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

1 The introduction of an agrarian economy in the Netherlands

1.1 Introduction

The rapid advance of Neolithic groups characterized by the use of LBK-pottery is often considered to be the classic example of colonists settling new lands[1]. These hailed from Central Europe and their settlements are encountered in Zuid-Limburg, the Netherlands, around 5300 BC.
The arrival in Western Europe of these Central European colonists has inspired many to philosophize and write about possible contacts with the local population and the implications for the transition from hunting-gathering to agriculture and husbandry. Opinions vary widely and are sometimes considered to be not mutually exclusive. A peaceful coexistence has been suggested, as well as total war between hunter-gatherers and farmers. One view had people interacting intensively, while others envisaged complete segregation.
This chapter considers the nature of the contacts between local hunter-gatherers and the Central European colonists and the effects of these contacts on the neolithization process. First the current archaeological data and the resultant models will be introduced. Then ethnographic contact situations will be discussed and characterized. The ethnographic and archaeological data will be compared and models on the nature of the neolithization process in this area drawn up. These models will be tested in the subsequent chapters with the aid of the data from the Meuse Valley Project.

1.2 The local population

From the Late Glacial onwards small groups of hunters, fishermen and gatherers had been roaming the North European Plain. The rapid rise in temperature, from the Younger Dryas/Praeboreal transition onwards, resulted in a higher sea level, which led, apart from the flooding of the North Sea, to an increasingly wet hinterland which in its turn resulted in growing peat bogs[2]. Flora and fauna changed dramatically. The forest evolved from relatively open pine/birch stands to a thick deciduous forest with lime, oak and elm. The animals of this period can be identified from the numerous remains found in Mesolithic settlements outside the Netherlands[3]. Elk, aurochs, red deer, horse, roe, wild boar, bear, beaver, lynx, hare, squirrel, badger, marten, fox and wolf were hunted. In the streams, rivers and lakes pike, salmon and eel were caught and animals like otter and beaver trapped. In the forests and transition zones between forest and water fruits, roots, berries and nuts were gathered[4]. The coastal zone was exploited as well. Depending on the situation there were shellfish, fish and sea mammals like seal and dolphin[5].
All these sources were used as food supplies, depending on opportunities offered by the ecological regions, the seasonal supply and the exploitation strategy. Of the tools associated with these activities, microlites are most conspicuous. These are the non-perishable parts of composite tools, made from a combination of flint and bone, wood or antler. In addition a range of other implement types was used, a.o. axes, hoes, digging tools and baskets. In the exploitation of some food resources, much effort was spent in building and maintaining permanent structures such as fishweirs[6].
The supply of food varied by region and time of year and determined the exploitation. In plentiful seasons and areas with many sources of food, groups of hunter-gatherers could often spend more time in greater concentrations. In seasons with less food resources the groups will have been smaller and dispersed over a wide area. Many encampments were open-air affairs. So far no indications have been found in the Netherlands for huts, houses or other dwellings. These are however known from other countries[7], so their occurrence may be assumed here as well. Almost always these will have been temporary, non-permanent dwellings. There are no indications for a sedentary lifestyle in the Netherlands.
The degree of mobility and mutual contacts may be derived from the use and spatial distribution of certain ornaments, commodities and exotic objects[8]. In some areas, particularly South Scandinavia, a trend towards smaller territories for Mesolithic groups can be distinguished. There are also indications for an increasingly complex society in the late Mesolithic[9]. However, there does not yet appear to be a stratified society in the late Mesolithic. The hunter-gatherer communities have been mainly egalitarian. Although there will have been differences, these appear to be related to individuals or gender only.

1.3 Colonists from Central Europe

The first farmers to arrive in this area around 5300 BC belonged to the Linear Band Keramik Culture (LBK). They

settled exclusively in the fertile löss area in Zuid-Limburg. In neighbouring Germany and Belgium these areas were settled as well[10].
They lived in large, four-naved houses up to 35 metres long. The houses were usually in close proximity or even in the form of a small settlement. The houses within a hamlet were rebuilt. Usually the location of a previous house is respected, but sometimes overlapping floor plans are visible. In Elsloo 7 different pottery styles can be distinguished, to which 7 building phases can be related. On the Aldenhovener Platte there are even 17 distinct phases[11].
The habitation has a permanent character and the fields are in the immediate vicinity. With hoes crops like emmer, einkorn, linseed, poppy seed and peas were cultivated[12]. Thanks to the fertility of the löss soil no fallow periods were necessary. Besides agricultural produce an important part of the diet consisted of beef, pork and mutton. Hunting does not appear to have been an important factor.
In the material remains two elements are conspicuous. This concerns the pottery first introduced by the LBK-people in this area[13] and the use of polished stone tools. There are also tools such as grindstones, arrowheads, scrapers, flint knives and retouched flakes.
Although traces of burials have not often been found near settlements, it appears these small communities buried their dead in cemeteries. Analysis of the burial gifts demonstrates differences between the sexes and among individuals[14]. These differences are slight, so it is justified to call this a mainly egalitarian society.
These data warrant the hypothesis that farmers settling in the south of the Netherlands met an indigenous population of hunter-gatherers, causing a first direct confrontation with a society different in almost every respect from their own traditional way of life. The arrival of these colonists does not appear to have resulted in any kind of direct (violent) conflict. This is probably due to the fact that the LBK people occupied only a small part of the hunter-gatherers' annual territory. And precisely this part of the hunter-gatherer territory, the löss land with its dense lime stands, was poor in game and yielded hardly any vegetable produce. For the farmers, however, these were the best lands to occupy. So there was no conflict between these differing economic strategies. For a long time farmers and hunter-gatherers would live side by side and in contact.

1.4 Frontier situations

1.4.1 ARCHAEOLOGICAL BACKGROUND

In Western Europe we may therefore assume a rapid colonization by the LBK from Central Europe. Two different stages can be distinguished. The first, visible as the distribution of the älteste LBK, stretches towards the river Main and is dated approx. 5700 BC[15]. The second is a surging expansion, to the west as far as the Paris Basin, around 5300 BC in the east and 5000 BC in the west. In this second surge the limits of colonization have been reached. In the Netherlands this ended on the Graetheide Plateau. The ever-expanding colonization came to a stop there: the moving frontier became a static frontier. This situation appears to have lasted at least 600 years.
This conclusion may be drawn from the data in two research areas and several individual observations. The first area is where the first (LBK) farmers settled around 5300 BC: the Graetheide Plateau. In this area farmers would practise their trade for almost 400 years. The second area encompasses the west of the Netherlands. There, often hidden beneath thick layers of sediment, are the settlement remains of groups that may be characterized as Neolithic on the basis of their material culture and use of domesticated animals and food crops. These sites (a.o. Bergschenhoek, Swifterbant, Hazendonk, Brandwijk, Hoge Vaart, Hardinxveld-Giessendam) date from the period 4700-4100 BC[16].
There are several individual observations that provide a date relevant to the period of the static frontier after 5300 BC. In Bronneger in the province of Drenthe an earthenware pot and two deer antlers were found during widening of the Voorste Diep stream[17]. The pot can be attributed to the Swifterbant tradition. A C14-determination of encrustations on the pot yielded an age of 5890 ± 90 BP (uncal.)[18]. On the donk 'Polderweg' near Hardinxveld-Giessendam pottery occurs in levels dated 4700-4800 BC[19], comparable in age to pottery from the site Hoge Vaart[20].

1.4.2 THEORETICAL BACKGROUND

Research into frontier situations has, for practical reasons, focused mainly on the 19th century colonization of large parts of Northwest America [21]. Many of these studies are of an anthropological-historical nature. For archaeological purposes usually highly theoretical models have been drawn up from these studies[22]. The extended period of static frontier in the Netherlands provides an excellent opportunity to re-evaluate and refine the data from these approaches and compare them with archaeological data.
The theoretical options for the neolithization of Europe have been included almost completely in Dennell's simple and clear model (fig. 1.1)[23]. He distinguishes between open and closed frontier situations. There is no contact in closed situations. In open situations there are two possibilities, according to Dennell. The first is a symbiotic relationship, which he illustrates by the example of an exchange of goods between farmers and hunter-gatherers. The second possibility is for a more parasitic relationship on the side of the hunter-gatherer, where they steal goods and products from the farmers. Whereas Dennell used hardly any ethnographical data in his model, there have been others who tried to utilize data from

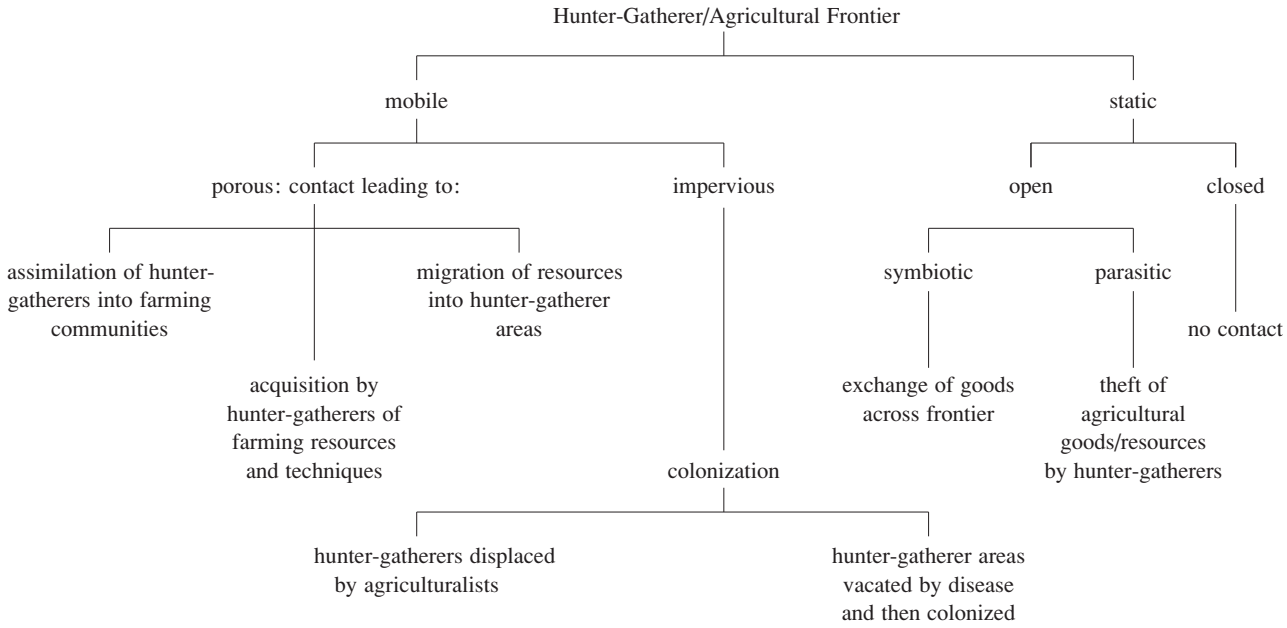


Fig. 1.1 Model of various 'Frontier' situations (after Dennell 1985).

modern hunter-gatherers in the study of frontier situations in relation to the neolithization process[24]. The study of modern hunter-gatherers coming into contact with farmers and living — evolutionary speaking — in a 'transition' towards an agricultural society may provide significant information in studying, describing and if necessary explaining the prehistoric situation.

The ongoing debate about the topicality of the relations between hunter-gatherers and farmers — the so-called revisionism debate — has demonstrated that modern relations between the two groups often go back a long way[25]. The interaction is long established but is no analogy to the study of the first contact between the LBK and local Mesolithic groups around 5300 BC. The modern circumstances of these hunter-gatherers mainly provide us with information about the growth of relationships and contacts changing over time. These data are very important for the situation during the 1000-year 'rest period'. The background to the first contacts and their consequences remain obscure.

Contact is the most basic element of the neolithization process. The meeting of two completely different emotional[26], cultural and economic systems must have had far-reaching repercussions on the societies involved. Concepts such as perception, existence, socio-cultural relationships and the historical dimension are all involved. First there is the confrontation and realization that there are 'others'. In the contact situation between Bandkeramik farmers and Mesolithic hunter-gatherers it is likely that the Bandkeramik people already knew of hunter-gatherers in their Central European past and this was not essentially new to them. This however, was not at all the case for the hunter-gatherers. They came into contact with something completely unknown. These were different people, foreigners with a strange appearance, different emotions and mindset, with unknown habits and a new way of life.

Another aspect to the societies concerned is whether and how to integrate these novelties into their own environment and the socio-economic system of the group.

For archaeologists a number of questions are highly relevant in this respect: what are the general characteristics of contact situations and can any generalization or pattern be distinguished? For another thing, can elements be discerned in the material culture or can changes be attributed to those general phenomena? If such changes can be ascertained in the archaeological material and be correlated to processes of contact situations, the archaeological phenomena may be much easier to interpret and it may be possible to formulate explanations as well.

Which are the first effects on the local population when another society has begun to colonize part of their territory? Upon arrival of the first farmers, the local population is often thought to have quickly adapted to this new way of life. After all, the advantages of agriculture were evident.

Despite having to work harder, it was possible to relinquish the supposed hardship of an itinerant lifestyle and settle in one place, start to acquire possessions, women could more easily take care of their children, the group could grow, the dependence on (unpredictable) natural food resources disappeared and social and power differences could come into existence[27].
That move towards an agrarian lifestyle has often been made, since there are hardly any hunter-gatherer groups left. But there are indications that in the past this move to another way of making a living was not made quickly, but that the traditional way of life persisted for a long time. The societies that still hunt and gather in areas where agriculture and animal husbandry may be feasible, bear witness to this. They, too, have clung to their old way of life, to this day, but with the necessary adaptations in their relations with their neighbours. A situation reminiscent of the 1000-year period when hunter-gatherers in the Netherlands refrained from adapting an agrarian lifestyle.
In order to answer the question how the hunter-gatherers reacted to the arrival of the LBK people, ethnographic examples of first contact situations and examples of second stage contacts will be analyzed. The resulting insight will be correlated with the archaeological data available.

1.5 Analyzing frontiers

When Columbus disembarked on Hispaniola over 500 years ago, he encountered peaceful primitives. This however suddenly changed later on and the contacts acquired a violent character. The image of primitive savages — with often violent and repulsive natures -emerges numerous times in the early travelogues. When the VOC-ship Duyfken anchored off Cape Keerweer on the northern coast of Australia in March of 1606, captain Willem Jansz. encountered ferocious and cruel savages who killed one of his men. The reactions were not always as wild and violent. The English explorer Cook remarked after his visit to Australia that the primitives displayed neither fear nor interest and simply went on fishing.
As for modern contact situations, relations between farmer-pastoralists and hunter-gatherers, there are a number of classic, oft-cited instances in ethnographic literature. Famous in this respect are the names of the Mbuti and Aka pygmies, the Hadza, Okiek, Vedda, Paliyan, Birhor, Agta, Punan and !Kung or San-Bushmen. These instances play an important part in many studies on the transition from hunting and gathering to agriculture. Recently the nature of these contacts has been questioned. Instead of a short contact period with visible change, these groups often turn out to have been in contact over a long period. These contacts are often of a symbiotic nature and led to hardly any radical changes in economic and social relations within the hunter-gatherer groups. The long duration of these contacts and the interplay of mutual expectations, desires and wishes, mean these instances are unsuitable as a source of inspiration in the study of the first contacts between Mesolithic hunter-gatherers and Neolithic farmers. They are, however, highly informative in the investigation of later developments in contact situations.

