##### 4.1-2 Axiom 1 and 2, the premises of regionality:

*The area of reference is the Netherlands and more generally the Lower-Rhine area.*

*The cultural manifestations need to fit the region. The synchronisation with the surrounding areas has no priority (De periodisering., 1965/66).*

Today many people would disapprove of axiom 1 and 2. World systems theory is fashion now, presuming a more or less intrinsic value for material culture: its value and importance (implicitly) is supposed to be the same everywhere (e.g. Kristiansen, 1998). From such a perspective, regionality

is not a realistic issue. However, world systems theory is also criticised because material culture may look the same over vast areas, but is used and interpreted differently everywhere (e.g. Fokkens, 1999). The European chronological schemes, like the Hallstatt and La Tène schemes are therefore useful for general frameworks, but are difficult to apply in regions where metal finds are relatively scarce, as in ours. I think therefore that axiom 1 and 2 still have considerable value.

This does not mean that the Netherlands can be seen as an area without influences from outside. The discussion about the origins of the Hilversum Culture has demonstrated this (see below). To put it even more strongly, Jay Butler's work has demonstrated that the Netherlands constitute a border zone between two large cultural worlds, that of the Atlantic and the Nordic world. The broad central river area of the Rhine and Meuse plays a central role in the division, acting as a wide

and diffuse 'border zone' (fig. 2). Differences in material culture are visible, but it is clear that these differences were only variations of the same cultural traditions (Lanting & Mook, 1977; Fokkens, 1997; Theunissen, 1999). These may have been differences just as they exist to day: in dialect, in food preferences, in religion (presently predominantly Roman Catholic in the south versus Calvinistic in the north), in housing, in burial practices, etc.

The distribution of the cultural differences in the Bronze Age shows that the boundary between the Nordic and the Atlantic worlds runs slightly erratically through the Netherlands (fig. 2). It does not follow the courses of the Meuse and the Rhine when they start to flow westward near Nijmegen, but the river IJssel, a northern branch of the Rhine. So in many respects the eastern Netherlands are part of the Nordic world, whereas the Veluwe — the ice-pushed hilly area north of the Rhine and west of the IJssel

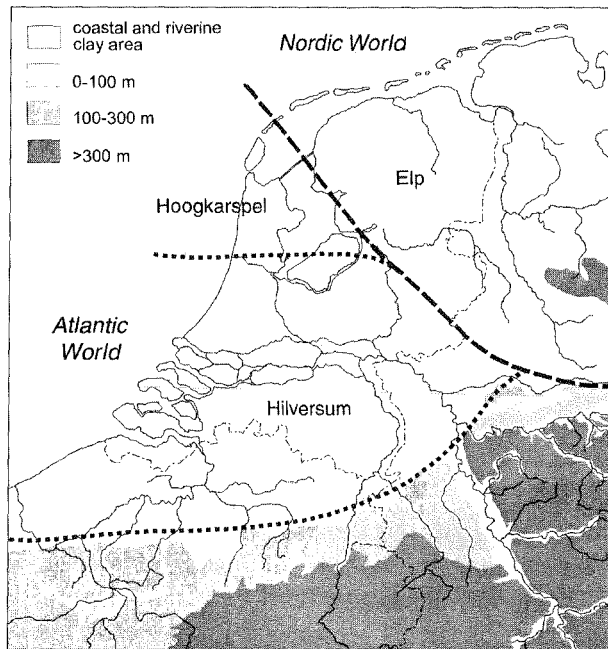


Fig. 2. The Netherlands as a border zone between the Atlantic and Nordic worlds. Indicated are the regions of the Elp, Hilversum and Hoogkarspel pottery traditions. Drawing: P. Heavens/H. de Lorm, Faculty of Archaeology, Leiden.

— is still part of the Atlantic world. On the other hand, the coastal zone north of the Rhine and Meuse, including West Friesland, seems to be part of the Nordic world in some respects (c.f. Van Heeringen, 1986) and of the Atlantic world in others, e.g. pottery (c.f. Brandt, 1988: p. 219). Here probably navigation from the north along the coast played a role in the maintenance of contacts.

### Axiom 3:

*The scheme has to be based on factual evidence not on hypotheses. This is to avoid the necessity of substantial changes later' (De periodisering..., 1965/66).*

With 'factual evidence' obviously material culture is meant. But from the way the periodisation was filled in, it is clear that not only excavated material culture was considered factual evidence. Childe's archaeological cultures and their interpretation as the tangible remains of peoples were also a fact. All other interpretations in terms of social processes etc. were considered hypotheses.

This is illustrated by, for instance, Glasbergen's introduction to the Dutch translation of Childe's *The prehistory of European society*. Glasbergen praises Childe's contributions to prehistory, especially concerning the concept of archaeological culture and its use for the recognition of migrations, but he also criticises Childe:

*Bij de uitwerking der thema 's zijner voor een algemeen publiek bestemde werken heeft Childe de wetenschappelijk gefundeerde interpretaties op grond van de technologische evolutie en de bestaansbronnen aangevuld met zijn interpretatie van de zwakke aanwijzingen omtrent sociale toestanden, religie en geestelijk leven. Wat het daardoor verkregen beeld won aan detail en literaire kwaliteiten, verloor het evenwel aan wetenschappelijke overtuigingskracht (Glasbergen: 1959: p. 11).*

In the rendering of the themes of his work written for the general public Childe supplemented the scientifically founded interpretations on the basis of the technological evolution and the sources of subsistence with his own interpretation and weak indications about social circumstances, religion and spiritual life. What the images produced in this manner gained in detail and literary qualities, they lost however in scientific credibility.

The belief in culture change as an indication for prehistoric migration accounts for one of the interesting misconceptions in the 1965 scheme: the dating of the Hilversum Culture. In the style of Childe, Glasbergen had built a theory about the origin of the Hilversum Culture, which he put forward in several publications (Glasbergen, 1954; 1957; 1969). In his view, the Hilversum people were bronze traders of the British Wessex culture who — following a trade route from northwestern France to the Netherlands — eventually settled in the southern and central Netherlands. This route could be traced in the form of characteristic pottery, called 'Biconical Urns' in Wessex and 'Hilversum Pottery' in the Netherlands. Other British elements recognised by Glasbergen in the Netherlands were the 'ringwalheuvel' (closely resembling the disc barrow of Dorset type, c.f. Theunissen, 1999: p. 59), and later also the round house.

Theunissen has commented on Glasbergen's theory extensively (Theunissen, 1999: chapter 2), and has shown how various facts of Glasbergen were less absolute than his authority suggested. Eventually his hypothetical structure collapsed when <sup>14</sup>C-dating revealed that the Hilversum-Culture was not an Early Bronze Age culture at all and that the devolutionary sequence of the Hilversum-Drakenstein-Laren pottery could not be supported by the evidence provided by absolute dating (Lanting & Mook, 1977; see also below). Finally also, the 'factuality' of *ringwalheuvels* and of round houses came under scrutiny (Theunissen, 1999).

To sum up, axiom 3 appears difficult to maintain because the interpretation of what is a fact changes all the time. Additionally it will always be necessary to discuss which cultural 'facts' are meaningful for the definition of periods. This point of discussion is continued in the analysis of axiom 4.

#### 4.4 Axiom 4:

*Borders between chronological periods are above all defined by the first occurrence of new cultural elements (De periodisering., 1965/66).*

The question how chronological periods are defined is of course crucial to any periodisation. If Childe's definition of archaeological cultures (Childe, 1929) is followed literally, axiom 4 seems a logical answer to that question. From that perspective new elements of material culture were often due to the arrival of a new people, and so they form a break in the periodisation. Not only new cultures, but also new materials — such as copper or bronze — almost by definition (following Thomson's Three-Age System) were taken as a natural break. Therefore Glasbergen's interpretation of the archaeological 'facts' of the Hilversum culture as a group of immigrants from Great Britain starting bronze trade in our area, was both perfectly acceptable and considered very well argued. A better start for the Bronze Age was scarcely conceivable.

Let us, for comparison, look for a moment at the periodisations of Denmark and France. In Denmark, bronze had already been known for several hundred years by the time that, around 1700 BC, the Bronze Age began. But there it was not the introduction of bronze, but the continued use of stone tools which was taken as the factor determining the periodisation (Vandkilde, 1996). In

France, Late Beaker elements determined — until very recently at least (see below) — that the Late Neolithic continued until 1800 BC (e.g. Blanchet, 1984).

