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AN EXTENDED BROAD SPECTRUM OF PAPERS
PRESENTED TO LEENDERT LOUWE KOOIJMANS

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12 The Schipluiden pottery: mobility, exchange and mode of production

Daan Raemaekers

12.1 Introduction

Looking back upon the last fifty years of research on the Neolithic in the Netherlands it is easy to appreciate the enormous increase in data and insights. The Leiden institute of Prehistory (IPL) has been a major contributor to the field of Neolithic research, especially by means of the input of its two directors. The founder of the institute, prof. dr. P.J.R. Modderman, focused on the province of Limburg where he executed important work on LBK, Limburg pottery and the Middle Neolithic of Limburg (now Stein group). From the early 1970's the curator of the Dutch National Museum of Antiquities, Leendert Louwe Kooijmans developed an important research line in the Rhine-Meuse area. The Hazendonk river dune, excavated in the early 1970's, still stands out as a key site in our appreciation of the process of neolithisation in northwestern Europe. With Louwe Kooijmans's appointment at the IPL the wetland research became a hallmark of Leiden research, most recently illustrated by ARCHOL's major research at Schipluiden (Louwe Kooijmans/Jongste (eds) 2006).[1]

Within the framework of wetland-based research on the process of neolithisation Louwe Kooijmans' approach seems a perfect example of Dutch no-nonsense attitude to the theoretical debate. In his early years Louwe Kooijmans excavated important sites such as Hazendonk, Het Vormer and Kraaienberg (Louwe Kooijmans 1974; 1980; Louwe Kooijmans/Verhart 1990). These sites were then analysed with an approach focussed on the when, how and why of neolithisation (*e.g.* Louwe Kooijmans 1993; 1998). More recently, the relative wealth of data allowed him to consider new avenues of analysis of which gender roles in Swifterbant and Hazendonk societies is the most striking topic.[2]

In my contribution I would like to follow up this new line of research and focus on the production of pottery within the Hazendonk group. The intriguing presence of two pottery groups at the Middle Neolithic site of Schipluiden is the starting point for this paper. On the basis of intra-site and inter-site comparison the meaning of these pottery groups is approached. After introducing the Hazendonk group I will start my analysis with the pottery from Schipluiden. These results will then be studied in relation to the other Hazendonk sites. In my conclusion I will address the issue of pottery production in terms of mobility, exchange and mode of production ending with the question whether it is possible to relate the production of pottery in this society to a male or female gender.

12.2 Context: the Hazendonk group and its pottery

The traditional framework of research into the neolithisation of the Netherlands is that in which the occupation history of the Central-European loess zone is related to that of the extensive wetlands of western Netherlands. Within this framework the Hazendonk group holds a special position. On the one hand, it may be seen as the successor of the Late Mesolithic and Early Neolithic Swifterbant group in terms of subsistence and spatial distribution; on the other hand, its material culture, especially its flint industry, is clearly linked to the Michelsberg culture (Raemaekers 1999; Van Gijn *et al.* 2006; Louwe Kooijmans 2007). The Hazendonk pottery provides links to both cultural areas (see below). On the basis of a large group of ^{14}C dates the Hazendonk group is dated *c.* 3800-3500 cal BC (Lanting/Van der Plicht 2000): between the middle phase of the Swifterbant culture on the one hand and the Vlaardingen group and TRB Westgroup on the other.

The type assemblage of the Hazendonk group was excavated by Louwe Kooijmans in the early 1970's and presented in his PhD thesis as a new cultural group: the Hazendonk group. Later research at the site yielded two older occupation phases and prompted new terminology. The two oldest assemblages became known as Hazendonk 1 and 2, while the Hazendonk material was renamed Hazendonk 3. When the Hazendonk 1 and 2 assemblages were re-interpreted as Swifterbant assemblages (Raemaekers 1999), Louwe Kooijmans proposed to return to the original terminology (Louwe Kooijmans 2007; Raemaekers/Rooke 2006). This definition is followed here.