1.5.1 STAGES OF CONTACT

In contact situations two stages can be discerned. These sometimes blend easily into one another, but sometimes only the first or second stage is represented. The first stage is the first contact, the often short, intense period of amazement and confusion. The second stage comprises the period when the relations between the two groups evolve into a pattern that is subject to further development.
Due to the lack of modern comparable ethnographic examples, it is impossible to find out what occurs in the very first stage of contact. Hence another approach is necessary to gain insight into the processes that may be active in such situations. Actually, the confrontation between prehistoric hunter-gatherers and the first farmers may be considered a confrontation between societies with differing technologies and socio-economic situations. By studying past and present contact situations/confrontations between these kinds of societies, the reactions in such a situation may be analyzed and attention may be paid to the development of mutual relations. This will yield characteristics that may have played a part as well in a prehistoric contact situation, between farmers and hunter-gatherers. The examples concerned all refer to contacts between representatives of European societies and non-western societies. The following contact situations have been studied:
– Australian gold diggers in the highlands of Papua New Guinea
– Vikings and Greenland Inuit
– European whalers and Canadian Inuit
– Europeans and American Indians
– English settlers and Australian Aborigines

An attempt will be made to reduce these examples to general phenomena that may have played a part in the confrontation between local hunter-gatherers and Central European farmers around 5300 BC. A great deal of attention will be paid to the material reflection of these contacts and the changing significance of objects within the societies concerned[28]. It will then be possible to develop models for the various contact stages and to test these against the archaeological data available. The first members of a western society to meet members of non-western societies were usually explorers. This was reported in their logbooks, diaries, reports and popular books. Apart from the fact that these descriptions are old and cover only a short contact period, the reports are often romanticized and biased and the ‘other’

Fig. 1.2 Michael Leahy during the first expedition in the highlands of Australian New Guinea. (Photo Collection M.J. Leahy, National Library of Australia).

was depicted either as a barbarian savage or an innocent child. In a number of cases an improved, ideal image is depicted, where the author's admiration for the 'other' shines through. Descriptions also often depend on the author's personal background, his employer or the interplay of social forces in which he finds himself[29].
In the next chapter a number of confrontations between societies with differing socio-economic backgrounds will be described. Emphasis will be on 'first contact'-situations, although in most cases a second stage of contact occurs as well. The first is the most complete instance, allowing references in later, less well-documented cases. Afterwards instances of second stage contacts will be discussed.

1.6 First contact, some case studies

1.6.1 NEW GUINEA

Amazingly enough, the most fascinating description of a contact situation is not very old at all. As a matter of fact this description might almost be considered modern because of its documentation in diaries, articles, photos and film[30].
In 1930 the Australian Michael Leahy (fig. 1.2), accompanied by a group of coastal Papuans, made for the interior of the former Australian New Guinea, to search for gold. In the five years he spent visiting the area, he found hardly any gold, but he did find a treasure trove of ethnographic material.
Leahy passed himself off as the discoverer of an unknown, densely populated area[31]. According to him the interior of New Guinea had always been considered uninhabited, but as a result of his discoveries thousands of Papuans who had never been in contact with a white man before, were found to live on the extremely fertile upland plain. As a matter of fact there had been whites in this area before, but for various reasons they had not bandied this about. The German Hermann Detzner, for example, roamed the highlands during the first World War in an attempt to evade the Australian

Fig. 1.3 Dan Leahy at dinner. The locals watch from behind a string marking off the camp area. (Photo Collection M.J. Leahy, National Library of Australia).

authorities[32]. Missionaries founded their first post as early as 1917 on the edge of the highlands. They barely reported their activities for fear that competing religions would gain a 'market share' in the conversion of the large numbers of Papuans.

The detailed description of this first contact and the relationship during the next five years provides important data for the first contact stage in the Netherlands. These acquired extra value when fifty years on, Connolly and Anderson sought out and interviewed the Papuans who had witnessed this event. This allows an analysis of a first stage contact from two different points of view.

Leahy was however not the only one to roam this area. Others travelled here as well and meanwhile several reports have been published. These reports match Leahy's data and often contribute to the description of the first contact from a different point of view. There are reports of the activities of private travellers, missionaries and police and government patrols.

The first direct contacts with white men frighten the Papuans. They think the whites are gods or the dead returned to earth[33]. Quite soon, however, they realize this is not so, although they might remain suspicious for a long time. The conclusion they are not gods is based on behaviour of the whites that is identical to their own. They, too, relieve themselves, eat (fig. 1.3) and sleep with women. Moreover anxiety is conquered by the objects the white men have, in particular shells, which are interesting to barter[34]. Many of the whites' objects remain a mystery to the Papuans as regards their function and operation. The whites go along with this and proudly demonstrate their technological prowess (fig. 1.4). Almost everything they demonstrate turns out to be over their heads. The Papuans realize it may have consequences, but the essence escapes them and no conclusions are drawn.

Fig. 1.4 One of the Leahy brothers demonstrates the action of a rifle. (Photo Collection M.J. Leahy, National Library of Australia).

At the first contact the whites attempt to create good relations with the local population by way of gifts. The main aims are to avoid violence and obtain food in addition to the rations carried along. To this end beads, salt, textiles and metal objects have been brought. At first only salt and textiles arouse the Papuans' interest. It is remarkable that metal objects, in particular the axe, are not valued items of barter[35]. The Papuans turn out to be more interested in shells, but unfortunately Leahy did not bring these along on his first trip[36]. But they are interested in a substitute, china plates (fig. 1.5)[37]. Not until a later stage, when the efficiency of the axe becomes apparent, is there any interest in it.
A year later Leahy visits the area again and penetrates into areas never visited by whites before. From that second year on, the relations in the interior will change forever. Bearing in mind his experiences of the previous year, Leahy has brought along shells. For shells, it turns out, anything can be bought.

In the highlands of New Guinea the economy can theoretically be divided into two separate parts. On the one hand there is an economy of the daily necessities of life, on the other hand an economy derived mainly from political and social relationships[38]. There is no personal wealth. The position occupied in society is essential and dependent on personal prestige. By putting on competitive ceremonial celebrations and giving presents, personal prestige is increased and you are able to make political and/or social alliances. The central aim in all this is to increase personal or group prestige. In the villages large ceremonial celebrations are held in a specially constructed area with attendant buildings. Sometimes thousands of people participate in this. The celebrations are a peaceful form of competition, an alternative to war.
The central figures in these celebrations are the leaders: the 'Big Men'. The main stream of goods flows through the Big

Fig. 1.5 Big Men exhibit their wealth at a party. On the forehead of the man on the left a porcelain plate can be seen, a substitute for a pearl shell. (Photo Collection M.J. Leahy, National Library of Australia)

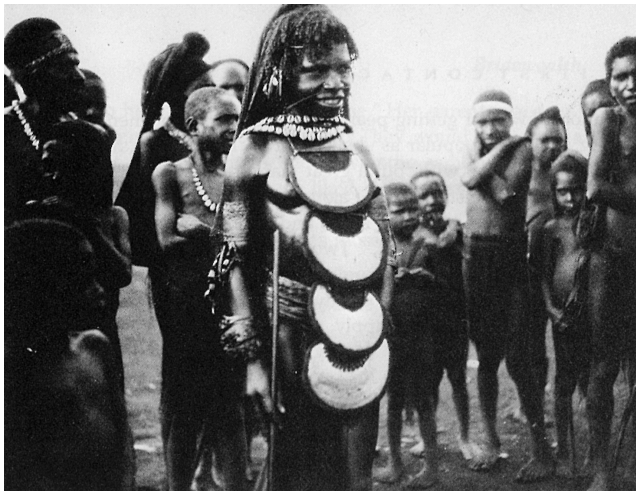
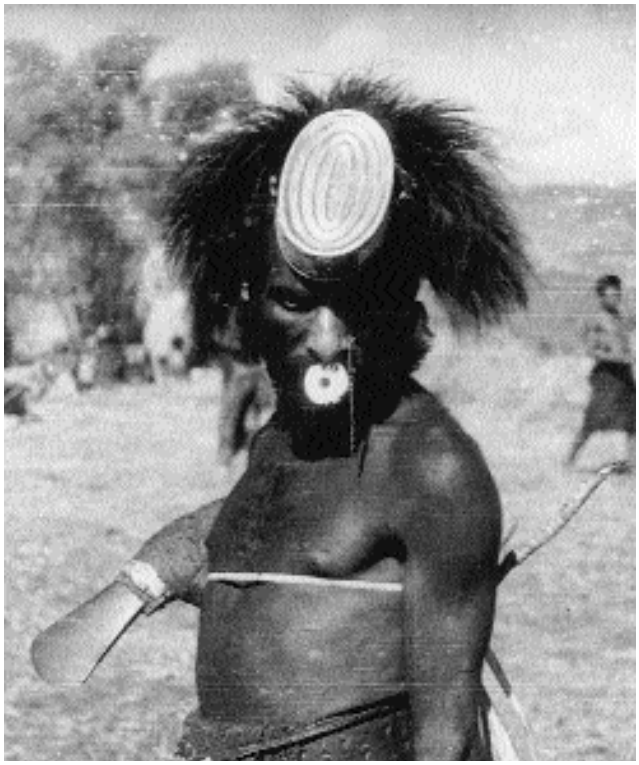


Fig. 1.6 Presentation of pearl shells during a wedding ceremony. (Photo Collection M.J. Leahy, National Library of Australia).

Men[39], except for all sorts of competing individuals. The presentation and exchange reaffirms and strengthens the position of the Big Men as individuals, but also increases the prestige of the entire group they belong to. Through alliances and putting others under obligations they ensure their position is at the very least maintained. The aim was of course to strengthen it. The competition for prestige is crucial to the whole system. The most important elements are pigs and shells (fig. 1.6)[40].

By continually exchanging shells you put other people under an obligation to provide you in turn with something of greater value at some point in time. The more people are under obligation to you, the more prestige and influence you may acquire. Until the arrival of the whites, this system worked with an occasional complete shell and many, often severely worn fragments of shells. These had reached the interior from the coast through many hands. In the interior their origins were unknown. They were thought to grow on trees somewhere in the south[41]. This situation is strongly reminiscent of medieval Europe, where the provenance of the spices being imported through Venice from the Far East was also unknown. This system must have been very old,



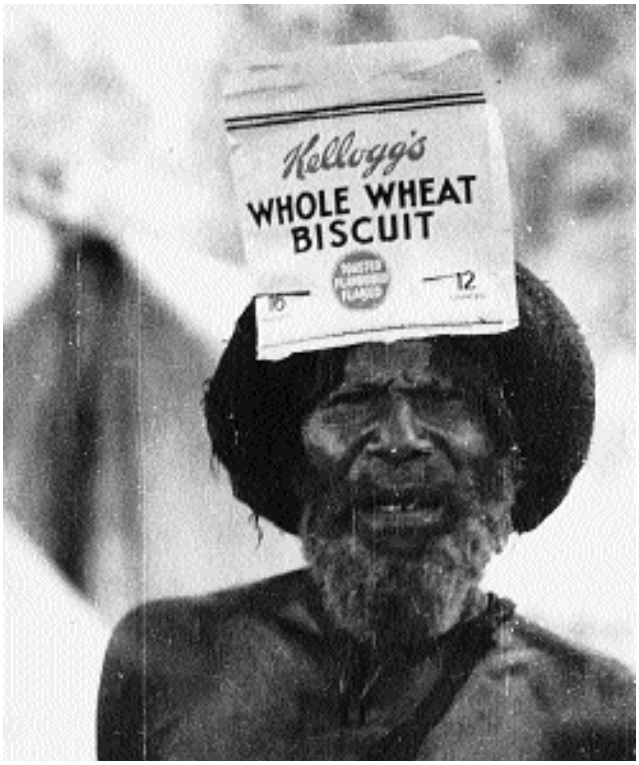


Fig. 1.7 Left: a mid-Wahgi man wearing an empty (sardines?) tin can on the forehead. Right: Wabag man wearing a biscuit bag. (Photo Collection M.J. Leahy, National Library of Australia)

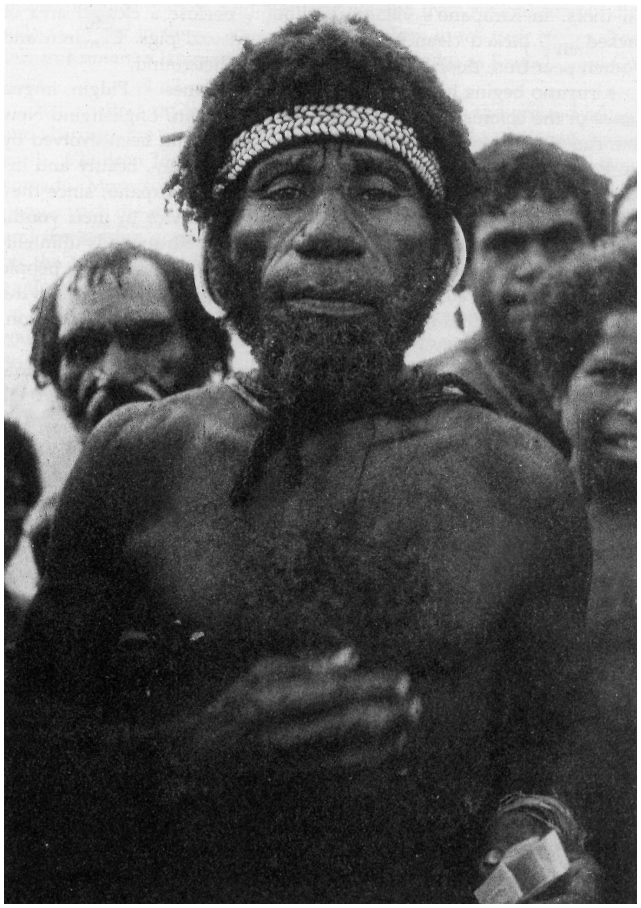


Fig. 1.8 An Asaro man with an empty cardboard film box in his left hand. (Photo Collection M.J. Leahy, National Library of Australia)

since shells have been found in sites with ages of 10.000 and 5000 years[42].
But objects that are new and may be associated with the visitors are also included in the traditional prestige system, including their waste. Leahy describes how attempts are made to barter food for empty tins (fig. 1.7), bottles, coloured labels, worn razor blades, empty boxes (fig. 1.8), cartridge cases and pieces of coloured cloth[43].
A remarkable description by Leahy is the situation where they are still present and the Papuans sit and wander around the camp in large numbers. This waste is only the tip of the iceberg, since the camp can only be searched properly for more of these valuable items after they have left. The use of waste in the prestige system has been documented in film, photos and oral history. This situation is not entirely unique, other explorers in New Guinea experienced this as well[44].
In a first contact situation articles of everyday use will not play a major part, since they do not have a function in the social and political subsystem. An object only acquires value when it lends prestige and as such may play a social part[45]. A good example is provided by the metal axes and knives. They attract hardly any attention until, after approximately two months, it becomes obvious that metal axes are much more efficient than traditional stone ones. The result of using metal axes is that a larger garden may be cultivated and maintained. This yields a higher agricultural production to feed more pigs. And pigs may be used to gain more prestige. In this respect the axe may be considered an object of delayed prestige.
Yet, despite the introduction of metal axes, stone axes remain highly prized ceremonial items. So the functional aspect is not always the most important. Lately they have even increased in value since no new ones are being produced[46].
Another important element in a first contact situation is violence[47], either by whites or by Papuans. The whites act like the dominant power and feel they have the right to shoot anyone who tries to steal anything. Although Mick Leahy forbids his porters to shoot women and children, there are casualties. The background to this violence is not exactly peaceful. The locals find themselves almost permanently at war with one or another of their enemies. Bravery is a highly prized, all-dominating quality. As the locals see it, the whites enter their territory practically unarmed. Some porters carry bows and arrows, but the whites themselves appear only to carry a stick. Unfortunately this stick turns out to be destructive: it is a rifle. It is remarkable that in first contact situations there is hardly ever a need to demonstrate mutual power.
The first contact is usually peaceful. When the 'unprotected' wealth of the whites has become known, Papuans attempt to steal it or simply raid the entire group. Leahy's response was always extremely violent[48]. Thieves are pursued and forced to surrender the stolen goods. Raiders are shot without mercy, since the whites are always a minority and fear the offensive power of the local Papuans.
The craving for shells increases tremendously during the second and subsequent visits. Women are encouraged to enter into sexual relations in order to obtain shells. Marriages are contracted with members of groups that have direct access to this wealth, in order to secure the future supply of shells.
The Papuans have no problems in bartering consumer goods with the whites. But this is different for objects that play a part in the social subsystem. When the whites wanted to have a ceremonial stone axe to take home as a curio, it turned out this could only be bartered for items of equal function. Such items could only be bartered for shells.
Other Papuans travel far to come into contact with the whites, but distances are limited because of the presence of enemy territory. Gradually items of contact spread, despite

