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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Chapter 2

Thoughts in transition – A European perspective

> *'…that revolution whereby man ceased to be purely parasitic and, with the adoption of agriculture and stock-raising, became a creator emancipated from the whims of his environment…'* (Childe 1952 (1935), 1-2).

2.1 Introduction

As somewhat dramatically stated by V.G. Childe above, the transition to farming is regarded by most prehistorians as one of the pivotal events in the history and development of humanity worldwide (*e.g.* Binford 2002 (1983); Bar-Yosef 2004; Childe 1976 (1957); Hayden 1995; Louwe Kooijmans 1998[a]; Price 2000[a]; Whittle/Cummings 2007). This almost unanimous concordance, however, contrasts strikingly with the multitude of opinions voiced concerning the processes that govern this transition, its spread and its implications. Although much of the debate has focused on the actual centres of domestication, there now also exists a vast body of literature on the transition to agriculture and the spread of farming *ex situ*. Europe generally is not regarded as an original centre of domestication, as most of the wild predecessors characterising the European Neolithic originated in the Near East. There is both ample evidence and chronological control as well as a constellation of circumstances (Uerpmann 1996, 232) pointing to an early local development (*e.g.* Ammerman 2003; Bar-Yosef/Belfer-Cohen 1989; 1992; Garrard *et al.* 1996; Thomas 1996[a]; Watson 1995).[1,2] Independent domestication in Europe can be largely ruled out and that leaves us with two main options for explaining the spread of agriculture: migration or local adoption. This study aims to contribute to an understanding of the transition to agriculture in the Lower Rhine Area (LRA), but should do so within the interpretative context of the process of Neolithisation on a European scale. Therefore, this chapter presents the main theoretical aspects and developments of this debate in order to create a European context for discussion. The following chapter will subsequently narrow the scope to the LRA.

2.2 The mechanics of spread

The academic debate concerning whether the dispersal of agriculture over Europe was mainly brought about by the migration of colonist-farmers originating from the Near East or through the adoption of (elements of) a 'Neolithic package' by an indigenous Mesolithic population is far from settled, yet there seems to be consensus concerning some aspects.[3] It is evident that both processes occurred

and operating simultaneously more often than separately (*e.g.* Price 2000[c]; Louwe Kooijmans 1998[b]). The relevance or dominance of either mode within a certain region, however, remains subject to debate.

Mediterranean perspectives

There are a few strong cases for colonization in Southern and Southeastern Europe such as the Aegean islands (Price 2000[c]) and Thessaly (Halstead 1996), which boast substantial evidence such as archaeobotanical (Colledge *et al.* 2004) and craniometric data (Pinhasi/Pluciennik 2004). Yet even there the situation is far more complex than previously assumed. A good example is Franchti cave in Greece, one of the few positively identified Mesolithic sites, where the transition to agriculture around 7000 BC was very rapid, while at the same time yielding convincing evidence for indigenous adoption (Halstead 1996, 299-300; Thorpe 1996, 23). Later in time and further west, another example is formed by the Cardial or Impressed Ware culture indicative of the westward spread of the Neolithic along the various coasts of the Mediterranean. Long deemed a classical example of colonization (Childe 1958, 47-49; *cf.* Price 2000[a]), there has been increasing evidence over the years that the picture is much more complex (*e.g.* Rowley-Conwy 1995, 346-347). Some of the evidence points to colonist bridgeheads, sedentism and farmer enclaves in Italy, Southern France and the Iberian peninsula (*e.g.* Barker 1985, 71; Binder 2000, 117; Harris 1996, 560; Zilhão 2000, 171). On the other hand there is evidence for internal adoption, or acculturation, as was proposed by Lewthwaite (1986) and Donahue (1992) (*e.g.* Geddes 1985). Whittle (1999, 291) even speaks of 'the sea-borne transmission of contacts, ideas and resources' as the 'primary means of change'. This is backed up by sites bearing evidence of a gradual change, such as the 7th millennium BC Grotta dell' Uzzo in Sicily or the Aude valley sites in Southern France.[4] There seem to be ample indications that both processes were operating in the region, perhaps even contemporaneously. Most scholars agree however that the untangling of these processes is severely hampered by differential preservation of sites. The submersion of presumed coastal sites with indications for contact and change, for example, places too much emphasis on the evidence from caves and rockshelters, spectacular dates often lack a good context, the allocation of finds and features to certain periods is questionable and there is limited knowledge on the Mesolithic occupation (Barnett 2000; Binder 2000; Lewthwaite 1986; Price 2000[a]; Tarrus *et al.* 1994; Whittle 1999; Zilhão 2000). Tringham (2000[a], 33) notes that the awareness of these kinds of problems and the general ambiguity of the data, have led to a reduction in speed, distance of movement and scale in modeling colonization, emphasizing social pressures and the social complexity of fissioning settlements.