So the Dutch Early Bronze Age started some 200 to 300 years earlier than in the neighbouring countries. In 1965, the dating of the Hilversum Culture made an early start of the Dutch Bronze Age perfectly acceptable. We have seen, however, that the Hilversum Culture had been shifted to the Middle Bronze Age. So, the introduction of bronze and the Barbed Wire Beaker Culture are left as new elements that appeared around 2000 BC. Unlike the Hilversum Culture, however, the Barbed Wire Beaker Culture is a 'continuous development' from the Late Neolithic (Lanting, 1973). That implies that there is no longer a substantial difference between the Netherlands and the surrounding countries in the period 2000–1800 BC. One might ask therefore, whether 2000 BC really is a good starting point for the Bronze Age, or whether we should also decide to let the Late Neolithic continue longer.

Our present periodisation is now a bit hybrid, because the introduction of bronze still plays a role in the background. This becomes even more visible when the chronological position of the early halberds that mark the beginning of our Bronze Age is considered. These halberds are often found as single depositions (e.g. Vandkilde, 1996: p. 193), but in the Netherlands we have one exceptional hoard, the Wageningen hoard, where a type 4 (Ó Ríordáin, 1937; Butler, 1963) was found in association with a number of copper, bronze and stone objects (fig. 3). In southern Scandinavia in particular a number of halberds have been found, which are dated by Vandkilde to the last part of LN I but predominantly LN II (c. 2050–1800 BC; Vandkilde, 1996: p. 139, 194). Needham (1989; oral comm.) prefers to date these halberds to 2100 BC rather than 2000 BC. That implies that — if

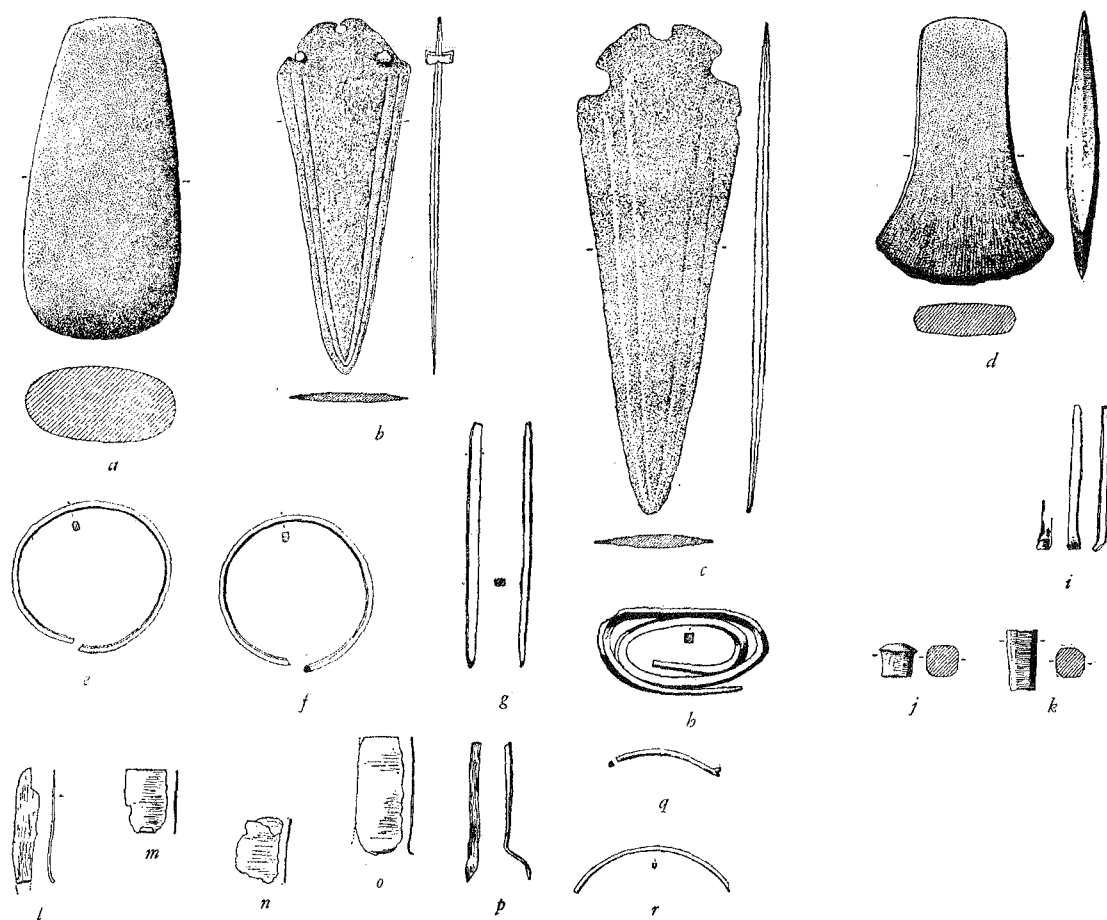


Fig. 3. The Wageningen hoard, with a stone axe (a), a bronze dagger (b), a halberd (c), a bronze flat axe (d), bronze arm rings (e, f), bronze engraving tool (g), copper 'bars' (h, i, q, r), fragments of sheet bronze (l, m, n, o, p), copper rivets (j, k) (after Butler, 1959: fig. 1). Drawing GIA (Groninger Institute of Archaeology, formerly BAI).

the introduction of bronze is an important criterium for the beginning of the Bronze Age — the dating of our Early Bronze Age must be shifted towards 2100 BC.

In France, a similar discussion has indeed led to a mayor shift in the chronology of the Bronze Age. For a long time the French Bronze Age started around 1800 BC. Recently, however, it was realised that many bronzes of Central European origin were present in eastern France and that they have been introduced much earlier, as early as 2300 BC. Hence it has been decided to let the Bronze Age in the whole of France start at 2300 BC rather than at 1800 BC (Lichardus-Itten, 1999).

In my opinion this decision is fundamentally wrong. First the question should be asked whether anything changed at all around that time. Boundaries between chronological periods are — if they are to be meaningful — not only determined by the introduction of 'new cultural elements'. We should look at changes in several dimensions of culture, rather than at separate elements. From that perspective, I want to look at the framework of the Dutch periodisation again. Since burial data and bronze industry already have their place in the scheme, I will mainly reconsider the settlement evidence and see how it fits in. I restrict myself to the most important categories of data found in settlements: pottery and houses.

### 5. Evidence from settlements

In the last 25 years an enormous amount of new data has been gathered about settlements. As a consequence there has been much discussion about the date and typology of houses and of the pottery found in settlements. The latter showed that the sequences that seemed to be clear from the burial data were sometimes difficult to maintain in settlement contexts. Apart from Ten Anscher's publication of the Vogelenzang finds, no large complexes have been published, however (Ten