The spatial distribution of Hazendonk sites is to a large extent determined by site formation processes as most sites were covered with younger sediment. The near absence of sites in areas without younger sedimentation (*e.g.* the cover sand area of Noord-Brabant) should be interpreted with caution. If Hazendonk sites were to be found, little more than

flint scatters would survive and it would be difficult to determine whether it concerns Hazendonk or Michelsberg sites. The spatial distribution (fig. 12.1) suggests that remains may be found in a triangular area between Maastricht, Nijmegen and The Hague.

The sites attributed to the Hazendonk group display a great deal of variability. It has to be realised that this variety is based not only on the character of the remains (systemic context), but also on the preservation and excavation conditions (archaeological context). Sites like Het Vormer and Meeuwen consist of a scatter of cultural debris without subsistence evidence or soil features preserved, while a wetland site like Hazendonk does yield subsistence evidence but the limited excavation area doe not provide us with features. For this reason, the observed variety in site characteristics is discussed in only general terms here. The subsistence base suggests that there were sites where wild animals constituted the predominant source of meat (*e.g.* Hazendonk; Zeiler 1997) and sites where remains from wild and domestic animals were more or less in balance (*e.g.* Schipluiden, Ypenburg, Wateringen: Zeiler 2006; De Vries 2004; Paalman 1997 respectively). Cereal remains are standardized: it always concerns remains from emmer wheat and naked barley. House plans have been demonstrated