Into Central Europe

This reduction also affects one of the other strongholds of colonization, the LBK-culture. The apparent homogeneity in material culture and settlement system of the LBK combined with a rapid spread over vast expanses of land still convinces many scholars of its migratory nature. Yet most agree that it was not as unilinear and evident as previously thought (*e.g.* Gronenborn 1998; Kind 1998; Louwe Kooijmans 1998[b]; Lüning (ed.) 1972; Modderman 1988; Price *et al.* 1995; Zvelebil 2004[a]). The origins of the LBK-culture lie in the northwestern part of the Hungarian plain, where there are strong affiliations with the Starčevo-Körös

complex (Bogucki/Grygiel 1993). It is, however, very unlikely that population growth of the pioneering groups and an open settlement system alone could have been responsible for the subsequent swift spread of the *Älteste* LBK up to Niedersachsen and Hessen (Louwe Kooijmans 1998[b]; Whittle 1999).[5] These doubts are confirmed by the heterogeneous appearance of assemblages and exchange patterns, implying intensive Mesolithic contact and already existent networks (Gronenborn 1994, 146; 1998; 1999; 2003[a]; Zvelebil 2004[a]) or, according to Tillman (1993), even possible Late Mesolithic origins. Mesolithic influence further north is suggested by the appearance of LBK-like arrowheads in Late Mesolithic assemblages (see Gronenborn 1998; Huyge/ Vermeersch 1982; Louwe Kooijmans 1998[b])[6] and the conspicuous lateralisation of both trapezes and LBK points as demonstrated by Löhr (1994; also see Gehlen 2006; Robinson 2008; 2010). Increasing regionalisation, visible for example in pottery decoration, (*e.g.* Modderman 1988) could also be ascribed to increasing indigenous influence. Metrical (Modderman 1988) and strontium-isotope analysis (Bentley 2007; Price *et al.* 2001; 2006) of Bandkeramik skeletal material indicate both strong regional differences and a very plausible Mesolithic influx within LBK-society. The occurrence of Limburg pottery and La Hoguette and *Begleitkeramik*-ware add to the existing complexity and the academic debate concerning both phenomena and their relationship to the LBK remains far from settled (*e.g.* Van Berg 1990; Brounen/Hauzeur 2010; Constantin 2002; Gronenborn 1994; Jeunesse 2001; Lüning *et al.* 1989; Manen/Mazurié de Keroualin 2003; Modderman 1981). One might, however, conclude that they at least represent, in either pure or acculturated form, the material legacy of a Late Mesolithic or, in the case of La Hoguette, early Neolithic substratum (Gronenborn 2004, 15; Jeunesse 2003, 102).[7] Their appearance at LBK sites at least indicates contact and interaction going on. The various strands of evidence taken together convincingly attest to a difficult to determine, yet distinct role for the Late Mesolithic population in the spread and settlement of LBK communities (also see Vanmontfort 2008[a]). In this light it is understandable that Whittle (1999) opts for an indigenous origin and mobile settlement system for the entire Bandkeramik, effectively reviving the debate on '*Wandernbauerntum*' (see for instance Childe 1958; Soudsky 1962; Modderman 1970; Bakels 1982). Yet although the evidence for (partial) indigenous acculturation is substantial, the indications arguing in favour of colonization are at least equally convincing; the absence of a fully Neolithic substrate with local domesticates, the differences in stone tools, pottery and house forms, as well as the rapidity and simultaneity of the numerous changes (Bogucki/Grygiel 1993; Jochim 2000), cannot but signal the significant 'intrusive' character of the LBK, especially from the *Ältere* LBK onwards (*e.g.* Gronenborn 1999).

On the North European Plain

Further north the Neolithic dispersal came to a more or less complete stop along the southern margin of the North European Plain (Bogucki 1999, 179). North of this imaginary frontier there is tangible evidence of a rather substantial Late Mesolithic population that held off agriculture for a considerable timespan. They only gradually incorporated various Neolithic elements, while to a great extent holding on to a foraging way of life, effectively turning into 'hybrid' communities (*e.g.* Louwe Kooijmans 1987; Price 2000[b,c]; Price/Gebauer 1992; Raemaekers 1999; Zvelebil/Rowley-Conwy 1984). Theoretically, peaceful coexistence, hostility

or avoidance are the possible options in these contact situations (*e.g.* Golitko/Keeley 2007; Jochim 2000; Price *et al.* 1995; Keeley 1992) and often there is a difference between the initial contact (first stage) and subsequent (second stage) relations (Verhart 2000). Although these stages in contact situations are hard to detect archaeologically, the North European Plain (including the LRA), and to some extent Scandinavia and the British Isles, remain an ideal 'stage' to study the process of Neolithisation and the different 'frontier-situations' (see Dennell 1985; Zvelebil 1996; 2000; 2001). This is both because of the long time-span involved, due to the static frontier, and the availability of high-quality (often wetland) sites (see Chapters 3 and 4).[8] As such the emphasis is much less on whether colonization or adoption was the dominant process involved, but more on the character and temporalities of the incorporation of Neolithic elements. This does not mean that colonization or demic diffusion should be entirely absent from the debate (*contra* Whittle 1999). People did not always stay in one place and the simultaneous occurrence of various Neolithic and transitional societies leaves room for intrusive or demic arguments, be it on a somewhat smaller scale.[9]

