THE DIFFUSION OF NEOLITHIC PRACTICES FROM ANATOLIA TO EUROPE

A Contextual Study of Residential And Construction Practices

8,500-5,500 BC cal.

THESIS SUBMITTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE UNIVERSITY OF LIVERPOOL FOR THE DEGREE OF DOCTOR IN PHILOSOPHY

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Ever since Vere Gordon Childe's seminal work on *The Dawn of European Civilization* (Childe 1925), it has been widely accepted that European agriculture originated in Southwest Asia. Exactly how farming spread to Europe from its origins in Southwest Asia remains, however, a matter of debate. Much of the argument has revolved around the manners of spreading of the Neolithic, whether through colonisation, acculturation or a combination of both. Far less attention has been given to the actual content of the Neolithic pattern of existence that spread into Europe.

In my thesis, I review one particular type of content, practices, defined by reference to the theories of social action as normative acts or ways of doing. Practices are marked out by repetitive patterns in the material record, such as burnt houses for the practice of house-burning. Accordingly, practices are inferred, rather than instantiated, from their material expression, using information about the context and the sequence of stratigraphic events. Beyond farming practices, the Neolithic witnessed the inception of a new set of residential and construction practices, pertaining to the way in which houses were built, lived in and discarded at the end of their use-lives. This research tracks each of five main areas of practices from their origins in the Near East: house 'closure', house replacement, residential burial, spatial organisation in the rectangular house and agglutination.

The aim is to examine whether some of the more distinctive Near Eastern practices, such as the deliberate infilling of houses at 'closure', the vertical superimposition of houses, the burial of the dead under active households, the spatial division of the main room into two flooring areas and the agglutination of houses in cellular house patterns, spread into Europe. I find that this older habitus of practices, which was involved in upholding a static repetition, house upon house, of the same pattern of existence, did not spread or only marginally into Europe. Over the course of the 7th millennium BC cal., however, it was superseded by another habitus of practices with a focus on collective action, which had wider relevance and appeal. The sequence of Çatalhöyük East, which spans both horizons of practices, serves as a guide to examine the broader dynamics of change in this period.

My thesis claims, on the basis of inference drawn from compiling together a database of 848 radiocarbon dates from 59 sites, uniformly re-calibrated and displayed with the same confidence interval in an interactive interface, the ^{14}C Backbone, that there was a two-thousand year lag, plus or minus a few hundred years, between the advent of Neolithic economy on the Central Anatolian Plateau and in the Aegean Basin. As it stands, the Western Anatolian Neolithic, which starts at or shortly before 6,500 BC cal., matches the Southeast European sequence more than it does the Southwest Asian one. New research in Western Anatolia suggests that there is ground to link up Thessaly and Macedonia with the Lake District and the Aegean coast of Anatolia, and Thrace with the Eastern Marmara region, regarding the advent of Neolithic practices.

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To the memory of James Mellaart

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Introduction

The Neolithic ‘Revolution’ arguably featured one of the first wholesale replacements of economic and social practices in the history of mankind. Not only did Neolithic farmers start to produce their own means of subsistence through cultivation and herding, but they invented a new set of interrelated practices, which transformed the way people performed activities in daily life. Some of these practices are still in evidence today: plant and animal domestication, land-clearance, transhumance, sedentism, nucleation, storage accumulation, and so forth.

The Neolithic pattern of existence evolved independently in different centres (Southwest Asia, sub-Saharan Africa, Southeast Asia, China, Meso- and Central America), from where it spread radially to other regions. Ever since Vere Gordon Childe’s work on *The Dawn of European Civilization* (Childe 1925), it has been widely accepted that European agriculture originated in Southwest Asia. Exactly how farming spread to Europe from its origins in Southwest Asia remains a matter of debate. This question provides a starting point for this research.

Over the years, much of the argument has revolved around the manners of spreading of Neolithic innovations, whether through colonisation, acculturation or a combination of both (e.g. Ammerman and Cavalli-Sforza 1984; Price 2000; Perlès 2001). Far less attention has been given to the actual content of the Neolithic pattern of existence that spread into Europe. Before one raises the prospect of finding out who Neolithic people were, where they came from or, critically, how and why they adopted farming, one would have to determine which innovations spread and which were lost, and whether innovations travelled together as part of one or more lifeways or ‘packages’. Consequently, this thesis is not only an attempt to answer the question raised above, but also a deliberate effort to adjust the frame of the question.

Traditionally, similarities in material culture, particularly pottery styles, were used to trace the spread of Neolithic innovations in Europe (Mellaart 1958, 154-156;

Schachermeyr 1976). In reality, objects served merely as chronological markers to synchronise prehistoric cultures and place them in a unified sequence. Scant attention was given to the broader context of understanding of these objects. Increasing realisation that two societies may share very similar sets of objects, and yet have different sets of meanings or rules attached to these objects and governing their use in everyday life, highlighted the inability of similarity-based approaches to tackle the heart of the problem, that is, to determine the content of the Neolithic pattern of existence that spread into Europe.

The idea behind this project is simple. If in place of similarities in material culture, one was to consider practices as the basic unit for our understanding of how farming spread to Europe, from its origins in the Near East, one would be able to develop a new approach that emphasises both the regional level of interaction and the context of action. For understanding how different societies go about doing things and tackling problems that arise from residence and construction has the potential to provide significant insight into the level of interaction between them.

