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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Afterthoughts on Neolithisation: Zvelebil's model reconsidered

10.1 Introduction

This study has focused on the role and position of the communities involved in the process of Neolithisation in the Lower Rhine Area between *c.* 6000 and 2500 cal BC, with an emphasis on the wetlands and wetland margins. The transition to agriculture has therefore been studied indirectly from a theoretical framework aimed at elucidating the long-term characteristics of communities in relation to the landscape and environment they inhabited (see Chapters 6 and 9). In this concluding chapter the implications of the approach taken in this study will be briefly interpreted for the process of Neolithisation, from a general, modelled and theoretical perspective. This is done by offering an alternative interpretation of the well-known availability model (Zvelebil/Rowley-Conwy 1984; Zvelebil 1986[a,b]).

10.2 Revisiting the availability model: indigenous perspectives

The availability model (see fig. 3.7) was intended as a heuristic framework to document the transition to agriculture through three stages: availability, substitution and consolidation, defined by the relative contribution of domesticates and cultigens to the diet. The model was reviewed in Chapters 3 and 7. While it offers a broad outline of the process of Neolithisation, it also has its shortcomings. These are mainly manifested in its focus on subsistence. Despite the importance of an economic shift from a hunting and gathering way of life to food production, its large-scale use as a 'prime marker' (see Zvelebil/Lillie 2000) is problematic from the regional and indigenous perspective adopted here. Additionally, it has been questioned to what extent the contribution of domesticates (and cultigens) can be determined for an entire cultural unit instead of per site (*contra* Zvelebil 1998[a], 11; 1998[b]) and to what extent we may base our interpretations on presence/absence data (Raemaekers 1999, 13), rather than proportions (see Chapter 7).[1] Both aspects obscure the diversity existing between sites and the choices made by the communities involved.

Change towards a producing economy inspired many developments, yet the 'transition to agriculture' is not synonymous with the 'process of Neolithisation'. The latter includes other, technical, social and ideological developments (*e.g.* Thomas 1999; Whittle 2003), each with its own (geographically changing) temporality and nature (see Rowley-Conwy 2004). An enhanced understanding can only be gained by studying all elements within a cohesive landscape and environmental setting. In this respect continuity and development, tradition and innovation,

acculturation and identity may or may not have operated independently; some things changed, while others stayed the same (see Chapter 9).

In the following an attempt is made to re-think Neolithisation along the lines of the availability-model, yet from a relational perspective focusing on community-based interaction and perception. The aim is to present an alternative (modular) approach to Neolithisation that may be used alongside the original availability-model, not in an opposing, but in a complementary manner. This is an approach 'from the perspective of a hunting stand, rather than from behind the plough' as argued originally by Zvelebil and Rowley-Conwy (1984, 104; Zvelebil 2001, 17). From this it follows that the general (Mesolithic) hunter-gatherer roots of communities in relation to their landscape and environment are foregrounded. To this end two theoretical perspectives will be introduced.

10.3 'Attitude': the context of a giving environment

The first perspective focuses on the *mentalité* or world-view of these communities. It concerns the ingredients of their 'moral community' (*cf.* Whittle 2003). This may help our understanding of the behaviour of indigenous populations in light of change.

While there are limitations to the generalization of ethnographic information (*e.g.* Testart 1988 and comments), certain common characteristics may be identified (Brinch Petersen/Meiklejohn 2007; Finlayson 2009; Panter-Brick *et al.* 2001, 2-10; Rowley-Conwy 2001). Crucial among them is the ideological perception of the environment.

