Times fade away. The neolithization of the southern Netherlands
Verhart, L.B.M.

5 Synthesis

5.1 Introduction

After ten years of research and four excavations, we stop and take stock. We have been quite active in our opposition to the site approach in archaeology and have proposed a more regional approach[1]. After ten years we still hold this view, but we do have to admit that a regional approach, in particular the Meuse Valley Project, is very labour-intensive and sizeable. This thesis only deals with part of the data we collected. Moreover, new questions keep emerging, not only over the course of the investigation itself, but also in each new excavation, even if conducted within a regional setting. As a result, excavation data at this stage — though these may fit a regional setting — may be considered site-oriented data again at a higher level of interpretation. We shall have to learn to live with this dilemma and shall attempt a synthesis of our current research results, although we are well aware how premature and relative the nature of our conclusions will be. This is illustrated by the investigation of a Late Mesolithic encampment at Merselo-Haag. Due to the absence of comparable research into similar settlements in the south of the Netherlands the results of this investigation become the standard. The lack of reference material makes it hard to evaluate the importance of the data of this investigation. A new excavation may lead to quite different views.
The neolithization process in general has been studied intensively and for a long time. As a result, various ideas have been formulated and published in the Netherlands[2]. In broad outlines there is a general consensus, but there are also highly divergent opinions on many, more detailed subjects. The synthesis presented here joins the broad outlines. We see the neolithization process as a gradual phenomenon based on more than a single cause. Our research and the results inferred from this do not fundamentally affect the picture, but try to specify existing ideas on the neolithization process in the south of the Netherlands, on the basis of a number of excavations and the study of flint scatters. However, our research into comparable processes of change in other, usually non-western, societies does constitute a new element. The result is a number of new data allowing the formulation of a model for the neolithization process in which social aspects play a part as well, besides purely economic reasons.
We wanted to gain a better understanding of and improve clarity on the neolithization process in the south of the Netherlands. Ideally, a settlement should be investigated where the moment of transition from a Mesolithic to a Neolithic way of life could be ascertained. This however does not exist. Ultimately the combination of site-associated and non-site-associated research data forms the basis of the synthesis. A leading part is played by developmental trends in intra- and intersite patterns, as a reflection of social and economic change.

5.2 Neolithization, a model

As a hypothesis, the neolithization process — the transition from an exploitative to a productive food economy — in the south of the Netherlands may be explained as a transformation process that was initially started by internal social change, originating in competition between individuals and possibly groups. The competition may occur between members of a single group, between individual members of different groups or between groups collectively (fig. 5.1). The contacts between Mesolithic hunters and gatherers and Neolithic farmers have brought a new dimension and acceleration to this competition.
The main building blocks for this hypothesis are data from ethnographic studies. In contact situations two different stages may be distinguished. At the first stage the contacts are opportunistic and aimed at mutual advantage. The ‘natives’ are often inferior in the eyes of the new arrivals; the ‘natives’ on the other hand, usually feel superior. The contacts have a primarily social meaning for the groups first coming into contact with new arrivals, even though at first sight it appears to be based on economic or technical improvements. The new arrivals, on the other hand, are mainly focusing on economic advantages. This stage of contact is characterized by a flow of goods considered partly valuable and partly less valuable by both groups (fig. 5.2). What is received is considered valuable, what is given away is not. New arrivals turn out to be interested almost exclusively in food and raw materials, never in artefacts, as these are associated with an inferior group. The meaning and appreciation of an object or raw material may therefore be highly divergent. Intrinsic meaning of objects may change as