Practice has come to acquire different meanings, whether one refers to the more general use of the term in everyday English language or to the academic tradition that stemmed from the writings of such influential social theorists as Pierre Bourdieu (1972[2000]) and Anthony Giddens (1984). These authors retained from the general definition of practice the idea that skills and knowledge are acquired through repetition of action. In their view, however, practice becomes a system of reproduction of society, which emphasizes the role of routinised daily action in shaping social agents' prior experience of the world and in affecting the capability of these agents to influence social structures.

In this thesis, practices are defined by reference to the theories of social action as acts or ways of doing within a normative framework, marked therein by repetitions in the material record. This approach, when it is based only on the sequence of a site, for example as it has been pursued at Çatalhöyük (Hodder and Cessford 2004; Hodder 2006), tends to emphasize long-term, diachronic continuity and change. By contrast, the social and structural interactions that take place in between societies, critically during key regional shifts such as the spread of agriculture, tend to be overlooked. By bringing together evidence drawn from a wide range of sites belonging to the same chronological horizon, c. 8,500-5,500 BC cal., in Anatolia and Southeast Europe, it becomes possible not only to study practices, but also the diffusion of practices.

For this approach to be viable, it is necessary to focus on those practices that have a material expression, and which can be reconstructed from the most readily available type of context in Anatolia and Southeast Europe, that is, Neolithic houses. The practices which form the basis of this study are intermittent practices relating to the house and thus to one of the core expectations of the Neolithic pattern of existence, sedentism. What is at issue here is not the house *per se*, but how social practices associated with the house developed in both time and space. In mediating the interaction between the small-scale context generated through archaeological excavations and the regional context drawn from compiling together evidence from a range of archaeological sites, practices provide an analytical framework to address the bigger picture, namely the diffusion of the Neolithic as a lifeway, a habitus of practices, from Anatolia to Europe.

The first three chapters provide the general framework of the project. Chapter 1 sets the scene by returning to the overarching definition of the Neolithic and highlights the chronological lag between Central and Western Anatolia at the onset of the Neolithic. Chapter 2 lays out the history of the research question and introduces current approaches of the spread of the Neolithic into Europe. Chapter 3 draws from theories of social action to outline a method based on practices and shows how the context may be used to collect practices from their material expression.

Chapters 4-8 form the heart of the thesis. Each chapter is devoted to an area of practice. Starting with the problem of how houses were discarded at the end of their use-lives, attention is called to the fact that house 'closure' was the first act of a larger strategy, which consisted in superimposing newer houses on top of older ones. This practice in turn gained significance from the fact that the dead were frequently buried inside the residential environment. If newer houses were always built in relation to pre-existing ones, they also conformed to a standardised layout, which was repeated from Anatolia to Europe. The implication is that houses from this period were lived-in in much the same way. While individual houses rarely consisted of more than one large room, in which people and activities clustered, the village as a whole often appeared as an orderly arrangement of agglutinated houses. Each of the five main chapters analyses changes in practice over time and tracks the diffusion of practices from Anatolia to Europe.

Finally, the synthesis and discussion chapter matches the different practices together. In keeping with the dynamics of diffusion indicated by the reassessment of the chronology, it provides a detailed cross-section, region after region, of the distribution of residential and construction practices.

1

A Fast-Tracked Revolution?
The Neolithic Transition in Europe as Seen from the East

This chapter sets out the problem to be investigated and its significance for archaeology. Chronology underscores a two-thousand year lag, plus or minus a few hundred years, between the advent of Neolithic economy on the Central Anatolian Plateau and in the Aegean Basin. As it stands, the Western Anatolian Neolithic, which starts at or shortly before 6,500 BC cal., matches the Southeast European sequence more than it does the Southwest Asian one. This is merely an inference drawn from compiling a large database of radiocarbon dates and it may or may not reflect an objective reality. But wherever one places the threshold between these two chronological horizons, one is confronted with a huge gap, which has not received proper examination in the literature (Schoop 2005a; Düring 2013).

Before one can address the delayed adoption of Neolithic practices in Europe, one has to clarify what exactly is understood by the concept of Neolithic and why one must conceptualise it as diffusion rather than wholesale invention in this particular context of research. Returning to the overarching definition of the Neolithic, I use traditional markers of the Neolithic as identified by Vere Gordon Childe (1936), to highlight a contrast between a developmental Neolithic (an incipient revolution?) in the centre and the east of Anatolia and a fully-fledged, albeit later, Neolithic in Western Anatolia and into Europe. I suggest that the Neolithic transition in Europe was ‘fast-tracked’ under the impulse of the Neolithic revolution in Southwest Asia.

1.1 The Neolithic: a changing definition

The Neolithic is a theoretical construct, as well as an empirical reality. To state that what we choose to label as Neolithic “[bears] no relation to how prehistoric communities would have understood their own position within history” almost seems to be a gross understatement (Pollard 2002, 5). At the same time, one cannot formally discount that Neolithic communities were self-consciously involved in spreading the new pattern of existence (Cauvin 1994). In our attempt to strike the right balance between relative and essential views of the Neolithic (see Pluciennik 1998; Zvelebil and Lillie 2000; Thomas 2003), we are drawn towards the second type of views, and to the hypothesis that the Neolithic, as a lifeway or a 'package' of innovations, spread into Europe. By way of consequence, we can actually trace its concrete course of expansion across the Anatolian and European landmasses.