The transition to agriculture in Europe was differentiated according to region and time frame (*cf.* Tringham 2000[a]). This realization and the fact that even the cases of colonization previously deemed clear-cut are hardly uncontested, has put an end to the polarization of the debate on the mechanics behind dispersal and the search for a monolithic process (see Gkiasta *et al.* 2003). The presence of a Late-Mesolithic hunter-gatherer population indicates that there will always have been an interplay between external and indigenous processes. Unfortunately the uneven distribution and archaeological 'invisibility' of this indigenous population is a major deficit in our current knowledge. Both colonization and internal adoption retain value as conceptual frameworks but future research must look for arguments to better distinguish between the movement of people, objects and ideas.[10]

2.3 In search of causality

The discussion above mainly deals with questions of where, how and when agriculture spread. The answer to the question *why* it spread, the search for causality, remains elusive. The past century has seen different important paradigmatic approaches to the problem accentuating the debate and shaping our knowledge. In order to understand the current situation, its deficiencies and the perspective of this study, a brief historic outline will be sketched.

Early models

The earliest explanations for the transition to agriculture were evolutionistic. Agriculture was a self-evident superior lifestyle that would be unhesitatingly picked up by hunter-gatherers confronted with it. This notion sprang from Darwin's ideas on the matter (1875) advocating knowledge as the crucial factor. Ecologically favourable circumstances in combination with knowledge, or culturally 'ready' communities (Thorpe 1996; Zvelebil 1986[a]), would inevitably lead to agriculture. Several models adopting this point of view were established for the Near East (*e.g.* Pumpelly 1908; Childe 1928; Braidwood 1960; Watson 1995). Farming populations would subsequently colonize new territories, assimilating or driving away the hunter-gatherers present. These ideas neatly echoed the existing culture-historical views on prehistory in Europe (see for example Childe 1958; Clark

1936), corroborating the supposed evolutionary gap between the Mesolithic and the Neolithic and making the latter a logical choice (Childe 1928; Daniel 1975; Dennell 1985; Pluciennik 1998). The spread of the LBK across Europe must have seemed illustrative in this respect.

Man the Hunter and New Archaeology

Anthropological opinion changed in the 1960s (Bender/Morris 1991; David/Kramer 2001; Shott 1992), with archaeology following suit. Fundamental in this regard was the publication of the 'Man the Hunter' conference proceedings (Lee/DeVore 1968). Foraging was no longer envisaged as an inferior unattractive subsistence strategy (see Dennell 1985). Hunter-gatherers had a good standard of living, expending remarkably little time and energy on subsistence compared to farmers (*e.g.* Lee 1968, 43; Woodburn 1968, 52-55).[11] Although hardly objective in itself (Price 1991), this new view effectively changed the perspective of the search for causality. Superiority no longer sufficed as an explanation and other motivations had to be found.[12]

With the onset of the 'New Archaeology', archaeological thinking in general changed. The approach to archaeology became more 'scientific', processual models were used and these had to be tested against verifiable data. Clarke, in his influential work 'Analytical Archaeology' (1978 (1968)), presented human society or culture as a system with subsystems. These sociocultural subsystems were themselves operating in an environmental system and striving to maintain a certain equilibrium in reaction to negative and positive feedback (1978 (1968), 47-52). Since homeostasis is the crucial element of these systems (Madsen 1986, 230), theories concerning the transition to agriculture now focused on univocal causes, such as population growth, resource imbalance and climatic change (feedback), emphasizing stress, rather than deliberate choice, as a motivation for the shift to farming (new equilibrium; *e.g.* Ammerman/Cavalli-Sforza 1971; Bar-Yosef/Belfer-Cohen 1992; Binford 1968; Harris 1990; Rowley-Conwy 1984).[13] An archetypical example of these 'push and pull' models (Bogucki 1999, 187-188; Harris 2003, 48) is Ammerman and Cavalli-Sforza's 'wave of advance model', based upon population biology (1971, 1973, 2003).[14] They explained the spread of agriculture, indicated by numerous ^{14}C dates, as the result of demic diffusion through the combination of an increase in population combined with a modest migratory activity. This would have set off a 'wave of advance' spreading out at a constant radial rate of 1 km per year from the Near East across Europe. In a later article (1973) the spread was also linked to the genetic variation in European populations.[15] Another example is Binford's 'packing model' (1968; 2002(1983)) whereby population growth acts as a trigger, restricting hunter-gatherer mobility and forcing them to focus on smaller animals and plants, eventually leading to a demand for an intensive production system. Climatic change and aquatic resources are important in the patterning of these processes (Binford 1999, 29-31).