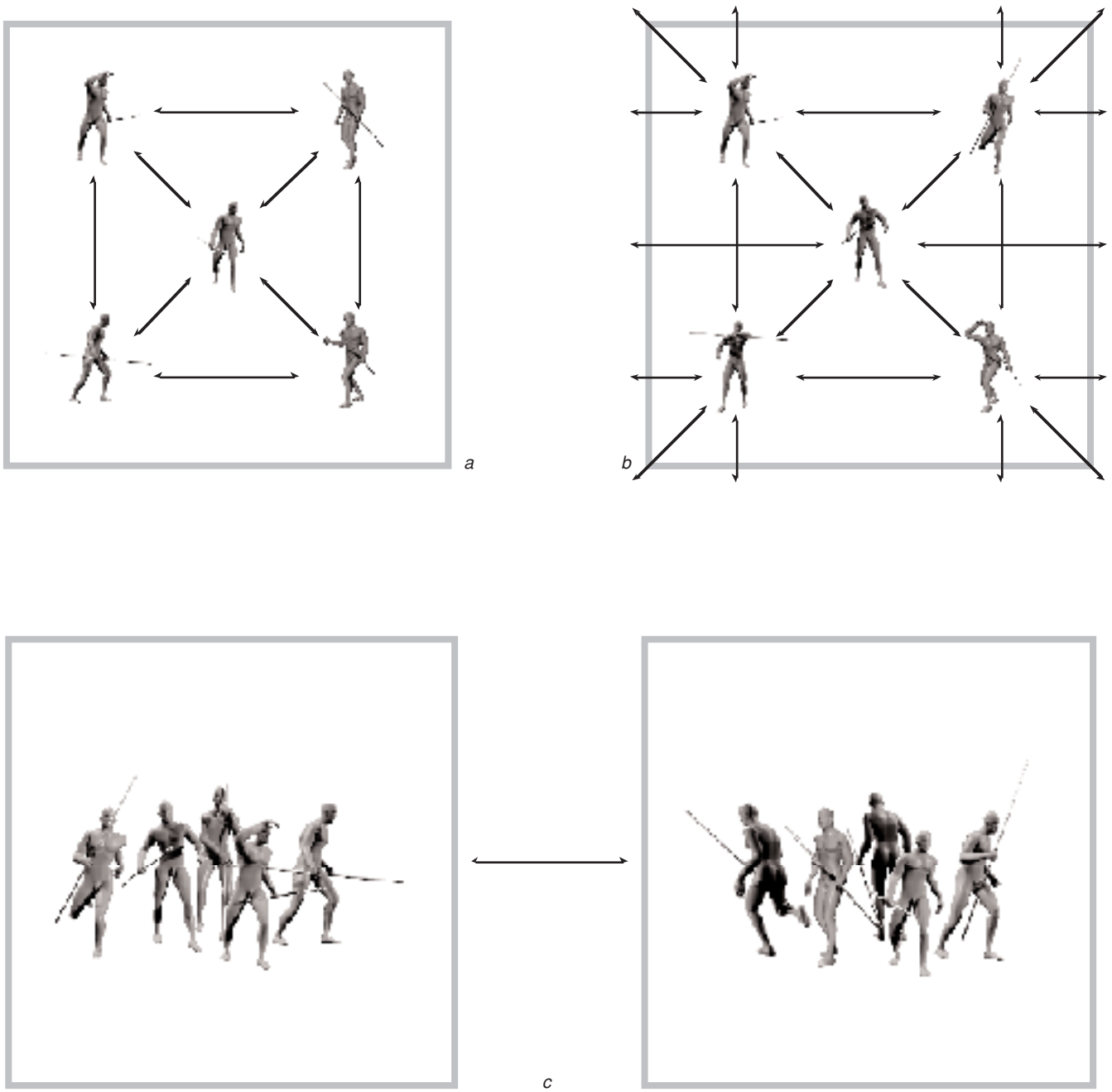

Fig. 5.1 Different types of competition.
a: closed: individual competition within the group of hunter-gatherers; b: open: individual competition within the group, in combination with members of other groups; c: group competition.

well, as a utensil from one group may become a status symbol within the other group. Even waste material may acquire status-enhancing meaning in this way.
What is worthless for one is valuable for another. It will be apparent that is such situations inflation is likely to start to play an important part. Fuelled by internal competition, objects of low value to one group will be exchanged in ever increasing numbers, until these have lost their attraction. At