1.1.1 The Neolithic stage of culture

The adjective neolithic was coined by John Lubbock[1] (1865[1869]) at the time when Charles Darwin published *On the Origin of Species* (Darwin 1859) and Charles Lyell established the antiquity of man in geology (Lyell 1863). Incidentally, the Neolithic, which literally means 'new stone age', was as much an element of classification or subdivision within the Three Age System devised by Christian Jürgensen Thomsen (1836), as an evolutionary stage in the history of human societies; for instance, the Neolithic coincided with a shift from savagery to barbarism in the scheme of Lewis Henry Morgan (Morgan 1877). What set the Neolithic apart from the Palaeolithic period was the introduction of polished stone implements (Lubbock 1869, 74). Technology was thus central to the original definition of the concept, although it was not its sole attribute.

There was an assumption that a settled life was a desirable step on the path to civilisation (Sherratt 2005): "[l]eading a more settled life, [the Neolithic man] buil[t] for himself a dwelling..." (Westropp 1872, 105). Given that Neolithic societies had achieved a higher level of social complexity, they were, almost by definition, sedentary, according to the first generation of social evolutionists. The legacy of Hodder Westropp in defining the first set of Neolithic traits has been recently

[1] "The later or polished Stone Age; a period characterized by beautiful weapons and instruments made of flint and other kinds of stone; in which, however, we find no trace of the knowledge of any metal, excepting gold, which seems to have been sometimes used for ornaments. This we may call the 'Neolithic' period" (Lubbock 1869, 3).

highlighted (see Orton 2008, 3). Westropp observed that pit- and lake-dwellings, pottery, spinning implements, tumuli and domestic animals, such as the dog, the horse, the pig, the sheep, the goat and the short-horned ox, were all innovations of the Neolithic period (Westropp 1872, 105-106). The same year, Gabriel de Mortillet (1872) offered a roughly similar description of the 'Robenhausian' culture of Western Europe, giving more emphasis, however, to the role of agriculture and megalithic monuments (see Pluciennik 1998, 62).

1.1.2 Food-gatherers and food-producers

If the evolutionary framework, implicit in the above definition of the Neolithic, entailed a spatial division of societies at different levels of economic and social advantages (i.e. Neolithic by opposition with Mesolithic), the structural interaction between these societies during key regional shifts remained undertheorised. A prevalent theory in the second half of the 19th Century was that of a "psychic unity of mankind" (Bastian 1860) – the idea, namely, that the human mind was formed in such a way that it evolved innovations spontaneously, whenever they were brought to its attention (see Boas 1896[1940], 270; 1911[1938], 194). Diffusionism offered a challenge to this doctrine. In particular, the first generation of diffusionists competed in the search for the ultimate source of innovations and set out to identify, wherever possible, the influence of 'higher civilisations' on their neighbours (e.g. Elliot Smith 1915[1929]; Perry 1923; see also Champion 2003).

Grafton Elliot Smith ascribed the inception of the Neolithic in Europe to 'contemporary' developments in Sixth Dynasty Egypt (Elliot Smith 1911[1923], xiii). The early inhabitants of the Nile Valley, ensnared by the opportunity to increase the yields of wild barley by maintaining a constant supply of water, would have invented basin irrigation and domesticated cereals (Elliot Smith 1930, 272). This in turn would have necessitated a collective effort, the development of a ruling class, a permanent habitation and structures of storage to accommodate the surplus (Elliot Smith 1930, 272-274). Precious metals and, chief among them, gold, would have provided the lure to attract a priestly elite, who presided over the creation of seagoing expeditions to spread the cult of the Egyptian Sun-God and, alongside it, irrigation and agriculture (Elliot Smith 1933, 208). According to Elliot Smith, Neolithic stone implements found in Northwest Europe were imitations of metal tools and the megaliths mere copies of the great monuments of Egypt, reflecting the adoption of the same religion in this part of the world (Elliot Smith 1930, 103; 1933, 210).

It is not difficult to see the shortcomings of this theory, particularly in regard to the erroneous chronology (see, for instance, Renfrew 1973a). The concept of diffusion itself was challenged in social anthropology as early as 1927 by Bronislaw Malinowski, a founding father of the Functionalist school of thought, who easily refuted Grafton Elliot Smith's bold assertions about the single origin of culture[2] (Elliot Smith 1927) and proposed instead a more nuanced, though, arguably, equally problematic, explanation of culture change, involving adaptation or "re-evolution"[3] (Malinowski 1927). There are good reasons, however, for re-examining the legacy of Grafton Elliot Smith in light of what came after him: Elliot Smith was first to establish a coherent, though incorrect, narrative for the Neolithic transition, emphasising the functional relatedness of the different components of the Neolithic pattern of existence (Elliot Smith 1930). In particular, Elliot Smith stressed the centrality of economy by drawing a distinction, which has still currency today, between "food-gatherers", who lived at the expense of nature, and "food-producers", who created their own means of subsistence (Elliot Smith 1930, 197). Like Childe, Elliot Smith was born and raised in Australia; and there can be no doubt that both authors shared similar mindsets, inherited from their experience of a continent, which, until 1788 AD – the date at which the first British colonies were established – was occupied mainly by nomadic hunter-gatherers, who did not practise agriculture, ceramic or metal-working (Laming-Emperaire 1966, 204). As purported by Elliot Smith (1930, 197): "The food-gatherers

[2] "We know in the case of every modern invention, that it was made in one definite place and became diffused over a wider and wider area until everyone in any part of the world who is making use of this particular invention is indebted directly or indirectly to one man in one particular place who was originally responsible for initiating the process" (Smith 1927, 10).

[3] "Just because no idea and no object can exist in isolation from its cultural context, it is impossible to sever mechanically an item from one culture and place it in another. The process is always one of adaptation, in which the receiving culture has to re-evolve the idea, custom or institution it adopts; and it can be said without exaggeration that diffusion is a partial evolution, though the contrary is not true" (Malinowski 1927, 31).

live[d] mainly on the outskirts of the world, far from the great centre of civilization. In some cases they occup[ied] countries, such as Australia […]".