During the 1980s dissatisfaction with single-causal stress models grew, mainly because of the difficulties in correlating population growth and climate change, or stress, to cultural change (see Bogucki 1999; Price 2000[c]). Attention now focused on the interplay of several factors in multi-causal models. At the same time the academic pendulum swung away from external factors altogether (*e.g.* Halstead 1996; Price 2000[c]; Thorpe 1996). Price, for example, (2000[c], 310) argues that it seems that forces such as climate, environment and population growth were not

primary causes of the transition to agriculture. Main arguments are that in many areas of Mesolithic habitation food resources were abundant and productive, especially in coastal and riverine zones. This abundance was not significantly reduced by environmental changes (because agriculture spread over long distances despite diverse environments within the short span of 3000 years) and thus could not form an incentive for the transition. Furthermore population numbers never seem to have been substantial (Price 1987).

Postprocessualism and indigenist perspectives

In the light of postprocessualism, the search for causality focused inward, regarding the processes, decisions and relations of hunter-gatherers as crucial in bringing about the transition to agriculture as well as in understanding the process of Neolithisation. The emphasis of the so-called internalist or indigenist approach (*e.g.* Ammerman 2003; Raemaekers 1999) is on the social and/or ideological structures of past societies and the way these instigate, shape and enshrine the process of Neolithisation (*e.g.* Edmonds 1999; Hodder 1990; Ingold 1996; Jennbert 1988, Price 2003; Thomas 1999; Tilley 1996).[16] One of the first to propose a social perspective was Bender (1978). According to her the commitment to agriculture was brought about by changing social relations, therefore we should question what brought about increased production and why these demands were made on the economy (1978, 204-206). Bender (1978, 214) further points out that social competition provides the major incentive for surplus production, ultimately leading to development in the productive forces and often involving technological change. Hayden (1990; 1995) explicitly draws these ideas into the arena of 'Big Men' and competitive feasting. He argues that the first domesticates exclusively appear in societies of resource abundant complex hunter-gatherers. Competitive individuals accumulating wealth could have stimulated the domestication of plants and animals in order to enhance their quest for power. These social and socio-competitive models have also been proposed in relation to the spread of agriculture across Europe (*e.g.* Dennell 1985; Price/Gebauer 1992; Verhart 2000; Zvelebil 1998[a,b]). Raemaekers (1999, 14 and 188-190) states that these models approach the transition to farming out of a state of 'social disequilibrium', where competition acts as a trigger for the adoption of domesticates. Echoing Madsen (1986) and Tilley (1996) and their interpretation of the social structure of Ertebølle communities, Raemaekers argues for a rather conservative subpopulation (of in this case Swifterbant-communities) preventing the full-scale adoption of agriculture. These opposing views of the competition models, requiring group consensus for societal change, are termed 'primitive communism' (*cf.* Tilley 1996, 68-69).[17]

Ideological approaches

Another postprocessual approach to the transition to agriculture is of an ideological nature, focusing on the symbolic and structural aspects of societies (*e.g.* Hodder 1990;1998; Tilley 1996; Thomas 1999; Whittle 1999). In his 'The domestication of Europe', Hodder (1990) clearly argues that the economic domestication of both plants and animals was secondary to the social domestication of the communities involved. According to Hodder the impact of the transition to agriculture implied a restructuring of worldview or *mentalité* in order to be able to cope with the consequences of Neolithisation. The taming of the wild (*agrios*), took place within the concept of the *domus* (meaning as much as home in its broadest sense), which

provided a way of thinking about this control and about the greater oppositions between culture and nature, social and unsocial.[18] Through the *domus* the origins of agriculture were conceived of and symbolic control of the wild took place. This means that the *domus* was a conceptual and practical mechanism for social as well as economic transformation (Hodder 1990, 28-43; also see Chapter 6).[19] Thomas (1997;1999) elaborates on the ideological approach by suggesting that for Atlantic Europe the actual economic transition was preceded by the adoption of cultural traits and accompanying beliefs such as pottery and monumentalism, transforming society and creating new worlds of meaning (*ibid.*, 14-17, 223, 229). Whittle (1999) argues that the in his eyes mainly indigenous transition from Mesolithic to Neolithic in Europe was less about technological-economic factors, but much more about the ideas and values guiding and framing peoples activities within the world (Whittle 1999, 370-371).