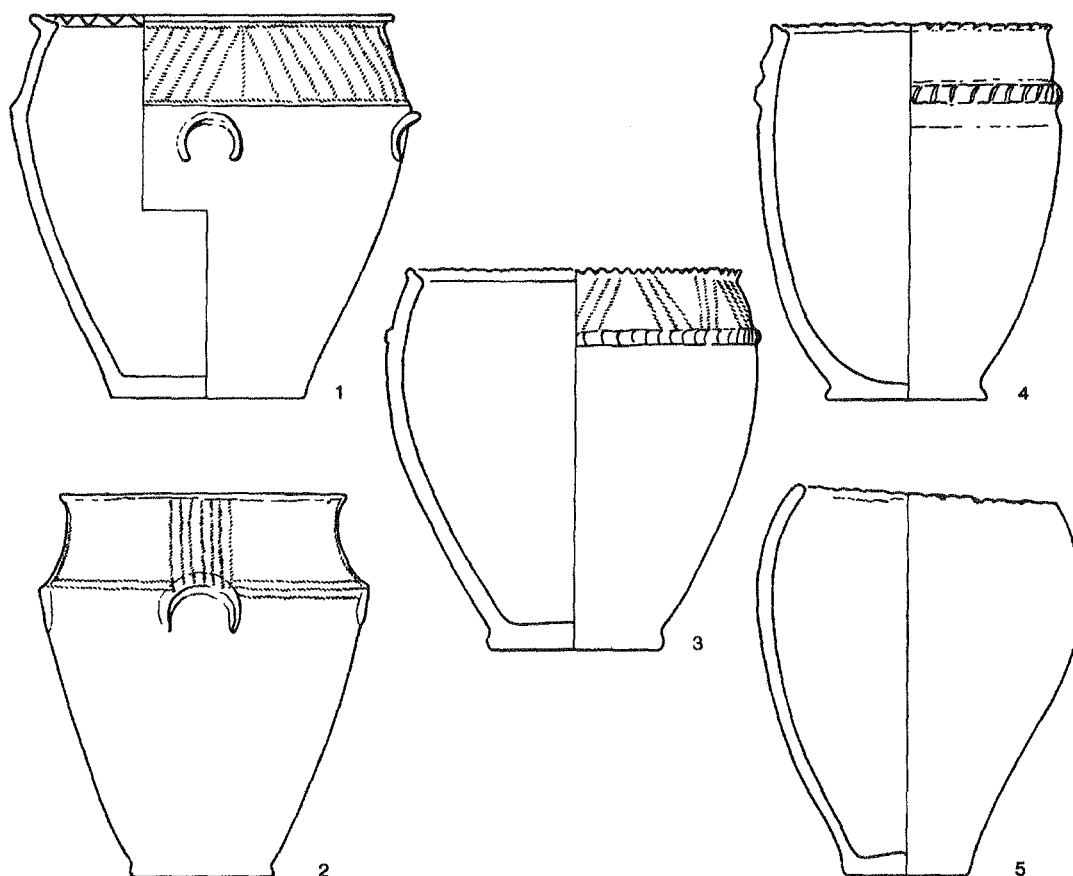


Fig. 4. Hilversum pottery: Wessex Biconical urn (1), Early Hilversum: 'Hilversum' type (2, 3), Late Hilversum: Drakenstein (4) and Laren (5) types (from Verwers, 1980).

Anscher, 1990). House plans have been described in several dispersed articles, but — with a few exceptions — detailed excavation reports are lacking. Only a few syntheses were published. In 1989 a symposium on settlements from the Bronze Age and the Early Iron Age in the Low Countries was organised in Leiden resulting in a summarised publication of most excavated settlement complexes in Belgium and the Netherlands (Fokkens & Roymans, 1991). In 1992 Huijts wrote his dissertation on structural aspects of prehistoric farms in Drenthe. The latter study is an important contribution towards the technical understanding of prehistoric building traditions.

#### 5.1.1 Hilversum pottery

The Hilversum Culture was defined by Glasbergen in the nineteen fifties (Glasbergen, 1954; 1957). Glasbergen used the observations he made during his famous barrow excavations in the 'Eight Beatitudes' near Eindhoven as a basis. In his view the Hilversum Culture was characterised by Hilversum, Drakenstein and Laren pottery (fig. 4). Hilversum pottery was brought in by immigrants and therefore most similar to its British 'parents'. Drakenstein and Laren pottery represented a typological *devolution* and therefore also a chronological development. In the Drakenstein phase only the finger-decorated cordon of the Hilversum phase remained, Laren pottery lacked all decoration.

The <sup>14</sup>C-dates told us that although Hilversum pots are always early, Drakenstein pots are not always later. They also occur early (Lanting & Mook, 1977). Therefore Glasbergen's hypothesis that Drakenstein pots had evolved out of Hilversum pots was untenable. Laren pottery contributes very little to the typology because the usually small fragments are impossible to distinguish from the lower parts of Drakenstein or Hilversum pots in settlement contexts.

In 1990 Ten Anscher tried to find a solution by suggesting that we should replace Glasbergen's Hilversum, Drakenstein and Laren *phases* by a HVS (Hilversum)-1, HVS-2 and HVS-3 phase respectively (Ten Anscher, 1990: p. 72). In the HVS-1 phase Hilversum and Drakenstein pottery

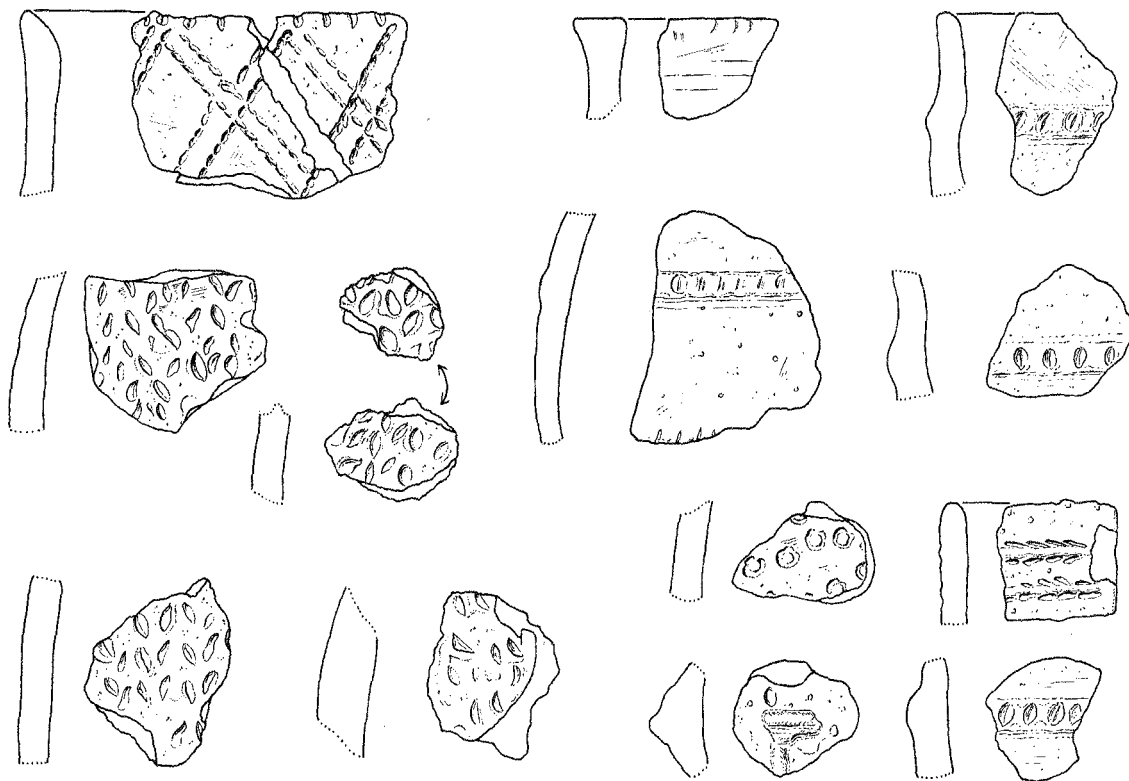


Fig. 5. An early Hilversum complex from Empel (near 's-Hertogenbosch). Collection Verhaage, drawing J.P. Boogerd, Faculty of Archaeology, Leiden.

were supposed to be present, in the HVS-2 phase only Drakenstein pottery, in HVS-3a Drakenstein and Laren pottery, and in HVS-3b only Laren pottery (Ten Anscher, 1990: p. 97).

This phasing seems schematic and logical, but in fact that is only an appearance because the Hilversum-Drakenstein-Laren pottery sequence still remains the basis. Indeed, the HVS-1 phase can be distinguished because 'true' (Middle Bronze Age A) Hilversum pottery has a number of characteristic elements. Ten Anscher distinguishes cord decoration on the collar and on the rim, a fingertip impressed cordon on the shoulder, concave bevelled rims (type A1) and horseshoe handles or knobs (fig. 5). Theunissen added to this the occurrence of paired fingernail impressions and decoration of the inner rim (Theunissen, 1999: p. 204). Such characteristics are absent from the later Drakenstein and Laren material, so in practice HVS-2 and HVS-3 are not distinguishable – at least in settlement material. Ten Anscher's proposition therefore received little support.

Recently Theunissen pointed out that a Drakenstein / Laren phase of the Hilversum culture is recognisable only by looking at the *absence* of early elements. Therefore *both* the Drakenstein and Laren types have lost their typological meaning. She suggests dropping those types completely and retaining the term 'Hilversum Pottery'. The term 'Hilversum Pottery' in her opinion is only applicable to pottery of the early (Middle Bronze Age A) phase. For the remainder, the term Middle Bronze B pottery ought to be applied (Theunissen, 1999: p. 205).

I agree with the proposition to discard the terms Drakenstein and Laren pottery completely. With respect to Hilversum pottery, however, I suggest keeping that term as a general indication for pottery of the Hilversum Culture. Pottery with the original Hilversum characteristics (see above) can be indicated as early Hilversum and pottery without them as late Hilversum. The transition between early and late takes place around 1500 BC.