10.3.1 The giving environment

Among (sub-)recent hunter-gatherers, including those that additionally, or temporarily practise some form of horticulture or pastoralism, culturally specific, yet comparable perspectives exist upon nature and their relationship with it (Descola 1992). The most characteristic of these is the idea of a 'giving environment' (see Bird-David 1990).[2] This perspective centres on the continuity between the social and the natural domain and may be termed 'animist'.[3] Nature and society are not separated by ontological boundaries but are perceived as part of one universe, a closed circuit featuring a constant circulation of substances, souls and identity (Descola 1992, 114-116). These important distinguishing traits do not stand alone. A similar division is witnessed among the Mbuti pygmies of Zaire and their Bantu-speaking farming neighbours, as well as other groups (*e.g.* Bird-David 1990; Politis 2007; Turnbull 1983). According to Bird-David (1990, 194) it is characteristic of hunter-gatherers in general that their views of the environment draw on primary kin relationships (also see Descola 1992, 126; Ingold 2000, 58-60). As such, our often dualistic view of nature and culture need not apply to the groups studied (Ingold 2000, 40; Johansson 2003, 109-138). Moreover, where Bird-David (1990[a,b], 1992) and others offer culture-sensitive interpretations regarding hunter-gatherer perceptions of the natural world, based on their relations in the human world, Ingold (2000, 42, 44) argues that interaction with nature is not grasped conceptually this way. Since hunter-gatherers cannot enter into interaction with the non-human environment as persons, they do so in a separate domain, where they figure as biological objects, rather than cultural subjects, as organisms rather than as persons. This forms a natural domain of organism-

Fig. 10.1 Hunter-gatherer 'economies of knowledge' and interaction, adapted from Ingold (2000, fig. 3.2). The lower part represents the indigenous perspective.
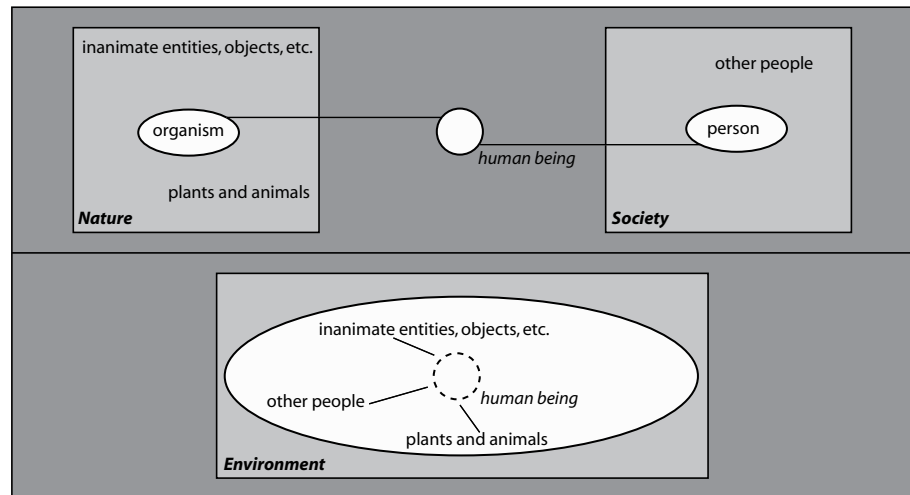
environment interactions, rather than a social domain of personal relations (fig. 10.1). In it there is no distinction between a literal truth in interpersonal relations and a metaphorical truth among humans and non-humans; there is no radical break between social and ecological relations and the latter should rather be seen as a subset of the former (Ingold 2000, 60, 76).

10.3.2 Resilient modes of thought

In contrast to pristine 'affluent foragers', it is now clear that many hunter-gatherer groups shared a history of centuries or even millennia of contact and interaction with food-producing groups. In many cases this has led to hunter-gatherers pursuing (and in some cases later abandoning) food production activities (see Chapter 7; Appendix III; Finlayson 2009; Layton *et al.* 1991). An important question in this regard is to what extent there is a degree of reconciliation, of combining hunting and gathering activities with other subsistence strategies (see Bird-David 1992[b], 20-22).[4] The ideology of a 'giving environment' implies the non-distinctive way in which hunter-gatherers may approach and value new resources. Domesticated plants and animals are bound to be perceived within the same framework as the natural resources, plants and animals that were already used (see also Ingold 2000, Chapter 5). Many modern-day hunter-gatherers combine their activities with cultivation and stock-keeping, yet do so in a manner that permits continued hunting and gathering (Bird-David 1992[b], 37). New activities are thus re-organized to resemble the 'old' traditions and practices as much as possible (note some of the examples among the Nayaka, Cree and San Bushmen).[5] While it is easy to characterise this behaviour as opportunistic or as part of a 'foraging mentality' (see Bird-David 1992[b], 38; Kelly 1995), it may rather be representative of how these communities relate to the outside world, implying a close relationship with their environment, responding to it in a flexible manner and adapting to geographical and temporal differences and changes. Resources are used and added from the idea of nature providing. In addition to this 'ecological knowledge' (*e.g.* Ingold 2000), Bird-David (1992[b], 32) stresses that while our society revolves around different products and related activities (cultivation and stockherding are distinguished from each other), hunter-gatherer society is cognitively sensitive to resources. This forms a crucial point: the means of acquiring resources does not establish