The postprocessual approach has emphasized the fact that there are more aspects to the process of Neolithisation than a mere change in subsistence. The prerogative of the 'walking stomach' has therefore rightly made way for social and ideological approaches emphasizing both the importance of the context of our data as well as the importance of the agencies structuring it. In the current postmodernist era these theories now often prevail in interpreting archaeological data, yet it is questionable whether they are as suited to enhancing our knowledge and understanding of the transition to agriculture, as they are to enhancing our scope on it. There is need for a more integrated approach incorporating data from a regional perspective.

2.4 Back to Basics?

In assessing several contributions to the debate on the transition to farming Madsen stated: *'It is symptomatic for many of the newer contributions that they base themselves to a wide extent on theoretical considerations, and make little or no reference to the archaeological record…Ideally a concern with the transition from Mesolithic to Neolithic, and an attempt to explain this transition, should base itself on both the Late Mesolithic and the Early Neolithic record, and these should be carefully compared in the light of what we know of the nature of the transition itself'* (1986, 231). Apparently not much heed has been payed to Madsen's statement, for in the following two decades the archaeological debate surrounding the process of Neolithisation in Northwestern Europe has, in the wake of the shifting Anglo-Saxon frontline of theory, succeeded in placing ever more emphasis on the social and ideological aspects of the transition (*cf. supra*). This has led to a steady drift away from archaeological data and as such, inevitably, from reality. Rowley-Conwy's 2004 article 'How the West Was Lost' is a critical appraisal of current archaeological discourse on the subject and a reconsideration of the agricultural origins of Britain, Ireland and Southern Scandinavia. Although geographically limited, Rowley-Conwy's plea for a new understanding of Northwestern Europe's Neolithic has definite repercussions that also affect the continental parts of the region, including the LRA. His main argument is built around the decoupling of ideology and subsistence that has taken place within postprocessual archaeology. Subsistence is no longer seen as fundamental in effecting change and, unlike material culture, is portrayed as only evolving at a slow pace. This subsequently led to the notion that the rapid change in material culture and the beginnings of

monument building marking both the advent of the 4th millennium as well as the Neolithic in Britain and Scandinavia must have sprung from a change in ideology (see Thomas 1999, fig. 2.1).

From this consensus three axioms have arisen (Rowley-Conwy 2004, 84). The first supposes an intensifying Mesolithic predisposed to agriculture. The second suggests the existence of a 'foraging' Neolithic after the change in ideology and the third as a result envisages a supposedly slow economic transformation, implying a rather seamless and gradual transition to agriculture. It is, however, demonstrated by Rowley-Conwy that there is no solid ethnographic or archaeological proof for either an intensifying Mesolithic, or a Neolithic subsistence economy based mainly on foraging (also see Rowley-Conwy 2001). The scarcity of domesticated plants for example has led to their contextualisation as ritual instead of relating this to biases in preservation. Houses have generally been missed during excavations because they were not searched for due to unfamiliarity with the concept and domestic faunal remains at settlements have been underemphasized compared to assemblages from monuments.[20,21] The origin of these thought-constructs lies mainly in taphonomical and preservation biases influencing both research tradition as well as theoretical development. This means that the supposedly slow, gradual and seamless transition to agriculture did not exist in Great Britain and Scandinavia. The process of Neolithisation there was rather disruptive and sudden involving sedentism, domesticated grains, livestock and agricultural fields in small clearings (Rowley-Conwy 2004, 93-96). A rapid transition to agriculture early in the Neolithic is further backed up by stable isotope analysis, which indicates an abrupt shift to a predominantly terrestrial diet even on the coast (*cf.* Richards/Schulting 2006[a,b]; Richards *et al.* 2003[c], 366; Schulting/Richards 2002[a,b]).[22] The deconstruction of the three axioms thus forms an argumented reply to the current consensus of decoupling ideology and subsistence economy and represents a plea for the reintroduction of domesticity to the debate.

Towards a combined approach

The above-mentioned discussion has certain implications for research on the process of Neolithisation in the LRA and as such forms an incentive for this study. One of the first issues raised is the current focus on social and ideological motivations for adopting agriculture within a particularly postprocessual and indigenist framework (*cf. supra*). Apart from Rowley-Conwy (2004) other authors have also warned against the various pitfalls surrounding social and ideological explanations since as early as the 1980s (see Binford 2002(1983), 17; Bintliff 1993, 92-95; Madsen 1986, 231; Shanks/Tilley 1989, 1-6; Shennan 1987, 378; Schulting 1996, 347). Yet current research more often than not is characterized by a remarkable aversion to so-called external factors such as climate, population growth and environmental changes. According to Price (2000[c], 311), causality should even be sought elsewhere. This has led to the awkward situation whereby the transition to agriculture, which is still importantly a change in subsistence-mode, has increasingly been explained as predominantly a social and ideological transformation initiated by the susceptibility of the present hunter-gatherers. Recently there has been a move away from this internalist premise (*e.g.* Ammerman 2003; Binford 1999; 2001; Bogucki 2003[a,b]; Bonsall *et al.* 2002; Gkiasta *et al.* 2003; Gronenborn 2004, Kalis *et al.* 2003; Layton 1999; McDermott *et al.* 2002;

Stager/Mayewski 1997;Strien/Gronenborn 2005; Richards 2003) and Rowley-Conwy's reappraisal of domesticity and subsistence-economy is an attempt to redress the balance in the search for causality.