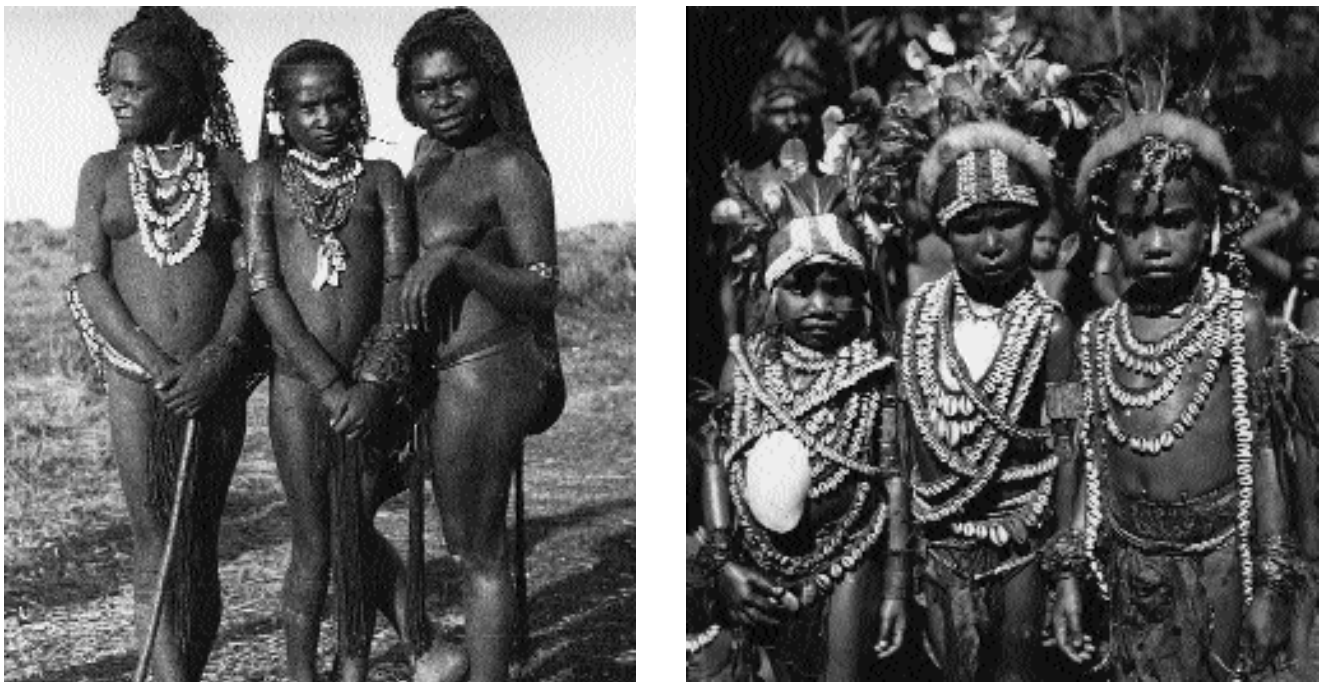


Fig. 1.9 The wearing of cowrie shells as an example of inflation. On the left Mount Hagen children around 1933; on the right around 1936/37. (Photo Collection M.J. Leahy, National Library of Australia).

the fact that the permanent war situation hampers circulation. To get an impression of the speed involved, a comparison with iron axes can be made. Salisbury was able to conclude that in the early stage, with little government control and therefore lots of wars, the distribution of metal axes spread by approx. 5 miles a year[49]. With tighter control and more pacification this grew to approx. 10 miles. Usually the ownership changed over short distances, from one ceremonial ground to another[50]. But courageous individuals travel greater distances to barter[51].

In the central highlands economic and social change soon occurred as a result of the repeated visits of the Leahy brothers. Most striking is the increase in shells (fig. 1.9). In order to obtain food and enough labour, shells are needed. Michael Leahy soon realizes this and has an airstrip prepared by the local population. Besides essential equipment and food, large amounts of shells bought on the north coast are flown in. This is the cause of a gigantic inflation[52]. Highly prized objects could lose their value and significance quite rapidly; other rarer objects would take their place. In prestigious exchange the value of pearl shell might become less, but by bartering it for e.g. feathers, other valuable items can be obtained that may be used in the competitive barter system[53]. As soon as the supply of pearl shells drops, their value rises[54].

Quite a different aspect of this supply of prestigious commodities is the strain on the traditional barter system, besides an increase in violence[55]. Of old, this was dominated by the Big Men. Through them such commodities were distributed and spread. With the arrival of the whites others, too, could acquire large amounts of these goods. By offering their labour they could become wealthy. By providing food to the whites — something that barely plays a part in the prestige system — this could be bartered for highly prized items such as salt and shells. Anyone could acquire status symbols that had been limited to an elite, the Big Men, before. Under those circumstances the personal qualities of a Big Man greatly mattered. Relatively old Big Men lose their authority in such cases and younger ones have a chance to increase their power.

Yet the economic and social relationships were preserved for a long time because there were hardly any opportunities before the end of the forties[56]. Due to the second World War the supply of goods ended and shops had not opened yet during this period. The only input of shells and metal was through missionaries, prospectors and officials. After the forties great changes occur. Money becomes the means in social and economic transactions. As a result, specific objects linked to an activity disappear. Money is generally acquired by providing labour, less often by selling products[57].

1.6.2 GREENLAND[58]

About 1000 years ago Eric the Red and a large retinue sailed to Greenland. Around 985 A.D he founded two settlements: Vester Bygd and Øster Bygd. For some time, favourable climatic circumstances allowed the Vikings to support themselves, using their traditional agrarian way of life. Plentiful pastures favoured livestock, they kept herds of cattle, sheep and goat. Dairy products appear to have played a particularly great part in the economy. These were essential to survive the long winter and bleak spring. The climate did not allow cultivation of cereal. The diet was supplemented by hunting caribou and seals. Fishery did not play any significant part. Eight hundred miles from the western settlements, in the centre of the country, as far away as the Thule district, there were hunters and people trading with the Inuit, the 'Skraellings'. This concerned mainly valuable items like driftwood, fur, polar bear skins and the highly prized walrus ivory. Until approx. 1200-1250 the Vikings had the place all to themselves. Later, Inuit from the Thule culture settled here and competition for the natural food resources arose.

At its height approx. 1500 people lived in the western settlement and between 4 and 5000 in the east. The prosperous community was able to arrange a visit of a bishop from Norway in 1125, to dedicate the Gardar cathedral in the Øster Bygd. The local gentry associated with the clergy in building churches near the major farms. At the end of the 12th century an intensive church building programme was set up. No trouble or expense was spared to erect imposing (by Greenland standards) stone buildings with stained-glass windows, a far cry from the peat structures of the preceding period. This is indicative of the personal status of the bishop and the influence of the clergy. Apart from associating with the church, the representatives of the local gentry also stood for economic power. They controlled the largest farms with the best pastures. The number of cattle was an indication of the owner's status in the North Atlantic lands[59]. Smaller farms were dependent on the larger ones in several respects. In order to keep their own herds vigorous, they needed the breeding bulls of the larger farms.

After 1350 the settlements went downhill. According to some sources the western settlement was abandoned and occupied by 'Skraellings'. The eastern settlement probably lasted another 100 years, after that the settlers disappear in the mists of time.

Besides the reported contacts with 'Skraellings', these are also apparent in the Inuit settlements themselves, where many iron and bronze objects are found. To the Vikings this was precious material as well, since there was a severe shortage. Particularly during the later habitation stages, when trips to the motherland become less frequent, ever more objects originally made of metal, are made of bone instead. Apart from metal, a large number of oak objects and a single bone comb have been found in the settlements concerned. In interpreting these finds the problem is how to determine that these do indeed refer to contacts and barter. Part of them might come as well from gathering Norse objects and useful materials in deserted settlements[60]. Another remarkable phenomenon is the representation of many Vikings in small figurines, usually made of wood[61]. Despite the occasional mention of Inuit labour in oral sources, no Inuit artefacts have been recovered from any Viking settlement. The Inuit way of life and their technology were not affected by the contacts. Rare skirmishes between Vikings and Inuit are mentioned, but the reports are contradictory. According to Norse sources, these would have been intensive and sustained attacks. Inuit violence is suggested as a factor in the abandonment of the western settlement as well. Some Inuit legends, as well as Norse sources, on the other hand paint a much more peaceful picture, making this option less likely.

It is quite striking that despite the arctic climate and environment the Viking settlers did not adopt any part of the Inuit culture. They did not exploit the sea, made no use of their highly evolved hunting techniques and even ignored their climatologically eminently suitable attire. The emphasis was on woollen garments of the latest European fashion. McGovern points to the coalition between clergy and gentry as responsible for this segregation and adherence to their own cultural values[62]. At stake would be a separation between heathen and christian, Inuit with their shamanism and egalitarian structure as opposed to the doctrine of the medieval church and a highly stratified society.

The end of the Viking colonisation and the abandonment of their settlements has always been linked to worsening climatic conditions: the arrival of the minor Ice Age. This was indeed a contributing factor, but not the main cause of the settlers' disappearance. As a result of the worsening weather, the number of sea voyages to the motherland fell sharply and the pastures decreased in size and quality. A contributing factor was the sharp drop in the number of seals hunted near the settlements, due to changes in the condition of the ice, as well as a decline in the caribou population. The opportunities to exploit the adjoining countryside by ship were reduced due to storms and floating ice and competition with the Inuit for natural food resources intensified. These changes were momentous, but need not have been catastrophic. Another exploitation strategy, with a greater emphasis on the Inuit approach, might have averted a crisis, but the dietary focus remained on animal husbandry.

The reason for not adapting to the circumstances can be deduced from the existing social and power relationships. The gentry controlled, with the clergy, an economy based on livestock. Adapting the economy to focus more on seal

hunting and the exploitation of marine resources constituted a serious threat to the power base. A change like that would also clash sharply with their sense of superiority. Adaptation of Inuit exploitation strategies basically meant a surrender to heathen practices.
After 1414 no mention is therefore made of this European colony.
In 1578 the English explorer Martin Frobisher visited the coast of West Greenland. This was the start of a period of occasional contacts between Inuit and European whalers and seal hunters. There were approx. 100 ships a year in Greenland waters[63]. In 1721 Denmark colonized Greenland again, followed by Herrnhutters in 1733 in an attempt to convert the Inuit. An important part in the first contacts with the local population was played by tobacco. Stimulant aside, it was also used for barter and as payment for services rendered. The Herrnhutters' attempts to include the Inuit in western society were intense and persistent. There was hardly if any respect for the traditional Inuit way of life. The Inuit who associated with the Herrnhutters in the first stage of contact, were despised and derided by their neighbours. Economic pressure in the end led to a revolution in the area around the missions, making the Inuit ever more dependent on weapons and fancy (consumer) goods.

1.6.3 CANADA AND AMERICA

1.6.3.1 Arctic Canada and America

Ancient sources on contacts between Inuit and Europeans are rare and provide very little information[64]. Later sources and archaeological investigation are much more informative. The first contacts were probably made by the Vikings and recorded in the Iceland Sagas. Later, in the sixteenth century, the Basques start to hunt seal and whale in arctic waters and come into contact with the local population. They recorded little of this, to prevent competition in these shores. In subsequent centuries the area was visited by several expeditions. The often brief descriptions indicate the contacts were as often violent as they were peaceful. Gifts were exchanged such as copper kettles, clothing, tobacco, metal knives and glass beads. The whites were mainly interested in fur and ivory. In the absence of merchandise women were offered, in order to obtain the European goods. The Basques were the first not to restrict themselves to occasional short visits[65]. In summer they would process their catch in small single-use stations. The relations between Basques and Inuit have rarely been recorded. The oldest description dates from 1547[66]. In late-16th century excavated Inuit houses the first European artefacts have been found[67]. These are metal nails, sherds, fragments of Venetian glass, glass beads, roofing tiles and European hardwood. These items were waste collected from the abandoned Basque whaling stations. Part of this waste was reworked or used as tools. The Inuit in contact with Europeans become middlemen and sell the European products to the interior. It is striking that there are no indications in graves for differences in status prior to the arrival of the Basques. The existing differences may be attributed to individuals that are both expert hunter and wise shaman. In the late 16th century the pattern starts to change. There are rich and poor graves and in the former a new element of status can be distinguished. This concerns individuals that also had great trading abilities. In particular in the richer graves European goods and 'waste' are found.
Later commercial activities by an English capitalist enterprise provide most information[68]. In 1660 the Hudson Bay Company opened the first trading stations in the north of Canada. Indians and Inuit could acquire European products in exchange for pelts. They become part of a western economy and made dependent on it by the introduction of new technology and luxury items[69]. Weapons turn out to be favourite items of barter. The use of rifles in hunting, their repair and a constant demand for gunpowder lead to ever greater dependence. To guarantee the supply of European goods, extensive trading networks evolve, allowing European goods to penetrate far into the interior without a white face ever being seen.
The settlement system is changing as well. The settlements move towards the European trading stations. As another consequence, population numbers decline sharply due to the introduction of European diseases such as influenza and measles.

1.6.3.2 New Amsterdam

After Henry Hudson in 1609 first sailed the river that was to bear his name, soon (1624) several Dutchmen settled on the shores, among others on what was to become the centre of New York. The settlement of the Dutch, as well as previous expeditions to this area, were mainly inspired by fur. Through trade with the Seneca Indians, an Iroquois tribe, pelts of beavers in particular, but also lynx and otter were obtained that were extremely valuable in Europe. Profit margins of 900% were common. The products for which the valuable fur was traded have been found in excavations in Indian settlements and graves. These are beads made from shell, cowrie shells, textiles, iron axes and knives, rifles, copper kettles and trinkets such as glass beads, pins, thimbles, pottery, buttons, combs, tin spoons and cups, glass mirrors, pipes and tobacco boxes[70]. Although these items were apparently for everyday use, this was not so. Much was reworked to be used in ceremonies, exchanges, personal adornment and to indicate differences in status[71]. Complete artefacts are found close by the settlers' settlements, fragments and parts in settlements at a greater distance. Remarkably little or no Indian artefacts have been found in Dutch houses[72].