their nature. For instance (*ibid.*, 39-40), the Indian Nakaya hunter-gatherers do not distinguish between jackfruit they grow and jackfruit they collect in the wild. Similarly, according to the circumstances, they hunt and 'gather' animals. Along the same lines, if certain hunter-gatherer groups practice stock-keeping or cultivation, they do so to *procure* resources, rather than to *produce*. So while to us they appear to shift between subsistence activities, from their perspective, they simply obtain the resources afforded by their environment through whatever means suitable (*ibid.*; Ingold 2000, 59). Based on these perspectives a number of characteristics may be defined:

- Attitudes to land and resources are based upon longstanding relations and perception of the environment, rather than ownership. Communities relate to this, outside of any nature-culture division, but within the idea of a web of connections where social and economic relations merge (*e.g.* Barnard 2007; Bird-David 1992[b]; Descola 1994; Ingold 2000).

- Sharing and the absence of long-term hierarchical leadership form important values in society. This grants family groups and individuals a certain level of autonomy with respect to procuring resources, dealing with change and making use of opportunities (Raemaekers 1999, Chapter 5; see also Brinch Petersen/Meiklejohn 2007; Finlayson 2009; Rowley-Conwy 2001).

- There are shifts and variations in subsistence activities. Different social cohorts (individuals, families, communities) may mix and match different types of resource-acquiring activities, while sharing, exchange and mobility enable diverse combinations. This potentially leads to smaller and larger-scale variation at different time intervals, ranging from weeks to generations.

- Hunting and gathering continue to be important activities that apart from economical value may also have had distinct symbolical connotations (Amkreutz/Corbey 2008; Bird-David 1992[b], 41).

These elements can be used to conceptualise the transition from an indigenous perspective (*e.g.* Zvelebil 2003[b]). In this respect Barnard (2007, 14), comparing Mesolithic and Neolithic modes of thought from a social anthropological perspective, stresses that the impact of culture contact on (hunter-gatherer) modes of thought is regularly overestimated. The hunter-gatherer mode of thought is much slower to change than its mode of production, or rather procurement (Barnard 2007; Bird-David 1992[b], 40; Ingold 2000, 59). Therefore social relations, or relations of production, retain the structures of hunter-gatherer times, since these are deeply rooted in cultural understanding of sociality. The existence of nearby agro-pastoralists, may even make former hunter-gatherers more aware of their differences, perhaps even accentuating these (*ibid.*, 2007, 14-15; Hodder 1982).[6] Furthermore the survival of many characteristic elements of the hunter-gatherer mode of thought is possible due to the flexibility of these communities (Barnard 2007, 15; Chapter 9). By adhering to the characteristics described above, these communities long resisted becoming 'Neolithic'.

10.4 Interaction: a context of networks

A second perspective deals with the nature of contact, exchange and interaction and how communities function in networks in which commodities, innovation and ideas are implemented or re-interpreted. The ideas presented earlier indicate that while archaeologically, over time, communities may be grouped into substitution or consolidation phases, this does not necessarily imply any ideological transition. It then becomes important to document the consistency of modes of thought and behaviour in the light of (Neolithic) change.

In view of Neolithisation we are confronted with one state (indigenous communities, hunter-gatherer existence, procurement economy) developing into another (settled farming communities). Instead of focusing on the trajectory and ingredients of Neolithisation emphasis here lies on the interaction with and implementation of new elements. This may be grouped under the term 'acculturation'.[7] This means gaining insight into the culture-sensitive dynamics of interaction, necessitating a qualitative approach to the indigenous effects of acculturation and an analysis of processes of hybridization (see Barnard/Spencer 2002, 897 *et passim*). The question is patently not what changed, when or why, but, in line with the indigenous approach advocated here, *how* change was implemented, controlled, and interpreted.