There is however a danger of overstretching the argument. For instance, recent climatic arguments have (again) rather easily been adopted and endowed with complete explanatory value. It should be acknowledged that the past 20 years of contextual archaeology have provided a valuable contribution to understanding the various aspects of the process of Neolithisation (see Jones 2004, in reply to Rowley-Conwy 2004). It has demonstrated that while the transition to agriculture may be characterized by a change in subsistence mode, the process of Neolithisation is a much more diffuse process, incorporating many aspects of society in spatio-temporally different constellations. To ignore this draws the academic debate on the adoption of agriculture back into a polemic between the classical (Cartesian) opposites of nature and culture.[23] There is thus a need for studies seeking to combine internalist and externalist explications or at least address their applicability to certain situations without ruling them out beforehand (see Arias 2004, in reply to Rowley-Conwy 2004, 100; Barrett 2005; Gkiasta *et al.* 2003; Gronenborn 2004, 24; Harris 2003, 52; Pinhasi/Pluciennik 2004, 74). However, and this brings us to another issue, research concerning the transition to agriculture also needs to re-establish a firm foundation rooted in reliable archaeological data.

Rowley-Conwy's article gives clear examples of the deficiencies of so-called *post hoc* accommodative argumentation (*cf.* Binford 2002(1983), 17). Archaeological data is interpreted in the light of preconceived notions of past motivations for adopting (parts of) the agricultural package. This has led to an increasing detachment from the archaeological record, sometimes resulting in rather narrative accounts (*e.g.* Edmonds 1999). To bridge this inferential gap there is a need for bottom-up research within a geographically coherent context, incorporating new theory without ignoring the limitations and patterning in the data.

2.5 Defining scope

The process of Neolithisation has been aptly described as a mosaic (Tringham 2000[a], 53-54). There is no singular explanation or motivation for either the spread of farming or its adoption, certainly not on a European scale. Thomas (1996[a], 311-312) stresses the different temporalities of various aspects of 'the Neolithic', indicating that its appearance was anything but a homogeneous and synchronous event. This is further elaborated upon by Price (2000[c], 306), echoing Gould and Eldredge's model of punctuated equilibrium (1993) when he states that the spread of agriculture is marked by series of rapid expansions followed by long periods of stasis, fits and starts. Various authors (*e.g.* Gould 1999; Layton 1999; Sherratt 1996; Simmons 1999) have also introduced the concept of contingency to the debate, questioning whether the constellation of circumstances leading to the adoption of agriculture is really that logical and structural. It may therefore be concluded that the process of Neolithisation is heterogeneous, discontinuous and to a significant extent dependent on specific spatially and temporally defined conditions. From this two implications arise, fundamental to this study. Firstly, research should take place within a geographically and culturally meaningful region.[24] This implies an abstinence from nomothetic explanations and a cautious use of archaeological data from outside the regional framework in order to be able to appreciate the

unique historiography within the area of research.[25] Following this, theoretical modelling regarding these developments in Neolithisation within these regions should take into account both the position and background of the population living there as well as incorporate the natural and dynamic characteristics of the region itself and seek out the relationship between the two. Second, it demands a 'test-of-mettle' of the inferential power and constraints of the archaeological record within the area of research in order to provide a useful database to study the transition to agriculture. While the former implication forms the main theme in Chapters 5-8, the latter brings us back to Rowley-Conwy's plea (2004, 88-90) for the re-introduction of 'middle-range theory' (*cf.* Binford 1977; 2002(1983)) to the debate. To arrive at an empirically sound database for studying the transition to agriculture, there is a need for a taphonomical reconsideration of the archaeological record, especially of its most informative component, the site. This topic will be investigated in Chapter 4. First though, the following chapter will provide a more detailed archaeological background for these issues, focusing on the LRA itself.

Notes

1 Most scholars agree upon external cultivation of emmer wheat, oats, einkorn and barley and the introduction of sheep and goat (Thorpe 1996, 22). Cattle and pigs were already present in Europe but most claims for local domestication can be refuted (see Bogucki 1999, 177; Rowley-Conwy 2003).