1.1.3 The Neolithic 'Revolution'

Vere Gordon Childe amalgamated some of these theories into a holistic narrative, which remains to this day: from Evolutionism, he drew the notion of progress[4] and, from Diffusionism, the spatial division between food-gatherers and food-producers[5] (McNairn 1980, 4-45); in addition, Childe derived from his own political background, Marxism, an interest in the means of production and in revolution, as a cumulative process with a point of no return. Childe articulated a model revolving around the shift to food production, which he made the unifying principle for defining Neolithic societies (Childe 1951, 22): "The first revolution that transformed human economy gave man control over his own food supply" (Childe 1936, 74-75).

In Childe's view, the ramifications were immense. A symbiotic relationship was established between humans, some plants and animals, and the latter two became dependent on man for their breeding or subsistence (Childe 1936, 74-75). The achievement of sustainable food production was in turn a necessary precondition for population increase (Childe 1936, 78). As populations grew, agriculturalists were faced with problems that necessitated collective effort and the development of new apparati. One such entanglement was the storage of surplus, which was remedied by adopting ceramic vessels that would at once hold foods and stand heat (Childe 1936, 101). Artefacts from this period acquired new meanings, which transcended their primary definition. To clear forest and open up arable farmland, Neolithic societies

[4] "If stages of economic and social evolution are to be defined on technological bases, food-production should surely mark the beginning of a major stage. I propose therefore to use it to define the transition from Savagery to Barbarism, and so far to allow Barbarism and Neolithic to coincide" (Childe 1951, 22-23).
[5] "So in 1925, adopting an idea advanced by Elliot Smith ten years earlier, from the three current criteria (polishing of stone, or modern fauna, or domestic animals and cultivated plants) I selected 'food-production' as distinguishing the Neolithic from the earlier Palaeolithic and Mesolithic" (Childe 1951, 22).

used stone axes, which were finely ground down to form a sharp cutting edge; other groundstone tools served to process crops and wild cereals (Childe 1936, 99). The advanced knowledge of plant and animal species afforded to Neolithic populations led to a shift in consumer habits. Domesticates were increasingly used for their secondary products (Childe 1936, 89). The Neolithic witnessed, for instance, a surge in the development of textile and textile-related products, as shown by the presence of loom weights and spinning implements (spindle whorls) in Neolithic assemblages (Childe 1936, 106).

Vere Gordon Childe's model ran against common views of the Neolithic as a shift to settled life, because sedentism was not directly consequent upon the adoption of food production economy. On the contrary, he suggested that the problem of soil exhaustion in primitive hoe agriculture was dealt with by occasional settlement relocation, while pastoral economy implied a nearly nomadic lifestyle (Childe 1936, 82; 91). This also proved a point against the supposed isolation of Neolithic societies, which were involved in ever more complex and long-distance exchange networks (Childe 1936, 98). Childe's 'revolution' was both a cumulative process with a point of no return – an "entanglement" in the modern sense (see Hodder 2011; 2012) – and a historical process happening in space and time (Childe 1936, 74). Constituent components of the Neolithic were functionally related and contingent upon the invention of food production economy, which, for environmental and cultural reasons, had happened only once, within the Near Eastern 'heartland' of domestication. Childe did not, however, conceive the various items that make up the Neolithic as integral components of a fast-spreading 'package' – there is no indication, for instance, that Neolithic items appeared, nor even travelled together in his writings – but instead they appeared as "mutually reinforcing parts of an unfolding process" (Zeder 2009, 39; see also Reingruber 2011b, 293).

1.1.4 More than one Neolithic?

Since Vere Gordon Childe's Neolithic 'revolution', there have been other attempts to subsume all Neolithic innovations under a single narrative, in which one or more criteria of the Neolithic lifeway receive greater relative weighting and come to determine the whole system of change (Tringham 2000a, 22). Perhaps the best-known example is Ian Hodder's *The Domestication of Europe*, which emphasises the conceptual opposition between the *domus* and the *agrios* as being central to the revolution that brought about, among other things, the domestication of plants and animals (Hodder 1990). The *domus* refers to the emergence of the house, as both a physical and conceptual framework, to control the wild or savage contained within the *agrios* (Hodder 1990). At the most basic level, Hodder's "domestication" may be seen as an attempt to replace one criterion (economic food production) by another one (the symbolic taming of the wild), to characterise the Neolithic phenomenon in its entirety. Like Childe's economic 'revolution', Hodder's 'revolution of symbols' thus assumes a distinction between criteria that are essential for the existence of the Neolithic and criteria that are simply derived and non-essential, such as food production in this instance (Hodder 1990, 31).

Adopting an idea formulated by David Clarke (1968[1978], 35-37), Colin Renfrew and others have called into question the above hierarchy of criteria by positing that the Neolithic is a "polythetic" category, that is, one which is defined on a broad set of criteria that are not individually sufficient for its existence (See Zvelebil and Lillie 2000, 60; Lichardus and Lichardus-Itten 1985, 227). Polished stone tools, sedentism, food production, symbolic revolution, pottery, etc., may all be conditions relating to the Neolithic, but none of these criteria is enough on its own to establish the category. The danger is that, without a central defining characteristic, the Neolithic may encompass widely different and overlapping phenomena (Zvelebil and Lillie 2000, 60) – "anything between 6000 BC and AD 1800" (Childe 1936, 98). One of the most dramatic implications of this relativistic standpoint is that there may be more than one Neolithic (Pluciennik 1998, 75-76). In recent publications, the definition of the 'Neolithic' has been watered down to such an extent that it no longer includes content, but instead attributes of structure. Julian Thomas emphasises, for instance, the "transformational" nature of the Neolithic and the "systemic connection" between its constituent components, without actually elaborating on what these components may be (Thomas 2003, 72).