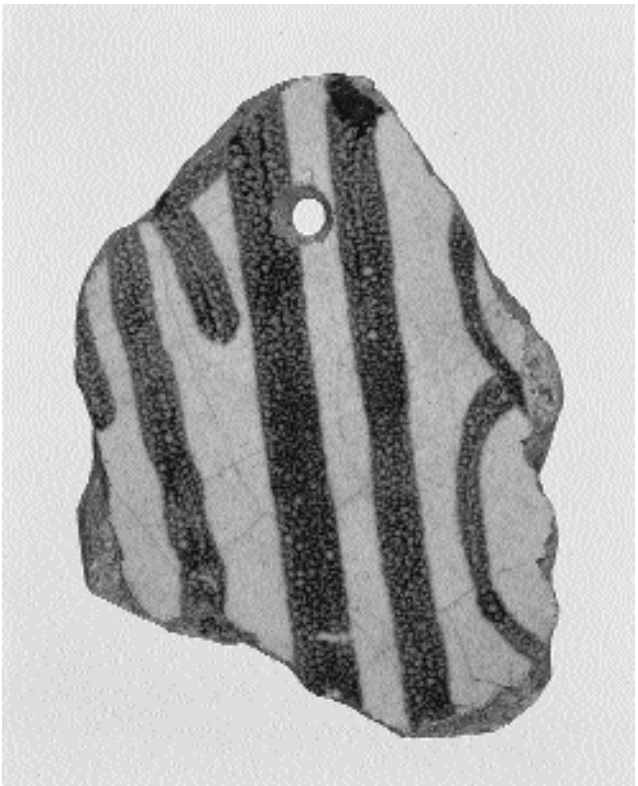


Fig. 1.10 Dutch delft tile fragment used as a bead found in an Indian grave from New York (after Van Dongen 1995).

There is hardly any written information on the first contacts between the Dutch and Indians. It is clear, however, that the first functional western products are reworked into objects representing a different value and use to the natives. Copper kettles are broken up and metal axes smashed to make them into ornaments and arrowheads. Rifle parts are also used for this purpose. The first contact stage was reported by the clergyman John Heckewelder, approx. 1760[73]. Long after the first visits by the Dutch therefore, making its reliability doubtful. The Dutch had given the Indians beads, axes, hoes and socks. The tools were to be used to cultivate the land. When the Dutch returned two years later, they saw the Indians wearing the hoes and axes around their necks, as jewellery. The socks were used as tobacco pouches.
Research into the relations between the Dutch and Indians has so far mainly been concentrated on the height of the trade. Barter products were shipped or manufactured on purpose. Cowrie shells came from the East Indies and were transported by ship to be used as 'currency' in Africa and the New World. Glass beads were manufactured in Amsterdam itself. A number of companies specializing in their production have been subjects of archaeological investigations[74].

Apart from these normal types of currency, objects outside this category have been found in Indian settlements and graves. A number of Indian graves have yielded perforated sherds of delft pottery, worn as pendants (fig. 1.10). In a later stage complete decorative pottery accompanies the dead as well, for instance chocolate cups of delft faience.
Fragments of glass decorations are found as parts of pendants, probably collected from the waste heaps around the Dutch trading settlements[75]. This might also be true for fragments of broadcloth lead seals, although their presence in Indian settlements is considered to be an indication of cloth trade with the Indians[76].
At the height of trade between Dutch and Indians (1630-1687) an inflationary process is active. In the oldest graves reworked waste is found: the perforated sherds. In younger graves complete and undamaged items are found, such as the chocolate cups, that could hardly be considered to have been of everyday use. Their original purpose does not matter. The item has received a new value and meaning.
Other indications of inflation are the ship's manifests proving an increase in the amount of barter items, written sources showing an increase in the countervalue for pelts and an increasing amount of European objects in Indian settlements[77].
Socially speaking, there were only trade relations. The presence of Dutch ministers did not lead to Indian conversions. Despite the enormous surplus of male settlers there are almost no instances of sexual relations between settlers and Indian women. Only in the first stage of contact do 'gifts' of women to the settlers occur[78]. There are no officially contracted marriages between Dutch and Indians. The number of half-castes is limited as well.

1.6.3.3 The Spaniards in the North-American Southwest

In the Interior Southeast, in the states of Georgia, Alabama, Tennessee, North and South Carolina, Indians met Spaniards as early as 1502[79]. Subsequently several expeditions were undertaken along the north coast of Florida. In contrast to the activities of the Europeans around New York, the Spaniards are mainly hunting for gold in the southern part of America. After the spectacular feats of Cortez in Mexico and Pizarro in Peru, all attention was focused on the north in the search for precious metals and gems. A first expedition in 1526, attempting to establish a colony as well, was not very successful. A second attempt was made in 1540 under Hernando de Soto. Although the expedition itself was a success, hardly any gold was seized. Two elements differ strikingly from the other activities in America. First of all the expedition caused a reign of terror and second, the Spaniards displayed a far greater conversion drive than the Dutch and other West European settlers. The final result was to seriously attack the native, highly evolved Indian culture

over a period of less than sixty years. In addition the population was severely depleted by diseases introduced from Europe.
Even before De Soto arrived, European goods circulated in a barter network. These were considered exotic status symbols and originated from the slave trade and wrecked ships. The arrival of the Spaniards caused an increase in European products, the most important of which were glass beads, iron axes and knives, copper kettles that were reworked into tools and decorative objects, rifles and metal bells[80]. In the earliest contact phase these items occur only in the (richest) graves. They appear to have been in circulation relatively shortly and to have been removed from the barter network by the owner's burial. Another instance of the dominance of the symbolic value over the function is the fact that the first rifles played a part in ceremonies[81]. In later stages an increase in the numbers of European goods can be distinguished and they are also found outside a burial context, for instance in settlements and waste heaps. In this phase the exclusive, exotic item loses its specific value and becomes a commodity.
Although they are slow to adopt and increase European goods, new crops like watermelon and peach are eagerly accepted. These require almost the same cultivation conditions as native crops. The similarity appears to have been the major factor in their rapid acceptance[82].

1.6.4 AUSTRALIA[83]

In 1770 James Cook unexpectedly sailed into Botany Bay, on the east coast of Australia[84]. The Aborigines did not lift their eyes from their fishing lines. A meeting should always be announced and performed according to the proper rituals. If this were not the case, two reactions were possible: ignore the visitors or approach them aggressively. On that memorable 29th of April they chose the first alternative. A disastrous choice, for when Cook landed nevertheless, a fierce fight ensued and several people died. Australia was claimed for England.
Australia is too large and its population too varied to discuss all contact situations, but some stand out. From the middle of the 18th century Indonesian traders from Makassar had been sailing to Arnhemland, on the north coast. In the shallow waters large numbers of sea cucumbers could be found. The dried meat fetched high prices in Canton, China, where it was used for soup and was alleged to be a sexual stimulant. Over approx. 150 years the traders from Makassar visited these shores, on average some 400 people a year. There was no competition for food and the Aborigines were treated as equals. Relations with the local population were usually peaceful, but violent incidents did occur. The traders' proas were plundered for the metal they carried along and conflicts arose over women. In exchange for tortoise shells the Aborigines acquired metal axes and knives, glass, textiles, some rice, tobacco and alcohol. They came to possess pipes as well. Most objects disappeared into the interior through a ritualized gift exchange system.
Another type of ritual attaches to artefacts. A clan from Arnhemland received a square glass bottle as a totem.
On Point Possession on the southwest coast, captain George Vancouver drove a British flag into the ground on 29 September 1791 and claimed the land for His Royal Highness the King of England. For two weeks they explored the area but found only deserted settlements. Ten years later Matthew Flinders explored the area and had friendly contacts with the local population. On the last day of his visit he treated the natives to a parade. According to Flinders himself they were full of surprise and admiration. A lasting admiration, as they would act out the parade in a ritualized dance for another 100 years.
In 1838 the British began to develop Port Essington on the north coast into an international port[85]. It was to become the new Singapore. No ship would ever berth there and consequently 11 years later the town was deserted. The settlers had a friendly relationship with the population. Excavations in the area demonstrate that during and after the habitation it was a source of glass as raw material for tools. Over half the glass fragments display traces of processing. The natives camped very close by the settlements; they are even depicted hanging about in the settlement. There is a suspicion that the main economic activity was the provision of sexual favours by Aboriginal women. These activities are not recorded in official reports but may be deduced from descriptions of the informal relations between the two communities and the remark, upon abandoning the settlement, that syphilis was the last and probably most memorable item the whites had brought. The local population provided food to the settlers and tried to get just about anything in payment. Some settlers were highly vexed as everything movable and immovable was taken and there were constantly loiterers in houses and public buildings.
Northeast of Adelaide the Murray river flows. A small settlement was founded near Moorundie in 1841. In those years large herds of sheep would pass there on their way from Adelaide to Lake Victoria. At the time contacts with the local population were quite bloody: a large number of Aborigines had been killed in fights instigated by the whites. In compensation and in order to improve the position of the local population, the settlement was founded. The government provided the inhabitants each month with flour and related products. As a bonus they received a blanket; for anything else they would have to work or provide food to the settlement. There also appear to have been other contacts: Edward John Eyre, the administrator, remarked some years later that venereal diseases, hardly known in 1841, took a heavy toll among the population.

1.7 Second stage of contact, some case studies

There are a large number of instances of second stage contacts. Some have been included in the description of the first contact situations, as the second stage is by now well under way there. In addition four examples have been chosen from Africa that outline developments in four hunter-gatherer communities in the recent past and the present.

1.7.1 HADZA

In the north of Tanzania a small group of hunter-gatherers known as Hadza[86] lives. The total number of members is less than 3000, all of whom exploit the desertlike savannah of North Tanzania in small groups of varying composition. The most extensively studied group, some 750-800 people, lives in the eastern part[87]. Their exploitation strategy may be considered an immediate return system[88]. There is no storing of supplies or planned exploitation of food resources. Several sanctions exist against acquiring possessions and gathering wealth.

Surrounding the Hadza territory are several sedentary agrarian groups, regarded as inferior by the Hadza. The isolation of the Hadza is taken to be an effect of colonial pressure, local exclusion by neighbouring groups but also a resolute separation by the Hadza themselves. They have always been strongly opposed to outside influences and do not enter into alliances with outsiders. Outsiders' perceptions that these are lazy, stupid primitives probably contributed to their survival in modern society[89]. The segregation was also stimulated by the fact that young women in particular can easily be 'acquired' by neighbouring farmers. Hadza men are in no position to obtain other women due to their lowly social status and inability to pay a dowry[90].

Occasionally they work on farms or herd cattle. There is also exchange with outsiders. Medicinal herbs[91], honey and game[92] are bartered. In payment for work and in exchange for goods they receive tobacco, metal for hunting gear, ornaments, cooking pots and some flour. They are not dependent on these goods for their existence. Metal aside, these can be considered luxury items.

1.7.2 PYGMIES

In the dense rainforests of Zaïre, the Central African Republic and Cameroon several tribes of Pygmies live, known as Ik, Mbuti (Efe), Aka and Bamgombi (Baka). In small groups they roam the jungle in search of vegetable and animal food[93]. The mobile groups spend the night in small camps that are used for relatively short periods. They are however much less mobile than the Hadza.

On the edge of the forest agrarian groups live, who are used to trade forest products for products from these agrarian villages or from outside, mainly metal and salt. The Bamgombi hunt for the farmers or work their fields. Some even farm themselves, on a supplementary basis[94]. This is also true for the Mbuti, where the ties with the Bantu farmers are much closer. They even work in their houses. In periods of close relations with the Bantu, their settlements are close to the villages and they stay in one place for relatively long periods.

The farmers with whom the Bamgombi are in contact, also make good use of the forest's opportunities, in sharp contrast to the situation with the Mbuti. The Bantu farmers there are terrified of the forest. This interdependence creates a symbiotic relationship, where each group lives more or less in a world of its own[95]. The Mbuti hunt in their domain, the forest. They are the Bantus' means to exploit the forest. These consider the Mbuti to be subordinate and oblige them to be initiated in Bantu rituals. In the forest, out of reach of the Bantu, the Mbuti adhere to their own rituals and customs.

The Aka pygmies are in a comparable situation[96]. They work partly for the sedentary Tall Black farmers. The produce is an addition to their diet. The exchange and dependence lead to social change in Aka society. Whereas small groups used to hunt for game, the basis for the exchange, now large drives are organized. This means the involvement of much larger groups. The introduction of new hunting techniques like snares resulted in reduced mobility. For the Aka this leads to more intensive relations with the Tall Black Farmers, which in turn result into a disintegration of their traditional way of life and economy. The lower productivity of the forest, due to excessive exploitation leads to an increased consumption of agrarian produce[97].

The extended use of settlements often housing larger groups as well, is caused on the one hand by the farmers' proximity, but also by the presence of Europeans. The Epulu settlements where Turnbull conducted his well-known investigations, appear to have sprung up by the presence of the American Patrick Putnam, who first founded a hospital there and then a petrol station and small zoo. The local Pygmies worked for him, demonstrated dances for tourists and gave guided tours of the forest[98].

1.7.3 BUSHMEN

Among the best-studied groups of hunter-gatherers are the Bushmen[99]. They live in the Kalahari desert, on the borders of South Africa, Namibia and Botswana. They wander around in small groups and hunt, fish and gather vegetable material. A number of groups farm and keep livestock. Until recently the Bushmen were considered to be original hunter-gatherers in a transition towards a more sedentary way of life because of contacts with outsiders[100]. When Denbow, Hall and Smith[101] proved that the Bushmen had had close relations with the neighbouring farmers for over 1000 years, the artificiality of the so-called pristine nature of the Bushmen became clear.

Within the various Bushmen groups a wide range in nature and intensity of outside contacts can be distinguished. Despite intensive contacts the Nharo adhere to their own culture, whereas other groups become increasingly sedentary[102]. The contacts consist of rendering services to outsiders, the Bushmen may be herdsmen or work in agriculture[103]. In addition, products like ostrich feathers, eggshell beads, skins, honey and horn are traded. In exchange the Bushmen receive metal implements, wooden kitchen utensils, tobacco, coffee, glass beads and shells. With the exception of the G/wi, all Bushmen groups have a delayed balanced reciprocal exchange system, better known by the name of Hxaro[104]. This is an exchange system within the Bushmen community ensuring the distribution of artefacts and raw material and leading to a network of fixed trading partners. Some of these partners are related by blood, others not. One of the underlying factors is that by having partners survival in dry periods is ensured. To survive dry periods, springs are essential. When their own spring runs dry, they may call on a Hxaro partner for water and survive the disaster. Although the element of competition is not as marked in the Hxaro system as it is in the New Guinea highlands, it is nevertheless present. In particular in finding new partners it is essential to make an attractive offer.
The process towards a sedentary lifestyle is accompanied by economic deprivation, internal disputes, intergroup problems and increased violence in the eastern and northern Khoe Bushmen[105]. Traditionally tensions in a group are relieved by splits, but this is no longer possible and more violence occurs. Gradually, when social relationships in particular become redefined, the violence decreases again. In this situation violence is most prevalent in groups just starting on the change towards a sedentary way of life.

1.7.4 OKIEK

In the central highlands of Kenya the Okiek live, a group of hunter-gatherers in strong symbiosis with neighbouring market gardeners and stock breeders[106]. They are highly specialized gatherers and may essentially be considered bee-keepers. To a large degree their economy is based on gathering honey. There is a lot of game as well, but relatively few vegetable resources are available. Hunting may often be seen as a by-product of collecting honey. There is an exchange system with the Masai for all kinds of commodities, but game and honey are most important. They also render services. In exchange they receive cattle, which is killed immediately[107]. In most cases this is used in ceremonies and as food for visitors[108]. It is hard to distinguish the Okiek from the Masai as they dress almost identically and have adopted much of their social structure[109]. Yet they are considered inferior and are despised by the Masai, because they have no cattle, the main Masai status symbol, and live by hunting wild animals. It is remarkable that Masai members are considered Okiek when they lose their cattle — this raises questions about the status of the Okiek as a distinct group. Once they own cattle again, they return to being Masai[110].
The Okiek manage to retain their territory because no outsiders are interested in it[111]. For another thing, they know the forest like the back of their hands, while outsiders generally fear it. A lot of energy, more than the Hadza, is put into efforts to obtain products from the neighbouring farmers[112], although the food is not essential to their survival. The main aim is to keep relations with the neighbours as friendly as possible and so create a large degree of interdependence. Then outsiders are no longer a threat.
Yet incorporation into the agro-pastoral system of the neighbouring groups appears inevitable. Ever more Okiek have of late changed to an agrarian lifestyle and it is remarkable at which speed the transformation occurs[113].