2 There have been some studies claiming that a local domestication could have taken place within Europe (*e.g.* Barker 1985; Dennell 1983). Barker (1985, 252) argues, although he admits the uncertain context of some of his data, that the natural distributions of the wild prototype-domesticates could have been present in Southern Europe, implying internal domestication. Apart from the fact that this fails to explain the spread of farming further north, few of the early dates for local domesticates appeared to remain tenable after AMS-dating (Ammerman 2003, 5). Recent investigations of cattle DNA also indicate a non-local origin (Bollongino/Burger 2007). Less controversial in this respect is the evidence for the intensive relationship between hunter-gatherers and wild resources, even to the level of manipulation and control (Bogucki 1999; Price/ Brown 1985; Zvelebil 1994).

3 The concept of the 'Neolithic package' is a rather problematic one since, first and foremost, there is an ongoing debate concerning what traits can be regarded as unambiguously Neolithic. Second, the existence and spread of a coherent and integrated set of traits, 'a package deal', remains far from undisputed (*e.g.* Bogucki 1987; Czerniak 1998; Price 2000[a]; Thomas 1996[a]).

4 The early dates claimed for several Southern French and Spanish sites such as Chateauneuf-les-Martiques, Grotte Gazel, l'Abri Jean Cros or Dehesilla are untenable in the light of their problematic dating (see Barnett 2000; Donahue 1992; Whittle 1999). The start of the Impressed Ware complex in Southern France and Spain shortly after 6000 BC is now agreed upon by most scholars (Whittle 1999, 301).

5 The oldest phase of LBK spread is termed *Älteste* or Krumlov LBK. It correlates with Modderman's phase Ia and can be dated to 5500-5300 BC. Around 5300 BC the LBK, now termed *Ältere* LBK or Flomborn, spread into Northwestern Europe (Modderman's phase Ib-d). This was followed by a spread of the *Jüngere* LBK (Modderman's phase IIa-d) into Hainault and the Paris Basin ending in the *Rubané Récent du Bassin Parisien* (RRBP) (Bogucki 1988; Louwe Kooijmans 1976[b]; Lüning *et al.* 1989; Modderman 1970).

6 Newell (1970[a,b]) tried to assess the affinities existing between Bandkeramik and Late Mesolithic (Younger Oldesloe) flint assemblages. He concluded that the latter influenced the former up to the level of cultural re-orientation. Louwe Kooijmans (1976[b], 235-236) convincingly argued that any existing influence would have been far more subtle.

7 The assertion that La Hoguette or Limburg ware could be special-purpose pottery made by LBK potters can largely be refuted on account of stylistic links, occurrence independently of LBK sites and geographical distribution (*e.g.* Constantin 1985; Lüning *et al.* 1989; Raemaekers 1999).

8 The contribution of wetland sites is especially relevant with respect to the LRA and adjacent North European Plain wetlands as well as Mesolithic Southern Scandinavia. For the British Isles wetlands seem more of a localized phenomenon (*e.g.* the Fenlands, Starr Carr and surroundings etc.).

9 Subsequent post-LBK cultures such as the Michelsberg culture (MK), and the TRB culture (Trichterbecherkultur or Funnel Beaker) partially appear to have been the result of prolonged meso-neo interaction (*e.g.* Bogucki 1987; Louwe Kooijmans 1993[b]; Midgley 1992; Raemaekers 1999; Vanmontfort 2004; Verhart 2000; Thomas 1999; Wansleeben/Verhart 1990; Zvelebil 1998[b]). Thomas, reflecting on the differences between LBK and MK, even speaks of a Mesolithisation of Central Europe (1996[a], 320). Both interaction as well as population mobility seem to have been factors in their development.

10 Recent research focusing on strontium isotope evidence as well as DNA patterns is providing new data with respect to these questions (*e.g.* Bentley 2007; Bentley *et al.* 2003; Haak *et al.* 2005; Price *et al.* 2001; 2006; Smits *et al.* 2010). However, difficulties regarding provenance, contamination, limited availability of good sampling material and multiple interpretations still limit the power of these new methods.

11 The different perspective on hunter-gatherer societies entailed a new bias, namely that of the Original Affluent Society (OAS), a term first coined by Sahlins (1968, 83). The groups of hunter-gatherers and their way of life were now idealized, characterising the transition to farming as a 'forced' reaction to stress (Raemaekers 1999, 13; Thorpe 1996, 5). Later on another bias sprang from the apparent hunter-gatherer variability. OAS foragers were contrasted with complex foragers, suggesting an evolutionistic trend. Complex hunter-gatherers would be more inclined towards farming (Hayden 1990; Rowley-Conwy 2001). This bias will be discussed more elaborately in Chapter 5.

12 Although outdated there might be some validity in the superiority argument, in that people worldwide independently adopted agriculture within the short span of a few millennia. Apparently there is something of an irresistible quality to agriculture (Louwe Kooijmans 1998[b], 15).