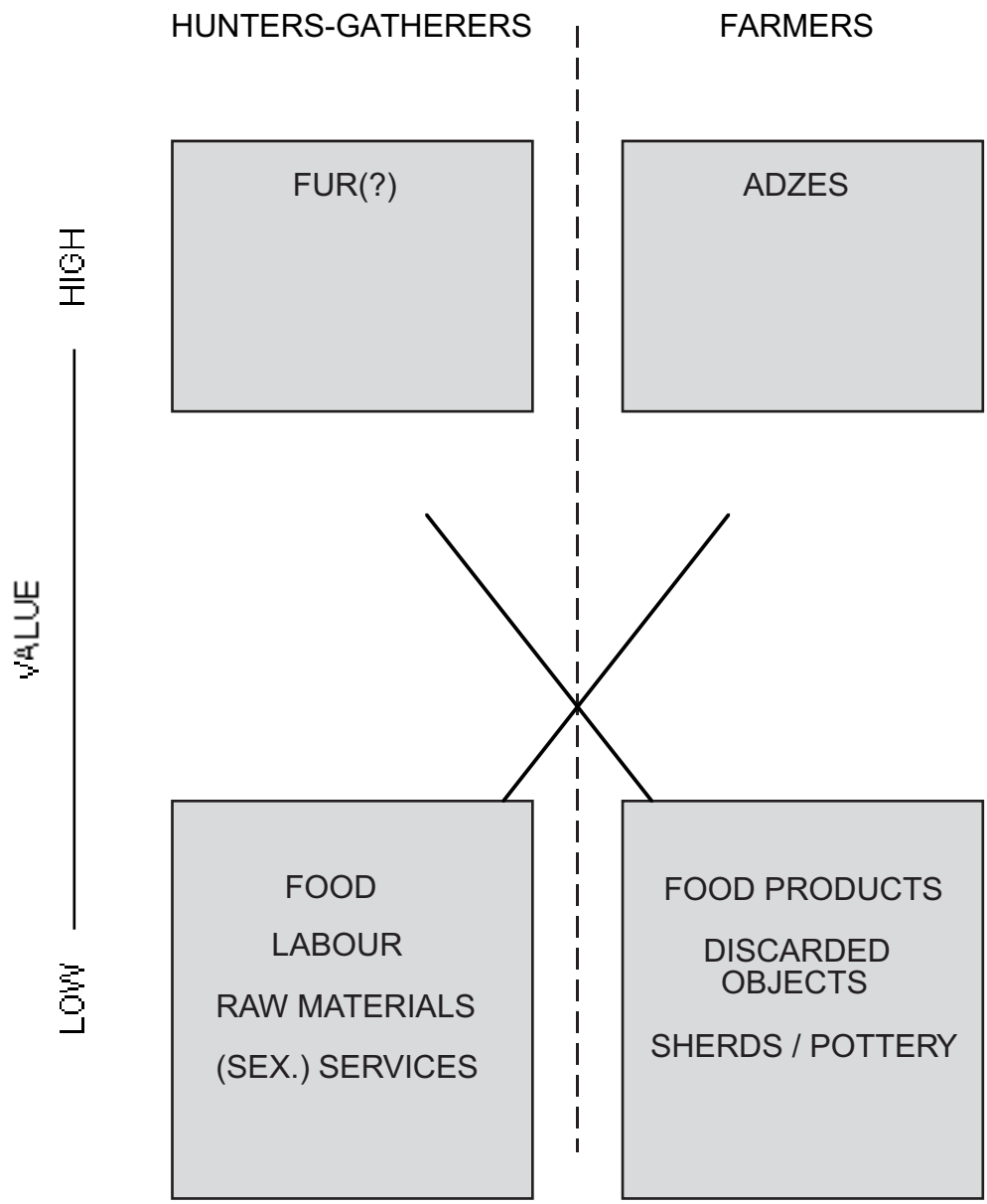

Fig. 5.2 Model for exchange between hunter-gatherers and farmers in relation to the changing value of exchange objects.

that point other objects may start playing a part in the exchange and the cycle will recommence.
As the result of first contacts, three types of reactions can be distinguished, in which those contacts are more structuralized.

1 The first type of reaction is a strong dependence on the people introducing these novelties, leading to a severe disruption of the indigenous lifestyle. Ultimately they merge into the group of new arrivals. This may occur 'archaeologically invisible', when a group or individual becomes an integral part of society, but another possibility is to remain a distinct — and often deplorable — outsider.

2 Symbiotic relationships develop that are mutually advantageous. Both groups remain distinctive cultural identities. Some of these changes may occur quite rapidly, whereas others occur at an extremely slow pace.

3 The indigenous group attempts an isolation from the new arrivals by avoiding contact. They often settle in areas

where the new arrivals do not or can not come. Although they attempt to hold on to their own identity in all possible ways, this rarely leads to an improvement in their own living conditions. Usually only marginal areas remain for settlement. This often results in decreased living standards.

The reactions mentioned above may be inferred from archaeological finds and an analysis of distribution maps. The assumed competition among Mesolithic hunters and gatherers and increasing contacts between hunter-gatherers and farmers are archaeologically visible in the use and distribution of Neolithic artefacts in a Mesolithic context. However, traces of exchange of perishable products such as pigments, feathers, herbs, salt, oil and food, often mentioned in ethnographic descriptions, have not been preserved. All that is left for us to find are pottery, adzes and Breitkeile as visible elements of those earliest contacts between farmers and hunter-gatherers. The numbers of finds and the size of the distribution pattern reveal increasingly close contacts over time. This may be linked to social developments within the Late Mesolithic communities. The use of culturally foreign artefacts may be connected with prestige and those objects may then serve to enhance the status of individuals as well as groups.
It is not likely that at the time of the LBK there was a dependency relationship between Mesolithic hunter-gatherers and Neolithic farmers. After all, the lifestyle emphasizing hunting, fishing and gathering has continued for another 1500 years. A strong separation between the two groups is also unlikely. Most plausible is a mutually advantageous symbiotic relation between hunter-gatherers and farmers.
In order to archaeologically document and describe the neolithization process in the southern Netherlands, we investigated five regions in varying detail. In three regions an excavation was carried out as well. Using the results of this investigation, in combination with excavation data from the north and west of the Netherlands and Belgium, the process of gradual neolithization can be outlined in stages.

5.3 Late Mesolithic

In general it is assumed that in the Late Mesolithic small groups of hunter-gatherers had a highly mobile way of life. They would travel around in an annual cycle, visiting those places where the food supply was largest at that particular moment in time. To a great extent, the rhythm of the seasons determined the food supply and the best location for a camp. The degree of mobility would be lower than in the preceding period, on the one hand due to the increasing overgrowth of the terrain, but on the other hand population growth and an attendant decrease in the size of territories would play a part as well. In that annual cycle there were also probably moments when the groups would meet in aggregation camps, where all kinds of social and economic activities would occur and information would be exchanged.
This picture is strongly influenced by ethnographic examples and barely substantiated in the Netherlands by archaeological data. This is due to the small number of Late Mesolithic sites investigated, but also due to the almost complete lack of regional research[3].
For instance, many sites have been discovered during the investigation in the core region Venray. Despite this wealth of sites there are major problems in analysis. First of all, the dating system based on typochronology is very crude. It may only be used to distinguish between Early, Middle and Late Mesolithic; finer distinctions are impossible. An associated restriction is the small number of guide artefacts per chronological phase. These are exclusively points (microlites), as a result of which it is impossible to date sites where these points do not occur and which might have a different function. The second problem is the repeated use of many locations over time. Apart from the fact that the function of such palimpsests can not be ascertained, the almost complete lack of 'clean' sites is a serious drawback to the study of settlement systems.

