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Persistent traditions: a long-term perspective on communities in the process of Neolithisation in the Lower Rhine Area (5500-2500 cal BC)
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Synthesis

To unsettle the Neolithic we must move beyond essentialised concepts. To rewrite the Neolithic we must not generalise; we need highly detailed studies from many particular contexts. To rethink the Neolithic we must not assume homogeneity of human behaviour or archaeological phenomena; the value is in the particular (Bailey/Whittle 2005, 7).

9.1 Introduction

The aim of this final chapter is to summarize the results brought forward in this work, and to provide an answer to the main research question.

Based on the theoretical framework sketched in the introductory chapters (2-3), this thesis argues that the process of Neolithisation may be best defined as a mosaic of processes and developments, which benefits from being studied from a regionally coherent context. This work deals with the cultural succession from the Late Mesolithic to the Vlaardingen culture, with a geographical emphasis on the wetland and wet margins of the Lower Rhine Area (LRA).

The main question of this thesis focuses on how the gradual nature of the process of Neolithisation in this area may be understood from the perspective of the communities involved. Simultaneously it offers a reflection on the characteristics underlying the cultural continuity in the studied time frame and region. This particularly involves the development of long-term community characteristics in relation to their landscape and environmental setting. This indigenous approach foregrounds environment not as an ecological context of margins and opportunities, but rather as an active agent in shaping community identity and disposition. It is from this integrated perspective that a number of aspects regarding Neolithisation in the LRA have been studied, the results of which will be summarized and contextualized here.

First, the qualitative characteristics of the available dataset for the study of the transition to agriculture in the Lower Rhine Area (LRA) in relation to the upland-wetland discussion will be presented (see also Chapter 4). Secondly, the regional diversity existing within the Late Mesolithic and its settlement system in connection with landscape and ecological aspects is discussed (Chapter 5). In particular the Late Mesolithic communities in the wetlands contrast with upland oriented communities with respect to mobility, settlement system and lithic industry. This demonstrates that the characteristics of the Late Mesolithic communities form a diverse background for Neolithisation. For the wetlands these contrasts offer a perspective on the nature and temporality of Neolithisation and its distinct Mesolithic roots. The final part of the synthesis narrows its scope to this area and the long-term characteristics of the habitation, land-use and settlement system of the Swifterbant-Vlaardingen successors. These aspects are

studied in view of the continuous indigenous development and in relation to the characteristics of its wetland and wetland margin occupation (Chapters 7-8).

9.2 Assessing the evidence

Before dealing with the archaeology of the Late Mesolithic and Neolithic communities in the LRA from an interpretative perspective, it is important to estimate the qualitative potential of the available dataset in the LRA study area. Chapter 4 provided a geographical reflective analysis, incorporating a range of taphonomic, formative and methodological factors influencing the dataset and the research performed. One of the central issues concerned the dichotomy existing in organic (material) and spatio-temporal preservation between qualitatively rich wetland and more meagre upland sites and datasets (*e.g.* Coles/Coles 1989).

From the perspective of preservation, wetland sites are at least partially representative of their less well-preserved, contemporaneous upland counterparts and (as such) greatly contribute to an understanding of the process of Neolithisation. Concerning economic choices and habitation characteristics, wetland sites did not exist in isolation and most likely functioned in wider settlement systems, which included other areas (*e.g.* Raemaekers 1999, 123). The idea of an upland-wetland distinction therefore is our own creation instead of reflecting a past reality or geological awareness (Louwe Kooijmans 1997, 111). Based on these considerations it is argued that a geographical distinction between wetlands and uplands should not be seen as absolute, but as gradual.

It is, however, also important to include a complementary perspective. The differences that may be documented between wetland and upland sites and datasets primarily result from preservation under different conditions, within different geogenetic sediments, relating to different environmental and landscape circumstances in the past (*e.g.* Groenewoudt 1994). At the same time, to inhabit these areas required different skills and strategies and resulted in different ways of life. Ethnographically, the existence of such connections between communities and specific landscapes has been widely attested (*e.g.* Descola 1994). This is distinctly the case for wetland environments (*e.g.* Harrison 2004; Van de Noort/O'Sullivan 2006). From a behavioural perspective therefore, distinct differences may exist between communities. In this respect the occupation and exploitation of the extensive wetland environments of the Delta and its intrinsic environmental characteristics are related factors that should be incorporated when studying these communities.

Therefore, while developments in the wetlands may provide the best perspective upon (aspects) of archaeological patterning elsewhere, they simultaneously deserve an analysis and interpretation of their own, based on the specific geographical and ecological qualities they possess and how these influence regionally specific behaviour and habitation.

9.3 The Late Mesolithic: a diverse background

Building from these landscape and environmental perspectives, the Late Mesolithic occupation of the LRA was studied through a selection of qualitatively informative, mostly excavated, sites in a number of (regional) settings (Chapter 5). The analysis aimed to increase our understanding of the existing indigenous substrate and

the diversity of Late Mesolithic occupation in relation to the characteristics of subsequent communities caught up in 'Neolithisation' (Clark 1980, 5; Madsen/Simms 1998, 258-260).

The analysis focused on the differences in settlement systems and character of occupation of sites situated in different regional environments, including the southern and northern coversand landscape, the wetlands and wetland margins and river valley locations. The main contrast resulting from this comparative approach characterised occupation on the southern coversand as relatively short-term and barely structured, most likely functioning within a system with a high degree of residential mobility (probably several days to a number of weeks). At the other end of the spectrum wetland locations such as Hardinxveld-Polderweg and Hardinxveld-De Bruin are characterized by longer-term stays of up to several months. These sites are distinct persistent places (*sensu* Schlanger 1992) that also demonstrate an increased investment in their structuring and resource procurement. These locations most likely formed seasonal residential bases in a system characterized by logistical mobility (*cf.* Binford 1980). Many of the other sites on the northern coversand, in the wetland margins and in river valley settings may be interpreted as differing in degree rather than kind in relation to these opposites. River valley sites in this respect better fit the wetland profile, while sites on the northern and southern coversand are alike in many respects as well.

Complementary lines of evidence

A site- and settlement-system-oriented approach was chosen. This approach combined different complementary lines of evidence. One part focused on the position of sites in the landscape. From the integrated perspective of 'texture', 'grain' and 'redundancy' (Cribb 1991; Chapter 5), different aspects of 'settlement grammar' (*ibid.*) were discussed including site location, settlement structure and investment. The other part dealt with the technological, typological and raw material characteristics of the studied lithic assemblages.

9.3.1 Sites in the landscape

Regarding site location choice and site structure, the relatively large dataset for sites on the southern coversand demonstrated a distinct homogeneity in patterning. Low coversand dunes in the vicinity of small peat fens and streams were chosen as site location relatively often. These sites often stretched over considerable distances and developed incrementally over a considerable period of time. Additionally there is little evidence for investment in the form of structures such as shelters, although the existing taphonomic bias should be taken into account (see Chapter 4). Site structure and location choice are comparable for the northern coversand. Similar locations in the vicinity of water were sought after and although there are some landscape-related differences, for instance in water drainage, the overall character is similar (see palaeo-geographical map '5500 cal BC'; Vos *et al.* 2011, 43). Evidence for investment (pits, hearths, structural stones) is more distinct, especially when elaborate hearthpit sites such as Mariënberg are taken into account, yet the signature of occupation is comparable.