13 Sedentism and the diversification of resource use are other elements in such models (Bogucki 1999, 188),

14 Both Thorpe (1996, 2) and Zvelebil (1986[a], 9) classify the 'wave of advance' model as belonging within the superiority paradigm, because of the rather passive role set aside for the Mesolithic population.

15 The 'wave of advance' model justly received a lot of criticism (*e.g.* Dennell 1985; Price 2000[a,c], Raemaekers 1999; Thomas 1996[a]; Whittle 1999; Zvelebil 1986[a];1996;1998[a], Zvelebil/Zvelebil 1988). This mainly focused on the dubious nature of some of the ^{14}C dates, the arguments for the classification of sites as Neolithic, the problematic aspect of genetic correlation and the speed and gradual aspects of the process. However, Ammerman (2003, 13-18) stresses that the 'wave of advance' was only meant to be a model. He holds much of the critique to be related to the currently popular 'indigenist' point of view and argues to move beyond it.

16 Sahlins' publication 'Culture and Practical Reason' (1976) can be seen as one of the fundamental works for the social approach. Sahlins argues that Man is not just a biological organism, but also a cultural organism striving to attain a meaningful life based on its own decisions instead of upon living in a material world.

17 Tilley's (1996) description of 'primitive communism', however, may suffer from some, often general, presumptions. Contrary to these, Late Mesolithic life was probably less egalitarian, tranquil and peaceful than is often suggested. This is for example attested to by numerous violent deaths in Late Mesolithic cemeteries such as Téviec in France, Vedbaek in Denmark and Voloshskoe and Vasilévka in the Ukraine (Schulting, 1996; Orschiedt 2004).

18 Hodder (1998, 91) states that the concept of *domus* stands for the economic, social and cultural emphasis on the house and its continuity through time.

19 Exemplary in this respect is Whittle (1996, 25). He suggests that the LBK longhouse figured in a mobile system and in this way facilitated integration, interchange and cohesion. In case of an indigenous development of longhouses Whittle considers the busyness of the interior with wood as linked to possible animistic forager beliefs, enculturating the surrounding forest of trees.

20 The dearth of domesticated plant remains in excavations and the abundance of wild species such as hazel, apple, pear and weeds for example had led to a ritualization of the cultigens that were present at sites (see Thomas 1999). However, hazelnut shells are robust and survive charring relatively well, as opposed to cereal grains that were not intended to be discarded in the first place. Apart from this the common occurrence of wild apple and pear at sites might be due to the appearance of mantle vegetation induced by forest clearings. Weed seeds can stem from the processing of crops (Rowley Conwy 2004, 90; also see Bakels 1978, 58-71). Another example is the fact that the unfamiliarity with the concept of Neolithic houses has prevented them from being discovered in excavations, supporting the theory of a mobile and foraging Neolithic. This idea however stands in striking contrast to the actual number of identified house plans for Ireland, Britain and Southern Scandinavia (175) (Rowley-Conwy 2004, 87-93)

21 The failure to find or recognize Neolithic houses is common in Northwest Europe in general. Examples are post-LBK cultures in the LRA such as the MK culture or the Stein group. These are mainly known from pits and scatters (*e.g.* Louwe Kooijmans/Verhart 1990; Vanmontfort 2004; Verhart 2000) as house plans are few and sparsely distributed (for a recent example see Van Kampen/Van den Brink 2013). Rowley-Conwy's methodological critique (2004) therefore also applies to these situations.

22 Stable isotope analysis does suffer from several biases. It only indicates dietary habits of individuals and cannot distinguish between wild or domesticated resources (Milner *et al.* 2004). Liden *et al.* (2004) argue for Southern Sweden that the distinction between terrestrial and marine diet probably stems from geographical rather than chronological variation.

23 This debate is strongly linked to both the conceptual appreciation of and earlier approaches in research taken towards the Mesolithic and the Neolithic.

24 Often, literature discussing the transition to agriculture in Northwestern Europe is exclusively based on data stemming from Denmark, Southern Sweden and the UK (*e.g.* Rowley-Conwy 2004; Price *et al.* 1995). Another emblematic example of this is the fact that Price's (2000) substantive compendium on Europe's 'First Farmers' conspicuously lacks a chapter on the Netherlands and Belgium. Also questionable are vaguely defined regions such as Bogucki's 'riverine interior Central Europe' (2003[a,b]). The definition of archaeologically relevant regions should first and foremost be based on archaeological arguments instead of research intensity, favourable preservation conditions, political borders etc. If not, arguments for extrapolation should be well-considered (also see Chapter 3).

25 This is definitely not an argument for a return to the parochialism that has hampered both Meso- and Neolithic research in Northwest Europe for a long time, but instead for a considered approach in defining meaningful regions for investigation.