In the core region Venray a quite considerable number of sites from the Late Mesolithic is known. The sites are clustered in an area at the transition from coversands to the Meuse valley and in an area approx. 15 km to the west, at the transition from coversands to the former wetland de Peel. It was impossible to distinguish specific types of easily characterized settlements like hunting or aggregation camps. These are all surface sites, with a find composition consisting of some arrowheads and several other types of tools. Apparently relatively small multifunctional base camps existed in the core region Venray in the Late Mesolithic, always located at the borders of large ecological units.
The excavation of the settlement at Merselo is important for the conclusion that multifunctional base camps existed in the entire region. Here an encampment was uncovered consisting of several spatially distinct clusters of flint which were the result of a series of more or less simultaneous activities. Besides flint processing, game was dismembered here, catch processed, hunting gear repaired, fires made and scrapers employed, probably in the processing of skins, antler, bone and wood. The many arrowheads appear to indicate that hunting was an important part of the activities on the site. The range of activities, however, points to a non-specialized function of the settlement. So an interpretation as a multifunctional base camp is plausible.
These results are not in keeping with the assumption that the Late Mesolithic settlement system is mainly characterized by a lower mobility compared to the preceding period, that

hunter-gatherers inhabited larger encampments for longer periods and that the surrounding countryside was exploited by a series of small specialized activities, performed by a small group consisting of the inhabitants of a large base camp[4]. The latter category of camps (special activity camps), known from the Early Mesolithic[5], have so far not been found in the core region Venray and are barely known outside the region as well. Most encampments investigated-small in number though they are — show striking similarities to Merselo-Haag in artefact composition[6].

The Late Mesolithic in this region therefore appears to demonstrate a settlement system and exploitation pattern that are not as varied as expected. Typical are the base camps of differing sizes, which have not been in use over a long time. The investigation at Merselo-Haag, however, also proves that this conclusion is determined to a large extent by the scale of the investigation. The picture of the Late Mesolithic settlement system is based on dots on a map representing settlements and linked to a function that has been inferred from a single excavation. The 'single or stray' finds that can not be squared with this function, have not been included in the picture of the system.
The excavation is a cutout providing a picture of the use of the area over time. Besides the presence of a base camp, all kinds of activities — represented by 'single or stray' finds-can be distinguished as well, making the picture drawn above much more dynamic. Part of these activities will be associated with the settlement, but another part will be the result of a different use of the terrain. The reflection of those activities outside a settlement setting consists for instance of artefacts lost during a hike, misfired arrows that have not been retrieved by the hunter, waste from a short rest period during the relocation of a camp or the remains of an overnight stop[7].
Although the scale of the investigation may also be the reason that 'special activity sites' are overlooked, the few data indicate that the Late Mesolithic settlement system is dominated by base camps inhabited by small to intermediate groups and were not used for long periods of time. To quote Binford[8], this is more of a residential mobile settlement system, as opposed to the more logistically organized settlement system expected.

5.4 Early Neolithic A/B

Around 5300 BC farmers lived in the south of the Netherlands. They are originally from Central Europe and settle the fertile löss soils of Zuid-Limburg. They introduce foreign food crops, livestock, pottery, polished stone tools and new social relationships. Another striking innovation is the choice of location and settlement. Large, sturdy houses are built, clustered as small hamlets on the edges of löss plateaus. The relatively small fields surround the settlement and are worked by hoe cultivation. The fertility of the soil allows the fields to be used almost continuously.
A different type of settlement is found in the coversand area immediately adjoining the löss. This is small in size, there are no soil traces of farm posts and a limited range of the material culture is found. Such settlements are interpreted as transhumance camps[9].
The economy of the LBK is considered to have been completely agrarian. The large amounts of arrowheads appear to indicate, however, that hunting was still an important factor, an assumption recently substantiated by the discovery of a bow fragment[10].

The agrarian lifestyle does not appear to persuade Mesolithic groups to change their traditional pattern of life. There are hardly any signs that the LBK has influenced Mesolithic hunter-gatherers in this respect. The use of La Hoguette and Limburg pottery is considered by us to be associated with the LBK and not with Mesolithic groups which developed independently a pottery tradition of their own[11]. In LBK-settlements no artefacts with a Mesolithic origin are found, but the opposite does occur. Outside the distribution area of the LBK, pottery and adzes are found in particular[12]. These objects are indicative of the contacts that will have existed between the two populations. The distribution is partly the result of direct contacts, but the majority will be the outcome of exchange among Mesolithic hunter-gatherers. No changes can be discerned in the settlement pattern of the hunter-gatherers, these do not occur until the Middle Neolithic.

Traces of the Rössen culture are extremely rare. Besides single finds of some sherds[13], only one major site is known in the south of the Netherlands: Maastricht-Randwijck[14]. Eight pits have been discovered there which contained Rössen artefacts. Post traces from this period are absent. On the basis of the material found: pottery, flint tools, waste of Breitkeile production, bovine molars, cereal remains and grinding and cooking stones, this is assumed to be the remains of a settlement consisting of one or more houses, which escaped erosion[15].

5.5 Middle Neolithic A/B

Archaeologically the neolithization process in the south of the Netherlands appears at first sight to be completed in the Middle Neolithic. The few Bischheim-finds and the large number of Michelsberg settlements are indicators for the presence of these formally Neolithic communities. Three possible scenarios for the neolithization process can be envisaged.

1 A neolithization process, assuming acculturation, occurred before the Michelsberg phase.

2 A Michelsberg colonization occurred, where the Mesolithic population merged into Middle Neolithic groups and/or moved to a different territory.