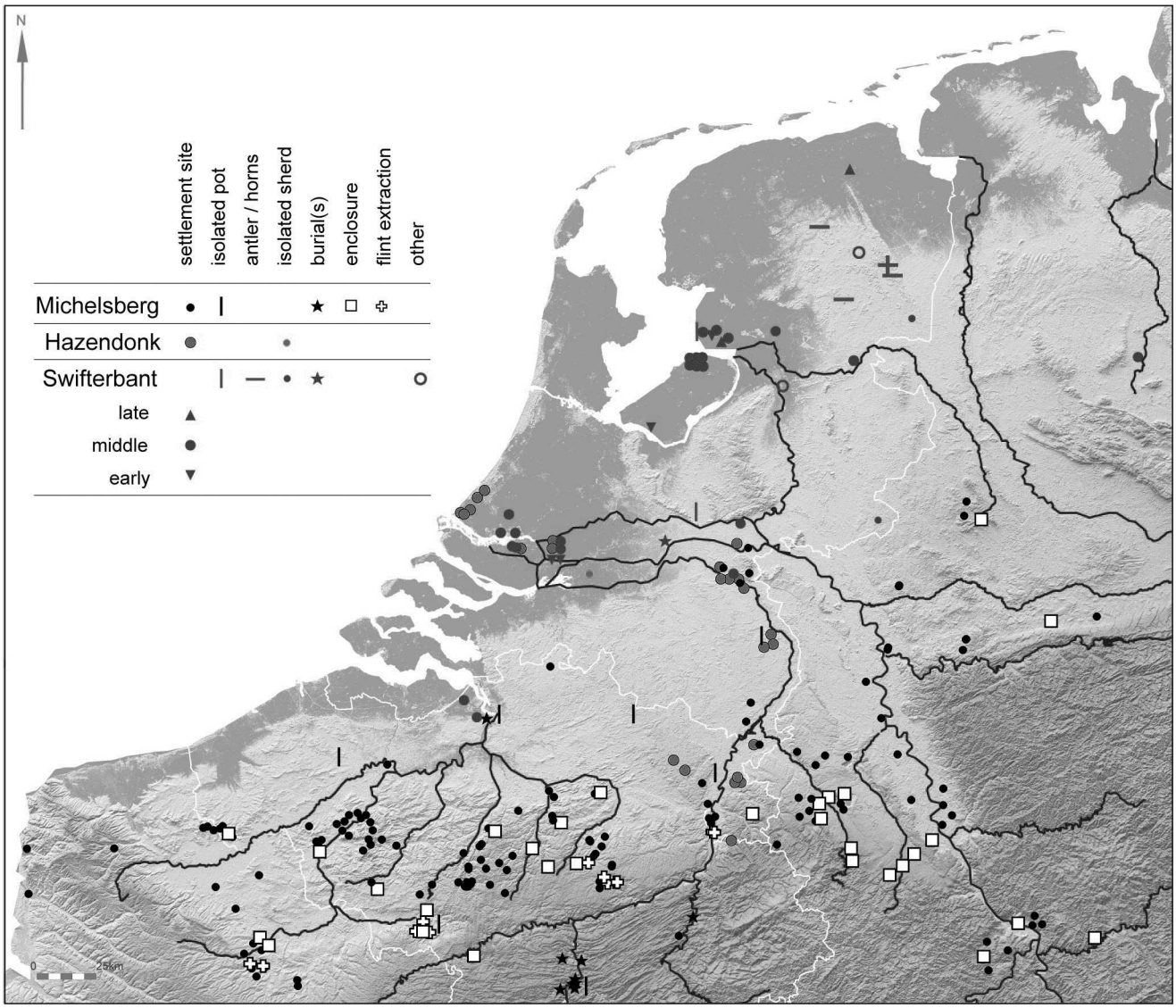

Figure 12.1 Distribution of Hazendonk sites in northwestern Europe (from Louwe Kooijmans 2006: fig. 27.4).

for Schipluiden (Hamburg/Louwe Kooijmans 2006), Ypenburg (pers. comm. J.H.M. Koot, Rijswijk) and Wateringen (Raemaekers 1997a). It concerns small two-aisled house plans. Schipluiden and Ypenburg also provide a number of human burials. A final characteristic of interest is the flint industry. All sites provide evidence of two technological categories. The first is that of local or regional available flint produced in a somewhat *ad hoc* technology; the second category consists of flint types that were transported from greater distance (Belgium, Limburg). From sites as Schipluiden and Wateringen the absence of cores is suggestive of the import of this second category of flint artefacts as finished tools (Van Gijn 1997; Van Gijn *et al*. 2006).

The Hazendonk pottery is a distinct group of prehistoric ceramics. It is characterised by the use of various tempering materials (most often quartz), coil-built, decorated with fingertips and/or spatulas in a random pattern covering the wall surface (but excluding the rim zone) and shaped into buckets, barrels and beakers (fig. 12.2). In some sites, these pottery types are accompanied by bowls (see below). In two sites in the coastal area the barrel and buckets may be divided into two groups defined on the basis of tempering agents, wall thickness and frequency of decoration.

12.3 The existence of two tempering styles

12.3.1 Site level: Schipluiden

Starting point in this analysis is my research of the Schipluiden pottery (Raemaekers/Rooke 2006). The large assemblage and well excavated site stratigraphy allowed a detailed analysis of the pottery and its development through the site's three occupation phases. The Schipluiden pottery was tempered with quartz (47.7%), other stone grit (19.5%), shell (19.3%), plant (12.1%) and grog (4.1%). As a rule (90.8%) only one type of temper was used. Using coils the clay was turned into relatively coarse pottery (average wall thickness 10.6 mm). The pottery forms include buckets (n=16), barrels (n=27), one beaker and one S-shaped pot. Decoration is found on 9.6% of the sherds and was carried out with fingertips (65.3%), spatulas (23.7%), with groove lines (8.7%) or other/undetermined techniques. Diatom analysis indicates that the pottery was produced locally.