#### 5.1.2 Elp pottery

The pottery of the Elp Culture has never been studied in detail. It was called *Kümmerkeramik*, literally poor or miserable pottery, after the pottery of the Middle German *Hügelgräberkultur*. It is mostly undifferentiated in shape (bucket-shaped) and undecorated. In order to provide a more uniform Dutch terminology I have proposed elsewhere to replace the German *Kümmerkeramik* by the term Elp pottery (Fokkens, 1991a; 1998). During the period of its use, from c. 1800–1100 / 800 BC (for comment on the beginning of the Late Bronze Age see below), there is hardly any change in form, decoration or temper. Elp pottery is therefore considered useless for periodisation.

#### 5.1.3 Hoogkarspel pottery

In its earliest phase, Hoogkarspel pottery is bucket-shaped and mostly undecorated, although fingertip impressed cordons occur (Brandt, 1988). Brandt's extensive study shows that early Hoogkarspel pottery (which he calls Hoogkarspel-Old) has affinity with Hilversum pottery, although — apart from cordons — typical early Hilversum decoration is lacking completely. Lanting and Mook view it as related to Elp pottery (Lanting & Mook, 1977: p. 6). Since also the house plans of Zijderveld type are found in West-Friesland, Brandt's suggestion that the southern and central Netherlands are the origin of the West-Frisian colonists is followed here. Early Hoogkarspel pottery developed around 1600 BC and continued until at least 1050 BC. Late Hoogkarspel pottery shows both regionally specific shapes and decoration patterns and forms that are typical for the (last part of the) Late Bronze Age in other regions of the Netherlands (Brandt, 1988). It disappears just before 800 BC when the inhabitants of West-Friesland have to leave due to the 'drowning' of the area.

#### 5.2 The position of the late Bronze Age

The criterion for the start of the Late Bronze Age is the same in many regions of north-western Europe: the appearance of urnfields. In 1948 Kersten decided that the Netherlands formed part of a regional variant: the *Niederrheinische Grabhügelkultur* (Lower Rhine Tumulus Culture). One of its characteristics was the occurrence of *Kerbschnittkeramik* (incised ware). In 1971 Jan Verwers

reviewed the material then known from the Late Bronze Age in the southern Netherlands (Verwers, 1971). He decided that the right bank of the Rhine was the northern boundary of that culture area. He also took the distribution of *Kerbschnittkeramik* as a guide.

Hilversum pottery went 'out of fashion' with the introduction of the urnfields around 1100 BC. This change is rather abrupt. It involves different forms, a complete change from coarse stone tempered pottery to no stone temper at all, the appearance of (new) decoration motives, etc. (cf. Van Den Broeke, 1991; Van Heeringen, 1986).

In the north, Elp pottery occurs in settlements and burials from c. 1800 BC until c. 800 BC. After 1100 BC, Elp pottery is in burials only as accessory vessels with Gasteren type pots in Gasteren/Vledder type monuments. Kooi — basing his analysis solely on urnfield developments

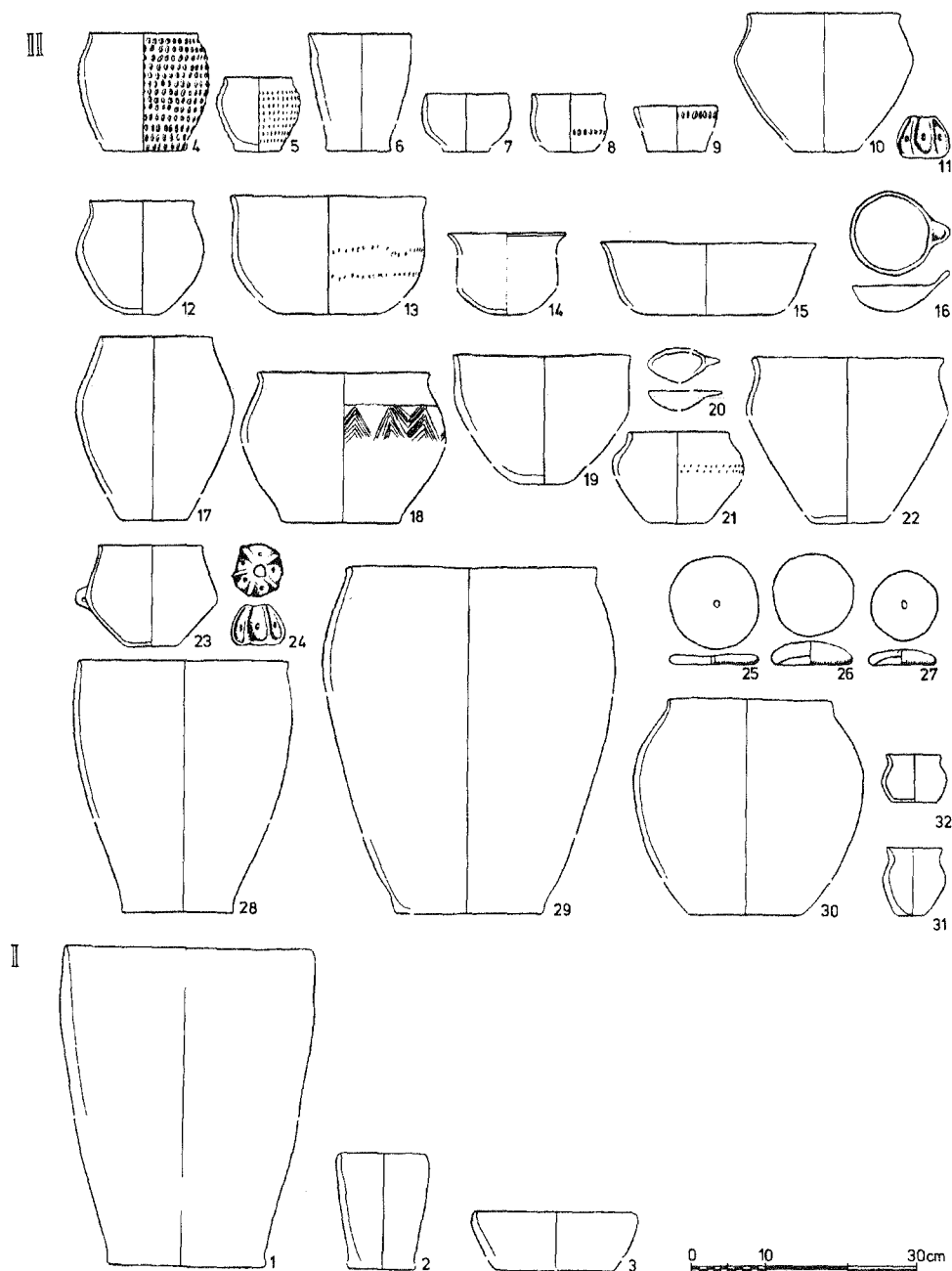


Fig. 6. Hoogkarspel pottery: 1 - 3: Early Hoogkarspel, 4 - 31: Late Hoogkarspel (from Bakker et al., 1977: fig. 8).

— therefore let the Elp Culture continue until 850 BC, to be followed by the Sleen (850-700 BC and Zeijen (700-500 BC) Cultures (Kooi, 1979). In contrast, Verlinde proposed to nominate the northern urnfield period in general as the Ems Culture, as opposed to the southern Dutch *Niederrheinische Grabhügelkultur* (Verlinde, 1987).

The problem with these 'cultures' is that they only relate to urnfield developments and do not incorporate settlements or depositions. Probably nothing much changes in the settlements, either in house types (see below) or in the pottery typology. Therefore it is unclear — in traditional terms of archaeological cultures — where one culture ends and another starts. Technically it is better to speak of the Ems and NGK groups of urnfields, and to avoid the term 'culture' as in fact Lanting and Mook did in their periodisation.

With good reasons Van Den Broeke argues that the Late Bronze Age in the southern Netherlands starts later than in the north. His criteria are the same as Lanting and Mook used (1977): the first occurrence of urnfields and associated pottery. He explicitly makes a link with central European chronology. German scholars date the pottery of the NGK on the basis of stylistic criteria to Ha B. The Ha A-B transition is dated absolutely to the end of the 11th century BC, so Van Den Broeke (1991: p. 194) proposed 1050 BC as the start of the Late Bronze Age. Such a late date seems difficult because in the north the urnfields start between 1200 and 1150 BC, 100 years earlier. In fact, this distinction illustrates the cultural differences between the north and the south that had already been present for a long time. It stresses again the importance of a regional approach, even within a country as small as the Netherlands.