The site location choice and settlement structure of the sites in the wetland(/margin) group and in river valleys is, to a certain extent, different. Distinct wetland locations such as the Hardinxveld sites demonstrate a considerable degree

of investment in a variety of features, including dwelling structures and graves. In view of the occupation span (see Louwe Kooijmans 2003) it indicates a diversified structural investment, corresponding with the structured use and reuse of specifically targeted sites in the landscape (see also Louwe Kooijmans/Verbruggen 2011). The location of activities at sites argues in favour of consistent traditions and choices over time through which these locations became persistent places. People returned to these places and structured them according to the same set of rules and practices for a long time. Because of this and the increasingly limited availability of other suitable places in the surrounding area (see Mol 2001^a), it is likely that this concerned the same group over time. A number of the other sites, such as Hoge Vaart, Urk and the Swifterbant sites, are situated in landscapes that were becoming increasingly wet. Their occupational characteristics differ in degree. The river valley sites around Liège are not situated in an extensive wetland, but in a floodplain environment. They also display evidence for structured investment and longer-term stays.

9.3.2 Evidence from assemblages

The differences sketched above are mainly based upon an interpretation of aspects of site location choice, settlement structure and investment in places. They are reinforced by the characteristics of the associated lithic assemblages, which are much less affected by differential preservation.

Assemblage composition yields a homogeneous picture for the large dataset of sites on the southern coversand. These contrast with the assemblages of the wetland locations at Hardinxveld. Other sites take up an intermediate position.

A large proportion of points in the tool spectrum is characteristic of the coversand assemblages, in particular in the south. Furthermore, both in tools and debitage, blade production and blade-based products make up a clear component. Both the blades and the formal tools represent a curated component of the technological tradition. This is further supported by the use of the high quality raw material of Wommersom quartzite, in particular for the production of formal tools such as trapezes. This contrasts strongly with the wetland sites, where the technological and typological characteristics of the assemblages point to the production of non-formal tools and an expedient technology, with an important role for retouched flakes.

These coarse-grained distinctions are proposed to be informative on the activity range performed at sites, site function and mobility. The relative importance of flakes versus blades relates to these aspects in view of issues such as reliability, bulk, access to resources and mobility type (see Chapter 5). A larger contribution of formal tools and curated technology is mostly typical for groups with a high(er) level of residential mobility, whereas expedient technologies and informal tools are often associated with groups characterized by a lower mobility and longer residential stays (*e.g.* Andrefsky 2005; Binford 1983 (1979)).

The characteristics of raw material procurement support the sketched contrast. For most of the coversand sites as well as the river valley and wetland margin sites, procurement focused mainly on local flint sources. On the southern coversand, Wommersom quartzite formed an additional important component and may have been partly procured through embedded mobility, in combination with targeted expeditions and exchange. At the wetland sites of Hardinxveld a different system

existed, since all raw material had to be brought in from considerable distances, implying an important role for logistical mobility, mainly ‘radiating’ from one location.

9.3.3 Context for occupation

The structural and assemblage characteristics sketched above should be interpreted in relation to the landscape and environmental setting. The evidence mainly allows the comparison and contrasting of opposites along a continuous scale. In that respect, the southern (and northern) coversand landscapes form one end of the scale. These areas are generally characterised by a closed-canopy forest (*e.g.* Bakels 1978; see Chapter 5) and in such a relatively homogeneous environment, locations near peat fens or streams would be the most attractive settlement areas. These places represented the conjunction of a diverse set of natural resources (including raw material and presence of water) and formed a buffer for occupation. The limited extent of these areas led to rapid depletion of available resources, which in combination with expected regeneration time prompted frequent residential moves (Kelly 1995). The knowledge on other locations and their relative abundance in the landscape would lower the cost of moving. This is substantiated by the probable focus on terrestrial fauna which often requires mobile and active encounter strategies (Binford 1980; 2001, 269-280; Chatters 1987). These factors support the archaeological patterning, which is characterised by extensive site complexes formed often over considerable spans of time by a multitude of visits to the same locations. As argued, the lithic analysis supports this idea.

At the other end of the spectrum there is the aquatic environment of the Dutch delta and, to a more limited extent, certain floodplain locations. These provide different habitational possibilities and offer greater opportunities for mobility and occupation. These wetland environments are trophically rich, providing many aquatic and related resources, such as fish, beavers, otters and waterfowl. They may be characterised as heterogeneous in type and variation, but with a relatively consistent distribution (Nicholas 1998^a; 2007^a). This means that attractive and diverse combinations of resources are available. As such these environments are best exploited by a collector-type strategy, characterised by logistical mobility (Binford 1980; Brouwer-Burg 2012), longer residential stays and larger groups (Binford 1990). Furthermore the nature of both the environment and its resources would also favour passive procurement strategies and investment in facilities such as dwellings, traps and canoes. This is substantiated by, for instance seasonality evidence as well as finds at the Hardinxveld sites and the river valley sites of Liège and Remouchamps. These characteristics in combination with the availability of suitable locations would also lead to a more place-focused system of persistently visited sites. The expedient characteristics of the assemblage and the logistical characteristics of the raw material procurement appear in line with this perspective.

9.3.4 Settlement systems and Neolithisation

Of course when interpreting settlement systems, the distinction outlined above is not absolute as these may have incorporated sites at both ends of the proposed spectrum. However, there was likely a significant difference in degree between systems that were more oriented to the exploitation of wetland resources and

those with an upland-terrestrial focus (see also Chapter 5). In the case of the wetland locations it is argued that these may have been attractive for occupation in the winter season, since their environments provide sufficient resources for lean periods (see Binford 1990). The seasonal signal of Hardinxveld-Polderweg (Louwe Kooijmans 2003), which may be interpreted as a winter base camp, perhaps functioning in relation to a complementary wetland margin location during summer, may support this contention. The typological and technological similarities between assemblages of the southern coversand and the river valley sites around Liège, in combination with similarities in the characteristics of lithic resource procurement, suggest a comparable scenario.

While ethnographic evidence indicates the diverse and complementary ways in which groups may combine strategies as well as split and aggregate in relation to resources and their predictability (*e.g.* Kelly 1992; 1995), the overall difference between sites at opposite ends of the spectrum, with respect to aspects such as site use, technology, raw material and food procurement and mobility, indicates the existence of relatively divergent lifestyles. These opposite ends do not preclude combinations but do support the existence of communities with socio-cultural and economic differences. This argues for the existence of diversity in the Late Mesolithic substrate. Similar landscape- and environment-related differences have recently also been alluded to from the perspective of behavioural and chronological studies (Brouwer 2011; 2013; Crombé *et al.* 2011^b).

9.3.5 *The Mesolithic roots of Neolithisation*

It is evident that an understanding of the characteristics of Neolithisation benefits from an understanding of the indigenous groups involved in the process (Madsen/Simms 1998; Zvelebil 2004^b). For the LRA, the diversity in the Late Mesolithic substrate in relation to the distance to and influence of farming communities shaped the nature and temporality of the transition to agriculture even before the LBK entered the study area around 5300 cal BC. A general premise is that in particular for wetland and wetland margin communities, specifically those of the (wider) delta area, there was little economic incentive to adopt aspects of agriculture. This fits Binford's notion that in settings with little aquatic potential, especially when there is stress over resources, relatively quick moves directly towards agriculture could be expected under packed conditions (1990, 149). In the case of the LRA moreover, the limited suitability of the wetland area to (Danubian) crop cultivation (Bakels 1986; Out 2009, 411-424) and the distance involved in the interaction necessary for agricultural practices to be adopted formed a factor of importance that should be taken into account (Amkreutz 2009). This creates a situation where, in the absence of direct competition over resources or stress, the initiative and character of the process is predominantly determined by the indigenous communities living in these areas. This may be contrasted to the situation in the southern part of the LRA, where hunter-gatherers with a significant upland component and terrestrial diet perhaps experienced competition over resources with Neolithic farmers sooner. When mobility no longer offered a 'way out' this may, hypothetically, have led to relatively swift transitions.

For the wetland communities, and reasoning from an archaeological perspective, this resulted in evidence for a gradual transition, starting with the procurement of foreign flint and artefacts, followed by indigenous pottery production and the

piecemeal introduction of domesticates to experimentation with crop cultivation (see De Grooth 2008; Louwe Kooijmans 2007^a; Out 2009). Socio-culturally it implies the absence of a necessity for economic change or more intensive interaction and a distinctly internally controlled introduction and process whereby important aspects of the initial Late Mesolithic communities remained unchanged.