The concept of the Neolithic ‘package’[6] enables a synthetic understanding of the Neolithic “without isolating or overemphasising some of the find groups” (Çilingiroğlu 2005, 2-3). It assumes a view of the Neolithic as a network of functionally related traits that evolve and subsequently travel together. Çiler Çilingiroğlu, for instance, outlines a suite of 21 elements, including figurines, ceramic wares, objects of personal adornment, tools, weapons, and small finds of indiscriminate function, which occur repeatedly within Early Neolithic assemblages from the Near East to Europe (Çilingiroğlu 2005). Although Çilingiroğlu succeeds in showing the existence of a ‘package’, which she defines from the ground up, it is not clear how it relates to the spread of the Neolithic in the first instance. Her model remains culture-specific and does not apply to, say, the Neolithic of Britain. A unifying principle that would link up all of the aforementioned elements according to a principle of causal dependence – A is a condition of B – is lacking. On the other hand, if the Neolithic is a truly polythetic category, not all of these elements are required at one time, at one place. When used in the plural form, the concept of Neolithic ‘packages’ opens up the possibility that there may be more than one expression of the same ‘essential’ Neolithic. Mehmet Özdoğan shows, for instance, how a core Neolithic expectation (settled village life) translates into a number of practical solutions (timber versus mud-built architecture for instance), which relate to the spread of two or more ‘packages’ of Neolithic innovations through Anatolia and across Southeast Europe (Özdoğan M. 2011a, S427).

In sum, what has been established so far is that the content of the Neolithic takes structural precedence over its manners of spreading. The Neolithic in most literature is associated with a suite of traits, including – but not restricted to – food production, settled village life, a revolution of symbols, polished stone tools and pottery (in this or another order). The successful spread of the Neolithic across Europe may be attributable precisely to its particular structure, as an integrated ‘package’ of functionally related traits, where none can exist separately. The unifying principle that underlies the Neolithic ‘revolution’ remains unclear. Vere Gordon Childe’s model

[6] Christopher Chippindale is usually credited for coining the term Neolithic ‘package’ in an undergraduate essay for the University of Cambridge (Sherratt 2005, 145).

perhaps retains authority on the subject matter, given that what stays constant through time – from the Near East to the British Isles – is the 'package' of economic domesticates[7] (wheat, barley, cattle, sheep, goats, pigs) and associated subsistence strategies. The model of shifting cultivation proposed by Childe, in which new arable plots were opened up by clearing woodland, while old plots lay fallow for a period of several years, may explain why agriculture was expansive and had both a cyclical and a wave dynamics (see Bogaard 2004a, 21; 51; Ammerman and Cavalli-Sforza 1984). Shifting or slash-and-burn cultivation comes under intense scrutiny, however, due to the small-scale and intensity in which farming seems to have been practised in the Anatolian, Southeast European and Central European Neolithics (e.g. Halstead 1987; 1996a; 1996b, 302-304; Halstead and Isaakidou 2013, 133; Bogaard 2004a, 154; 2004b; Fairbairn 2005, 198; Sherratt 2007). Amy Bogaard suggests instead a model of "intensive garden cultivation", in which cultivated plots were potentially maintained and used for hundreds of years, through the continuous replacement of soil nutrients by manuring and middening (Bogaard 2004a, 161). Long-term investment in a fixed plot of land removed the incentive for settling elsewhere, suggesting that "the spread of farming took place *despite* the intensive nature of crop and animal husbandry" (Bogaard 2004a, 162). Although this model does not challenge the importance of agriculture to Neolithic societies, questions arise as to what was the driving force behind the expansion of agriculture in Europe.

1.2 The two Neolithics of Anatolia

The context in which this study was undertaken follows naturally from the preceding discussion. Turkey sits astride two continents, Asia and Europe, and this ambivalence is reflected in the archaeological fault line between a 'developmental' Neolithic, which was remarkably old, to the centre and the east where Asia begins, and a 'fully-fledged' – albeit later – Neolithic on the north and west fringes, along the

[7] A gradual loss of diversity of cultivated crops from Southeast to Northwest Europe has been identified in a number of studies and attributed both to the changes in ecological conditions as one progressed westward across Europe and to the development of specific practices to accommodate both plants and animals (e.g. Colledge *et al.* 2004, S47; Colledge *et al.* 2005, 148-149; Conolly *et al.* 2008; Coward *et al.* 2008; Colledge and Conolly 2007a, xi).

main routes that led to Europe. Consequently, the Neolithic of Anatolia may be conceptualised as a microcosm of the Neolithic world, which was divided between 'zones' of primary neolithisation and zones of 'secondary' neolithisation (Cauvin 1994, 4).

'Primary' neolithisation refers here to the formative process by which the Neolithic pattern of existence (the 'package'?) evolved in a few centres of food-plant and animal domestication. Typically, a period of "stasis" is expected between the first introduction of domesticates and the adoption of a self-sustaining farming economy in zones of 'primary' neolithisation (Perlès 2003a, 102). 'Secondary' neolithisation, by contrast, refers to the derivative process of 'diffusion' of the (fully-formed) Neolithic pattern of existence in regions previously unrelated. A *caveat* must be drawn immediately: the core-periphery framework implicit to the aforementioned division assumes chronological precedence of Southwest Asia vis-à-vis Europe; it does not imply that the European Neolithic was (exclusively) Southwest Asian in character, nor that there was no diffusion inside 'primary' centres of neolithisation.