The large assemblage allows an analysis in which the variables are cross-referenced. This resulted in the conclusion that there are two pottery groups at the site. These groups may not be identified on the basis of morphological characteristics such as size or shape, but are found in technological characteristics only. The first group consists of sherds

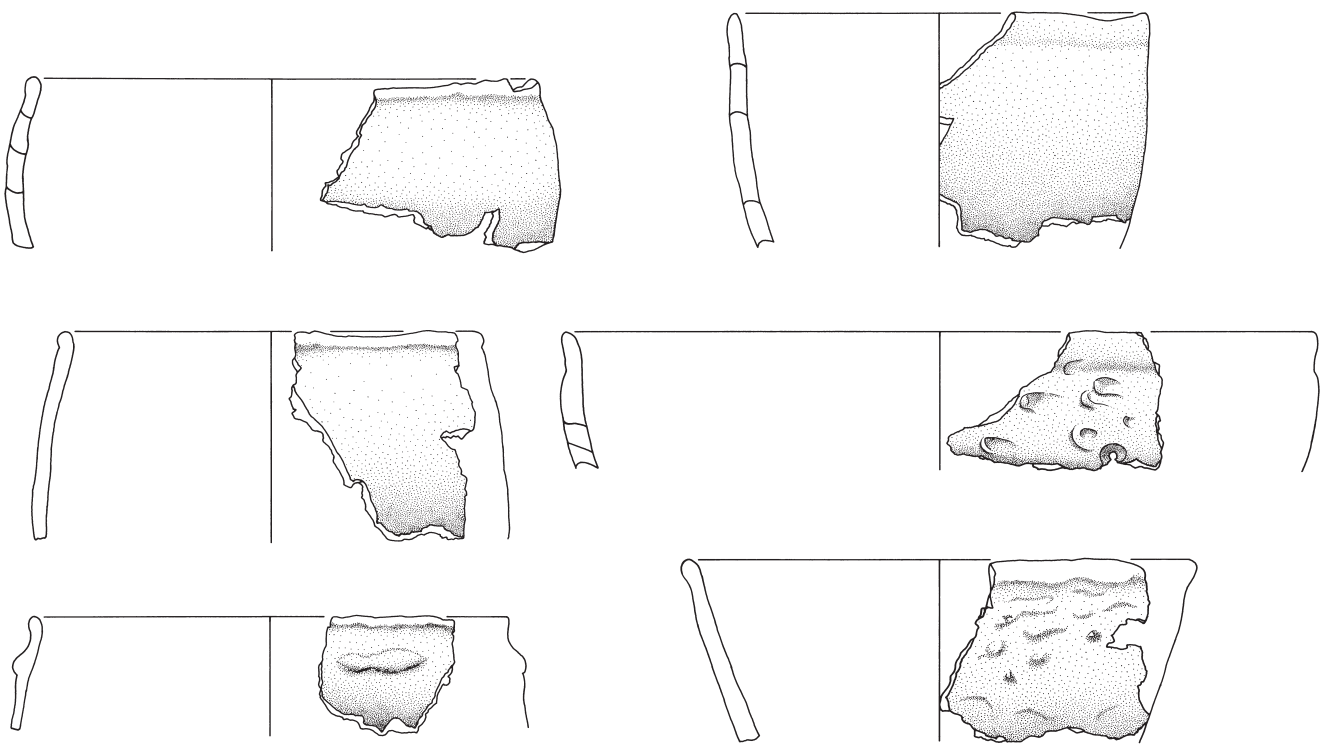

Figure 12.2 Schipluiden pottery. Left barrels and right buckets (after Raemaekers/Rooke 2006). Scale 1:3.

tempered with quartz, grit or grog. These sherds have an average wall thickness of 10.3 mm (median value 10 mm) and are frequently decorated (13.2%). The second group comprises the shell tempered sherds. These have an average wall thickness of 11.3 mm (median also 10 mm!) and are rarely decorated (1.1%). It is important to note that this difference between thin-walled pottery with frequent decoration and thick-walled pottery with virtually no decoration is found throughout the c. 250 years occupation history of Schipluiden (table 12.1). This makes clear that the two pottery groups were produced during many generations of pottery makers. Through time the proportion of shell-tempered sherds decreases from 47% (phase 1) to 10% (phase 3), indicating that the thick-walled undecorated shell-tempered pottery group became less frequently produced.