1.8 Conclusions from the ethnographic data

1.8.1 FIRST CONTACT

Despite all differences, specific circumstances and the unique nature of each first contact situation, five recurrent phenomena may be distinguished. Part of these phenomena continue on into the second stage of contact.

1 The results of first contacts appear to affect mainly the social subsystem, as opposed to the economic subsystem.

2 The meaning an outsider attaches to an object often does not match the meaning of the local population.

3 The value these objects represent appears to be highly subject to inflationary developments. This results in a quantitative increase in the number of objects or the rise of other valuable objects in the exchange system.

4 The flow of commodities between two different sociocultural systems is widely divergent. The local population is interested in objects, almost never in food. Their own food is adequate for their daily subsistence; only food that may be re-used in the prestigious system is exchanged. The outsiders on the other hand are exclusively interested in food, sexual favours and useful raw materials, never in artefacts which are ofte considered inferior.

5 Only at a much later stage — what we called the second stage of contact with modern hunter-gatherers — economic motives will play a part, in the form of the possibilities for ‘delayed prestige’.

1.8.2 SECOND STAGE CONTACT

After the first contact three main types can be distinguished in the further development of the relations in the process of acculturation and/or adaptation to the newcomers. Although presented as separate, in reality they often blend to some degree or other.

a. Dependent

There are two possible degrees of dependence. First, the native inhabitants are totally integrated, acculturated and no longer recognizable as a distinct socio-cultural group.
As a second possibility the native population group is still identifiable. In such a situation there is a disruption of their traditional way of life and social and economic breakdown. In this phase the standards and values of the hunter-gatherers change, there are no longer any fixed rules and characteristics and they are unable to preserve their traditional economy any longer[114]. Often societies in this kind of situation are despised and discriminated by the group they depend on. Their material culture degrades, artefacts from outside the culture come into use, standards and values of the other society are adopted, prostitution raises its head, as well as alcohol abuse and slavery. In short, the traditional hunter-gatherer society goes to seed, people are exploited and excluded.
The final result is that they are often a negligible minority, underprivileged if they should manage to integrate into society.

b. Symbiotic

Both societies, hunter-gatherers as well as farmers, develop relations that meet the mutual needs, depending on the pressure of one group on the other. In such a situation the farmers are the dominant group that may impose change, wittingly or unwittingly, on the hunter-gatherers. Geographically speaking the two groups are close. Depending on the impact of one group on the other, the characteristics of the main adaptations are a.o.: changes in the settlement system, larger settlements, a longer habitation period, an increasingly sedentary lifestyle and attendant lower mobility, often the adoption of artefacts by the weaker partner, changes in diet and economy, continuous interaction between groups, exchange of marriage partners, in particular of the weaker symbiotic partner, competition among the groups in contact with outsiders and an increase in violence. These changes may occur slowly, but can also be rapid, particularly in the beginning when people realize that economic advantages may entail social profits as well. For instance, the introduction of new crops in New Guinea occurred at an enormous speed[115] and the Okiek also adapt rapidly to changes in their economic situation[116].
In part these changes may be drastic and change the entire society. Another possibility is that only parts of the social and economic subsystems change, as was the case with the Hudson Bay Company, and that much of the traditional way of life is preserved.

c. Independent

The third main type that can be distinguished among hunter-gatherers may be characterized as the aim to be as independent economically and socially as possible. In essence this is a kind of prolonged first contact stage. As a reaction all contact is resisted. This may be culturally inspired, mixed with spiritual/religious reasons, but a fear of losing one's own identity may play an important part as well. As a result of this kind of attitude they seek refuge in areas not exploited before. These should also be areas which are unsuitable for the economy of the outsiders they wish to avoid, or which the outsiders for some reason do not dare to enter and exploit. Hunter-gatherers will settle in areas unfit for agriculture or livestock. The existing settlement system and pattern will therefore change.
Attempts are made to adopt as little as possible from the others or to provide it with a new identity and meaning within their own socio-cultural framework, e.g. ritualizing or a move to marginal areas. The ethnographic data, like those in Australia[117], demonstrate that hardly any normal commodities are incorporated, but that goods assigned a part as luxury or prestige objects may indeed be adopted. These will then be embedded in their own culture.

1.9 Archaeology and contact

1.9.1 FIRST CONTACT

Are these developments and characteristics, as described above for the first stage of contact, also evident in northwestern Europe? In the ethnographic situations of contact which have been studied, the local population exchanged among other things shells, feathers, hides, fur, textiles, fish, meat, food crops, medicinal herbs, resin, pigments, honey and salt. All of these are products unlikely to have been preserved and impossible to trace in an archaeological setting. Fortunately less perishable materials are exchanged as well, e.g. raw materials for stone working, exotic en precious raw materials, pottery and metals. It is of course obvious that in studying prehistoric contact situations those imperishable materials are the sole source. Only in good preservation conditions may part of the perishable materials have been preserved.
An attendant problem is the fact that archaeologists are not in a position to easily demarcate short moments in time. A first stage of contact soon blends into a second stage. We should therefore take into consideration that most phenomena described here may well be second stage contacts.

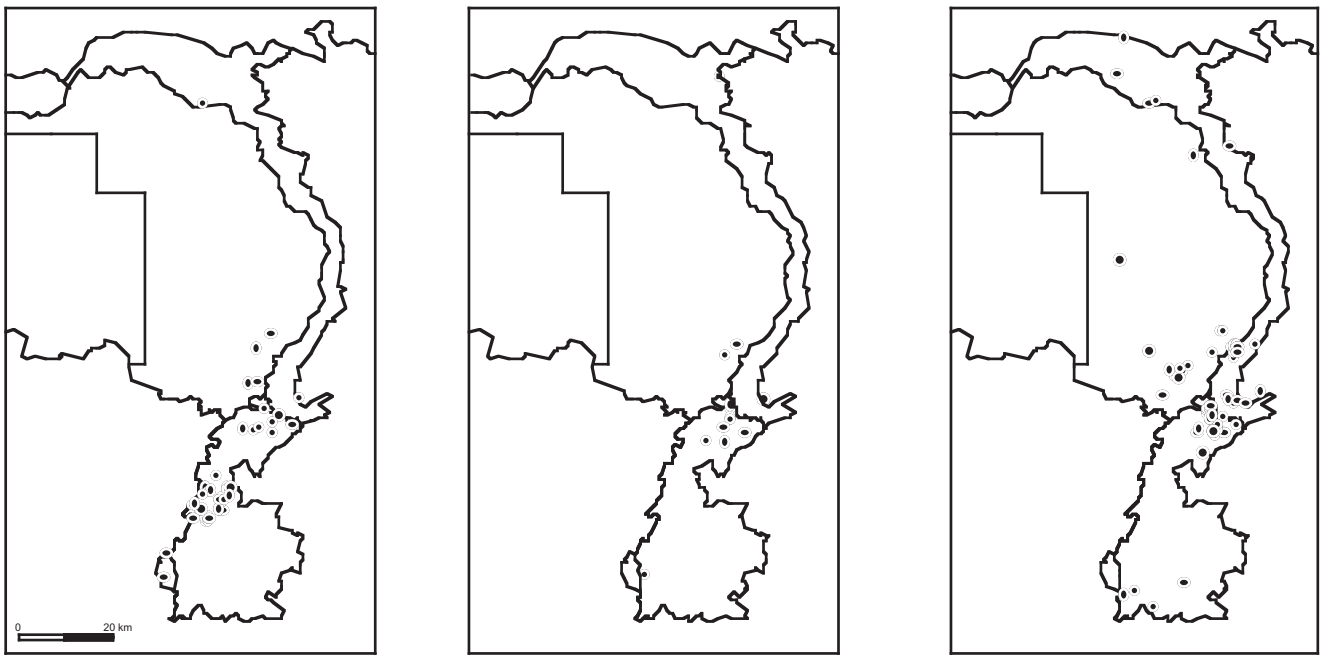


Fig. 1.11 Distribution of the settlements of LBK (a), Rössen-Culture (b) and Michelsberg-Culture in the southeast of the Netherlands

From the data of the Meuse Valley Project and other investigations — mainly excavations — it may be inferred that in the south of this country the presence of Bandkeramik settlers and their successors, the Rössen Culture, seems to have had hardly any economic effects on the local population[118]. The general impression is that the transition to a farming way of life did not occur until the end of the Rössen phase. In the succeeding Michelsberg phase a farming economy does exist, with strong Mesolithic overtones[119].

This can be inferred from the distribution patterns of artefacts and the location of the settlements in the Meuse valley. In the Bandkeramik phase there is a concentration of settlements in the löss region, small settlements in the adjacent coversand area and a distribution of pottery and adzes in a northerly direction. In the Rössen phase there are hardly any sites in the Limburg löss region. In the coversand area the pattern is identical to that of the previous phase: a thin distribution of pottery and Breitkeile. In the Michelsberg phase the pattern is completely different: the entire coversand area is covered with settlements (fig. 1.11c).

In the periods of the Bandkeramik and the Rössen Culture there was therefore a contact stage without any visible effects on the economic subsystem. Bandkeramik and Rössen artefacts are found in the coversand area, well away from their settlements (figs. 14-17). Most artefacts are surface finds and provide no data on associations with other items. Explanations for the occurrence of this material have been numerous[120]. Most widely heard is the opinion these are items left or lost by farmers on hunt, on treks and expeditions. Another explanation — with fewer supporters — for these Neolithic items found far outside the known Neolithic settlement areas, is that they were left by Mesolithic hunter-gatherers. Sites are known where on the surface a Neolithic artefact was picked up in association with a lot of Late Mesolithic material, without any other recognizable Neolithic material being present. Dutch examples of this are Breitkeile from Ysselstein, Den Bosch-Maaspoort and from Helmond[121]. More is known of the find conditions surrounding an LBK adze and some La Hoguette sherds from Gassel[122]. The La Hoguette sherds come from two pots at the most. All the soil from this coversand dune site has been sieved by amateurs, which yielded approx. 30.000 artefacts. The majority of this is Late Mesolithic flint, but a significant amount of Michelsberg, WSV- and beaker pottery occurs as well. The area appears to have been in use in the Mesolithic and from the middle of the Neolithic. However, not a single Early Neolithic artefact has been recovered, apart from those mentioned before. The sherds may therefore be correlated with the Late Mesolithic habitation.

The associations of several finds of La Hoguette pottery from north of the löss are less clear cut. From Ede-Frankeneng a

Fig. 1.12 La Hoguette pottery from Ede-Frankeneng. Scale 1:2. (after Schut 1988).

surface site is known with sherds as well as flint[123]. Part of the sherds belong to a group of organically tempered pottery, decorated with spatula impressions and with lugs. A sample of the organic temper yielded a C14-age of 6050 + 110 BP (uncal.)[124]. A second group of sherds comes from an oviform pot without decoration, with weakly profiled ridges and a lug (fig. 1.12). This pot is not dated, but has a strong typo-morphological resemblance to La Hoguette pottery. That this is not a sole incident is apparent from the discovery of several sherds of a comparable specimen, albeit without a lug, but with a double folded rim, near Posterholt (fig. 1.13). Another find is older. In the thirties sherds have been found on the Ossenberg near Venlo, which have now been determined to belong to this group as well[125].
From the neighbouring countries, Germany and Belgium, sites are known where Early Neolithic material was found far outside the original centres of habitation, as well. For instance in the Weidenthal-Höhle at Wilgartswiesen (Rhineland-Palatinate) a LBK sherd has been found together with Mesolithic material. The sherd is considered an indication that LBK-groups exploited areas outside the löss as well[126]. However, an explanation as exchanged, robbed or found artefact seems more likely.
Several old reports mention finding LBK pottery. For instance in Vledderveen, East Groningen, a LBK pot is supposed to have been found together with an adze and on the Weinkaufmoor near Dannenberg, Bremen, a late LBK pot[127]. These finds have not been preserved and the reports are not beyond doubt. There are, however, also well-documented finds. In the river Weser, near Uesen a younger Bandkeramik bowl was found in dredging operations and near Fisherhüde a small bowl was found, supposed to date from the älteste Bandkeramik phase[128]. However, the unique nature of this small bowl casts doubt on this attribution.
In the Neolithic, but in lifestyle still very much Mesolithic settlement Hüde I several pots of the Rössen culture have

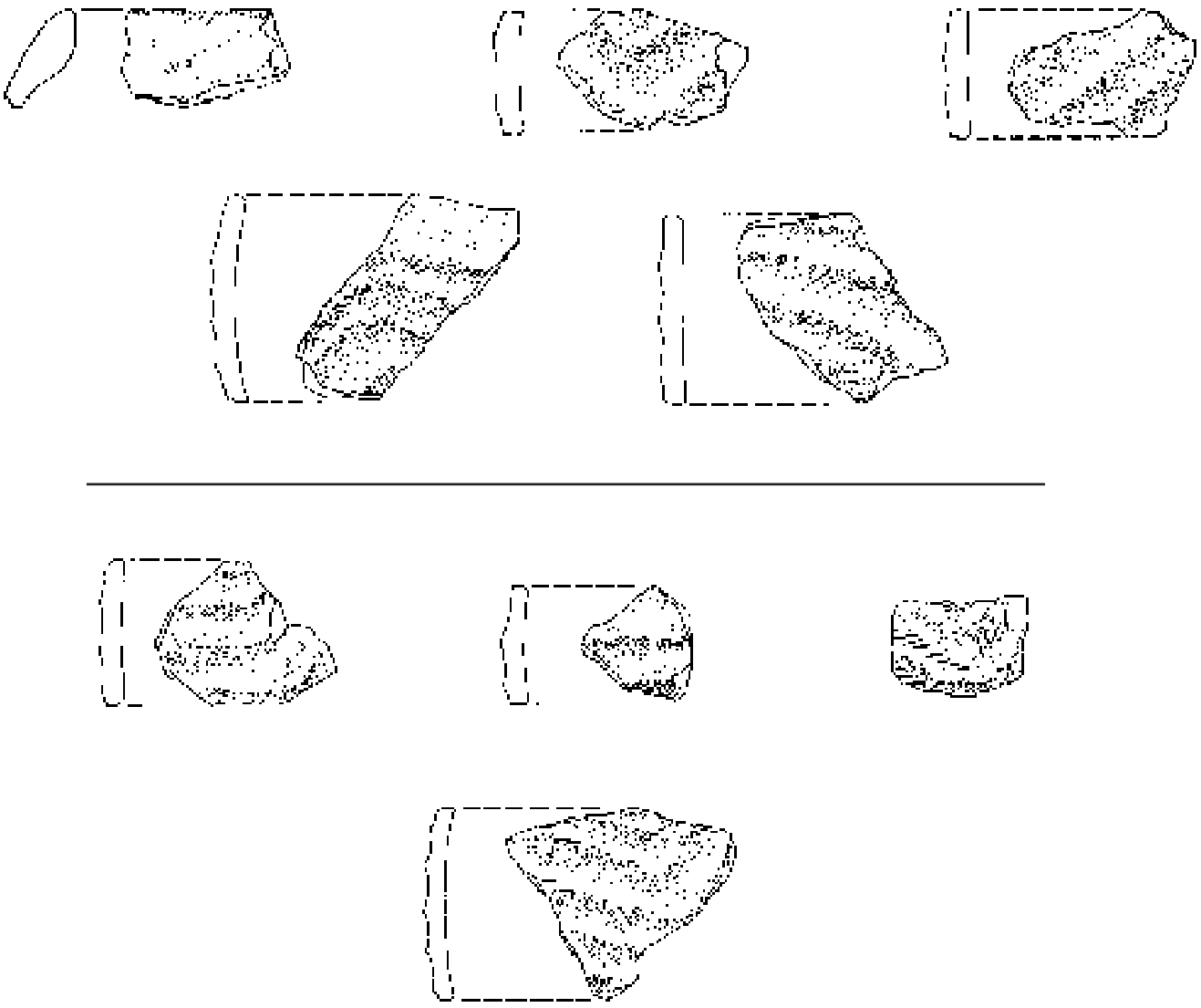


Fig. 1.13 La Hoguette pottery from Posterholt (top) and Venlo-Ossenberg (below). Scale 1:2.

been found during excavations that should originate in the löss belt approx. 25 km to the south, according to analysis of the pottery[129]. Even further to the north, at a distance of approx. 250 km from the löss, in Hamburg-Boberg several sherds related to Grossgartach and a Rössen pot have been found in a site containing mostly Late Mesolithic material[130]. Recently at Hardinxveld-Giessendam some Rössen sherds have been found[131]

Adzes are also found far outside the original LBK settlement area. Quite early these caught the attention of investigators since their distribution could illustrate the influence of the first settled farmers on the local population[132]. However, many of these artefacts are single finds. Some were found in terrain where Late Mesolithic flint was recovered, such as Grabow and Schletau, both near Bremen[133]. A fragment of an adze has been recovered in a Late Mesolithic 'hut' at Sarching near Regensburg[134].