3 The Michelsberg culture may be considered a neolithicized Mesolithic, after a Michelsberg model.

The arguments in favour of the first scenario, an almost full-blown neolithization process before the Michelsberg phase, are few. In that instance the Rössen culture should be considered the stimulant for this transformation; its settlements, however, are located on the Aldenhovener Platte in Germany and one at Maastricht-Randwijck, but are not present either in the sands or the löss in the Netherlands. Despite the absence of Rössen settlements in these parts, the Rössen culture did have an impact. Indications for that impact are the numerous Breitkeile and the few sherds recovered far outside the actual culture area. These are indicative of direct and indirect contacts between Mesolithic and Neolithic groups, but do not appear to have significantly changed society economically.
Another phenomenon — where the Rössen culture may have played a part — is the use of pottery. In the Swifterbant culture in the north of the Netherlands this is evident as early as approx. 5900 BP[16]. The flint industry[17] is still strongly Mesolithic as late as approx. 4200 calBC, whereas livestock and agriculture have become important parts of the food economy by then[18]. A process of gradual transition from Mesolithic to Neolithic may be assumed[19]. Finds of Swifterbant pottery, or pottery that may be linked to indigenous production, have so far not been found in the south of the Netherlands. This may be due to conservation conditions, as pottery is badly preserved in sandy soils. The flint industry has still too much of a Mesolithic character to allow any features to be used to identify Swifterbant in the sandy areas. We do not preclude the early use of indigenous pottery, but as yet there are no indications for this. The La Hoguette and Limburg pottery, assumed to have been produced by Mesolithic groups, should in our opinion be associated with the Bandkeramik[20].
The second scenario assumes a colonization by Michelsberg groups, in particular from the Rhineland, Zuid-Limburg and Belgium. The oldest dated MK-settlement in the Netherlands (5310 ± 80 BP GrN-21043) is Maastricht-Vogelzang[21]. The material excavated there, which may be attributed to MK-phases I and II[22], comes from the filling of a depression. The actual settlement area has eroded, so no statements may be made on the presence or absence of houses. An interpretation as settlement is plausible and may be inferred from: pottery, flint tools, axes and grindstones. Although this need not imply a permanent settlement, such an interpretation is made more likely by the presence of grindstones, the large amount of misfired pots and the fact that the find concentration may be considered a waste heap. The tempering of the pottery with flint, in combination with the use of flint and tranchet axes from the north of France, reflect a connection with Michelsberg in Belgium.
Meanwhile it has become clear that in the west of the Netherlands indications occur for the early use of pottery comparable to Hoge Vaart-A 27. The oldest sherds are from Hardinxveld-Giessendam[23]. Somewhat younger is the material from Bergschenhoek and Brandwijk. These two sites have ages of approx. 5400 BP[24]. The excavations at Hazendonk, Bergschenhoek and Brandwijk demonstrate that from around 5400/5300 BP pottery really was used in combination with a flint industry characterized by the use of mined import flint from Zuid-Limburg and flint collected in river channels or old river terraces. Although MK-elements — particularly in the Hazendonk 2-phase — are discernible in the pottery, this Neolithic may not be considered a MK-colonisation. Besides a food economy largely based on hunting and gathering, relationships can be demonstrated in a material sense with Swifterbant groups to the north[25]. In the west of the Netherlands a culture appears to have developed between two spheres of influence, in its early stage (5400/5300 BP) with impulses from the northeast (Swifterbant) and in a somewhat later stage (5000/4900 BP) a development of its own with southeastern influences (MK). Besides the settlement of Maastricht-Vogelzang, Heerlen and the settlements in the west of the Netherlands, many more sites containing Michelsberg material are known. These range from sites with only a few artefacts to complexes where so much material has been collected as to warrant an interpretation as settlement. Quite a number of features may be distinguished here that deviate from what is typical of the Michelsberg culture at its source[26]. Of the varied morphology of the Michelsberg pottery only a few simple main forms have been adopted. On the Michelsberg sites in the sandy area bottle shapes, large roughened storage pots, little cups and ‘baking plates’ are absent, to name but a few. In these areas we encounter mainly barely distinctive tulip-shaped beakers and pots and bowls with carinated profiles. In addition features like ‘Tupfenleisten’ and subcutaneously perforated lugs — although these are quite rare — occur. Essentially this is a ‘translated’ form of a selection of the range of Michelsberg pottery.
A second phenomenon indicating a pottery tradition of their own is the use of decoration in the Hazendonk 3-phase. Motifs are used like nail impressions, drawn lines, ‘pinpricks’ and surface roughening by spreading clay and applying clay lumps[27]. This kind of composition and use of decorative motifs is not known from MK-settings.
At first sight a break with the Mesolithic past seems apparent in the flint industry as well. The macrolithic tools and leaflike and triangular arrowheads do indeed not resemble the tools of the previous period. Yet in the flint