10.4.1 Networks

To study the processes of interaction from an indigenous perspective, it is important to focus on the characteristics of local translation for making sense of the world. A useful methodology for interpreting the behaviour of past communities and their reaction to potential change is in terms of the networks in which these groups function. In sociology and (to some extent) anthropology, this method has been applied and developed and has become known as actor-network theory (Callon 1986; Latour 1993; 2005; Law 1992; see Hoogsteyns 2008 for an elaborate review).

Actor-network theory (ANT) approaches reality as a network consisting of actors, that may be animate or inanimate; people, objects and places may all participate in it (see Latour 1993; 2005; Strathern 1996). Both material aspects as well as semiotics (ideas or concepts) are included and interact in relation to each other. Within ANT, all are endowed with agency.[8] This enables them to influence and change the other participants in the network (Latour 2005, 71; Law 1992). Participants and relations are therefore subject to ongoing redefinition, ordering and interaction (*ibid.*, 218). New actors are constantly redefined or 'translated' (Callon 1986) and their eventual positioning in a new network takes place in an altered and differentiated form. New 'truths' arise.[9]

Networks and Neolithisation

ANT fits the approach to Neolithisation adopted in this study, because it implies an absence of (hierarchical) categorization between subject and objects, through a focus on actors (see Hoogsteyns 2008, 190). This involves the abandonment of *a priori* distinctions between the natural and the social (Callon 1986, 196-200).[10] This fits within the idea of a moral community that experiences its surroundings as embodied or animate (see Descola 1994) and applies to the environmental perception of past hunter-gatherer-farmers.

A network is defined and maintained by re-establishing the relations between the actors, by continuously ordering them. ANT is therefore anti-static and performative. It accentuates the ramifications of what takes place in interaction (Latour 2005, 200-202).[11] Furthermore, networks and actors are studied from a bottom-up perspective, meaning that Neolithisation is studied at the level of the pieces (actors) forming the mosaic (composition of networks), focusing on the communities and their developments within coherent regional contexts (*e.g.* Tringham 2000[a]; Whittle/Cummings 2007). It is this aspect that is of special importance; the local implication and translation of new actors and the way networks both change and are consolidated.

10.4.2 Network dynamics

Within ANT the studies of Callon (1986) and Latour (2004) have tried to phase the dynamics at play in a network when new actors are introduced. They focus on the processes of translation taking place (Callon 1986, 200-214; Law 1992), the moments at which new actors, their identity and implications are negotiated by the participants in the network. A first phase distinguished is one of amazement and problematization. A new actor arrives within the network. Its identity and implications are researched and other actors involved are identified. The existential rights of the new actor are questioned and acceptance depends on the redefinition of alliances and existing relationships between other participants. The second phase of 'interessement' (*cf.* Callon 1986) starts after the existential right of the new actor has been established and involves the negotiation of its essence and the place it may assume in a network. It is this phase that may be linked to how societies allow or prevent change and new *habitus* (see Bourdieu 1977; Sommer 2001). A third phase of 'enrollment' (*ibid.*) involves the incorporation of the new actor in the network within the parameters established by the previous negotiations. It involves a process of translation that seeks to redress the balance and find a way in which the new actor may settle among the existing structures without disrupting them (see Latour 2004, 109).[12] The role or essence of the actor may still change, but will equally affect already existing structures. In the end the actors involved accept the redefined roles and a new hierarchy is established. A final phase involves the redefinition of the network. The new actor is now accepted and no longer questioned. It is institutionalized, implying it has become a functioning participant. All existing actors in the network interact with it and vice versa.

This sequence aids the formulation of hypotheses and modeling concerning the character and implementation of Neolithic elements and the degree to which change was allowed for at a localized level, from an indigenous perspective. In the next paragraph this reasoning will be applied to communities in the process of Neolithisation.