Until recently the most informative find has been the grave discovered in 1934 in Bad Dürrenberg, Kreis Merseburg[135]. There has been a great deal of confusion about its age. As it contained a skeleton with raised knees, it was initially attributed to the Single Grave Culture. The burial gifts however were not in accordance with this attribution. The grave contained the skeletons of an adult woman and a child. With them were found stones, unworked bones, teeth and fragments of antler, shells, the remains of three tortoise

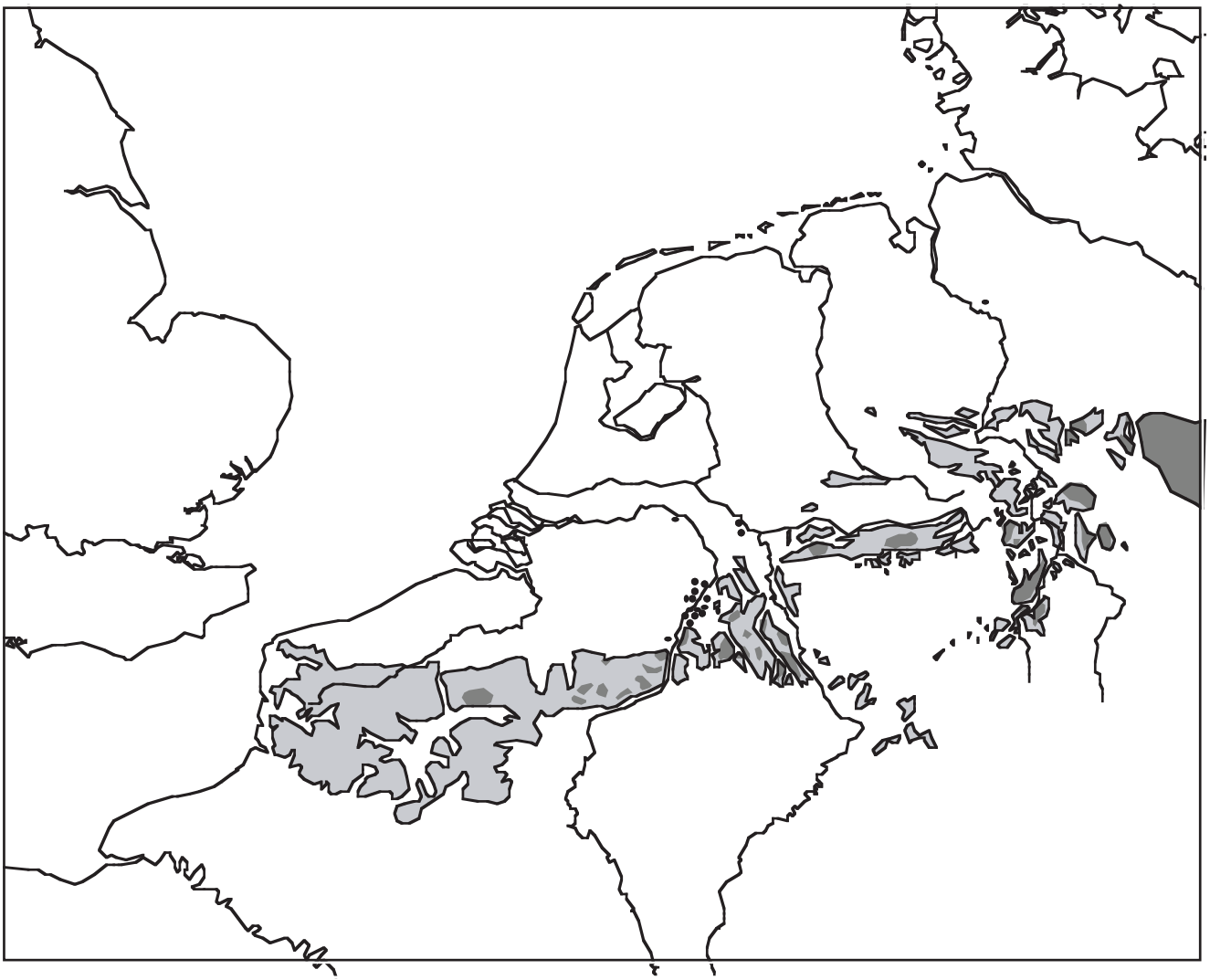


Fig. 1.14 Distribution of LBK pottery in the northwest of Europe outside the löss area. Light grey: löss, dark grey: distribution of LBK settlements.

shells, together with one piece of ochre, 29 microlites and 2 flakes in a container made of a crane's diafysis, 9 flint blades, 1 hammer stone, 2 worked and 3 polished boar tusks, 5 bone awls, 24 perforated boar and aurochs teeth, a perforated axe shaft of red deer antler and a flat adze. The last item would originate in a LBK context and constitute a major indication of contacts between Mesolithic hunter-gatherers and LBK farmers. The other finds, in particular the trapezia of Late Mesolithic age, supported this view[136].

Distribution

Separate distribution maps have been constructed for the occurrence outside the löss of LBK and Rössen pottery, adzes and Breitkeile (figs. 1.14-1.17). The maps were composed using the existing surveys supplemented with various small find reports[137]. One of the problems in this procedure is that in using such surveys no detailed information on site and object is available. As such it is hard to construct a map with finds exclusively from the LBK phase and found outside the löss area, as some artefacts do not occur exclusively in a single period. Perforated adzes for example date for the most part from the late LBK phase, but younger specimens are known, of Grossgartach and/or Rössen age[138]. The maps therefore represent activities over a longer period, but it is possible to emphasize a particular period. The adzes are in general older than the Breitkeile and belong mainly in the Early Neolithic LBK time frame. In this way a good impression

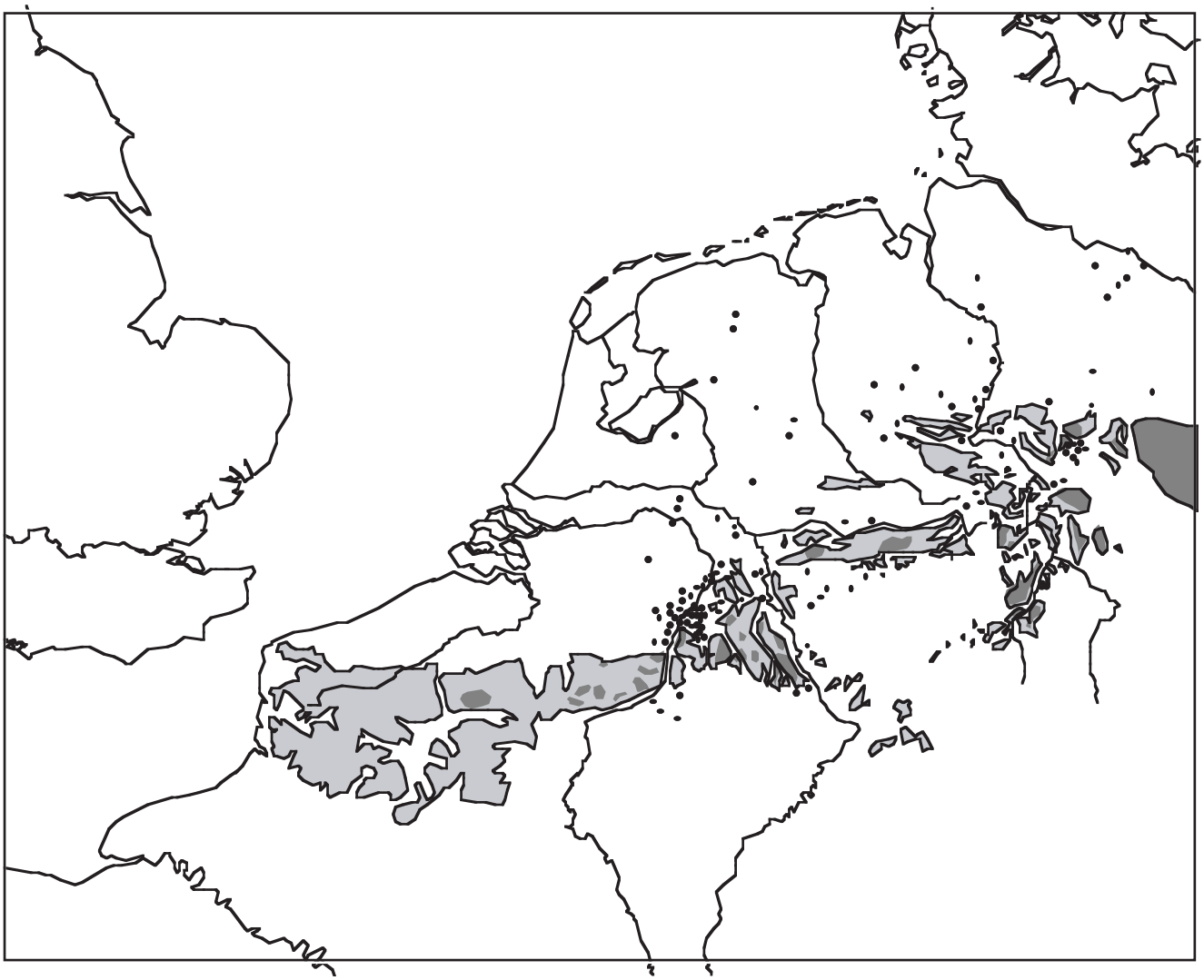


Fig. 1.15 Distribution of LBK adzes in the northwest of Europe outside the löss area. Light grey: löss, dark grey: distribution of LBK settlements.

can be obtained of development trends in the various phases.

How should these distribution maps and the finds be interpreted? Numerous explanations have been put forward by other researchers. The distribution of these artefacts is thought to be the result of: the settling of early Neolithic farmers, scouting expeditions by these farmers, cattle transhumance camps, or theft or exchange of objects by Mesolithic hunter-gatherers.

The first two options seem not very plausible. Outside the löss zone so far no settlements have been found in these parts that can be compared to those known from the löss itself. The scouting expeditions may have played a part in the distribution, but it must have been limited. The material reflection will have been small, in contrast to the actual distribution pattern and the mutual differences in the distribution of pottery and adzes.

The third option, cattle camps, may explain the distribution of artefacts in the immediate adjoining coversand area. The model Bakels has developed for the Graetheide cluster suggests a shortage of pasture in the löss zone and necessitates a transhumance system for cattle[139]. In this way the coversand area around the löss may have been exploited. However, this option is only valid in the area immediately adjoining the löss. The finds that were located more to the north and west seem to be the result of another mechanism. This distribution can be considered the reflection of contacts between hunter-gatherers and farmers and of an exchange

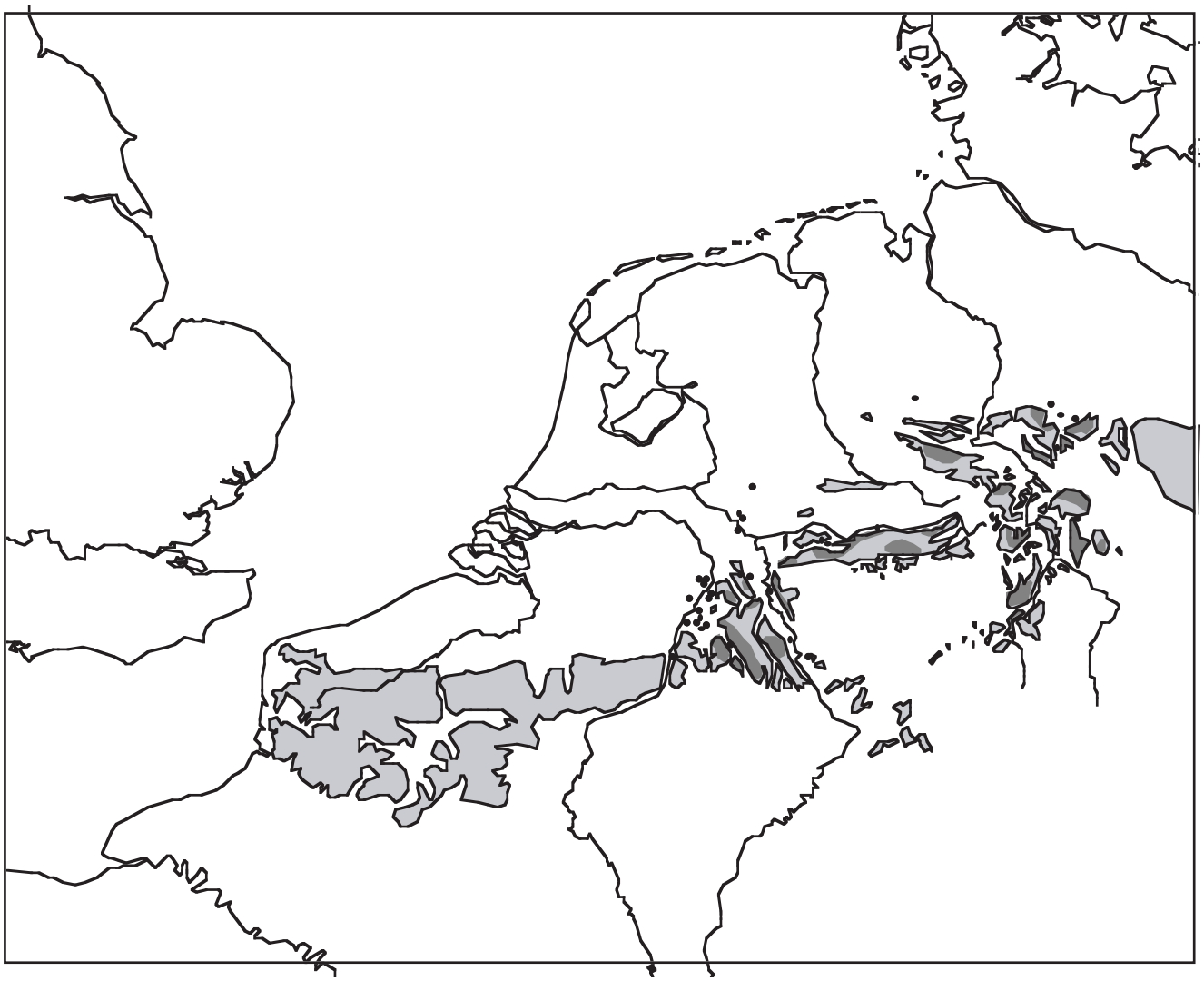


Fig. 1.16 Distribution of Rössen pottery in the northwest of Europe outside the löss area. Light grey: löss, dark grey: distribution of Rössen settlements.