On the basis of his pottery research Peter van den Broeke (1991) distinguished an Early (1050–?? BC), Middle (??–800 BC) and an Late Phase (800–750/700 BC). The start of his Middle phase has not yet been dated because only a few pottery complexes from the entire period are available. Under the influence of the chronological position of Gündlingen swords the end of the Bronze Age has now been dated to c. 800 BC (Pare, 1991; Roymans, 1991). These swords were manufactured both in iron and in bronze and mark the transition to a new tradition of weapon and cart burials. In Ha B (the Late Bronze Age), swords are almost exclusively deposited in rivers and hoards, but from Ha C onwards only in burials. Gündlingen swords are found in both contexts, but predominantly in burials (Roymans, 1991). Therefore their dating (775–700 BC) marks the transition from the Late Bronze Age to the Iron Age. Van Den Broeke's late phase of Late Bronze Age pottery in the south has now become part of Phase A of the Early Iron Age (Van Den Broeke, oral comm.).

### 5.3 Houses of the Bronze Age

In the Netherlands we know quite a lot about the houses of the Bronze Age, but not of every period. In particular, we know very little about the developments in the period 2000-1500 BC. The general impression is that in the period 2000-1800 BC the two-aisled house still prevailed and that in the period 1800-1500 BC the three-aisled long house developed. There are a number of arguments to support this thesis.

#### 5.3.1 The end of the two-aisled house tradition in the period 2000-1800 BC

For the Early Bronze Age (2000–1800 BC), we know the houses of Molenaarsgraaf. Originally not everyone was convinced of Louwe Kooijmans' reconstruction (Louwe Kooijmans, 1974), but in the mean time more convincing revised reconstructions have been published (Louwe Kooijmans, 1993; Fokkens, 1991c). The structures remain a little 'irregular' though, but very recently Van Heeringen excavated a similar house plan at Noordwijk (fig. 7; Van Heeringen, Van De Velde & Van Amen, 1998). This has the same irregular but, indisputably, two-aisled construction that appears to be typical of Late Neolithic houses. The Noordwijk house was dated around 1850 BC and was associated with Barbed Wire pottery and a few early Hilversum pottery shards. It was interpreted in the publication as two houses, but a re-analysis makes an interpretation of the structure as one house more likely (fig. 7; written comm. with R.M. van Heeringen). A small number of flints

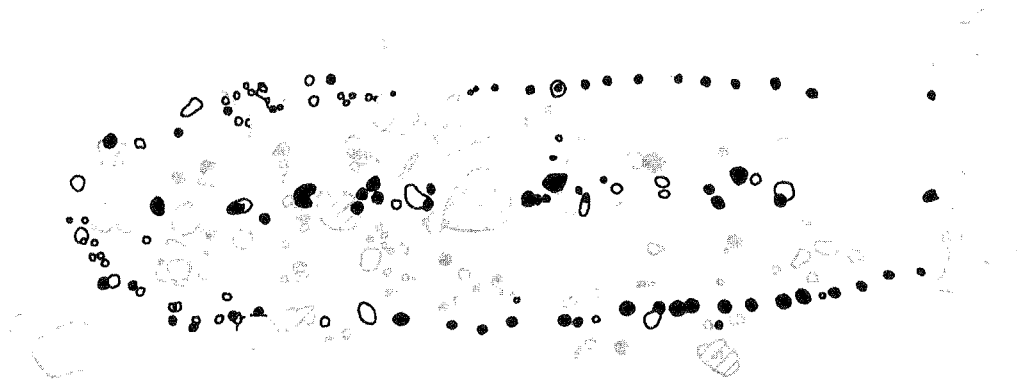


Fig. 7. The two-aisled house of Noordwijk dated to c. 1850 BC. Reconstruction of the author on the basis of the published plan (after Van Heeringen, Van De Velde & Van Amen, 1998: fig 11a). The closed postholes are deeper than 10 cm, the open postholes less than 10 cm deep.

was found: arrowheads, scrapers and the point of a dagger. Everything still pointed to Late Neolithic traditions, but the pottery also showed affinities with the Middle Bronze Age Hilversum culture (Van Heeringen, Van De Velde & Van Amen, 1998).

Verlinde claims to have found an Early Bronze Age house in Vasse (eastern Netherlands; Verlinde, 1984). That structure too is very irregular. Waterbolk has re-analysed an excavation in Zwolle-Ittersumerbroek and constructed about 40 two-aisled Early and Middle Bronze Age houses from the plans (Waterbolk, 1995a; 1995b). His constructions are inconclusive, though, and they have not been generally accepted.

In conclusion it appears that in the period 2000-1800 BC the two-aisled tradition of the Neolithic continued. In Scandinavia this tradition continued at least into the 18th century BC (Rasmussen & Adamsen, 1993) but the oldest three-aisled houses also date to that period (Ethelberg, 1991).

### 5.3.2 *The development of three-aisled houses after 1800 BC*

The genesis of the three-aisled house is an important new development, because it may be the start of the longhouse tradition, where animals and people are housed under the same roof. There are several explanations for the genesis of this tradition, which actually survives to the present day in most areas of the Northwest European plain. Recently a social explanation has supplemented the functional explanations. The social approach emphasises the role of cattle in exchange networks and therefore as a means of creating and maintaining social networks (Fokkens, 1999).

It is assumed that in the Neolithic housing tradition as symbolised by the two-aisled house, cattle were not stalled inside the house. I phrase myself carefully here because in most plans structural evidence of cattle stalls is absent. Harsema (1993) thinks that the early three-aisled house plans, which he calls the Angelsloo type, had no stalls. Most people, however, accept the principle that the stalling indeed was part of three-aisled houses, but that very often the structural elements marking the stall partitions were too shallow to survive or had no extra support/fixture apart from the roof beams.

It is difficult to find house plans that date to the period 1800 - 1500 BC. The earliest houses are known from the river area. The Dodewaard and Zijderveld plans both probably date to that period (Hulst, 1991), and a number of recently discovered houses at Eigenblok and De Bogen as well (P. Jongste, B. Meijlink, oral comm.). The Dodewaard house is, at the moment, the oldest three-aisled house with a most probable date between 1778 and 1628 BC (3430  $\pm$  35 B; Hulst, 1991: p. 58; Theunissen, 1999: p. 139; but see Lanting & Mook, 1997: p. 121).

On the Pleistocene sand soils several pits have been dated to the period 1800 - 1500 BC, but so far only a few house plans. One of the oldest is a plan from Emmerhout, dated between 1674 and 1654 or 1636 and 1522 with a 1 sigma interval. With a 2 sigma interval the range is much longer (1740-1710, 1696-1500, 1492-1446) due to the large insecurity factor of the date (3320  $\pm$  60 BP; Huijts, 1992: p. 37).

Up until now the only house types that were well defined in the Netherlands were the Emmerhout and Elp types of the northern Pleistocene sand area (Huijts, 1992). Until recently no typology existed for the south and central Netherlands. On the basis of recent finds in the south of the Netherlands (Theunissen, 1999), I propose to distinguish between two types: the Zijderveld and Oss types. This proposition has already been discussed during a small workshop about the Dutch Bronze Age in the river area in April 2000 and was supported by the participants. Both types are similar in structure and concept, but there are a number of characteristic differences that probably relate to a large extent to the environment of the settlement: the 'wet' river area (Zijderveld type) versus the 'dry' sandy soils (Oss type). The characteristics of the different types are briefly outlined here to avoid confusion.

#### 5.3.2.1 The Zijderveld type

The Zijderveld type is named after the first house recognised in the southern Netherlands. This is not for sentimental reasons, but because it has — even if it is rather disturbed by a recent ditch — most of the characteristic elements (fig. 8). The distribution of the Zijderveld type is confined to the riverine and coastal areas. The Middle Bronze Age houses in West Friesland have the same constructional elements (cf. Louwe Kooijmans, 1985; IJzereef & Van Regteren Altena, 1991). This indicates that the constructional elements that characterise the Zijderveld type are to a large extent a consequence of the physical environment.