1.2.1 Anatolia, a land of two continents

Geography helps to establish Anatolia's unique contribution to the study of the Neolithic. The term 'Anatolia' (from the Greek Άνατολή, meaning 'sunrise', 'east') is used throughout this thesis to refer to the Asian part of Turkey, including Cilicia, but excluding regions east of the Amanus Mountains, which belong to the broader North Levantine and North Mesopotamian cultural sphere during most of prehistory (for the etymology see The Online Liddell-Scott-Jones Greek-English Lexicon; Mellaart 1964a, 3). With due respect to classical authors, who saw Anatolia as a reflection of the 'Other', much of the geographical area of present day Western Turkey may be deemed 'Aegean' in character; for instance, alluvial plains at the level of Izmir resemble the great Thessalian plains in Greece (Larissa Plain, Kardhitsa Basin), which were equally liable to seasonal flooding (Grove and Rackham 2001, 341-345); and there is indication that Neolithic sites followed similar patterns of distribution in these regions (Thissen 2000, 194).

Anatolia is the only east-west oriented peninsula (of any significant size) in the Mediterranean basin; a configuration, which, throughout history, has contributed to the flow of men and ideas between Europe and Asia. Despite mountains, such as the Taurus Range, and high plateaus making up most of the Anatolian landmass, Anatolia was never an environmental barrier *per se*. Altitude rises gently and by degrees. Prominent volcanoes and snow-covered mountains, such as the Hasandağ, Erciyes Dağ and Uludağ, are visible from afar and serve as landmarks for people who travel across the plateau (Mellaart 1964a, 5). In addition, great natural routes along the Büyük Menderes (Classical *Maeander*) and the Gediz (*Hermus*) river valleys link up the Central Anatolian Plateau with the Aegean coast of Turkey (Mellaart 1964a, 4). Today, the location of these routes is signalled by major regional roads and motorways.

But the Aegean Sea does not constitute a barrier either. From Çesme, one can reach the Greek mainland via a chain of intervisible islands, including Chios, Psara, Skyros and the Sporades. Further south, the Cyclades provide a myriad of alternative routes. The recovery of Neolithic and possibly Pre-Neolithic finds on the islands of Crete and Cyprus establishes the feasibility of such movements across water in prehistoric times (Broodbank and Strasser 1991; Broodbank 2006; Strasser *et al.* 2010). Prehistoric findspots on smaller Aegean islands are conspicuously scarce but not absent[8]. Early Neolithic farmers displayed a clear preference for sedimentary basins, such as the Plain of Larissa in Thessaly, and may have neglected other environments (van Andel and Runnels 1995; Andreou *et al.* 1996). Southern Greece was apparently less densely settled, due to its environmental setting (Alram-Stern 2005, 186; Johnson 1996, 258; Perlès 2001, 118; but see Cavanagh 2004, 180), and settlements were located on the coast rather than in the enclosed valleys (Talalay 1993, 59). Some degree of interaction between Mesolithic and Neolithic communities in this region cannot be ruled out (see, in particular, Perlès 1990, 136).

[8] e.g. Agio Gala on Chios (Hood 1981); Agios Petros on Kyra Panagia (Efstratiou 1985; Theocharis 1973, 57); Aspri Petra on Kos (Erdoğu 2003, n.2:20); Cyclops on Youra (Sampson 1998, 4; 21; 1996-1998, 94; 2006); Kalythies on Rhodes (Erdoğu 2003, n.2:20); Maroulas on Kythnos (Honea 1975; Sampson 2006; 2008; 2010); Ouriakos on Limnos (Efstratiou *et al.* 2013a); Papa to Choma on Skyros (Mellaart 1960, 90, Theocharis 1973, 57); Uğurlu on Gökçeada (Erdoğu 2003; 2011); etc.

The Anatolian Peninsula is also connected to Thrace via the Strait of Çanakkale (formerly known as the Dardanelles) and the Bosphorus, which, although difficult to cross due to strong currents, were never insurmountable obstacles (but see Takarova 2011). Likewise, there is no physical boundary between Turkish Thrace and Bulgaria, if one excepts the low-lying Strandzha range to the east of the present border. Incidentally, the site of Aşağı Pınar near the Turkish city of Kırklarelı is currently being investigated as a typical Karanovo site by researchers from the University of Istanbul (Özdoğan M. 2011b, 83-84). The Thracian Plain, which includes the catchment area of the Maritza (*Evros*) river and of two of its tributaries, the Tunja and the Arda (Nikolov 2007, 7), is bounded to the north by the Balkan range (Stara Planina), which stands as a geographical and climatic barrier between the north and the south of the Balkan Peninsula (Takorova 2011, 3).

The deep valleys of the Struma (*Strymon*) and the Mesta (*Nestos*) rivers, which are separated from the Thracian Plain by the Rhodope Mountains, provide another gateway to the Balkan hinterland. Both rivers are characterised by much narrower catchment areas as well as a distinctive Mediterranean climate with higher rainfalls (Popova and Marinova 2007, 500). Like the Maritza River further east, both the Struma and the Mesta rivers discharge their water in the Aegean basin. The Struma valley also provides direct access to both Greek and Yugoslav Macedonia. West of this valley rise the Malesevski and the Osogovski ranges. The Kresna Gorge, which divides up the course of the Struma River apparently also provided a boundary between different cultural spheres in the Neolithic (Lichardus-Itten *et al*. 2006, 83).