industry and the treatment of flint a number of Mesolithic traits can be distinguished.
The flint used is of good quality and imported as semi-manufactured goods for standardized tools. Additional tools are made of flint collected at shorter distances from the settlement. This is often of an inferior quality and the tools made of it — mostly flakes with retouch and small scrapers — appear to have been made for quick, once-only activities. A similar pattern may be discerned as early as the Late Mesolithic, where we also see importation of semi-manufactured goods for tools and the use of locally collected flint for additional activities. But the use of other, conspicuously large, tools in the Michelsberg phase is most striking. This is a phenomenon subject to 'fashion', highly similar to for instance the rapid distribution of bell beaker pottery over large parts of Europe in the Late Neolithic. The wide-ranging occurrence of such a 'fashionable' item does not necessarily imply that their own cultural identity and traditions have vanished as a result. These conspicuous artefacts affect our picture and suggest change, although much is still the same. The pattern of flint use, the processing techniques and part of the tool types are still of Mesolithic origin in this period.
Finally, two individual observations are in keeping with this. At the Hazendonk 3-level at Hazendonk we find, besides the characteristic triangular MK-points with semi-surface retouch, also transverse arrowheads indicative of a continuance of Mesolithic traditions. This is confirmed by a second observation: the finding of two pieces of Wommersom quartzite in the MK-encampment at Gassel[28].
The second scenario basically offers the possibility that the Mesolithic groups could have moved to another territory upon colonization by the Michelsberg culture, to continue their traditional lifestyle elsewhere. At first sight this would appear unlikely. After all, in the west and north there were groups of Mesolithic origin, which had already adopted a large number of Neolithic features, most strikingly the use of pottery. Yet there are indications, albeit rare, that the Mesolithic in the coversands of northern Belgium and the southwest of the Netherlands continues into the Michelsberg phase. First of all, a number of Mesolithic settlements may be pointed out that have C14-dates within the MK-period or later. Secondly, a single Michelsberg pot was found on the Late Mesolithic site Dilsen-Dilserheide[29], that may be considered an object of exchange between Mesolithic hunter-gatherers and MK-groups to the south. Thirdly, remarkably few Michelsberg settlements are known to occur in the western coversand area.
There are therefore no indications for a Michelsberg colonization of the west and the coversand area in the south of the Netherlands.
The arguments in favour of the third scenario, a Neolithicized Mesolithic after a MK-model, have for the most part been discussed already in the first part of the second scenario. The exact same arguments against colonization can now be used in favour of a more indigenous development. If colonization may not be designated the driving force for change, only one alternative remains: an independent, indigenous development, enhanced to a greater or lesser extent by outside influences. In this type of situation the Mesolithic society would gradually adopt Neolithic elements. At the point where Neolithic artefacts become predominant, agricultural elements become important in the food supply and houses are being built, archaeologists designate this stage 'Neolithic'. This gradual process of transformation is particularly well-documented on site-level in the west.
In the sandy areas the choice of location, the range in settlement types and the Mesolithic roots of the material culture are indications for a gradual process of transformation. In this process differences between regions in the south of the Netherlands are apparent: in some regions change occurs faster than in others.

The first region is the Meuse valley and the immediately adjoining coversand area. For this region the investigation at St. Odiliënberg, and recently at Roermond[30], may be considered representative. On the basis of the data available, it can be inferred that the neolithization process was well-advanced in this region. Many finds testify to contacts between hunter-gatherers on the one hand and farmers (LBK and Rössen) on the other. The Michelsberg pottery displays marked similarities to the original material, although only a limited selection has been adopted from the range of pottery. Later, regional developments of their own appear to be favoured. The degree of influence is hard to ascertain, due to the dearth of data, but characteristic decorated Hazendonk 3-sherds are known from this region. Sites include a.o.: Meerlo, Tienray, Venray and Sittard.
Although it proved impossible to demonstrate beyond question the presence of a house on the excavation site Neliske, single house sites appear to be the basis of a predominantly agricultural economy. The length of use of an area is related to the life span the house or the degree of exhaustion of the arable fields surrounding the settlement. As soon as one of these elements had reached a critical value, another area would be exploited and a new house constructed. This type of agriculture is referred to as 'shifting cultivation'[31]. Hunting does not appear to have played a significant role in the area around St. Odiliënberg.
In a material sense the find material may be considered Neolithic. Few Mesolithic roots can still be identified in the Michelsberg phase, with the possible exception of the use of flint. In the pattern of use — tools of imported flint — those Mesolithic traditions might still be discerned.