The Mesolithic diversity and the wetland component in particular provide the context for the successive communities that developed. As argued earlier the Swifterbant-Vlaardingen cultural succession may be seen as heirs to these Mesolithic wetland communities. The available archaeological evidence (*e.g.* Chapters 7 and 8) regarding site distribution, procurement practices and characteristics of material culture, argues in favour of a significant (though not absolute) wetland orientation of these communities, as well as cultural continuity (*e.g.* Louwe Kooijmans 1998^a). These communities were further studied here with the idea that their role and trajectory within the process of Neolithisation was mainly self-imposed and controlled. This affords the opportunity to study these communities, and the characteristics of Neolithisation, from an essentially long-term (indigenous) perspective rooted in the Late Mesolithic and in relation to the long-term relationship and interaction of these groups with the wetland environment.

9.4 Neolithisation in the wetlands: a long-term community perspective

Building on the analysis of the Late Mesolithic, the scope in the second part of this thesis was narrowed to the wetland and wetland margin environment and the successive communities (Late Mesolithic to Vlaardingen culture) inhabiting that area. Central to the analysis is the recursive relationship between communities and their environment in relation to the nature of the process of Neolithisation. Most human-environment approaches in relation to Neolithisation are predominantly of an economic or functional character and socio-ideological aspects are mostly incorporated implicitly. In this study the human-environment relationship takes on a more explicit social and ideological role, offering a complementary perspective on Neolithisation by focusing on regional long-term community characteristics.

The roots of this community-environment perspective were theoretically anchored in an archaeology of inhabitation in which the regional context and historicity of such a relationship is stressed (see Chapter 6; *e.g.* Barrett 2001; 2005). Reasoning from the dwelling perspective and its social character (*cf.* Ingold 2000), elements of routine practice, or *habitus*, are incorporated in the analysis outlining the nature of the relationship between communities and their environment. In this respect environment, or rather the perception of environment, is deemed formative or structuring in the development and characteristics of the communities involved (*e.g.* Brück 2005; Whittle 2003). With regard to the wetland environment this involves a combination of geological, geographical and ecological aspects of the wetland landscape and the occupational margins they offer, as well as an incorporation of the structural and structuring conditions of these landscapes (see Barrett 2000) and how these may have been (phenomenologically) experienced.¹

The results shed light on the communities and their *mentalité* in relation to issues of land-use, livelihood, mobility and settlement systems. They also provide a complementary perspective on the regional nature and temporality of

Neolithisation in the study area. This argues for the study of communities and their environmental context as 'total phenomena' (cf. Balée 1998^b).

9.4.1 Wetland environment and dynamics

The geomorphological and ecological characteristics of the wetland landscape have been outlined in Chapters 3 and 7. From an economic and functional perspective the wetlands and their margins have been defined as a very rich environment, similar to many wetlands (e.g. Van der Noort/O'Sullivan 2006; Nicholas 2007^{a,b}). Their trophic qualities and diversity set them apart from upland environments such as the coversand areas in the LRA. Additionally, they were defined as relatively dynamic landscapes. Processes such as unexpected flooding, waterlogging, peat growth, changing constellations of resources, changing routes and networks, disappearing (drowning) and emerging land, places and landscape features, increasing distances to upland regions, changes in fresh or brackish conditions were all part of these dynamics. While the underlying long-term geological processes of erosion, sedimentation and environmental change (Vos/Kiden 2005) largely escape human perception, their effects may be noticeable within generations and lifespans and can be sudden or unexpected, affecting everyday life. These characteristics must have placed a strain on resource reliability, on patterns of anticipation and planning, territoriality and mobility.

The wetland landscape as a medium in these processes was likely a factor of perceived importance (see Cooney 2004, 325), yet people in these wetland environments lived with these cyclical as well as unexpected changes. The structure of their way of life was not dominated or altered by environmental changes (Van der Noort/O'Sullivan 2006, 25; see also Leary 2009) as their inhabitation of this landscape incorporated mechanisms to flexibly deal with these. This raises questions as to the interwovenness of people, places and the environment and how wetland landscapes were active agents in forging local identities (Chadwick 2004). Reasoning from the dwelling perspective, landscape and its environment are interpreted as characterised by certain structural conditions, but simultaneously have a structuring agency in relation to the communities living in them. They are therefore more than an abstract physical and ecological background determining (economical) opportunities and risks, but are also dwelt-in and experienced, in particular through routine practice. As such they recursively contribute to shaping the social identity of their inhabitants (e.g. Barrett 2000; Cooney 2000; Ingold 2000).

9.4.2 Wetland communities: land-use and livelihood

In the approach of a dwelling perspective the aim was to document the regional *habitus* (cf. Bourdieu 1977) of communities over time. This offers a long-term perspective on the characteristics of inhabitation in the area and on the nature of the structuring principles underlying it. The human-environment interaction and its specific influence on the communities inhabiting the LRA wetlands and wetland margins has been documented in particular for aspects of procurement as well as mobility and seasonality. These topics reflect fundamental choices and behaviour regarding the general characteristics of livelihood of these communities and as such also influence other fields of practice. The main results will be discussed below.

Procurement

Practices of (food) procurement offer an informative perspective on community-environment relationships. In general the evident rich trophic qualities of the area did not urge inhabitants to quickly switch the mainstay of their subsistence procurement to crop cultivation or stock farming. Instead these activities were incorporated into what had been common practice since the Mesolithic (see also Zvelebil 1994, 64), forming an extension of the existing broad spectrum economy (*sensu* Louwe Kooijmans 1993^a, 103; 1998^a). Of relevance is also the notion that while domesticates and cultigens increasingly contributed to subsistence, the practices and native knowledge of hunting, gathering and fishing remained important.

The composition of the subsistence spectrum at site-level, best illustrated by the faunal remains, primarily reflects the natural exploitation possibilities with respect to hunting (including fowling and fishing) and farming. While the overall contribution of domestic animals to the diet increases over time, their predominance is mainly a feature of coastal (and potentially wetland margin) sites from the Middle Neolithic Hazendonk group onwards. As late as the Vlaardingse culture, sites located in other areas demonstrate a more varied composition of the faunal spectrum and wild resources remain an important component in subsistence at these sites.²

The contribution of crop cultivation is difficult to establish. It is difficult to define between 'no or limited evidence for crop cultivation' or 'some evidence for limited crop cultivation' (see Out 2009, 445). There is positive evidence for small-scale cultivation at the northern Swifterbant sites, and firmer evidence for coastal locations from the Hazendonk period onwards. At the wetland sites in the southern part of the delta, transport of crops remains an option alongside small-scale local cultivation (*e.g.* Out 2009). Because of the limited available arable area (*e.g.* Bakels/Zeiler 2005, 327) and particular physical and ecological conditions, crop cultivation in large parts of the wetland area necessarily took place on a limited scale. The continuous and stable contribution of gathered plants further suggests that crop plants and small-scale cultivation were simply added to the already existing plant food spectrum (Cappers/Raemaekers 2008; Out 2008^d).

With respect to subsistence, or rather procurement (see Bird-David 1992^b; and discussion in Chapter 8), the defined characteristics complement the idea of an 'extended broad spectrum economy' (*cf.* Louwe Kooijmans 1993^a). It may be argued that the LRA wetland communities were non-exemplary regarding the implications of the introduction of animal husbandry and crop cultivation (Zvelebil/Lillie 2000): these elements were successfully 'added to the mix', without resulting in drastic changes to society or settlement system. Developments occurred gradually and did not include all (culturally) contemporaneous sites. A diversity in choices existed that although limited to the regional environmental and physical context, also allowed for a certain element of group choice (agency), preference or tradition (see Chapter 8).