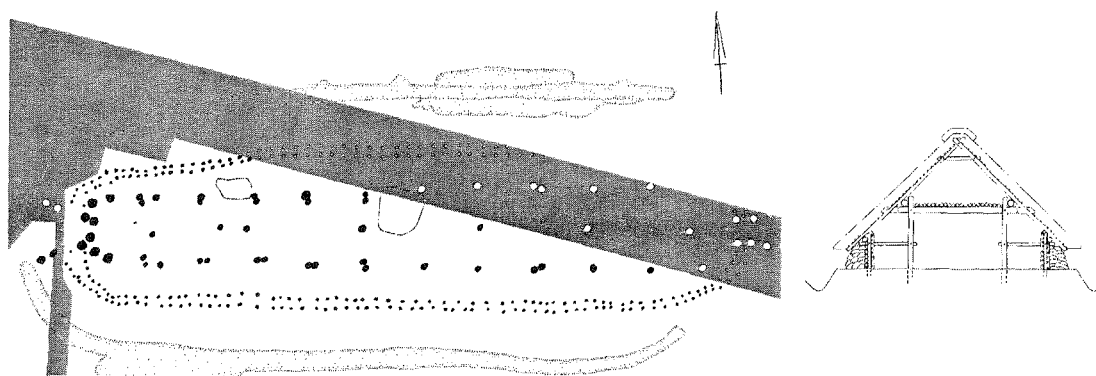


Fig. 8. The Zijderveld type (Zijderveld house 1). The shaded area marks a disturbance (modern ditch) and the postholes drawn in that area are a projection. The eastern end with the entrance is also a projection. The dimensions of the house are c. 23 x 6 m (after Hulst, 1991: fig. 1; Theunissen, 1999: fig. 4.34; cross-section after IJzereef & Van Regteren Altena, 1991: fig. 10).

The characteristic elements comprise:

- The roof construction is formed by two rows of beams placed opposite each other. The outer row of posts just inside the wall, characteristic for the Oss, Emmerhout and Elp types, is generally absent. The walls must have carried part of the weight of the roof.
- Frequently an irregular row of posts in the centre of the plan supports the rooftop.
- The walls are made of small stakes set some 20 to 30 cm apart, indicating wattle work. Sometimes they are placed in a double row, suggesting that they lined an earthen or sod wall. Often these wall stakes have become invisible due to erosion of the topsoil. The plan is then only visible as a parallel row of posts (De Horden, Texel - Den Burg).
- Often a shallow ditch is present outside the wall. This is interpreted as a drip gully catching water running off from the roof, thus protecting the wattle and daub walls.
- Frequently both house ends are rounded. This is visible in the inward position of the last two roof beams.
- Entrances are generally present in the short sides only.
- In front of the entrances often a funnel shaped post setting marks a kind of entrance portal.

- Sometimes repairs to the beams, the wall construction and the house ditches are visible. In West Friesland houses were frequently enlarged.
- Structural indications for stalls are absent in all examples.
- The dimensions of the houses known at present in the river area are 16–28 m long and 6–7 m wide ( $n=15$ ; Theunissen, 1999: p. 192). From West Friesland over 200 plans are known, with the highest frequencies in length between 25 and 20 m (IJzereef & Van Regteren Altena, 1991: p. 75).
- Time span: 1800–800 BC.
- Distribution: central river area, West Friesland and adjacent areas.

#### 5.3.2.2 The Oss type

The Oss type is named after the houses excavated in Oss in 1986 and 1987 (Vasbinder and Fokkens, 1987; Fokkens, 1991b; Schinkel, 1998). Although the Nijnsel plan was known much earlier, the Oss houses are — in a way — more characteristic. Schinkel has already briefly described them as type Oss 1A in his dissertation (Schinkel, 1998). The Oss 1A type has a number of characteristics in common with the Emmerhout type (fig. 9; Huijts, 1992; Schinkel, 1998).

The distribution of the Oss-type is diffuse. It occurs at least in the Meuse-Demer-Scheldt region. Probably it is not present on the loess and in the uplands in the south (Roymans & Fokkens, 1991: fig. 2). South of the loess comparable plans occur on several sites in France, e.g. in Lorraine (De Hingh, 2000), but always in relatively flat areas that allow for the emphasis on cattle raising that is supposedly connected with this type of farm.

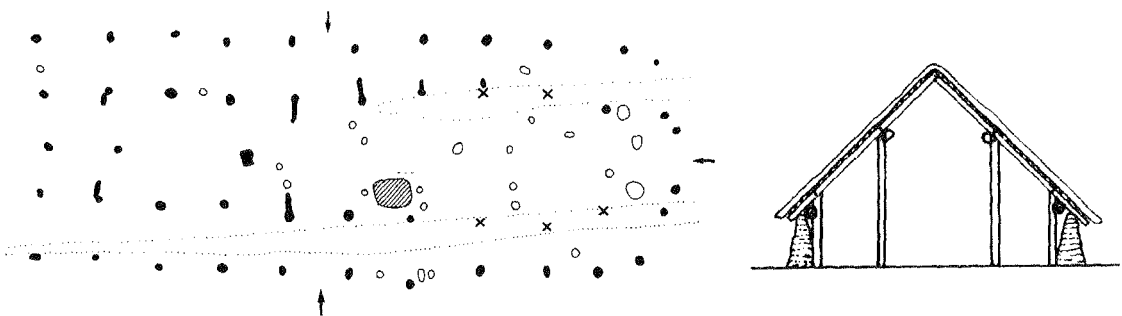


Fig. 9. The Oss 1 type type with cross-beams in a half-portal system (Loon op Zand house 1). The dimensions are c. 22,5 x 7,5 m. (after Roymans & Kortlang, 1991: fig. 4; Schinkel, 1998: fig. 22).

The Oss type is characterised by:

- A half-portal construction made up of pairs of posts set in line with each other (see Emmerhout type).
- Sometimes extra posts are present in the centre (Nijnsel, Loon op Zand, Oss).
- There is much diversity in the end form of the house (round indicating a saddle roof, straight a hipped roof). Often one short side appears to be rounded (Geldrop, Blerick, Loon op Zand), occasionally two (Venray) or none at all (Oss).
- Entrances either oppose each other in the long sides or in the short ends (Nijnsel, Loon op Zand).
- In several instances internal divisions are present within the central aisle (Loon op Zand, Oss, Venray). This suggests that these divisions were not intended as cattle stalls.
- The dimensions of the houses known at present are 16–29 m long and 6–7 m wide. At the moment c. 10 plans are known (see Theunissen, 1999).
- Only the Loon op Zand house, dated c. 1500 BC (1520–1418, Roymans & Hiddink, 1991: p. 114) shows stall partitions (in the north-eastern part) (fig. 9).

### 5.2.3.3 The Emmerhout type

The Emmerhout type (fig. 10) is the oldest three-aisled house plan type in the Northern Netherlands, and the most common. About 50 Emmerhout plans have been excavated (Huijts, 1992: p. 37), though only a few of these have been published (e.g. Harsema, 1991; Kooi, 1991). The oldest examples of the Emmerhout type may date well before 1600 BC, but the range of the oldest date (3320  $\pm$  60 BP) is too large to be conclusive.

This has prompted Harsema to theorise that the three-aisled long house was conceived around 1400 BC (Harsema, 1993). In his opinion, prior to that date, houses and byres were separate buildings. He indicates the earlier three-aisled houses as the Angelsloo type. Apart from the main house, smaller three-aisled buildings are interpreted as stables, although they too lack stall partitions. In my opinion, they could just be separate, single family houses, all the same. Structurally the main buildings are copies of the Emmerhout type, the only difference is that stall partitions are not visible in the plans. For reasons which are unclear, the possibility that, as in many other cases, traces of stalls are archaeologically invisible is rejected by Harsema (1993: p. 102). All in all, his arguments for the Angelsloo type are inconclusive. Much hinges on a re-interpretation of two plans from Dalen excavated by Kooi and published with a perfectly acceptable interpretation as reconstructed houses of Emmerhout type (Kooi, 1991).