among hunter-gatherers. This may refer to robbed material as well as exchanged objects.
In the case of robbed material we may think of raids, but also of collecting or scavenging waste, like pottery sherds, in abandoned settlement areas, more particularly in those small temporary settlements or camps in the coversand region. Part of the distribution pattern of the pottery can be explained in this way.
Another part however can be associated with exchange. For Mesolithic hunter-gatherers pottery would be associated with the new arrivals and therefore have an exotic appeal. This association gave it an added value. To the farmers it was a cheap commodity, but as the potential new owner should be able to associate the pottery with the original user — in other words should know that original user — it resulted in a restricted distribution. The archaeological distribution pattern supports this hypothesis (fig. 1.14). A second factor that may play a part in the limited size of the distribution pattern is the fragility of pottery.
The distribution of adzes shows another pattern (fig. 1.15). A concentration in the vicinity of the Bandkeramik settlements, fanning out in a northerly direction, is noticeable. The adzes represented a relatively high value in Bandkeramik society, as demonstrated in Van de Velde's study of grave inventories[140]. So the chances are remote that these were left behind in abandoned settlement areas. The distribution seems more likely to be the result of exchange. Functionally comparable artefacts occur among the tools of

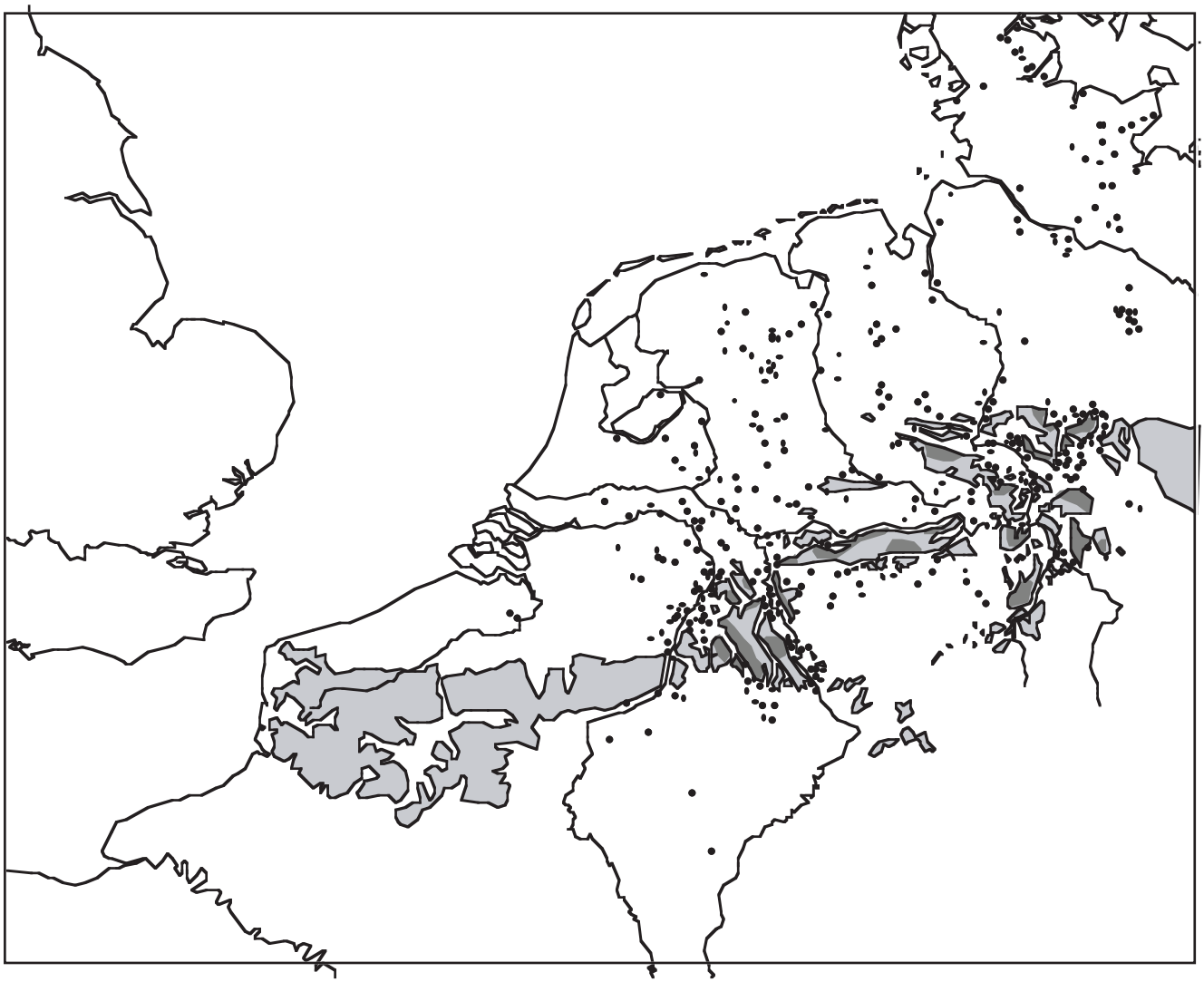


Fig. 1.17 Distribution of Breitkeile in the northwest of Europe outside the löss area. Light grey: löss, dark grey: distribution of Rössen settlements.

Mesolithic hunter-gatherers. So to them this artefact was a recognizably functional object, made more valuable by its exotic character. It did not have to be associated directly with the original owner or maker to be regarded as a prestigious object. This resulted in a wider distribution. To explain the concentration of adzes in the outer löss zone an inflationary process might be proposed. Pottery became a less desirable exchange object in favour of adzes.
In the next chronological phase, the Rössen Culture, the pottery, in the shape of complete pots, is exchanged over a limited distance (fig. 1.16). It is likely that a change in meaning occurred here, from primarily prestigious object to more functional object. The exchange is very well documented, as demonstrated by the find of imported Rössen pots at Hüde on the Dümmersee. The restricted distribution pattern may have been caused here as well by the fragility of the material.
The distribution of perforated adzes and Breitkeile (fig. 1.17) seems to indicate the growing importance of these implements in the prestige system. The pattern becomes noticeably more dense compared to the previous period and extends as far as the south of Scandinavia.

1.9.2 SECOND STAGE OF CONTACT

As mentioned before, it is hard to separate first and second stages of contact in archaeological time. Moreover, at the moment second-stage contacts are less tangible archaeologically than first-stage contacts. On the one hand there is a gap

in our knowledge concerning the exact meaning of these Stone Age sites in the south of the Netherlands, the reason for setting up the Meuse Valley Project in the first place, on the other hand the lack of continuity in farmers' presence in the löss area presents a problem. After the disappearance of the LBK there are no successors and it becomes difficult to find a direct source of inspiration for continued interactions between hunter-gatherers and farmers. Based on the trends visible in the first-stage contact, an intensification of contacts, the disappearance of the LBK does not appear to have affected this process to a large extent.

Our archaeological knowledge of the second stage of contact is based mainly on data from excavations in the west and middle of the Netherlands. In this phase economic transformations become apparent. In excavations, e.g. Hoge Vaart, Bergschenhoek, Brandwijk, Hazendonk, Swifterbant, the use of culture crops and animals in combination with hunting, gathering and fishery have been demonstrated. The Mesolithic characteristics still visible in certain parts of the material culture, the settlement pattern and the various types of settlement, lead to the conclusion that these are originally Mesolithic groups in a specific transformation phase that might lead to an increasing importance of agricultural elements in the economy, but might as well lead to a return to a traditional way of life.

Similar well-documented data are not available for the coversands in the south. There is a lack of organic elements of the food economy and material culture. It is possible, with some effort, to demonstrate Mesolithic origins in the flint industry. The few data on the settlement pattern and settlement types[141] suggest a still highly Mesolithic way of exploiting the terrain, in combination with farming and husbandry.

From ethnography a number of correlates may be deduced for a second stage of contact.

For a situation of high dependence there are two possibilities. The first is a completely integrated hunter-gatherer community. Archaeologically this should be indistinguishable from a completely agricultural society. From this stage farming communities characterized as Rössen and Bischheim are known. But the material culture shows hardly any similarities to what was recovered from those settlements. A complete integration/acculturation therefore seems out of the question.

The second possibility is for hunter-gatherer communities to become dependent to such a degree that their traditional way of life is severely disrupted. This, too, does not seem to be the case, despite the relative obscurity of the Late Mesolithic. On the one hand Mesolithic origins are still visible in the material culture and settlement system, but on the other hand new types of artefacts, innovations and improvements are introduced. The social and economic disruption so characteristic for groups that are highly dependent on others, is not visible.

In assessing this situation, the sandy areas are still blank spots on the map. Many of the excavated settlements turn out to be palimpsests of the use of the same terrain over a period of thousands of years. The presence of e.g. degenerated hunter-gatherer groups within a Neolithic settlement area is hard or even impossible to determine in such a situation. The artefacts they left might as well have come from a visit to the area before the Neolithic habitation or from later activities.

There are quite a number of characteristics present for a symbiotic relationship. Due to the small number of sites in the Dutch löss area, it is not possible to obtain an impression of the degree of influence of the farming communities and the effects on those communities themselves[142].

Based on the ethnographic data the flow of goods moving from hunter-gatherers to farmers will have been mainly organic in the Netherlands. As organic matter is hardly ever preserved, it is doubtful whether these relations would be archaeologically discernible even if the farmers were known with whom the hunter-gatherers were in contact. The changes should be most apparent in the hunter-gatherers. Excavations in the west and middle of the Netherlands demonstrate an increasingly sedentary lifestyle, larger settlements and changes in diet and economy. Ethnography makes it apparent that in such groups mutual competition increases and violence occurs. The small cemeteries of Swifterbant, Zoelen, Urk and Rijswijk-Ypenburg might be indications of territoriality and increasing competition.

We do not get a clear picture of the sandy areas. Here analysis of the settlements and settlement patterns might be very productive. Indications for this are provided by the settlement pattern in the core region of Venray. During the Middle Neolithic a pattern is discernible here that is still highly similar to the preceding Late Mesolithic pattern, but the increase in agrarian components in the economy may clearly be deduced from the choice of location[143]. During the Neolithic a shift occurs towards locations meeting the agrarian requirements and increasingly less oriented towards hunting, gathering and fishing. By the end of the Neolithic, these last components appear to play no longer any significant part.

It is very difficult to determine complete independence towards the settlers. First of all, the settlements from such a contact phase should be distinguishable from settlements from a preceding phase. As there are hardly any discernible differences in material culture, this is almost impossible; moreover the dating system, based on the C14 age of hearths, proves to be invalid[144].

This possibility does not appear to be very likely for almost all of the Netherlands. After all, an increase in contact has

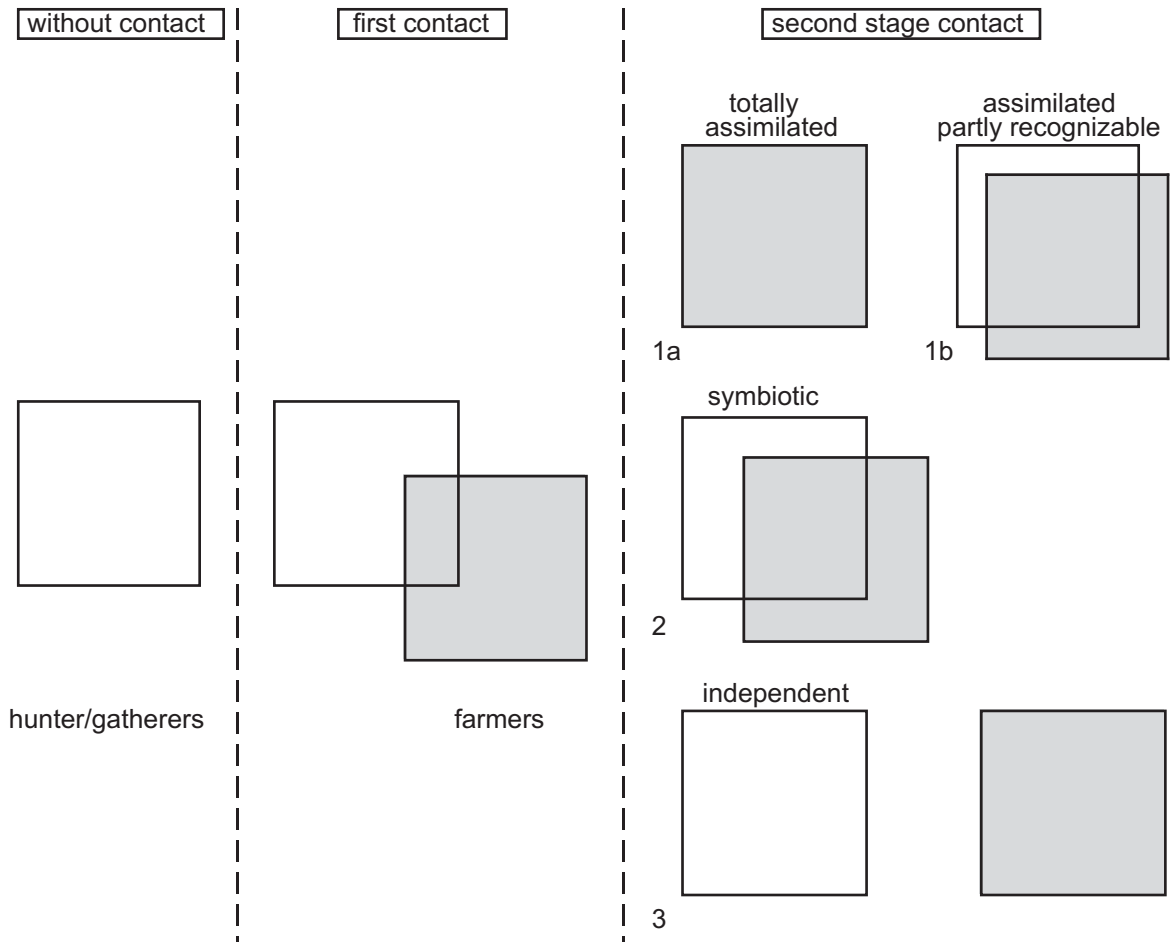


Fig. 1.18 Model of possible relationships after the first contact. The impact of Neolithic influence varies by 'dependence' relationship.

been demonstrated, as inferred from the number and distribution of typically Neolithic artefacts. The data from the earliest Neolithic settlements in the west and middle of the Netherlands clearly demonstrate the integration of agrarian components into the economy as well. Yet there are some indications in the sandy areas that a prolonged independent attitude should not be ruled out completely. C14-datings of Late Mesolithic settlement areas show an age similar to that of Middle Neolithic settlements[145]. Moreover, remarkably a Michelsberg pot was found in the middle of a Late Mesolithic flint concentration in Dilsen-Dilserheide (Belgium) [146]. This could be interpreted as an exchange object between MK farmers and hunter-gatherers still active in the coversand area to the northwest of the löss.