Seasonality and mobility

The nature of community-environment relationships and in particular aspects of site-use, mobility and the settlement system are also illustrated by the available evidence on seasonality in combination with material site-based characteristics.

While interpretation is hampered by the limited number of sites and the necessity of extrapolation of the available data, there is convincing evidence for long-term wetland-oriented communities (see Chapter 8). Settlement systems incorporated margin locations and possibly sites further afield on the sandy upland, but appear to have been centred on the inhabitation of the wetlands.

It is argued that while activities were seasonally specific, there is no season in which wetlands were not (residentially) inhabited. This includes residential occupation during the winter as demonstrated at Hardinxveld-Polderweg (Louwe Kooijmans 2003), or 'summer-sites' such as Swifterbant-S3 (Zeiler 1997). This domestic occupation of the wetlands continued as late as the Vlaardingen culture and is supported by evidence for a substantially 'wild' component in the economy and overall site composition of residential wetland locations such as Vlaardingen, Hekelingen, Hazerswoude and Hellevoetsluis. There thus appear to be no distinct archaeological indications for a shift towards an exclusively extractive use of the wetlands and wetland margins (and a focus on optimal farming locations in the settlement system) before the Early Bronze Age (see Louwe Kooijmans 1993^a, 101). As such there is convincing evidence for an ongoing domestic, residential use of the wetland area until the Vlaardingen culture, in addition to the appearance of year-round occupation of settlements in the coastal area (from the Hazendonk period onwards).

The evidence for year-round occupation of settlements from the Hazendonk period onwards and evidence for a significant contribution of animal husbandry and local crop cultivation (*e.g.* ard marks) at some sites, point out that aspects of the settlement system changed. Overall there is a trend from seasonal residential moves, combined with logistical mobility in the Late Mesolithic and Early Swifterbant period, to permanent settlement combined with logistical mobility from the Hazendonk period onwards. Although these permanent agricultural settlements take on an important 'fixed' role, it is part of a range of options and seasonal occupation of semi-agrarian to non-agrarian residential settlements is attested up to the latest phase of the Vlaardingen culture in some eco-zones. The residential (seasonal?) function of the Hazendonk site during Vlaardingen phase 1b forms a case in point (see Louwe Kooijmans/Verbruggen 2011). Mobility thus remained important.

In conclusion there appears to be a strong element of continuity in the way the wetland area is used over time. This also relates to non-food raw material procurement. The familiar tracks, pathways and contacts probably provided the channels for knowledge on farming and other aspects of Neolithic life to reach these communities. In general it appears that many of the Mesolithic routines relating to raw material procurement remained in place.

Continuity and flexibility as communal traits

The following general conclusions with regard to the human-environment interaction and characteristics of regional inhabitation were reached. First there is a clear cultural and behavioural continuity, which finds expression in the consistent range of practices and strategies employed.³ Places were used over long periods of time and procurement remained characterized by an often central core of hunting, gathering, fowling and fishing to which domesticates and cultigens were added. Similarly there was no wholesale shift to sedentism, (parts of)

communities remained residentially mobile. There is therefore a consistency in the way these communities dealt with the wetland environment and its (spatio-temporal) dynamics for almost three millennia.

Second, with regard to the nature of this behavioural continuity, these communities demonstrate an ongoing flexibility in inhabiting the wetlands. Site use is stable (see Amkreutz 2013^b; see also Tringham 2000^b), yet site function may change and is subject to both shifting short-term seasonal use patterns as well as long-term shifts in function over time. At the same time a broad range of procurement strategies is in operation, while residential mobility remains an option as well. Moreover, community choice appears not always to be optimal if we take into account the specific ecological and physical site circumstances. Therefore the central theme (or socio-behavioural trait) that may be defined for these communities is flexibility. This means that they were characterized by a ready, responsive capability to adapt to new and changing requirements and circumstances; a certain pragmatism.

Of importance is the notion that while this defining trait should be understood against the particularities of the wetland environment it is also, and perhaps became more so, an innate quality of the communities involved. In view of the documented behavioural continuity and its flexible nature over time, a distinct element of intra-cultural agency emerged, most probably at the regional level of the settlement system. This is evidenced by diverse choices that were made with respect to subsistence and habitation, at sites with the same cultural affiliation in different geographical regions, but, more importantly, also at contemporaneous and adjacent sites with a comparable ecological background (see Louwe Kooijmans 2009). This points to community-based choices and group agency regarding resource procurement, mobility as well as the incorporation of Neolithic elements (*i.e.* the contribution of domesticates and cultigens).⁴

From a long-term perspective this flexible aspect of inhabiting the LRA wetlands and their margins seems to have endured over time and appears to be a characteristic feature of the inhabitation of this area.

9.4.3. Integrative strategies

The changing patterns in the wetland mosaic and their consequences were buffered by the opportunities the wider region offered as well as the disposition of the communities involved.⁵ Interestingly, the way in which these communities dealt with their environment also informs us on the character of social memory, how society perceives itself, the surrounding landscape and its position in it. Both *practice* and perception are the result of a long-term interaction between communities, landscape and environment. Reasoning from this it may be stated that people were not dominated by the whims of the natural environment (see also Van de Noort/O'Sullivan 2006, 25), but rather adjusted technical, economic and social aspects of their way-of-life to new circumstances *without* fundamental change. By attuning to the changing environmental and landscape mosaic in space as well as time, they managed to consolidate their (way of) livelihood and buffer against shortages (*e.g.* Leary 2009, 232-235).

This characterisation is in line with the understanding of the development of an extended broad spectrum base of subsistence proposed by Louwe Kooijmans (1993^a), where Swifterbant, Hazendonk and Vlaardingeng communities incorporate

agricultural products and eventually practices alongside continued hunting, fishing and gathering. While this perspective mainly stresses the (economic and practical) addition of new elements to the spectrum, it is argued that other aspects, such as mobility, exchange and group composition, also form aspects of a range of options. This shifts the emphasis from composition to practice and to an operationalisation of the extended broad spectrum economy. The active transformation of the repertoire of options into adaptable combinations is distinguished here as characteristic of these communities. This concept has been defined as integrative strategies (see Chapter 7).

The composition of these integrative strategies, such as mobility, symbiosis, interdependence, group fissioning and exchange was 'fluid' in nature. Their exact configuration at specific points in time, or for specific sites is difficult to attest because of the equifinality of different explanations. Nevertheless, the regional signature based on the evidence of subsistence, seasonality, (residential) mobility and inferred structure of the settlement system, points to a consistent underlying behavioural and social disposition or *habitus*. It shifts the emphasis from subsistence and the addition of domesticated resources, to the dynamics of the settlement system, including mobility, intergroup interaction and complementary strategies and the long-term position of the communities involved.

The role of domesticates and cultigens

The perspective offered above argues that the distinctive repertoire of options emerged out of the communities' long-term relationship with the wetland environment and its (potentially) dynamic character. At the same time this behavioural flexibility was partially decoupled from direct environmental motivation and posited as a shared trait characteristic of these groups. It was argued that the long-term relationship between these societies and the wetland environment over time gave rise to a cultural system appreciating flexibility. In the long run, flexibility thus became decoupled from responses to immediate environmental fluctuation, and became an element that invaded their cultural repertoire. This implies that it also influenced how they dealt with 'Neolithic novelties' (e.g. domesticates, cultigens, technology and sedentism). Despite the potential novel and alien aspects of the initial introduction of agricultural practices and Neolithic material culture, their appropriation, position and implication do not seem to have had a disruptive influence on the existing way-of-life and its attached values and ideology.