The existence of two pottery groups defined on the basis of tempering agents, wall-thickness and decoration might be interpreted in two ways. First, it might be indicative of two different 'microstyles' related to two pottery producing households with their own slightly different technological traditions, that are reproduced from one generation to the next. This should be reflected in the spatial distribution of the pottery finds. The spatial analysis of post holes and cultural remains suggests the existence of four contemporary yards at the site (Wansleeben/Louwe Kooijmans 2006: fig. 4.5). The distribution of the pottery within those four yards makes clear that the two pottery groups do not correspond to household consumption: there is no difference in the spatial distribution of sherds tempered with shell or quartz. As the microstyles are not mirrored in the spatial patterns and household consumption cannot be proven, the explanation of these microstyles as resulting from household production is at this point difficult to prove. The second possible explanation is that the two pottery groups correspond to two functional groups unrelated to size and shape. The only evidence we have of the function of the vessels is the presence of food remains on many sherds (n=764; 16.8%). The abundance of food remains and the morphological homogeneity suggest that most, if not all vessels were used for cooking. The functional difference might then be found in the contents of the pot: were specific meals related to specifically tempered pots? Unfortunately, no chemical analysis of the food remains is available, but there are five ^{14}C dates on charred food remains[3], all with a reservoir effect (Mol *et al.* 2006: table 12.2.2; Raemaekers 2005: table 1), indicating that fish was prepared. One pot was tempered with shell, the other four with quartz or grit. At this moment there is therefore no evidence that the two pottery groups may be interpreted as being related to different functions. Is it possible to gain more insight in the meaning of the two pottery group by expanding our scope?

phase	1	2a	2b	3 Unit 10	3 Unit 11
av.wall thickness (mm)					
quartz	11.6	10.4	10.1	10.1	9.8
shell	12.8	11.6	10.8	11.1	10.6
wall decoration (%)					
quartz	15.0	14.8	16.2	20.0	13.7
shell	1.0	1.1	4.0	0.0	4.0

Table 12.1 Average wall thickness and percentage of wall decoration for sherds with quartz and shell per occupation phase (from Raemaekers/Rooke 2006: table 6.4).

12.3.2 At a micro-regional level: the coastal sites

In the coastal area of Schipluiden two more major excavations are of relevance. It concerns Wateringen 4, excavated by the Leiden University in 1994, and Ypenburg, excavated in several campaigns in the late 1990's by the archaeological service of the municipality of Rijswijk. The ceramics were studied with a similar descriptive system (Raemaekers 1997b and Raemaekers in press respectively) allowing a detailed comparison. Ypenburg is in many respects similar to Schipluiden as it concerns a large site, yielded both human burials and house plans, and its ceramics may also be divided into two groups on the basis of the correlation between temper, wall thickness and percentage of decoration. Again, there are no spatial patterns suggesting household consumption and the proportion of sherds tempered with shell decreases through time. Wateringen is a somewhat different site although it must be remembered that only c. 50% of the site was excavated. This half-a-site provided us with a single house plan, while the absence of stratigraphy puts the entire assemblage into one phase. There are no burials. The Wateringen ceramics can not be divided into two groups as shell temper was almost absent.[4]

How may these regional patterns be related to the two explanations proposed above? The first hypothesis that the existence of two pottery groups is related to household production is not corroborated by the spatial patterns in household consumption in Ypenburg. Yet, the absence of shell tempered pottery in Wateringen might be interpreted as the absence of a second potter: the pottery from Wateringen was then produced within one microstyle. The second hypothesis, that the pottery groups are related to a different function, might be evaluated by referring to the differences in site characteristics between Schipluiden and Ypenburg on the one hand and Wateringen on the other: the specific function of ceramics tempered with shell was then not present at Wateringen. This interpretation cannot be supported by extra ^{14}C dates from charred food remains from

Wateringen: there are none, while similarities in the bone assemblages from the three sites suggest a similar subsistence base. The inclusion of two contemporary settlement sites from the coastal area apparently does not help us to decide which of the two hypotheses explains the occurrence of two pottery groups at Schipluiden.