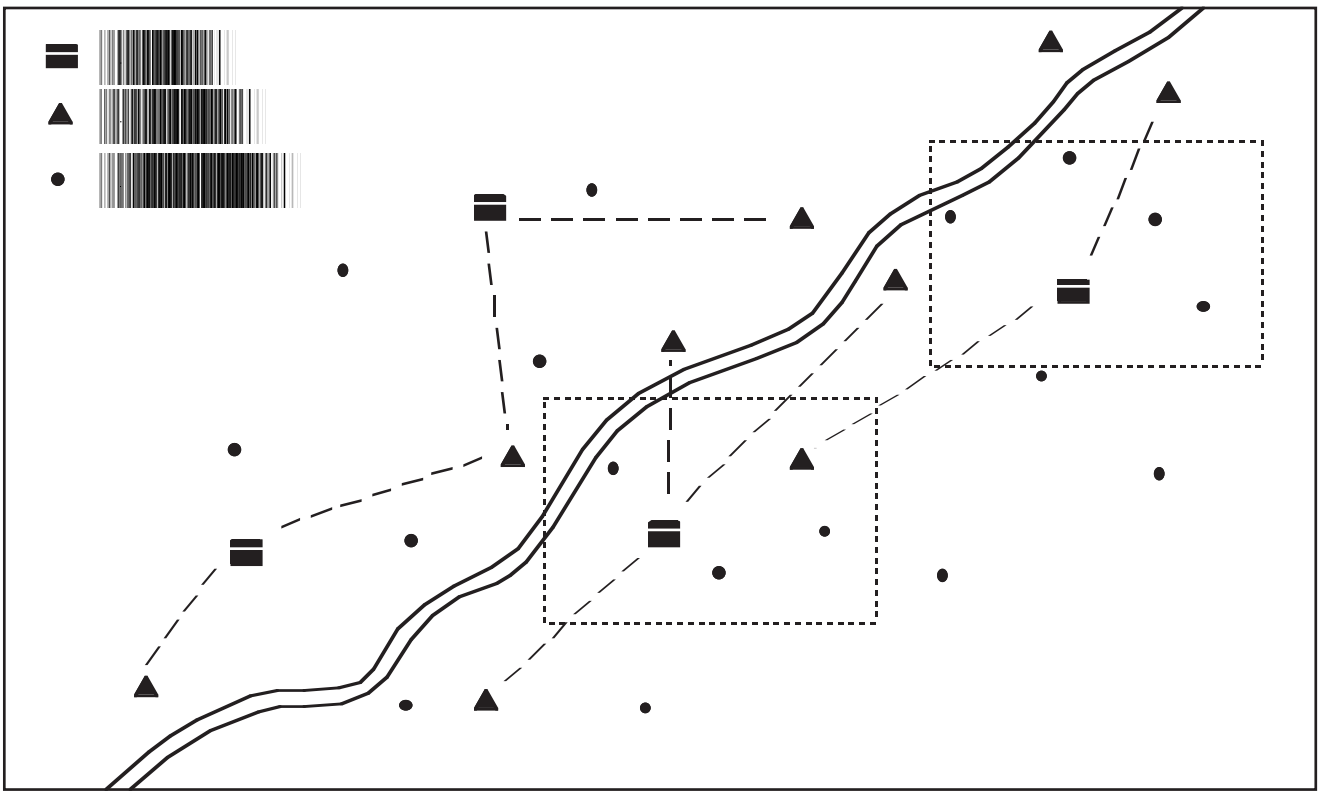

Fig. 5.3 Model of the Michelsberg settlement pattern in the coversand area along the Meuse.

The second region is the eastern river district. Quite a number of excavations and large-scale explorations have occurred here, providing a more detailed picture of the transition from Mesolithic to Neolithic. There is a wide range of Neolithic settlement types. Settlements occur with a (semi)permanent character, comparable to Neliske at St. Odiliënberg, temporary encampments (Gassel) and a find scatter (Linden-De Geest) that may be considered the result of off-site activities. The relatively large number of arrowheads is indicative of the importance of hunting for the economy. The range in settlement types points to a dichotomy in exploitation of the terrain. On the one hand a more settled type, in which agriculture plays an important part, and on the other hand a more transient type, where livestock, hunting and gathering are important. The latter type of settlement displays similarities with the Mesolithic. The settlements are part of a system that can be modelled, where two important settlement types are concerned, surrounded by zones of activities that may be linked with these settlements (fig. 5.3). The first type is the (semi)-permanent settlement, surrounded by a zone with small-scale activities associated with that settlement. The second type is the temporary encampment related to a permanent settlement[32]. In the core region only one type of the combination is present at the same time. The core region is too small to contain both a (semi)permanent settlement and an associated temporary encampment. The encampments, too, will have been surrounded by a zone of modest dimensions, where activities occurred that were related to the camp. Besides the settlements, artefacts reflecting all kinds of off-site activities are found in the river district, as evidenced by the excavation site at Linden-De Geest. Most striking are the arrowheads, indicative of hunting.

The third region is the coversand area west of the Meuse, particularly that west of the Peel. There a Neolithic lifestyle appears to have been adopted only slowly and relatively late. Whereas Michelsberg settlements are already present in the river district and the coversands along the Meuse, here Middle Neolithic traces are rare. Of a number of Late Mesolithic sites a date of approx. 5400 BP is known. The few single artefacts from the Early and Middle Neolithic are not indicative of the presence of agricultural settlements. These may be interpreted as artefacts acquired by very Late Mesolithic groups through direct or indirect contacts with Neolithic communities.

Within these last hunter-gatherer communities a process of transformation towards an agrarian society occurs as well. Late Mesolithic sites occur containing Neolithic material as well, both from the Middle Neolithic A and B, for instance Meeuwen-Donderslagheide[33], Opgrimbie[34], Schorisse[35], Melsele-Hof ten Damme[36], Oudenaarde-Donk[37] and sites in Hageland[38] in Belgium and Bladel-Kriekeschoor[39], Geldrop-Huisvennen[40], Rosmalen[41] and Toterfout-Halve Mijl[42] in the Netherlands. The question remains in which time frame this transformation occurred within the MK-period. This is hard to ascertain, as most sites did not yield pottery that could be used to position a site more accurately within the MK-period. Only the sites Opgrimbie[43], Meeuwen-Donderslagheide[44] and Opoeteren-Heuvelven[45] yielded enough sherds with diagnostic features. This concerns primarily Hazendonk 3-pottery. If these observations are representative, the transformation could be attributed to the end of the MK-period in this region.

The data for the Middle Neolithic B are few, too, but the picture outlined above for the Middle Neolithic A appears to be valid for Middle Neolithic B as well. An important difference, however, is the end of the use of macrolithic imported flint. The economy and exploitation of the terrain within the core region Cuyk-Grave display large similarities with the Middle Neolithic A.