1.10 Models of neolithization

Within the framework of ethnographic and archaeological data a number of possible neolithization models may be formulated. The main elements in this model are the ideas on a first stage contact, followed by a second stage that eventually would have led to the disappearance of a lifestyle essentially based on hunting and gathering.
Mesolithic society was not static, but continuously subject to changes within social, economic and ecological constraints. At present there are no signs that there were complex hunter-gatherer communities in the Netherlands. Indications such as status differences, specialization, a richly ornamented ('emblematic') material culture, cemeteries and a sedentary lifestyle are absent.
In the Netherlands we encounter a primarily egalitarian society. Competition on an individual level between members of the small mobile groups of hunter-gatherers should of course be allowed for. In seasons of plentiful and clustered food supply, aggregation may be expected, but (semi)sedentary settlement as is known from Denmark is not very likely. There are no indications that internal factors like

population growth or external factors like climatologic or ecological changes have defined the neolithization process. The arrival of Central European settlers marks the moment of change in Mesolithic society.
We suggest the following model with several alternative options (fig. 1.18).
In the southeast of the Netherlands hunter-gatherers first encounter people settling inside a marginal zone of the hunter-gatherer territory: the löss area. We assume that this settling did not cause conflicts or intense competition for food.
In a first contact stage there is a mutual exchange of goods. At first this flow is opportunistic and there is hardly any structural interaction. Analogous to several ethnographic instances, both groups attempt to exchange objects that are less valuable to them for more valuable items. As a result inflation and devaluation occur, where the number of objects may increase, but other objects, representing a higher value, come into circulation as well. Several factors may start and reinforce this process. A major social factor appears to be competition within or among hunter-gatherer groups[147]. Possession may play a part, as does the control over means of production, as suggested by Bender[148]. A continuously reinforced intergroup competition may be involved as well, translated into rituals as is customary in Australia, but which will hardly be discernible archaeologically[149].
Other elements may stimulate these ever intensifying contacts as well. For instance the possibility of a more sedentary lifestyle or the chance to fall back on your agrarian contacts in times of hardship. Innovations that can have important economic implications are often not recognized as advantageous in a first contact situation and will not play a major part at that stage.
Another element in this disregard for innovations, particularly agriculture, is the fact that in a first contact stage the contacts are made by men, who traditionally play this part, but often also have a higher status. Agriculture appears to be adopted only after a lengthy process of contacts, as it is the women who are active in this domain, both among the hunter-gatherers and among the farmers[150].
Gradually — in a sudden break or over a long period of time — the exchange will become less opportunistic and more structured. This is the beginning of a second stage contact, that may have three different outcomes. The hunter-gatherer community becomes dependent, develops a symbiotic relationship with the farmers or dissociates itself from the newcomers and goes its own way.
In this stage structural economic changes occur as well, when a decision is made to make contact. An example of this is the basic structure of the economy that has to change from an immediate return system to a delayed return system[151]. The settlements will gradually become more permanent in character and the mobile lifestyle loses ground to a sedentary way of life. The advantages of a sedentary lifestyle are, despite its disadvantages, economically and socially great[152]. An agrarian way of life can be extended, food resources are predictable and children may contribute their labour. Socially more mundane matters are involved, like more personal contact and sociability, but it also becomes possible to exercise control over people, gather possessions and have a more complex society. These are the seeds of a socially stratified society, a society fundamentally different from the free, unrestrained, egalitarian and mobile existence of the hunter-gatherers.
As a final consequence of the decision to make contact, the hunter-gatherer way of life is doomed to disappear and from then on an agrarian economy will be the basis for life and economic development in prehistory.

1.11 Closing remarks

In the circumstances as described above, the neolithization process may be considered initially a process of intensification. An intensification aimed in the first instance at increasing opportunities in an exchange system based on kinship and personal political alliances. This first stage is characterized by, among other things, an exchange of prestigious objects. This is followed by a second stage with the emphasis on delayed prestige. In this stage interactions with Neolithic groups increase and gradually economic elements are incorporated into Mesolithic society.
The ideas and data put forward here might suggest that we consider the social element to be the sole crucial factor in the neolithization process. This is by no means true. We merely want to emphasize the often underrated importance of social factors. We feel that the neolithization process is an interplay of several factors: demographic, economic, ecological, perhaps climatologic and social. But we do think that the social factor prevails, especially in a first stage of contact.

notes

1 Alexander 1978; Ammerman & Cavilli-Sforza 1971, 1973; Bender 1975; Dennell 1985, Gregg 1988; Gronenborn 1994; Keeley 1992; Louwe Kooijmans 1993a, 1993b; Modderman 1970, 1988; Newell 1970, 1984; Price & Gebauer 1992; Price, Gebauer & Keeley 1995; Rowley-Conwy 1983; Sherratt 1995; Thomas 1988; Van Berg 1990a, 1990b; Vermeersch 1990, 1996; Wischenbarth 1995; Zvelebil 1986.

2 Jelgersma 1979; Verhart 1995b.

3 Aaris-Sørensen 1988; Street 1989, 1990.

4 Perry 1996; Zvelebil 1994.

5 S. Andersen 1995, 1997.

6 Pedersen 1995.

7 K. Andersen, Jørgensen & Richter 1982; Grøn 1995; Sørensen 1987.

8 Vang-Petersen 1984; 1990.

9 Newell 1984; Larsson 1990; Price & Brown 1985.

10 Lüning 1988; Lüning, Kloos & Albert 1989; Modderman 1970, 1988.

11 Stehli 1989.

12 Bakels 1978, 1982; Bakels & Rouselle 1985; Knörzer 1971.

13 Not everyone shares this view. A number of researchers do not rule out the possibility that even before LBK Mesolithic groups or maybe an older Neolithic group used La Hoguette pottery (Cahen & Otte 1990; Cziesla 1992, 1994; Gronenborn 1990, 1994; Jeunesse 1987, 1994; Jeunesse et al. 1991; Louwe Kooijmans 1993a, 1993b; Lüning 1988, Lüning, Kloos & Albert 1989; Modderman 1988; Schütz, Strien, Taute & Tillmann 1992; Tillmann 1993; Van Berg 1990a, 1990b). For a more extensive discussion see Verhart, in prep.a.

14 Van de Velde 1979, 1991, 1993.

15 Lüning 1988.

16 Van Gijn & Verbruggen 1992; Hogestijn & Peeters 1996; Hogestijn, Peeters, Schnitger & Bulten 1996; Louwe Kooijmans 1993a, 1993b.

17 Kroezenga et al. 1991.

18 Lanting 1992.

19 Pers.comm. D. Raemaekers.

20 Hogestijn & Peeters 1996; Hogestijn, Peeters, Schnitger & Bulten 1996.

21 Alexander 1978, 1980.

22 Dennell 1985; Zvelebil 1986.

23 Dennell 1985.

24 a.o. Gregg 1988; Quensel-von Kalben 1994.

25 Headland & Ried 1989; Kent 1992; Lee 1992; Lee & Guenther 1991; Shott 1992; Solway & Lee 1990; Stark 1993; Vansina 1986; Wilmsen & Denbow 1990.

26 Knutsson 1995.

27 See a.o. Orme 1980: 43 e.v.

28 See also Appadurai 1986.

29 Pagden 1993.

30 Connolly & Anderson 1988; Leahy 1936, 1991. We also used three documentary films: First Contact (1982), Dusty Hearts (1988) and Black Harvest (1992). All were directed by Bob Connolly and Robin Anderson.

31 Leahy 1936.

32 Radford 1987: 18.

33 Connolly 1988: 6, 8; Leahy 1991: 8. In this context it is interesting to know that the Strickland-Purari patrol of Jack Hides experienced this as well. Only 18 months afterwards the patrol visited another virgin area 10 kilometres away. But he approached from a different direction, viz. downstream. It turned out that the idea of whites as gods was based on the direction of the river's current. Approaching from the direction the dead went to, the whites were gods accompanied by the dead. These dead were the coastal Papuans carrying supplies and equipment. When the whites arrived from the other direction, they were people, albeit with a different appearance.

34 Connolly and Andersen feel the supernatural image of whites as gods persists for a very long time. However, the objects acquired or collected from the whites, shells as well as waste, are used in the traditional, prestige-based barter system or play a part in personal adornment. It is therefore unlikely that the supernatural was a lengthy and important component in the relationship between whites and Papuans.

35 See also Schieffelin & Crittenden 1991: 141.

36 The Strickland patrol led by Jack Hides also did not carry any shells along and ran into a great deal of trouble as a result (Schieffelin & Crittenden 1991).

37 Leahy 1991: 99.

38 Brown 1972; Dwyer 1990; Healy 1990; Hughes 1978; Radford 1987; Schieffelin & Crittenden 1991.

39 Brookfield & Brown 1963; Godelier 1986; Goodale 1995; Healey 1990; Kelly 1993; Sahlins 1963; Schieffelin & Crittenden 1991; Strathern 1979.

40 Brookfield 1973; Goodale 1995; Rappaport 1967.

41 Connolly & Anderson 1988: 13.

42 Allen 1982: 196.

43 Leahy 1991: 45, 60.

44 a.o. Berndt 1954; Bijlmer 1938: 170-171, 179; Radford, 1987: 111.

45 Salisbury 1962.

46 Crittenden & Schieffelin, 1991: 133.

47 Blick 1976; Lea 1973; Nelson 1982.

48 Without trying to explain away violent behaviour, it is important to know that at that time this was the standard approach of natives. However, each Papuan killed had to be reported to the local

authorities by the expedition leader. The authorities would then investigate the matter. The number of deaths during the expeditions of the Leahy brothers compares favourably with other expeditions and patrols. Michael Leahy has always stressed this. It should however be noted that official expeditions, mounted by the government, had hardly any opportunities to suppress or cover up violent encounters with locals. Due to the lack of controls this could be managed by private expeditions unaccompanied by a government official. Michael Leahy's later expeditions were always accompanied by a government official, usually J.L. Taylor.

49 Salisbury 1962.

50 Strathern 1971: 255-265; 1978: 253-264.

51 Hughes 1977: 42-45; Langlas 1974: 177

52 Hughes 1978.

53 Healy 1990, 261.

54 Schieffelin & Crittenden 1991: 132; Hughes 1978.

55 Blick 1976.

56 Nelson 1982.

57 Dubbeldam 1964: 302.

58 Most data derive from McGovern (1980, 1985).

59 Ahrensburg & Kimball 1968; Fenton 1978.

60 Arneborg 1993, 1996; Mathiassen 1935.

61 Gulløv 1982; Meldgaard 1995.

62 McGovern 1980, 266.

63 Israel 1969: 12.

64 Mary-Rousselière 1984; Ray 1975.

65 Barkham 1984.

66 Barkham 1978 (quoted in Kaplan 1980).

67 Kaplan 1980.

68 Rich 1959; Salisbury 1976.

69 Not everybody. The degree of dependence is closely related to a person's individual choices (Salisbury 1976).

70 Baart 1985; Wray 1985.

71 Hamell 1987; Van Dongen 1995; Wray 1985: 100.

72 Wray 1985.

73 Francis 1995.

74 Baart 1985.

75 Jacobs & Dickinson Shattuck 1995; Wray 1985: 102.

76 Baart 1985.

77 De Roever 1995; Jacobs & Dickinson Shattuck 1995: 107; Wray 1985.

78 Boxer 1965: 257.

79 Bakeless 1950.

80 Smith 1987.

81 Brown 1979: 117.

82 Smith 1987: 125.

83 Almost all examples derive from the publications by Favenc (1888, reprint 1967) and Mulvaney (1989). Their sources have not been quoted here in order to restrict the size of our bibliography. We refer to them. Literature not cited by them has been included.

84 Hughes 1986.

85 Allen 1974.

86 Also known as Hadzapiti, Tindiga, Kindiga and Kangeju.

87 Blurton Jones, Hawkes & Draper 1994; Woodburn 1988.

88 Woodburn 1981.

89 They are now seriously threatened by government interference. Various campaigns are to ensure that the Hadza give up their traditional way of life and integrate into modern Tanzanian society (Kaare 1994; Ndagala 1988).

90 Ndagala 1988, 71.

91 Woodburn 1988: 40

92 Woodburn 1988, 51

93 Hart & Hart 1986.

94 Pedersen & Waehle 1988: 77.

95 Turnbull 1961, 1965, 1983.

96 Bahuchet & Guillaume 1982.

97 Bahuchet & Guillaume 1982: 207.

98 Pedersen & Waehle 1988: 83-84.

99 For a survey of recent literature we refer to Barnard (1992).

100 Lee 1992; Lee & Guenther 1991.

101 Denbow 1984; Hall 1986.

102 Barnard 1992.

103 Lee 1979: 407.

104 Wiessner 1983.

105 Barnard 1992: 124; Kent 1989.

106 Chang 1982; Blackburn 1971, 1974, 1982.

107 Woodburn 1988: 41.

108 Woodburn 1988, 54; Blackburn 1982: 298-300.

109 Woodburn 1988: 55

110 Chang 1982: 280.

111 Woodburn 1988: 47.

112 Woodburn 1988: 53.

113 Blackburn 1982; Woodburn 1988: 57.

114 See also Lea 1973: 72-73.

115 Lacey 1982: 357, 362.

116 Blackburn 1982; Woodburn 1988: 57.

117 Mulvany 1989.

118 Louwe Kooijmans 1993a, 1993b; Wansleeben & Verhart 1990, 1995.

119 Wansleeben & Verhart 1990.

120 a.o. Bakels 1978; Louwe Kooijmans 1993a, 1993b; Modderman 1988; Vermeersch 1996.

121 Arts 1994.

122 Brounen & De Jong 1988. Unlike both authors, we feel these Neolithic finds cannot have been collected in stratigraphic position — i.c. be younger than the late-Mesolithic material. Geological survey of identical terrain close by proves the coversand dunes containing the site to have been from a single phase. Sedimentation and possible erosion can be ruled out as explanations for the stratigraphic position. All sites investigated by us in this region turn out to always contain Mesolithic, Neolithic and younger finds in a single assemblage.

123 Schut 1988.

124 Pers. comm. P. Schut. The shape of the pot and decoration show some affinity with pottery of the Blicquy-group (Van Berg 1990a).

125 RMO, inventory number l 1938/6.78. These sherds belong to the former collection-Keus. The Limburgs Museum in Venlo houses some sherds from the same collection, one of which fits a sherd from Leiden.

126 Cziesla 1992: 281-282.

127 Dieck 1975/76, 1983. These data come from A.E. Lanting en E. Kramer. We gratefully acknowledge their mention to us of these finds and the use of a manuscript on this subject. However the find circumstances of these artefacts are very doubtful (Raddatz 1998).

128 Schünemann 1979.

129 Kampfmeyer 1983.

130 Schindler 1961.

131 Pers. Comm. D. Raemakers.

132 a.o. Brandt 1967; Lomborg 1962.

133 Breest 1988, 1989.

134 Schönweiss & Werner, 1974.

135 Bicker 1936, Geupel 1973, 1981; Gramsch 1973; Newell, Meiklejohn & Constandse-Westermann 1979.

136 Meanwhile three C14-datings have been performed with the surprising results 7930 ± 90 BP (OxA-3136), 7730 ± 90 BP (Bln 2221) and 7580 ± 80 BP (Bln 2130).

137 a.o. Brandt 1967, 1995; Hoof 1970; Schut 1991; Van der Waals 1972. Small find reports are not cited.

138 Brandt 1967.

139 Bakels 1978, Brounen 1986.

140 Van de Velde 1979, 1990, 1992.

141 See chapter 2 on the Late Mesolithic in the core region Venray and chapter 4 on the Middle Neolithic of the Roer area.

142 The distance from the contact zone is an important factor in the process of change as a result of contact. The greater the distance, the easier it is to be independent. This is exemplified by the Hadza (Woodburn 1968, 1988). Close contact leads to the strengthening of symbiotic relations, as e.g. with the Mbuti- and Aka-Pygmies (Bahuchet & Guillaume 1982; Turnbull 1961, 1965, 1983; Quensel-von Kalben 1994; Waehle 1986). In close contact situations there will also soon be competition of native groups in the immediate zone of contact.

143 See chapter 2.

144 For the problems in associating hearths with habitation see chapter 2.

145 For an extensive discussion see chapter 3.

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

147 This is not only true for simple egalitarian hunter-gatherer communities, as demonstrated by the fact that with the Kwakiutl the introduction of European commodities leads to an increased frequency and size of the potlatch (Bracken 1997; Salisbury 1962).

148 Bender 1978, 1981, 1985, 1988.

149 Berndt & Berndt 1987; Flood 1983; Lourandos 1988.

150 For a comparable situation see Lacey 1982: 353.

151 Woodburn 1988.

152 Hitchcock 1982.