With respect to food procurement the attested continuity in practice and the consistent contribution of hunting and gathering to the diet also suggests the importance of ideology and values attached to an existence based on wild resources (e.g. Amkreutz/Corbey 2008; Barnard 2007; Tucker 2006). This is supported by ethnographic case-studies. While these cannot provide an ideal parallel for the LRA situation (lacking similar spatio-temporal scale, ecology and technological footing), their added value lies in the degree to which underlying common principles may be determined. They offer an idea of the diverse adaptations among small-scale societies in combining various subsistence and mobility strategies and shed light on the position of husbandry and crop cultivation in particular. There is convincing evidence for the existence of communities using and combining wild and domesticated resources. The main idea evolving from this is that adopting producing modes of food procurement did not always have the impact we often

assume it did, from the etic perspective of Neolithisation (see Whittle/Cummings 2007). The image is rather one of a range of pursued strategies, the use of which is sometimes haphazard, experimental or even careless. Both from a long- and short-term perspective (see Appendix III; Chapter 7) comparable characteristics may be noted that argue for a flexible attitude towards combining and switching between domestic and wild resources. This indicates that there may have been little incentive to adopt agriculture as the main economic system on a society-wide scale.

In view of our LRA wetland case-study this underlines that these new resources and practices probably formed a welcome addition to the pragmatic consolidation of the way-of-life of these wetland hunter-gatherers, rather than a new opportunity.

9.4.4 A new perspective on settlement systems

In line with the perspectives offered above, the available evidence for site-use and mobility at Late Mesolithic to Vlaardingen wetland sites was reviewed in terms of settlement systems and land-use and subsequently modeled in Chapter 8. The limits of the available data prevent a definitive definition of settlement systems, but allow the distinguishing of larger-scale periodical composition over time.

The following developments are seen. During the Late Mesolithic and the Early Swifterbant period, logistically mobile systems were in operation besides potentially residentially mobile systems on the (northern) coversand. Delta sites such as the Hardinxveld locations and possibly Maaspoort point to a settlement system focused on wetland exploitation and are characterized by an increased degree of permanency and investment (see Chapter 5). This logistical system with seasonal sites and extraction camps appears to become the 'standard' during the Middle Swifterbant occupation of the research area. Mobility was combined with animal husbandry, import of crop products, or small-scale local cultivation. Evidence for year-round occupation of sites is absent. Since we are dealing with a continuum from residential to logistical mobility systems (*cf.* Binford 1980), other, more residentially mobile systems or combinations may be expected in relation to site location and environmental exploitation, in particular when upland locations were included in the settlement system.

For the Hazendonk and Late Swifterbant occupation two types of settlement systems were defined. A number of sites continues to provide evidence for a continuation of seasonal occupation in a system of logistical mobility. This is now combined with locations, such as most of the Delfland sites that provide evidence for year-round permanency and an important role for agricultural resources. Of importance is the noted group agency, leading to diverse choices at adjacent Delfland sites (see Louwe Kooijmans 2009). For the subsequent Vlaardingen occupation there is continued evidence for year-round permanency and an agricultural subsistence base, predominantly in the coastal areas. In the freshwater tidal and peat marsh areas (in particular) continued (seasonal) logistical mobility and non-permanent sites are attested.

Complementary systems?

The central question is whether the development of sedentary sites with an important role for agriculture should be seen as the determinant in the interpretation of settlement systems. If so, then the composition of the Hazendonk group and Vlaardingen settlement system is hierarchical. The (coastal) locations with permanent occupation form the main components and other, temporary sites or locations with a significant contribution of wild resources function in relation to these sites in an auxiliary manner. This implies that the location of the main sites was determined by the possibilities for nearby cereal cultivation and animal husbandry and that agriculture shifted from being an extension of the broad spectrum subsistence base, to being the major subsistence strategy, determining spatial strategies (see Raemaekers 2003, 745; 2005^a, 276). From a perspective focusing on economic aspects of Neolithisation, or the transition to agriculture as such, the interpretation of a subordinate system forms a logical step. However, in line with the arguments brought forward earlier, regarding the flexible disposition of these communities and their adoption of integrative strategies, a more heterogeneous approach may be employed.

The first interpretation is importantly based on the idea that agricultural sites with (an assumed) sedentary occupation form the main element in the settlement system, while locations with a large contribution of wild resources, or that are less ideally situated for animal husbandry or crop cultivation, function in a subordinate relationship. This interpretation foregrounds the role of agriculture with respect to Neolithisation. It does not necessarily take into account whether agriculture is in fact actually the main (caloric) contributor to subsistence, as is for instance called into question by certain faunal assemblages or the isotope signature of the Schipluiden inhabitants (see Chapters 7 and 8), nor whether the location of a sedentary site is in fact determined by its potential for agriculture. An alternative perspective provides a different emphasis. Based on the evidence for flexibility, pragmatism and integrative strategies, this perspective argues for a number of options existing side by side. These include sedentary sites, potentially occupied in relation to auxiliary locations, as well as the continuation of ('completely') logistically mobile systems, including seasonal residential mobility. Since the wetland communities were arguably in contact, interaction, exchange, mobility and group composition remained important factors in facilitating access to resources and accommodated community choice. Rather than a new step this may be interpreted as a further consolidation of a system already in existence.⁶

Integrative strategies and settlement systems

Due to the qualitative and quantitative limitations of the archaeological evidence, the character and combination of the integrative strategies and the composition of mobility in the settlement system remain abstract. A number of general long-term particularities supporting this perspective may however be found in the archaeological record. These include the fact that the diversity in wetland landscapes remained in (residential) use. There appears to be no distinct shift to coastal areas or wetland margins to facilitate agriculture. Differences remain in the subsistence spectra which point to diverse choices regarding the emphasis placed on hunting, gathering and fishing in relation to animal husbandry and crop cultivation as well as with respect to local production versus import. There

continue to be differences in raw material networks, for instance regarding the lithic raw material for the Vlaardingen culture at a number of wetland sites (*e.g.* Amkreutz 2010^b; Verhart 1992), implying differences in hinterland, territory and cooperation. It is less plausible to assume that all of this diversity would be reflected in a single type of settlement system. Differences also apply to site architecture and structure, such as building practices and settlement layout and size. Mobility, including residential mobility, remains an option for the entire studied period and should, according to ethnographic analogy, be complemented by allowing for additional mechanisms, such as group fissioning, task division and exchange.

To conclude, it is argued that the characteristics detailed above are typical for most of the occupation of the wetlands and their margins during the time period between 5500-2500 cal BC. They reflect both the behavioural adaptation as well as socio-ideological identity or *mentalité* of the communities inhabiting this wetland landscape. As such they characterize the role of these groups in relation to Neolithisation.

9.5 Neolithisation: a long transition

The study of the communities from the perspectives discussed above has repercussions for the interpretation of the process of Neolithisation (see Chapter 8). This in itself is importantly a matter of choice, based on the premises chosen (see Chapters 1 and 2) and it should be stressed that a discussion on the process of Neolithisation differs from defining a(n artificial) boundary for the Neolithic.

Concerning the development of Neolithisation, this study argues that for the area studied and communities involved, distinguishing a Neolithic boundary may obscure insight into the developments taking place. In view of the widely used availability model (*cf.* Zvelebil/Rowley-Conwy 1984) the archaeological evidence for the transition to agriculture in the LRA has been interpreted as indicative of a short process. The occurrence of settlements with a faunal composition incorporating 50% domesticates or more, as well as increased evidence of crop cultivation and sedentism can be positioned in the middle of the 4th millennium. This would place these sites at the consolidation stage of the availability model and thereby at the end of the transition to agriculture. Based on this Raemaekers (2003, 744-746) argues in favour of a shorter transition to the Neolithic: being completed at the time of the Hazendonk group or even before, if absence of evidence for Swifterbant coastal sites is taken into account (*ibid.*, 746). This is based on the domestic faunal contribution at a number of sites, in combination with evidence for sedentism and cultivation in the coastal area and supported by the argument that the faunal assemblages differ more with respect to different environments than they do over time in a similar environment (Raemaekers 2003, 745). The contribution of domesticates and cultigens to the subsistence base is interpreted to have shifted from an extension to being the major subsistence strategy (*cf. supra*) in that time frame. While evidence for this scenario initially appeared most convincing for the Vlaardingen culture, excavations at Wateringen and subsequently at Ypenburg and Schipluiden have pushed back this threshold, enabling the interpretation of a process of Neolithisation in the Dutch delta that was likely short (*ibid.*, 746).