Given the sheer size of the territory of modern Turkey, which is a little under 800,000 km^2, it is hardly a homogeneous ecological entity (e.g. Van Zeist and Bottema 1991; Asouti and Hather 2001). The Konya Plain, for instance, was dominated by open steppe and marshland environment in Neolithic times, which perhaps helps to explain the centrality of settlement and the importance afforded to game hunting at Çatalhöyük; while regions further west, such as the Beyşehir-Suğla Basin and the Lake District seem to have been densely wooded with large areas of coniferous forest (Schoop 2005a). Presumably dense tree cover in the hills surrounding the basins delayed the advent of settled life and agriculture in Western Anatolia and consecrated the plateau's isolation.

1.2.2 The two thousand year lag: introducing the ^{14}C Backbone

In spite of the fact that there are no physical boundaries in the study region, evidence drawn from chronology suggests that the westward spread of Neolithic economies was a punctuated process in fits and starts (for discussion, see §9.1). The ^{14}C Backbone, as its name suggests, serves as a chronological backdrop to assess trends in residential occupation over time. This excel interface allows the user to check and uncheck radiocarbon intervals of selected sites or regions on an interactive diagram (CD-ROM). The ^{14}C Backbone has been developed with the purpose of facilitating comparison of 848 radiocarbon dates from 59 Neolithic and Chalcolithic sites in four regions of Anatolia and Southeast Europe during the interval 9,000-5,500 BC cal. (Figure 1). The dates, which are listed in Appendix F, were collected from publications and databases, in particular the Central Anatolian e-Workshop (CANeW) database compiled by Laurens Thissen and Agathe Reingruber (Reingruber and Thissen 2005; Thissen 2006; Gérard and Thissen 2002) and the radiocarbon CONTEXT database of the University of Cologne (Böhner and Schyle 2008). Some additional ^{14}C dates were kindly made available by Bernhard Weninger (Clare and Weninger, in press). The dates were re-calibrated uniformly using the IntCal09 atmospheric curve (Reimer et al. 2009) in OxCal 4.2 (Bronk Ramsey 2013).