10.5 Integration

Understanding the local communities involved in Neolithisation, both in relation to their perception of the environment as well as their place in the network, is important for providing an alternative perspective on the developments taking place. This requires regionalizing large-scale processes (see Harrison *et al.* 2004, 9) and focusing on processes of adaptation, rather than change. Latour (1993, 117;

2005, 190-195) uses the metaphor of a railroad, to indicate that even the longest networks are seen and interpreted as local at particular times and places. It is the new elements of the network that are framed by what already existed and that make it 'localized' and 'placed' (also see Strathern 1996, 523-529).[13] As argued earlier, novel elements will often be transposed according to the already existing constellation of relations of the indigenous groups. This stresses the resilience of the existing hunter-gatherer modes of thought and perception. Ethnographic work suggests that rather than a process of hybridisation (or creolisation), developments in acculturation may be best interpreted along the lines of adaptation, in particular if the introduction of new elements took place under the conditions and temporality set by the indigenous communities (*e.g.* Barnard 2007; Bird-David 1992[b]; Helms 1988; Turnbull 1983).[14]
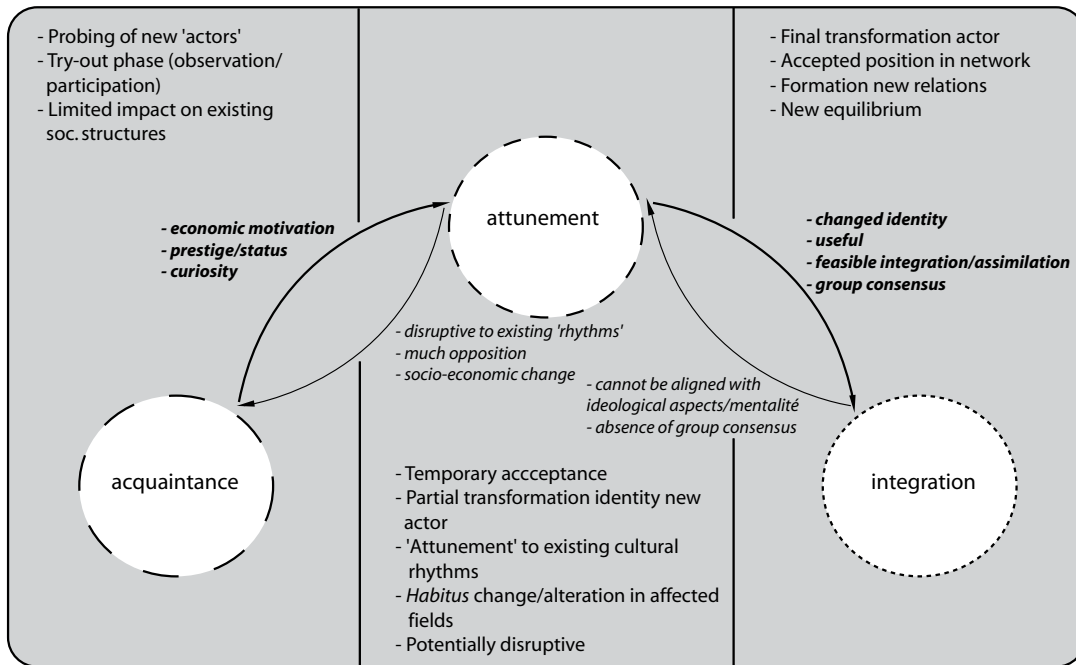
Based on the perspectives presented above it can be hypothesized that as long as there is no direct necessity (*e.g.* resource stress, competition, violence, see Gregg 1988) to 'go over' to new (Neolithic) practices, products and ideas, 'translation' of new elements and aspects will take place along existing perception and cultural lines. While 'novelties' may be used to fix or ameliorate individual or group position (in an economic or social manner, *e.g.* Verhart 2000), aspects and elements of identity will for a long time remain as they were. Actual change, affecting all aspects of society, may have been very slow and controlled, since those aspects that were deemed intrinsically important and deeply rooted, the constituents of socio-cultural integrity of a hunting-gathering moral network, remained fixed and unchanged for a long time.