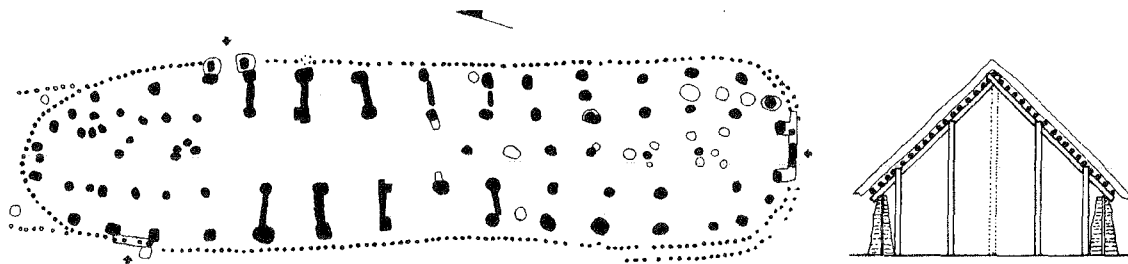


Fig. 10. The Emmerhout type with cross-beams in a half-portal system (Emmerhout house 13). The outer beams and the rafters form the portals. They get their rigidity from the inner beams supporting the rafters. The dimensions of the house are c. 29 x 7 m. (after Huijts, 1992: fig. 40).

The characteristics of the Emmerhout type are:

- A half-portal construction made up of pairs of posts (inner and outer beams) set in line with each other.
- Frequently extra beams are present in the centre of the middle aisle.
- In general both short sides are rounded.
- Entrances occur in the long sides, or in the short ends.
- The houses are marked by a threefold division. The middle part shows stall partitions.
- The dimensions of the presently known houses are c. 20–30 m long and 5–7 m wide.
- In some instances the walls may have been constructed as a combination of sods and wattle work as in the most often published house, Emmerhout 13 (Huijts, 1992: 37).

### 5.2.3.4 The Elp type

The Elp type was first excavated in the type-site Elp. Waterbolk originally thought that each of his settlement phases consisted of two houses, a small and a large longhouse (Waterbolk, 1964), but he revised his opinion (Waterbolk, 1987). He now considers the small plans to be the oldest, the long ones the youngest. Apart from a plan in Angelsloo, dated between 1676–646 and 1642–1518 (2 sigma) all dates of Elp houses are younger than 1400 BC (Huijts, 1992: p. 55). Huijts dismisses the early Angelsloo plan, but does not state his reasons. Since the excavation results have not been published, we cannot judge the evidence. The possibility that the Elp type also develops in the period 1800–1500 should not be rejected out of hand. At the moment about 30 plans have been excavated, of which about half are published.

The characteristics are (fig. 11):

- The inner and outer beams are often not in line with each other. In the (eastern) part stall partitions are visible because the inner rows of beams contain a larger number of posts than the outer rows.
- Sometimes extra beams are present in the centre, but generally they are absent.
- In general one short side is rounded.
- Entrances are opposite to each other in the long sides between the living quarters and the stable, sometimes also in one of the short ends.
- The houses are marked by a twofold division. The eastern part is often recognisable as the stable.
- The size of living quarters and stable generally is equal.
- The dimensions of the houses known at present are c. 20–30 m long and 5–7 m wide.

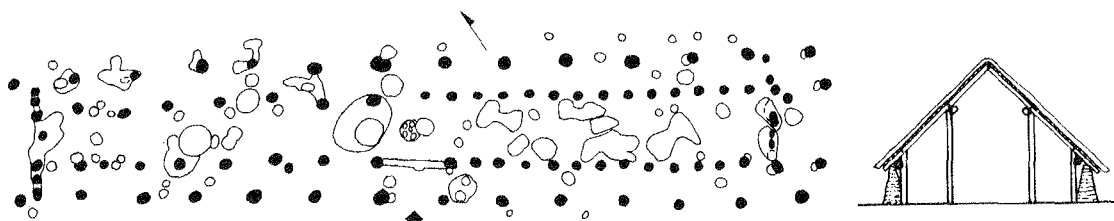


Fig. 11. The Elp type with the transition of a half-portal system to a combination of sleepers and lengthwise girders (Emmerhout house 1). The dimensions are c. 30 x 6 m (after Huijts, 1992: fig. 48).

#### 5.2.3.5 The round 'house'

In the 1960s, round structures were recognised in the central and southern Netherlands in Zijdeveld, Hien (Dodewaard) and Nijnsel (Hulst, 1967; Beex & Hulst, 1968). In the last decade they were also discovered in the eastern Netherlands (e.g. Kooi, 1991; Van Beek, 1988). The latter were however not interpreted as houses, but as sheep pens (Van Beek, 1991).

Theunissen has extensively described the problem of the round 'houses', explaining that in the 1960s they fitted well into the then current view of the Hilversum Culture people as immigrants from Britain, but may have been nothing more than mental constructs (Theunissen, 1999: pp. 180–184). Since most round structures were discovered after the excavation had been finished during the analysis of the drawings, critical analyses of the features in the field have so far been impossible. In her opinion, we need more rigorous observations in the field to prove their existence.

## 6. The periodisation of the Bronze Age reviewed

I have described very sketchily the existing periodisation, its premises, the archaeological cultures that were distinguished and the typo-chronological aspects of settlement data. The question that I want to pose now is whether the framework still has validity. I will divide this question into a few points of discussion.

- Is the beginning of the Early Bronze Age around 2000 BC still valid?
- What is the effect of the settlement data on the archaeological cultures of the Bronze Age?
- How meaningful are the period boundaries that we distinguish in terms of culture processes?

### 6.1 2000–1800 BC: Late Neolithic or Early Bronze Age?

As in neighbouring countries, the period between 2000 and 1800 BC shows continuity with the Late Neolithic Beaker Cultures. Jan Lanting has demonstrated this point very clearly in his seminal article of 1973, which unfortunately was published only in Dutch. Lanting demonstrated that Bell Beaker forms and decorative patterns continued in Barbed Wire Beaker pottery (fig. 12), even in the characteristic large beaker pots. The only difference with Bell Beakers appears to be the deco-

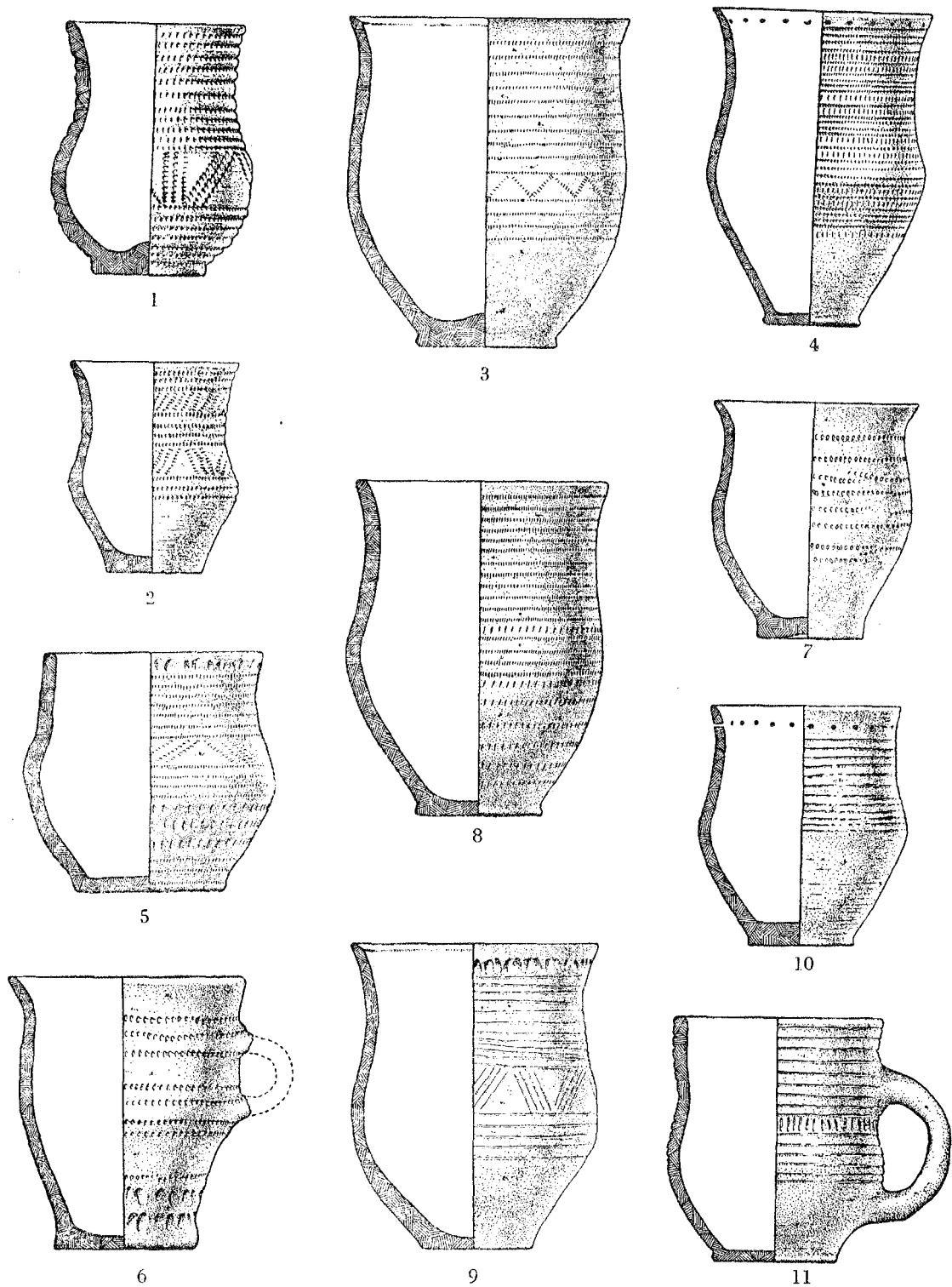


Fig. 12. Beakers with Barbed Wire decoration (after Modderman, 1955).