9.5.1 Premises of a short transition

Based on the perspectives of the integrated relationship between communities, landscape and environment, the existence and implications of a short transition to agriculture are questioned here. Argumentation for the short transition model is based on a number of premises that focus on the 'Neolithic' side of the spectrum. The most important of these is the custom to describe Neolithisation in terms of food production (Raemaekers 2003, 740). The ratio between wild and domesticated animals (preferably ungulates) is often used as an index for this. Problematic in this respect is the fact that lumping domesticated animals, wild fauna and occasionally pigs (difficult to determine) into three separate groups presents an oversimplification of the actual situation and blurs differences in choice and spectrum between sites. Comparative studies of terrestrial meat consumption, caloric value and factors such as the contribution of fish and fowl to the diet (as demonstrated for instance by the isotope study at Schipluiden; Smits/Van der Plicht 2009; Smits *et al.* 2010), or the distortive effects of partial processing of hunted animals in the field (*e.g.* Faith/Gordon 2007) and taphonomy on bone preservation are not taken into account. Apart from this biased faunal perspective, a problem lies in the fact that a prime position is given to its implications within the availability model: the (beginning of the) end of the Neolithisation process in a certain region is set at the moment when domesticates (and cultigens, *cf.* Zvelebil 1998^a) account for 50% or more of the assemblage of a single site, which then determines the interpretation of both site function and settlement system. This brings forth the question for instance whether certain sites in the Hazendonk group that surpass the 50% boundary are informative on the nature and position of later Vlaardingen sites with a predominantly wild faunal count. In other words, if sites with the strongest Neolithic signature are used as the central elements in the settlement system, it is attractive to suggest a linear development (*cf. supra*; see Chapter 8).

9.5.2 Perspective for a long transition

Evidently the choice for a shorter or longer transition to agriculture in the study area depends upon the emphasis placed upon certain elements in subsistence and the settlement system. This particularly involves the interpretation of residential and logistical mobility and the role attributed to sites characterized by a predominantly domestic fauna and (potentially) year-round permanency of occupation. Here it is argued that when emphasis is placed on the strategies and behaviour of the wetland communities, a picture emerges stressing continuity and an incorporation of novel practices and products that did not lead to abrupt changes. It is the intra- and interregional differentiation in the way different resources were exploited rather than the dietary contribution of domesticates and cultigens that mark the developments taking place. Foregrounding these characteristics as the outcome of long-term community-landscape interaction, makes them central to the way these communities interacted with their environment as well as resources. In view of this, a long transition model seems most plausible.

From that point of view two aspects should be highlighted with respect to Neolithisation. First, while from a modeled perspective the appearance of Neolithic elements (objects, practices, agriculture and sedentism) may mark distinctive developmental stages, their use or adoption does not directly inform us

on their impact on the lifeways of these communities. These elements, including domesticates, cultigens and the practices involved, became part of the repertoire of options that characterizes the integrative strategies defined. Reasoning from the position of the communities involved and their continuity in *habitus* and supported by ethnographic evidence, it may be argued that agricultural developments, including sedentism, were incorporated into existing practices of living in the area. Instead of them forming a distinct developmental stage, changing lifeways and livelihood, they can be perceived as epiphenomena of continuing an existing way-of-life. Second, if the introduction and adoption of domesticates and cultigens should be understood as an ‘extended broad spectrum economy’ (cf. Louwe Kooijmans 1993^a) then the emphasis in developments may also be placed with the consistency of this system, rather than with the appearance and contribution of its ‘extended’ aspects. This perspective is supported by a number of characteristics discussed in Chapters 7 and 8. Of importance in this respect is the diversity that remains characteristic of the composition of the food economy and the contribution of domesticates and cultigens across settlement systems. Although part of the diversity is explained by differing environmental contexts, part is also based on community choice as demonstrated for sites with a comparable ecological background. Additionally it includes the continued contribution and potentially symbolic role of wild resources and the continued evidence for mobility, including residential mobility, as an important feature of the settlement system (or part of it). Furthermore the diversity existing in networks for raw material procurement as well as other non-food elements of site use, building practices as well as ritual expression may be mentioned.

When the characteristic elements of the communities in the cultural succession between the Late Mesolithic and the Vlaardingen culture are foregrounded, there is evidence for long-term continuity. This involves a lifestyle characterized by flexibility, group agency and a successful combination of integrative strategies inclusive, but not in service, of agriculture.

The dimensions of this characteristic flexibility and pragmatism are related to ecology, but should primarily also be understood as a cultural choice. Additionally it should be stressed that the long-term continuity mapped and interpreted as reflecting a specific wetland *mentalité* also influenced how these groups shaped their adoption of agriculture and interacted with those elements we define as Neolithic.

9.5.3 Neolithisation and ‘new rhythms’

The continued flexible *habitus* underlines the consistent central role of the suggested integrative strategies and is supported by the variability in site function, resource composition, mobility and raw material networks that can be documented as late as the Vlaardingen culture. The combined evidence supports the interpretation that this also included the integrated economic role of domesticates and cultigens and the position of sedentism.

Reasoning from this perspective, the continuity in livelihood from the Late Mesolithic onwards corroborates a long and gradual transition. The process of Neolithisation did not end before the Early Bronze Age in this respect, when the majority of the evidence points to a mainly sedentary agricultural lifestyle (see also Louwe Kooijmans 1993^a; 2007^a, 307). Recently this was underlined by the

study of the Late Neolithic SGC wetland site of Keinsmerbrug, which pointed to distinct behavioural variability and an important contribution of wild faunal resources at a location that was used in a short-term seasonal manner (Smit *et al.* 2013, 211-222).

The implementation of 'new rhythms'

In view of the above it could be stated that the process of Neolithisation was as it were 'slowed down' in the wetland and wetland margins of the LRA. Reasoning from the specific interaction between communities and the wetland environment, it is important to analyse the spatio-temporal implications that the introduction of Neolithic products and practices may impose. The fundamental routines in the livelihood of the communities were characterized by specific rhythms in practice and repetition (Ingold 2000, 153; Lefebvre 2004), central to a regional *habitus* and defining issues such as identity and difference, contrast and continuity. In line with this idea the process of Neolithisation may be identified as a potent source of 'new rhythms', some of which were potentially disruptive. However, from the long-term perspective of the communities involved, evidence for any sudden transitions or culture-wide adoptions is lacking. As argued above, more agriculturally oriented sites existed alongside other locations with different strategies, mobility remained important and variable and there is evidence for diversity regarding resource procurement, site structure and characteristics of habitation, even within ecologically homogenous regions. This implies that from a culture-wide perspective most Neolithic practices and products rather than forcing or initiating change, were attuned to the existing rhythms of livelihood of the indigenous communities present. The overall evidence for 'Mesolithic' continuity (in technology, habitation and economy) further supports the consistency of this type of *habitus* and the valuation of the traditions and rhythms handed down from the ancestors.