A complementary model of 'attunement'

The foregoing theoretical perspectives highlighted alternative factors that influence and shape the process of Neolithisation. In the following an attempt will be made to reconcile these ideas in a complementary model, based on the availability model, that studies Neolithisation from a perspective focusing on community, process and implementation. In this respect it is also a reconsideration of the original model by Zvelebil and Rowley-Conwy (1984; Zvelebil 1986[a,b]) as it matches the static stages with dynamic processes from an indigenous and interactive perspective.

At the core of the model (see fig. 10.2) a number of phases may be distinguished that provide a reference for the developments taking place during Neolithisation. They start from community perception and agency and form alternatives to the well-known phases of availability, substitution and consolidation in the original model. The perspective of this framework is deliberately divorced from either an economical orientation or evolutionary developments (see arguments above and in Chapter 7) and focuses on the character of implementation, on the processes taking place.

- A first phase may be termed '**acquaintance**'. This indicates an awareness of a potential new actor, from direct or indirect personal knowledge. This knowledge is derived from participation or observation. An initial stage within this first phase may be termed 'cognizance' which involves the condition of knowledge or familiarity gained through association or experience. Within this phase the actors in their network become aware of potential new actors and their viability is probed. Certain elements in the network may be in favour of introduction, others opposed to it.

Within the diagram:

Top-left box:
- Probing of new 'actors'
- Try-out phase (observation/ participation)
- Limited impact on existing soc. structures

Top-right box:
- Final transformation actor
- Accepted position in network
- Formation new relations
- New equilibrium

Left arrow labels (acquaintance → attunement):
- *economic motivation*
- *prestige/status*
- *curiosity*

Right arrow labels (attunement → integration):
- *changed identity*
- *useful*
- *feasible integration/assimilation*
- *group consensus*

Center-left italic labels:
- *disruptive to existing 'rhythms'*
- *much opposition*
- *socio-economic change*

Center-right italic labels:
- *cannot be aligned with ideological aspects/mentalité*
- *absence of group consensus*

Circles: attunement, acquaintance, integration

Lower-center box:
- Temporary accceptance
- Partial transformation identity new actor
- 'Attunement' to existing cultural rhythms
- *Habitus* change/alteration in affected fields
- Potentially disruptive

Fig. 10.2 Schematic illustration of a model of 'attunement' in which there is no dominant direction and an emphasis on implementation of Neolithic elements in existing structures.

• A second phase may be termed '**attunement**'. This involves the (temporary) acceptance of the new actor as a potential attribution to the network and its subsequent positioning within the established relations. This is a try-out phase which may see the temporary or definitive integration of new actors within existing cultural rhythms (*cf.* Lefebvre 2004). If implementation proves too disruptive to these rhythms, the new actor may again be excluded or its identity transformed.[15] Eventually this phase involves some form of *habitus*-change in fields affected by the introduction of a new actor (see Bourdieu 1977; Jacobs 1993). It is likely that within the small-scale non-hierarchical communities of the LRA, group consensus will have been the main factor in allowing for change (see also discussion in Raemaekers 1999, 190-192 and Tilley 1996), while acceptance would have depended strongly on the way in which the 'identity' of the new actor may be transformed to fit existing structures (*e.g.* Bird-David 1992[a,b]).

• A third and last phase is termed '**integration**'. It involves the unquestioning acceptance of the new actor in the network in its final transformation. This involves a change in the network, creating a new position and subsequently new relations, as well as a change in the actor, both due to the process of attunement in the previous phase. It is therefore a phase characterized by the acculturated local implementation of a new actor and the degree of continuity witnessed in the existing socio-cultural moral network.

The main premise in the last phases is that existing perception and *mentalité* will generally be the chief conservative elements in relation to the positioning of new elements. Furthermore from the perspective of the processes taking place there is no clean break between the different stages.[16]

10.6 Application and future use

The model is more than a semantic paraphrasing of the availability model. It may be employed to study different trajectories of attunement of Neolithic aspects and to form hypotheses as to their implementation. The three defined levels serve as a framework for establishing the degree to which new elements were incorporated into existing structures. The model's main purpose is to present an alternative perspective on the processes taking place.