rative technique. Instead of using a spatula, barbed wire decoration is made using a flexible or sturdy stamp with a piece of string wrapped around it which is pressed into the wet clay. The distribution of Barbed Wire pottery also resembles that of late Bell Beaker closely to the extent that it is not found in the higher parts of Belgium and Germany. It extends into the higher regions only along the river valleys of the Rhine and the Meuse (fig. 13).

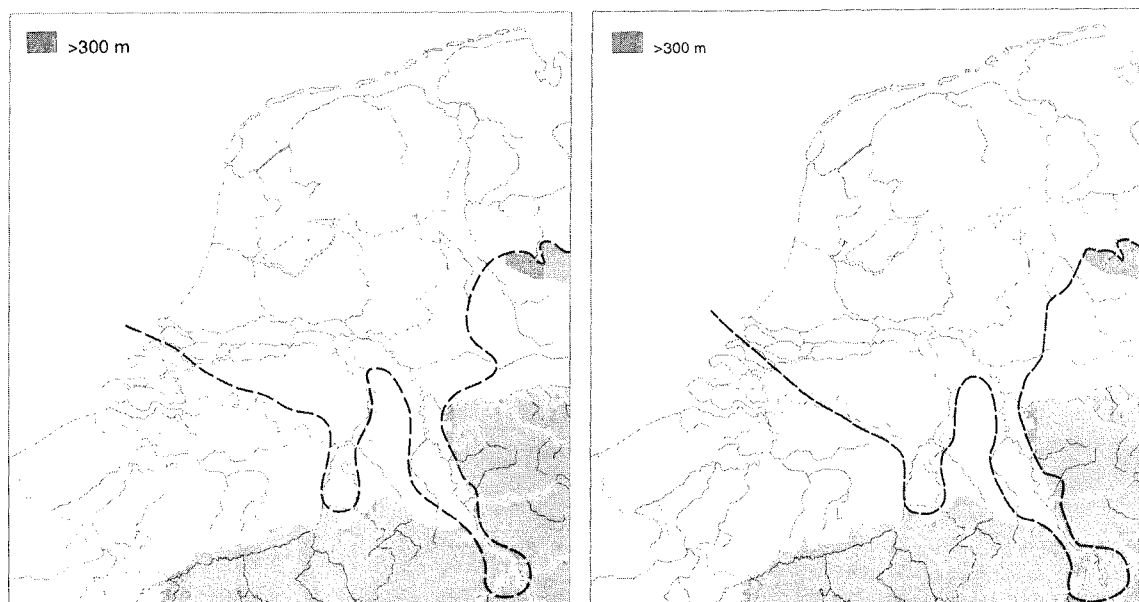


Fig. 13. De distribution of Bell beaker (left) and Barbed Wire Beaker pottery (right) in the Netherlands.

Apart from pottery typology and distribution there are many other aspects of continuity. As with Bell Beaker burials, Barbed Wire Beakers never occur as urns containing the ashes, but only as gifts presumably filled with food or drinks. Hilversum pottery — in contrast — is *always* used as urn.

Furthermore, the traditions of a crouched position of the dead, of inhumation, of barrows without secondary interments, and of several types of grave gifts continue from the earlier beaker periods. The use of flint, and of flint artefacts such as daggers, and arrowheads is continued between 2000 and 1800 BC as well, and stops shortly after. The same holds true for battle or hammer axes. In fact, only the use of flint arrowheads is continued after 1800 BC. In settlement context we have seen that the two-aisled house tradition continues until the very end of the period 2000-1800 BC.

To conclude this short summary, it is evident that the Dutch Barbed Wire Beaker 'Culture' is in all respects a continuation of the Late Neolithic Beaker traditions. Most of these traditions change rather radically around 1800 BC, although there is still a lot of evidence for continuity as well. The implication of this for the discussion of the beginning of the Bronze Age in the Netherlands is, in my opinion, that we should move the line dividing the Neolithic and Bronze Age towards 1800 BC. This is the absolute end of the Beaker traditions and the start of entirely new ones, maybe not so much in a technological sense but in social, economical and ritual aspects of culture.

I therefore propose to indicate the period between 2900 and 1800 BC as the Late Neolithic, the period of the Beaker Cultures. Late Neolithic A is the period of the Single Grave Culture including AOO Beakers (2900-2500 BC), Late Neolithic B the period of the Bell Beaker Culture (2500-2000), Late Neolithic C the period of the Barbed Wire Beaker Culture (2000-1800).

### 6.2 1800–800 BC: *The Bronze Age*

The Early Bronze Age, as I see it, is marked by the development of several traditions that differ from the Late Neolithic practices sufficiently to suggest that a fundamental change in several dimensions of culture occurred simultaneously. Housing traditions changed and possibly associated economic traditions, burial traditions, deposition practices and pottery traditions. At the same time new traditions start which continue for the next 700 years.

It is difficult to find the next *caesura* of comparable magnitude. We can use the 1500 BC mark as the border line between the Early and Middle Bronze Age, but it is definitely not as clear a

boundary as the beginning of either the Early or Late Bronze Age. It marks only the transition between Early and Late Hilversum pottery and between barrows with ring ditches and post circles. In the north Sögel-Wohlde ends around 1500 (Butler & Steegstra, 2000).

The start of the urnfield period is a bit more far-reaching, although changes can only be seen in the traditions of burial and pottery. Nothing seems to happen in the settlements. Housing traditions continue, changing only around 800 BC, when the short 'single family' house of type Een/Overgangstype Hijken (Huijts, 1992: p. 67 ff.) and Oss 2 develop out of the large Bronze Age longhouse (Fokkens, 1991; Schinkel, 1998). The exact date for this transition is not clear, since no absolute dates exist so far.

In the Late Bronze Age also the Celtic Fields develop (Fokkens, 1991a; 1998; De Hingh, 2000). This may indicate an important change in the way arable fields are exploited and also in the way burial areas are perceived as ancestral lands (Fokkens, 1997; Roymans & Kortlang, 1999). The beginning of the Late Bronze Age c. 1100 BC, therefore appears to be a meaningful boundary in terms of social and economic processes.

For the end of Bronze Age at 800 BC the same holds true. Then housing and deposition traditions change. The burial ritual appears to remain unaltered, although there are several developments in pottery and grave typology that make a distinction between the period before and after 800 BC possible. Moreover, shortly after 800 BC the rich wagon burials of the central and southern Netherlands mark a new relationship with central Europe and the emergence of what Roymans has described as an elite (Roymans, 1991). This development is almost certainly related to the almost complete disappearance of weapon depositions in rivers and marshes after 800 BC. This too indicates a fundamental change of traditions that justify the choice to set the boundary between the Bronze Age and the Iron Age at 800 BC.

## 7. Final remark

Dear Jay, it was a pleasure to write this article in your honour. I hope I have not offended you with my proposition to move the boundary of the Bronze Age forward in time. We'll certainly discuss it some time. Thanks for introducing me to the Bronze Age in the years between 1975 and 1980 that I studied in Groningen. Though I did not follow your footsteps in studying bronzes, you set me on a trail and you were right: it is one of the most interesting periods of prehistory. I hope to share the Bronze Age with you for a long time to come.

## 8. Note

1. The text was critically read and improved by M.H. van den Dries and A. Brindley.

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