9.5.4 European perspectives

The heterogeneous character of the process of Neolithisation that emerges for the LRA wetland area as described above fits the image of a mosaic of Neolithisation as envisaged by Tringham (2000^a; see Chapter 2). Recent research, for instance in Southern Scandinavia (Sørensen/Karg 2012) and Central Europe (Kind 2010), points to a similar process where indigenous Mesolithic communities take on an active and significantly determining role in the temporality of the process of Neolithisation and the composition of its elements (see also Bollongino *et al.* 2013). Sørensen and Karg (2012, 16) point out that while the agrarian expansion into Southern Scandinavia itself was a quick process, between 4000 and 3700 cal BC, there may have been a certain cultural dualism in its aftermath. This may have involved hunter-gatherers living on the coast and lake shores that quickly adopted new material culture and husbandry (herding), but for quite some time continued their hunter-gatherer lifestyle until the end of the Early Neolithic (I) period. The transition towards an agricultural way of life in Scandinavia is defined as a complex and continuous process of migration, integration and gradual assimilation of neighbouring farmers and hunter-gatherers (*ibid.* 11, 17). It is interesting to note that wetland-oriented hunter-gatherers in particular incorporate these Neolithic elements, while continuing their Mesolithic way of life. From a similar perspective

Kind (2010) reviews the evidence for Neolithisation in Central Europe. He argues for a quick dispersal by way of knowledgeable individuals, so-called ‘managers of Neolithisation’ that initiated a process of acculturation (2010, 457). While these ideas are controversial regarding the colonization hypothesis of the LBK, Kind (*ibid.*, 458) does point out that the transition itself should be viewed as a heterogeneous process of indigenous groups in contact with each other, that acted in different ways, pursuing varying solutions to the challenges of environment and subsistence, stressing that this is clearly a continuation of the Mesolithic.

The value of both brief examples lies in the fact that they complement our perspective on the transition to agriculture by distinctly shifting the focus to the active and determining role of indigenous Mesolithic communities involved. They are recognized as important actors in shaping the process of Neolithisation, at least partly on their terms. The latter aspect in particular is of course something that should be understood from an integrated human-environment perspective, an approach that is in line with the scope of this work.

9.6 Total phenomena: human-environment relationships in the wetlands

This study has placed centre stage the recursive relationship between communities and their environment. This relationship has been determined as something experienced and essentially social, central to the existence of these communities and an important factor in the creation of a certain regional *mentalité* or moral community. This perspective served to help understand the long-term (behavioural) characteristics of the successive Swifterbant, Hazendonk and Vlaardingen communities, but also offered a complementary approach for understanding the process of Neolithisation and the gradual nature of the transition to agriculture in this area. In the following this human-environment perspective is placed in a reflective framework focusing on the importance of an approach of ‘total phenomena’.

9.6.1 Community-land relationships

The idea of a moral community (*cf.* Whittle 2003) presupposes an integrated existence of landscape, environment and related ecosystems with human social behaviour (Balée 1998^b, 24; Barton *et al.* 2004, 253; see also Schama 2004). Instead of adhering to Cartesian lines (*e.g.* *domus-agrios*; see for instance Hodder 1990) a socio-ecological perspective is proposed that integrates and centralizes natural and human elements.

Reasoning from this perspective, many environmental elements influenced the shaping of regional identities or moral communities. Of importance is the notion that the affordances of the environment are based upon perception and that this mainly derives from hands-on, everyday tasks that require a practiced ability to respond to salient aspects of the environment (Ingold 2000, 166; see also Gibson 1979). The essence of dwelling in a landscape implies that people do not import ideas, plans or mental representations (Ingold 2000, 186), but that these come into existence because of their interaction with it. This urges us to seek out those aspects of dwelling that differ from other regions and that were characteristic for the studied area.

Since we are dealing with long-term cultural continuity both short-term and long-term developments and characteristics can be used to outline the recursive relationship between communities and their surroundings over time. Moreover, the former, at least in part, constitute the latter (see Foxhall 2000; Gerritsen 2008). In this way both the limited brief snapshots that high-quality (wetland) excavations sometimes provide as well as the more coarse-grained and murkier palimpsest evidence that we are usually confronted with, may be informative on the relationship of people and their environment (*e.g.* Layton 2008, 3, 5).

An interpretation of total phenomena

The perspective on communities and landscape offered here is firmly rooted in ethnography (*e.g.* De Coppet 1985; Küchler 1993; Politis 2007), where there has been an increasing appreciation of the non-western conceptualization of environment and its agency (Descola/Pálsson 1996, 3). Central is the notion that there is no perfect match between culture and environment and that behaviours cannot be sorted into those that are ecological, social or cultural (Kelly 1995, 36). This indicates the need for a contextualized, regional and historical perspective. Barton *et al.* (2004, 253) point out that *'spaceless, timeless, linear relationships that specified flows of matter and energy among organisms are giving way to a realization that ecosystem configuration and process is dynamic in time and space and contingent on the history of a system in a particular place'*. This 'historical ecology' focuses on the 'dialogue' between nature and culture and the relations existing between them (Balée 1998^a, 3). It emphasizes that all human activity takes place somewhere, embedded in a matrix, context, environment (Crumley 1998, ix) and landscape is foregrounded not as a composition of resources or the structure of terrain, but as a central concept, with which humans conjoin in a dialectic entity (Balée 1998^a, 9). This merges with the approach of an archaeology of inhabitation as proposed in Chapter 6.

By focusing on this interaction from a non-dualist perspective, the existence of local (or regional) systems characterized by specific sets of (perceived) human and non-human relations geared towards specific environments is implied (Descola 1996, 99). Instead of distinguishing between persons, culture, technology and environment, fields of significance, 'mental systems', or moral communities are identified (*cf.* Descola/ Pálsson 1996, 18; Latour 2005; Whittle 2003). Within such an intentional environment, person and environment embrace an irreducible system; the person is part of the environment and, consonantly, the environment is part of the person (Descola/Pálsson 1996, 18). The different composite elements should then be studied as 'total phenomena', as specific types of socio-cultural systems that historically have interacted in finite and comprehensible ways with parts of the biosphere (Balée 1998^b, 24). In this respect it can be stated that human communities and cultures over time interact with landscapes and regions, they grow into each other and from this interaction a certain regional identity is forged.

9.6.2 Wetland and wetland margin inhabitation

Working within this theoretical 'ethnographic' paradigm we should thus aim to come to terms with how the dynamics of the wetland and wetland margin landscape and environment attuned with the community characteristics we

document archaeologically. For this it is important to understand how people perceived and dealt with landscape instability and how continuous (long-term and short-term) environmental flux is incorporated into group perception and social definition of the environment (Papagianni 2008, 39).

A modern-day ethnographic example is formed by the local perception of semi-sedentary people in Northern Greece of both long-term and abrupt landscape change due to tectonic activity (Papagianni, 2008, 40 (and references)). While this produced dramatic effects, such as cracks widening each year, areas sinking several feet and land slumping off into gullies, all of which affected grazing grounds and cultivation areas, people responded that the landscape 'had always been like that'. Change to local people did not appear anomalous, because stability and lack of movement was not something they associated with their landscape. People, animals, the ground etc. were all on the move and activities were simply relocated if land was lost or became useless. This stresses the important point that people were linked not to tectonic, but to historical processes (*ibid.*). These were dealt with by relocating, modifying and rearranging the set of strategies practiced, so ensuring continuity.

Wetland dynamics

The dynamics of the wetland environment must have formed a constantly changing element harbouring both slow or gradual, as well as sudden and unexpected qualities that were negotiated by its inhabitants (see Chapter 7). From a broader perspective comparable ethnographic and archaeological case-studies therefore exist. Nicholas (1998^b, 40-42) for instance mentions several regional examples of hunter-gatherer wetland use in North America and stresses that landscape use changes, but places remain constant. For Sweden Larsson (1998) points out ritual and territorial activities of societies as a potential reaction against the changeability of nature.