12.3.3 At a macroregional level: the Hazendonk group

The analysis may be undertaken at yet a larger spatial scale, that of the entire Hazendonk group. To this end, the coastal sites are compared with Hazendonk, some 50 km inland and Wychen-Het Vormer, near Nijmegen, some 120 km inland. Louwe Kooijmans' 1980 publication of the ceramics from Het Vormer should be discussed in detail. He carried out an extensive morphological and technological analysis and concludes that there are three morphological sub-assemblages present: bowls, beakers and buckets/barrels. The first group, the bowls, are found not only at Het Vormer, but also in other assemblages in the neighbourhood. While the Hazendonk and the coastal sites lack bowls, this group has its parallels in material from Belgium, northern France and Great-Britain (Louwe Kooijmans 1980; Vanmontfort 2004). Bowls are apparently a supra-Hazendonk group phenomenon. The beakers of the second group are found across north-western Europe in the Michelsberg culture (Vanmontfort 2004; Willms 1982), late Swifterbant (Raemaekers 2005: Schokkerhaven) and the contemporary early phase of the TRB in northern Europe (*früheste* TRB; *e.g.* Koch 1998). It appears that decoration schemes are more varied and elaborated in TRB beakers, while the late Swifterbant beakers are little and simple decorated. With the exception of one beaker from 't Klumke (Raemaekers 2007), beakers from Hazendonk sites are undecorated, as are the Michelsberg beakers. The third group encompasses the buckets and barrels that are so characteristic of Hazendonk pottery. With these three morphological groups from Het Vormer as starting point it becomes clear that the occurrence of various morphological groups at Hazendonk sites was the norm. At the coast two subgroups of buckets and barrels are found alongside some beakers, at Hazendonk the same groups are found, but shell-tempered pottery is absent, while the sites near Nijmegen may contain three morphological groups. Alongside the regional patterning in technology and morphology, there are also clear patterns in terms of decoration (table 12.2): groove lines appear to be a type of decoration favoured near Nijmegen and had decreasing importance to the west. The frequency of imprints with a hollow spatula and fingertips also shows inter-regional variation. Returning to the two ceramic groups found at Schipluiden (and Ypenburg) does the inclusion of the entire Hazendonk group assist us in determining whether their existence is evidence of microstyles or specific functions? It appears that this is not the case: the inter-site and interregional variability makes clear that these ceramic patterns cannot be explained by a monocausal argument. Instead, interpretations of the observed patterning should include explanations of both the similarities (i.e. what defines the Hazendonk group pottery) and the inter-site ceramic dissimilarities.

12.4 An alternative explanation: mobility, exchange and mode of production

This broader perspective starts with the observation that we are able to construct an analytical concept – the Hazendonk group – on the basis of specific ceramic characteristics (fig. 12.1). The Hazendonk group is relatively well distinguishable as prehistoric pottery on the basis of ceramic shapes (buckets and barrels), technology (poor quality, coil-built) and decorative schemes. This relative homogeneity needs explanation because it is not self-evident that small-scale pottery producing communities develop and maintain a common ceramic expression. The pottery however does vary in terms of the tempering material.

A first issue concerning the observed patterns is that of *mobility*. The coastal area of Schipluiden appears to have been a newly-settled area during the time of the Hazendonk 3 group as no older coastal sites are known. It is as yet unclear whether Swifterbant sites may ever be found due to coastal erosion (Raemaekers 2003). The new settlers of the coastal area may have brought their Hazendonk ceramic tradition with them, developing the coastal styles in the following generations.

	coastal area	Hazendonk	Nijmegen area
important types of temper	quartz, plant, shell	quartz, plant	quartz
wall decoration	low percentage	high percentage	low percentage
groove lines	present	frequent	dominant
hollow spatula	present	present	absent
fingertip	frequent	present	present

Table 12.2 A supra-regional comparison of the Hazendonk group pottery.