Application involves a different point of view, arguing that instead of a necessary socio-symbolical change in the minds of the indigenous inhabitants of Europe to adopt a Neolithic way of life (*cf.* Hodder 1990), the opposite took place. Based on a wide array of ethnographic evidence it is more likely that in the absence of severe or direct demographic or economic pressure to 'go over', the hunter-gatherer mode-of-thought, their *mentalité* and its associated *habitus* were conservative and slow to change in comparison to their mode of production or procurement (see Barnard 2007).

The operative principle of the model suggests a practice aimed at translating, or attuning new elements so that their potential disruptive power to the existing traditions and rhythms is limited. Arguably there is discrepancy in the way certain new elements are adopted. Some aspects are integrated more quickly than others. The latter are usually of distinct socio-symbolic value. If we focus on those aspects that remain of a continued, largely Mesolithic character, these may particularly be found in such basic domains as food procurement, technology and mobility.

The model argues against the idea that the first use of domesticates involved a new conception of the relationship between human beings, their environment and time (Bradley 2004, 113). As such it questions whether the centre stage taken by domesticates and cultigens in analyses of the process of Neolithisation is appropriate, as hunter-gatherer communities within their ideology of a 'giving environment' may not have approached domesticates and cultigens as radically different from the resources they were already procuring. Instead it argues for an emphasis on how new material, economic and social elements were integrated. For instance, while growing crops and herding cattle may require new techniques, practices and rhythm, it is the scale and consistency of these that define their impact *in combination* with indigenous perception of them. This implies that new practices and resources were probably perceived according to existing ideological frameworks and re-organized to be integrated with existing practices and traditions (see Bird-David 1992[b]; Ingold 2000). As such the model abandons implicit connotations of (economic) development in favour of behavioural implementation of new ideas, products or technology from an indigenous perspective. Its emphasis lies with their 'attunement' within existing practices and ideology. The integration of domesticates and cultigens in the LRA wetlands may be envisaged along similar lines. This means that the introduction of agriculture may have brought about changes in an economic respect, but much less so on an ideological and social level.

Notes

1 A proper quantitative assessment is limited by methodological and taphonomic factors, while isotope and related studies may offer a contrasting point of view (see Smits *et al.* 2010).

2 Bird-David (1990, 190-194) stresses that among the South Indian Nayaka hunter-gatherers nature, the forest and the wild are perceived as family. The Nayaka see the forest as a parent giving food and themselves as siblings with whom one shares. Among their farming neighbours, the forest is perceived as potentially dangerous, and the relationship is seen as ancestral and reciprocal.

3 Animistic belief systems do not regard plants or animals in a taxonomic manner, but believe that all natural beings possess their own specific spiritual principles and that it is possible for humans to establish personal relations with these entities.

4 As argued in this study (see also Layton *et al.* 1991, 255), it is potentially more useful to study hunting, gathering, herding and cultivation as alternative strategies, which are singly, or in combination, appropriate to particular natural and social environments. This also underscores the problematic application of the term 'substitution' in the availability model. New resources are not expected to be dealt with from a perspective of eventual replacement, but as additional strategies, used in an integrative manner (see Chapter 7).

5 Activities are combined if opportunities allow to permit continued, if intermittent, hunting and gathering. An elaborate study of the Nayaka in India demonstrates that at times these groups received seedlings from their neighbours and subsequently invested considerable time and effort in preparing paddies, yet this investment was seen as a means to procure food on a one-off basis, not as the start of a cyclical (agricultural) investment. In this manner, individuals or groups may have cultivated at considerable intervals, possibly lasting decades (Bird-David 1992[b], 37).

6 A case-study of the Hai//om Bushmen demonstrates that, while working at least part of the year for Ovambo agro-pastoralists, growing their own crops and building their houses in the same style, these communities spend most of the year hunting and gathering, having little contact with their agricultural neighbours (see Barnard 2007).

7 Much debate has taken place as to what defines culture (Cohen 2004; Wagner 1981). It can take many forms, encompassing what people do, eat, think, make etc. Together these traits form distinguishable cultural complexes, whose members are culturally competent and knowledgeable when it comes to the rules, practices and *habitus* (*e.g.* Bourdieu 1977; Giddens 1984; Sommer 2001). These complexes, while not in the least original or pristine themselves, may enter into contact with each other, exchanging flows of objects, people and ideas. In the long run the effects of this may change or alter one or more of the interacting complexes (see Redfield *et al.* 1935); acculturation takes place. In this respect the context of acculturation is of crucial importance (Naerebout/Versluys 2006, 16).