In the Late Neolithic the neolithization process has reached a final stage. Although hardly any Late Neolithic settlements have been excavated and this period is moreover not the target of this part of the Meuse valley project, the agrarian way of life becomes dominant in this period. On the one hand this may be inferred from the choice of location in the regions Venray and Grave-Cuyk, on the other hand it is remarkable that the range of settlement types has almost disappeared. A completely agrarian economy appears to have become the core of human existence.

5.6 Conclusion

The neolithization process in the south of the Netherlands has not been sparked off by catastrophe, climate change, population growth or forcible annexation. It was not revolutionary in the sense of rapid change, as the entire transformation process took approx. 1500 years, but it was revolutionary in the sense of a crucial economic upheaval. It was a slow process, set in motion by settlers from Central Europe. The arrival of the settlers did not lead to a bloody struggle for land, analogous to the settlers and Indians in 19th-century America. The LBK-settlers occupied a marginal zone of the hunter-gatherer territory. Through a series of probably peaceable contacts and the exchange of desirable objects, symbiotic relations came to be. Increasing integration of elements of the Neolithic way of life into indigenous society led to an irreversible process of change.

If ethnographic data may be extrapolated for the situation in the Netherlands, at first social changes will have occurred, followed by economic change. This was the start of a process that would ultimately lead to the abandonment by hunter-gatherers of their traditional way of life and their becoming farmers as well.

One of the fascinating questions is whether entering into contact with representatives of a completely different way of life was a deliberate decision, in which the consequences this entailed were calculated. Critical for this question is the nature of the first contacts between an indigenous population and foreigners. The ethnographic data in particular make it clear that theoretically a decision is possible whether to enter into contact with foreigners or not. On the one hand this depends on the pressure the foreigners may exert, but on the other hand also on the possibility for the indigenous population to resist this pressure. The latter happens only rarely[46]. In most cases contact is made. In the second stage of contact relations are structured in a way that is advantageous to both groups, but in most cases local groups will ultimately come off worst, in a cultural sense. In the long term they are unable to hold onto their traditions and have to adapt to the socio-economic system of the new arrivals.

In the first stage of contact decisions have to be made whose implications and consequences can not be calculated. As our own society has to make these uncertain decisions time and again, often just hoping for the best, so Mesolithic hunter-gatherers faced this decision, too. We are familiar with the consequences of their decision. Ours are still hidden in the future.

notes

1 Verhart & Wansleeben 1990; Wansleeben & Verhart 1990.

2 Bakels 1989; Clason 1968; Harsema 1992; Louwe Kooijmans 1993a, 1993b; Modderman 1988; Raemaekers 1999; Van der Waals 1972; Waterbolk 1962.

3 With the exception of the studies by Price (1978, 1980, 1981).

4 Newell 1973, 1984; Price 1978.

5 Arts 1984; Stapert 1979; Verhart 1995a.

6 See chapter 2.

7 Bokelmann 1995.

8 Binford 1980.

9 Brounen 1985.

10 Weiner 1995.

11 Verhart, in prep.a.

12 The large numbers of LBK-like arrowheads are considered to be an independent Mesolithic development, possibly influenced by the LBK (see chapter 2).

13 a.o. Aalten (Schut 1981), Grathem (Bloemers 1972), Hardinxveld-Giessendam-De Bruin (pers. comm. D. Raemaekers), Herkenbosch (Smeets 1992), Neer (Bloemers 1972), St. Odiliënberg (Bloemers 1972), Posterholt (Brounen 1985).

14 Louwe Kooijmans 1988; Oude Rengerink 1991.

15 Louwe Kooijmans 1988.

16 Hogestijn & Peeters 1996; Hogestijn, Peeters, Schnitger & Bulten 1996; Lanting 1992.

17 Deckers 1979; Hogestijn & Peeters 1996.

18 Clason & Brinkhuizen 1978; Hogestijn, Peeters, Schnitger & Bulten 1996; Zeiler 1997.

19 Louwe Kooijmans 1993a, 1993b; Raemaekers 1999.

20 Verhart in prep.a.

21 Brounen 1994, 1995.

22 Brounen 1994, 1995.

23 Raemaekers (pers. comm.).

24 Louwe Kooijmans 1993a, 1993b, 1996.

25 De Roever 1979; Hogestijn 1988; Raemaekers 1999.

26 Lüning 1968.

27 Louwe Kooijmans 1976; Verhart & Louwe Kooijmans 1989.

28 Verhart & Louwe Kooijmans 1989.

29 De Bie, Steenhoudt, Luypaert, Van Impe & Vermeersch 1991.

30 Verhart & Wansleeben 1999.

31 In this setting the term shifting cultivation is not really appropriate. Shifting cultivation has many variations, and as exact data on agricultural and livestock methods are absent, the term is too specific in this instance.

32 A detailed investigation into the function of such settlements, by means of a microwear study, is conducted by J. Schreurs (Schreurs 1995).

33 Creemers 1989.

34 Janssen 1984.

35 Vermeersch, Goossenaerts & Velghe 1991.

36 Van Berg 1991; Roeyen & Keeley 1991; Roeyen, Minnaert, Strydonck & Verbruggen 1991.

37 Parent 1987; Plaetsen 1985.

38 Vermeersch 1976.

39 Slofstra (pers. comm.).

40 Wouters 1993.

41 Verhagen & Wouters 1994.

42 Van Beek 1977.

43 Janssen 1984.

44 Creemers 1985, 1987.

45 Creemers 1985.

46 For instance with the Hadza.