From a more interpretative perspective and against the background of an evolving character of wetland landscapes (Van de Noort 1998, 294), Van de Noort and O'Sullivan (2006, 63) stress the need for a more empathic perspective in understanding human-wetland relationships and an appreciation of the way in which the daily practical engagement of communities with the dynamics of these environments constructs and negotiates distinctive social identities (see also Coles/Coles 1992, 152). One of the most emblematic examples in this respect is formed by the gradual transgression of the North Sea after the last glacial, leading to the loss of land (such as Doggerland) in the North Sea basin. Between 8000 and 6000 cal BC sea-levels rose rapidly and the loss of land will have been considerable and noticeable (Van Gijssel/Van der Valk 2005; 60-61; Van de Noort 2011, 49-55; Verhart 2008, 159). Undoubtedly the inhabitants of this area had to deal with the submergence of their camping and hunting grounds. They had to adjust their mental maps, territories and mobility rounds, but over time these coastal dynamics also became an accepted part of living in the North sea coastal region (see fig. 9.1; also Leary 2009; Van de Noort 2011, 67). Comparable processes were likely experienced and dealt with by the later inhabitants of the LRA wetlands studied here. Thesiger (2007) in his 'Marsh Arabs' emblematically demonstrates how such wetland dynamics are confronted and at the same time form an intrinsic part of community identity and existence. Similar work has been done by Pétrequin (1984) in his *Gens de l'eau, gens de la terre*.



Delta dispositions

If we transpose this theoretical and ethnographic perspective to the wetlands and wetland margins, then several elements stand out. These include the rich ecological diversity, the importance of fish, waterfowl, beaver and otter, the lush forested environment, the waterways, the insular dry patches, the absence of stone, certain species of trees and animals etc. Within the wetlands these differ, often in arrangement, from other environments and locations. They play a role in how landscape is perceived and experienced, simply because they are directly visible and present. On the other hand they are at least partially symptomatic, rather than fundamental. For an increased understanding of past perception of the environment and its potential influence, it may be more profitable to focus on the more subliminal elements that underlie wetland constellations and influence mental processes and *habitus*. In other words the material and historical conditions that lead to a certain type of life or disposition and the ‘rhythms’ associated with dwelling in these wetland areas. If we study the wetlands from this phenomenological perspective, then it is especially the (potential) dynamic qualities, or the affordances of the wetland landscapes within different temporalities that may be defined as characteristic. These may include the (un)expected floodings, changing constellations of resources and routes, waterlogging, alternations between brackish and fresh and the drowning or surfacing of land. It is these

Fig. 9.1 Doggerland hunter-gatherers (c. 8000 cal BC) returning to their flooded camp (John Tomanio/National Geographic Stock; John Tomanio and Amanda Hobbs, NGM Staff; Art: Alexander Maleev; Sources: Simon Fitch, Vincent Gaffney, Benjamin Geary, University of Birmingham U.K.; published in NG December 2012, 132-133).

aspects, shaped and governed by water, that created a distinctively dynamic, interactive and living landscape and may have significantly influenced and shaped community characteristics, identity and long-term moral networks over time.

Of essential importance here is that instead of a (Western) human-environment dichotomy, whereby natural processes are interpreted as outside of society and externally imposed, posing problems or difficulties that need to be overcome or controlled, these characteristics can be seen as indivisible to these landscapes (Ingold 2000; Leary 2009, 230; Van de Noort 2011, 30-35). Societies were accustomed to these aspects, learned how to deal with them and developed an intimate relationship with these landscapes (*e.g.* Sturt 2006, 136).

The specific aspects of living in and with the (dynamics of) the wetland environment, over time brought about a certain attunement, a wetland disposition that became part of the socio-ideological characteristics of these communities and that more or less differed from that of communities elsewhere. The strategies and dispositions that enabled them to deal with life in these parts should not be confined to physical adaptations, or local knowledge, (see examples in Chapter 8). They also involved ideology and other long-term mechanisms of passing on information between groups (see Leary 2009, 234). These aspects, in their combination, touch upon what shapes a moral community, group identity and *mentalité*. From this perspective, questions regarding the existence of a 'people of the wetlands' (see Van de Noort and O'Sullivan 2006, 67; see also Coles/Coles 1989) can be answered positively for the wetlands and wet margins of the LRA and validate a search for the 'total phenomenon' of wetland occupation, the fibre of life in these parts.

9.7 Future prospects

The integrated community-environment perspective forms the background of the theoretical approach adopted in this study. The central question to be answered from this context was twofold. It aimed at elucidating the long-term cultural and behavioural continuity witnessed from the perspective of the communities involved and sought to explain the gradual nature of the process of Neolithisation in relation to their characteristics. In answering these questions I have tried to analyse the available evidence from a perspective that foregrounds human-environment relationships, envisaging them as total phenomena from which a characteristic regional *mentalité* or moral community developed.

For the wetland and wetland margin communities its application may be motivated from two perspectives. On the one hand there is the landscape and environmental point-of-view, distinguishing wetlands as (gradually) diverging from uplands and endowed with dynamic, consistently changing qualities over time. On the other hand there is an historical motivation, rooted in the cultural succession and community continuity from the Late Mesolithic to the Vlaardingse culture, where both the short-term and long-term characteristics of inhabitation form part of the same fabric of community-environment relationships. From this perspective the character and internal dynamics of the wetland environment and the way communities interacted with it, led to the development of recognizable traits and traditions, in particular a sense of flexibility and pragmatism. These were then studied from a long-term perspective and interpreted as fundamental

in the disposition of these communities in relation to the development of Neolithisation.

The future prospects of the approach offered in this study lie with the alternative perspective it offers. Rather than a novel interpretation of the period or transition to agriculture, it presents a vision. It offers an alternative framework for studying the indigenous communities of the wetland and wetland margins and provides a complementary perspective on the process of Neolithisation. While archaeological application for a phenomenological understanding of landscape, community and environment is limited due to the intrinsic limitations of the material record (however, see Bender *et al.* 2008; Zvelebil 2003^{a,b}), it may be used alongside, or compared to other economic, functional, more factual approaches. Reappraising the less tangible aspects of the LRA wetland communities in this way and focusing on the way they inhabited and may have understood their landscapes, brings us closer to understanding environment and surroundings as active agents in the creation of local identities and *mentalité*, while simultaneously shaping a regionally specific set of practices, rituals, rules and traditions for living in and dealing with such an environment. This realization may help in understanding regional similarities and variations in behaviour and settlement systems. It may shed light on the composition of resources and the continued mixing of 'wild' and 'domestic' elements, or even concerning the way in which architecture and (the long-term) use of places are conjoined and regionally significant. Finally, it broadens our horizons regarding the perspectives we may have on the process of Neolithisation and its specific long and gradual trajectory in this area.

Notes

- 1 The existence and legitimacy of such an approach may be based on a wide range of ethnographic, ethnohistorical, philosophical and historical literature (see Chapter 7 and references; *e.g.* Casey 1996; Chadwick 2004; Coles and Coles 1989; Cooney 2000; Ingold 1993; Lefebvre 2004; Van de Noort/O'Sullivan 2006; Schama 1995; Thesiger 2007; Tilley 2004).
- 2 It should be taken into account that the information from wetland margin sites, especially for the period between 4500 and 3600 cal BC, is limited and that comparative upland information is largely lacking (see also Chapter 7).
- 3 In view of this the character of short- or medium-term activities at sites, which provide us with the most direct access to past perception and *habitus*, may essentially be informative on longer-term traits (Foxhall 2000, 484-485, 496), especially within settings where there is cultural continuity.
- 4 This existence of community agency may also be documented for topics such as housing, settlement structure as well as social practices such as burial (*e.g.* Amkreutz 2013^{a,b}; Louwe Kooijmans 2009; Tringham 2000^b).
- 5 Consistent community adaptability in view of these dynamics appears to be more convincing than stressing issues such as calamity, disaster and vulnerability (however, see Leary 2009).
- 6 A number of sites (*e.g.* Hazendonk, Hekelingen-III, Vlaardingen; see Chapter 8) serve as cautionary tales against interpreting the archaeological record as showing a straightforward development towards significantly sedentary communities.