8 This does not presuppose intentionality on the part of inanimate elements. Instead it indicates a focus on the multi-stranded heterogeneous relationships between humans and non-humans (places, objects, environment).

9 This process of translation is not necessarily dialectic in that it may take place over a prolonged period of time with actors that are not consciously involved in translating or changing other actors. In this sense it finds itself on a par with the mechanisms underlying the creation of new *habitus* (Bourdieu 1977; see Chapter 6).

10 It is important to stress that there are differences between the ANT approach of, amongst others, Latour and the phenomenologically rooted approach of Ingold (2000). Latour's emphases lie more on material culture studies, whereas Ingold focuses predominantly on ecological, biological and psychological case-studies (see Hoogsteyns 2008, 72-73; see also Ingold 2007). Both, however, propagate an abandonment of nature-culture oppositions and both share a number of common ideas that tie in with the ethnographically and perception-oriented approach of this study.

11 It is argued that interaction is never *isotopic*, what is happening in one place and at one moment is in fact connected to many other places, distant materials and remote actors. Nor is interaction *synchronic*. Actions in the present (or past present) are historically connected. Objects used, ideas spread, share histories and transformations (Latour 2005). As argued by Latour (2005, 201), time is folded. Related to this the interactions taking place are also historical and thus not homogenous. Finally, interaction is not *synoptic*. Not all participants in interaction are visible or possibly even known. This implies that both past participants or actors and, even more so, current archaeologists, cannot establish the complete set of actors making up a network. This is partly also the result of the fact that interactions are not homogenous (Latour 2005, 201), since the relays through which interaction takes place will not have the same material quality all along. The actors in the network are not static but develop, shift, are succeeded or disintegrate.

12 A parallel may be drawn with the work of Lefebvre (2004) where the introduction of new rhythms may have caused *arrhythmia* that demanded a (communal) reaction ranging from mild attunement to more intense restructuring in order to recreate a new state of harmony or *eurhythmia* (see Chapter 6).

13   One might argue that cultural hybrids (involving both natural as well as material and social elements; *cf.* Latour 1993, 10-11) exist that consist of specific constellations between people, objects, practices and the environment (actors in ANT) and that the composition of these constellations is negotiated and re-interpreted at the moment that the network is cut.

14   While there are many examples of adaptation (*e.g.* Barnard 2007; Gregg 1988; Kent 1989[a,b]) a useful case is provided by Turnbull's study of the Mbuti pygmies of the Ituri rainforest in Zaire (Turnbull 1983). Over many years these communities were confronted with, and interacted with, non-forager groups, ranging from Bantu-speaking farmers to Belgians. Until recently and despite all these influences they have preserved their identity of *bamiki bandura* (children of the forest; Turnbull 1983, 19, 156). This does not mean they have remained static or impervious; some elements were adopted (*e.g.* iron tools and spears), and they provided services and resources to their non-foraging neighbours. But a major motive in the character of their interaction and the degree of adaptation that took place was their intention to preserve their integrity of a forest way-of-life and preferably to keep others from interfering with it (*ibid.*, 21). To engage in interaction may thus very well involve a distinct (heightened) sense of separation and safeguarding of identity (Naerebout/Versluys 2006, 18). It should therefore be realized that when confronting change, indigenous groups may have chosen to adapt, perhaps not only according to what befitted their 'foraging mode of thought', but in view of (unavoidable) culture contact and interaction perhaps also to preserve such a mode of thought.

15   In line with the terminology utilised by Lefebvre (2004), it may be more correct to assume that instead of *arrhythmia*, the communities in question may rather have perceived the 'Neolithic rhythms involved' as *isorhythmia* that were different but similar and may have been brought into harmony, without disrupting the existing structure (see Chapter 6).

16   As argued previously it should be noted that in situations where some form of stress or pressure exists the implementation of new elements may have followed a much less gradual course, or even in the absence of group consensus (*e.g.* Gregg 1988).