The second issue of relevance are the existence of *exchange networks*. The presence of flint artefacts made on exotic materials such as Rijckholt flints and quern stones indicate that in a network in which exchange and mobility are combined raw materials were transported to the coastal area. The proportional importance of Rijckholt flint decreases from the Nijmegen area *via* Hazendonk to the coastal area suggesting a down the line exchange instead of long (c. 300 km) expeditions to the Rijkcholt sources in the southern part of Dutch Limburg. Because of the lack of sites between the coastal area and Hazendonk one is inclined to identify the scale of the raw material exchange network on the basis of the distance between these two areas: some 50 km. The Hazendonk inhabitants in turn had exchange relations further inland.

The third issue to be discussed in relation to the observed pottery patterns is that of *mode of production*. Ethnographic literature provides us with various models in which degrees of production specialisation lead to notions of production at the level of a household, a family, *ad hoc* specialists or true specialists. It is difficult to relate these categories to the Hazendonk group as we are dealing with patterns in consumption rather than production. The lack of spatial patterning at Schipluiden at least indicates that there is no household consumption, but this does not indicate that household production should be dismissed. The most extensively excavated sites, Schipluiden and Ypenburg, suggest the existence of settlements in which a small group of households lived together. Diatom analysis suggests both local production and consumption. Another aspect of relevance here is the lack of stylistic development through time across the entire Hazendonk area. This conservative technological tradition indicates that the emblemic value of this category of material culture is very restricted and the pottery is foremost a functional artefact group.

One potential explanation of the observed pottery groups of Schipluiden might be proposed on the basis of these three issues (fig. 12.3) and is presented here. The coastal area was colonised by people of the Hazendonk group living further inland. After settling contacts between the potters in the coastal area and those beyond were restricted, resulting in regionally preferred decorative schemes. It appears that in the supra-regional exchange of marriage partners potters were not exchanged. Instead, a *ceramolocal* marriage system developed in which partners married into the potter's family. The occurrence of two pottery groups at Schipluiden and Ypenburg is evidence of two contemporary traditions – microstyles – providing pottery for all households at Schipluiden.

	Similarities	Dissimilarities
Mobility	Colonisation	
Exchange networks		Ceramolocal marriage system
Mode of production	Tradition	Little emblemic value

Figure 12.3 An overview of the issues concerning the patterning of Hazendonk pottery.

A final topic to be discussed is that of the gender of the potters. Although I have no problem accepting the existence of gender roles in these small-scale prehistoric societies, Louwe Kooijmans's suggestion that it was a female activity is in need of archaeological argumentation. As a rule, there is little direct evidence of gender roles. A singular exception is the male burial from Schipluiden with strike-a-light and pyrite (Van Gijn *et al*. 2006). It appears that a specific male role was expressed (Smits/Louwe Kooijmans 2006: 107) and making fire might be a male activity. On a more general level it is evident that whereas flint procurement is related to mobility and exchange due to the absence of raw materials in the coastal area, pottery production is a local activity. This suggests that gender roles may be related to degree of mobility. In my opinion, it is a matter of personal preference to identify the ceramolocal pottery tradition with a matrilocal exchange system in which 'mobile males' marry into their wives' family or the other way around.

Notes

1 ARCHOL is the excavation firm that is part of the Leiden University.

2 Symposium contributions by Louwe Kooijmans in Schleswig (2006) and Leiden (2007).

3 Mol *et al*. report GrA-26892 as a dated charred wheat (2006: table 2.2) contrary to Raemaekers 2005: table 1. A request at the Groningen Centre for Isotopic Research made clear it concerns a date of charred food remains.

4 The report does not mention that there are two sherds with bone or shell fragments.

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