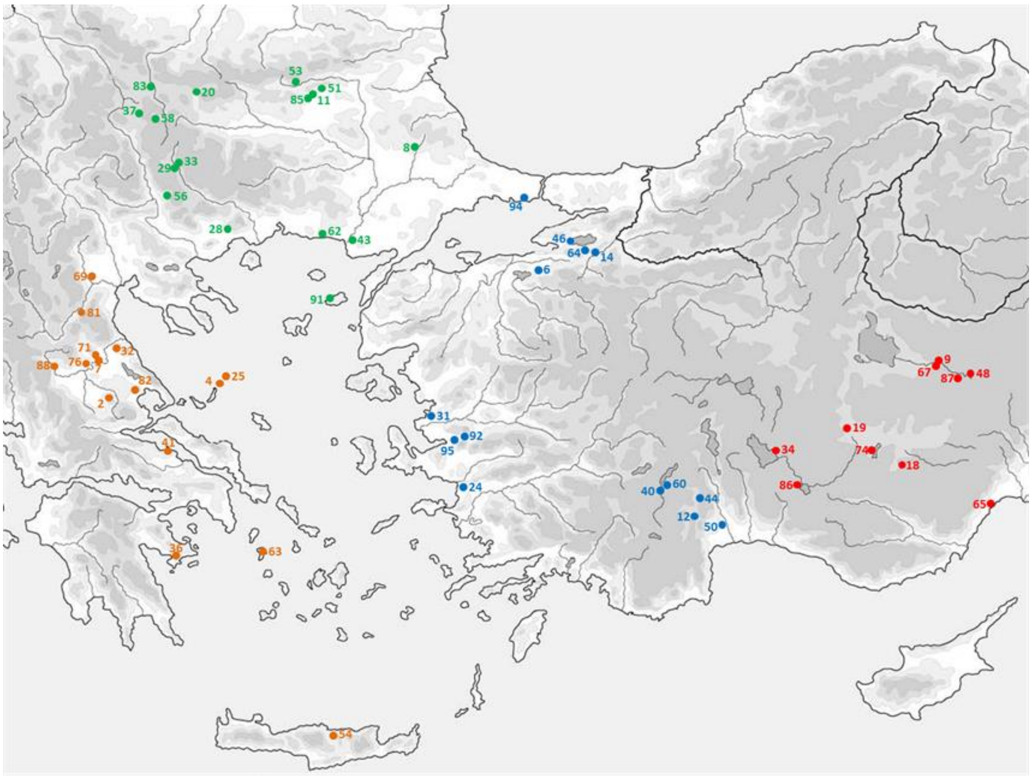

Figure 1. Geographical distribution of 59 radiocarbon-dated Neolithic sites in Anatolia and Southeast Europe. The sites are divided up in four regional groups according to their colour code in the 14C Backbone interface: Central Anatolia (red), Western Anatolia (blue), Greece (orange) and Thrace (green). 2. Achilleion; 4. Agios Petros; 6. Aktopraklık; 7. Argissa; 8. Aşağı Pınar; 9. Aşıklı Höyük; 11. Azmak; 12. Bademağacı; 14. Barcın Höyük; 18. Can Hasan I/III; 19. Çatalhöyük East/West; 20. Čavdar; 24. Çukuriçi Höyük; 25. Cyclops Cave; 29. Dobrinište; 31. Ege Gübre; 32. Elateia; 33. Elešnica; 34. Erbaba; 36. Franchthi; 37. Gălăbnik; 40. Hacılar; 41. Halai; 43. Hoca Çeşme; 44. Höyücek; 46. Ilıpınar; 48. Kaletepe; 50. Karain Cave; 51. Karanovo; 53. Kazanlăk; 54. Knossos; 56. Kovačevo; 58. Kremenik; 60. Kuruçay; 62. Makri; 63. Maroulas 64. Menteşe Höyük; 65. Mersin-Yumuktepe; 67. Musular; 69. Nea Nikomedeia; 71. Otzaki Magoula; 74. Pınarbaşı; 76. Platia Magoula Zarkou; 81. Servia; 82. Sesklo; 83. Sofia-Slatina; 85. Stara Zagora – Okražna Bolnica; 86. Suberde; 87. Tepecik-Çiftlik; 88. Theopetra Cave; 91. Uğurlu; 92. Ulucak Höyük; 94. Yarimburgaz Cave; 95. Yeşilova Höyük. For a full list of sites, see Appendix E.

One advantage of this display is that it does not pre-judge the quality of the dates, which are simply placed side by side in the excel diagram with a secure confidence margin of two standard deviations (95.4% probability[9]). The dates are arranged in chronological order from the oldest to the youngest date BP and are given one of four colour codes, corresponding to Central Anatolia (red), Western Anatolia

[9] At two standard deviations, there is a 95.4 percent probability that the actual calendar date falls within the confidence interval.

(blue), Greece (orange) and Thrace (green). The division into four broad regions and colours is arbitrary and has been adopted for the sake of clarity and to enhance the visual output. The user may decide to change this grouping by checking or unchecking selected sites or regions in the interface (CD-ROM). Although the distribution of calibrated intervals instantly flags out isolated dates or statistical outliers, which appear either too old or too young in the diagram, the appraisal is not complete without a quality assessment of the database as a whole and of the suitability of each date taken individually (Zilhão 2001; Brami and Heyd 2011).

The bulk of calibrated dates from Greece, which were processed between the 1950s and the 1970s, is characterised by large standard deviations comprising between 200 and 400 calibrated years at 2σ. In contrast, the majority of dates from Western Anatolia, which were processed over the last two decades, present smaller intervals of between 100 and 200 calibrated years (Brami and Heyd 2011, 173). It follows that, placed side by side in the ^{14}C Backbone, dates from the Greek side appear anomalously old; that is, if one only considers the endpoint, and not the complete interval. Another bias to take into account is that all regions did not contribute equal amount of radiocarbon dates to the database. Within the interval 9000-5500 BC cal., Central Anatolia contributed 310 dates, Western Anatolia 182, Greece 172 and Thrace 184. The distribution is skewed towards recognition of bigger sites, such as Çatalhöyük, Ilıpınar and Aşıklı, which produced over 50 dates each.

The majority of dates listed in the ^{14}C Backbone stem from charcoal samples[10], rather than samples of grains and/or bones of domesticates. Thus, they do not date the advent of Neolithic economy itself, only building-phases or levels ascribed to the 'Neolithic' by the excavators. Cave sites, which occasionally span Mesolithic and Neolithic occupations, should be treated with caution. For instance, the

[10] There are inherent problems associated with charcoal samples, which limit their reliability. Unless charcoal stemmed from short-lived tree species, the sample may come from inner rings of a tree, in which ^{14}C started to decay before the tree was felled or burned; this bias is referred to as 'old wood' effect in the literature (Zilhão 2001, 14181). Long-lived tree species are used in building construction; studies at Çatalhöyük demonstrate that roof posts were frequently salvaged and reused from one phase of building to another, with the result that they yielded dates older than the context in which they were found (Cessford 2001, 720).

series of dates from Theopetra Cave in Thessaly, although reliable on principle, raises questions about the stratigraphy of the cave (see Facorellis *et al*. 2001, 1040; 1044; Manolis and Stravopodi 2003). There is a chronological gap between two series of dates, one clustering at ~7,000 BC cal. (CAMS-21773; DEM-576; DEM-583; DEM-360; DEM-918) and the other at ~6,300 BC cal. (DEM-919; DEM-917). The suggestion is that the earlier series relates in fact to a later Mesolithic horizon. This result awaits confirmation by dating of the domesticates themselves. On the other hand, none of the open-air sites in the study region demonstrates such a continuity between Mesolithic and Neolithic occupations, and it is safe to assume that they were all 'Neolithic' from the start.

The ^{14}C Backbone provides the opportunity to explore hypotheses about regional patterns through chronology. One example of how this interface might help to clarify our understanding of the spread of the Neolithic is given below. Figure 2 lists all the radiocarbon intervals from Central Anatolia and Western Anatolia during the interval 9,000-5,500 BC cal. In turn, Figure 3 lists all the determinations from Western Anatolia, Greece and Thrace. The reader can see that: (1) successive Neolithic phases in Central Anatolia (in red in the diagram) span nearly three thousand years, c. 8,500-5,500 BC cal. at two standard deviations; (2) in contrast, only one radiocarbon interval from Western Anatolia, that of Aceramic Hacılar V (see discussion in §9.1.1), falls outside the interval c. 7,000-5,500 BC cal. at 2σ; (3) 171 out of 182 radiocarbon dates from Western Anatolia (in blue in the diagram) cluster during the interval c. 6,500-5,500 BC cal. at 2σ.

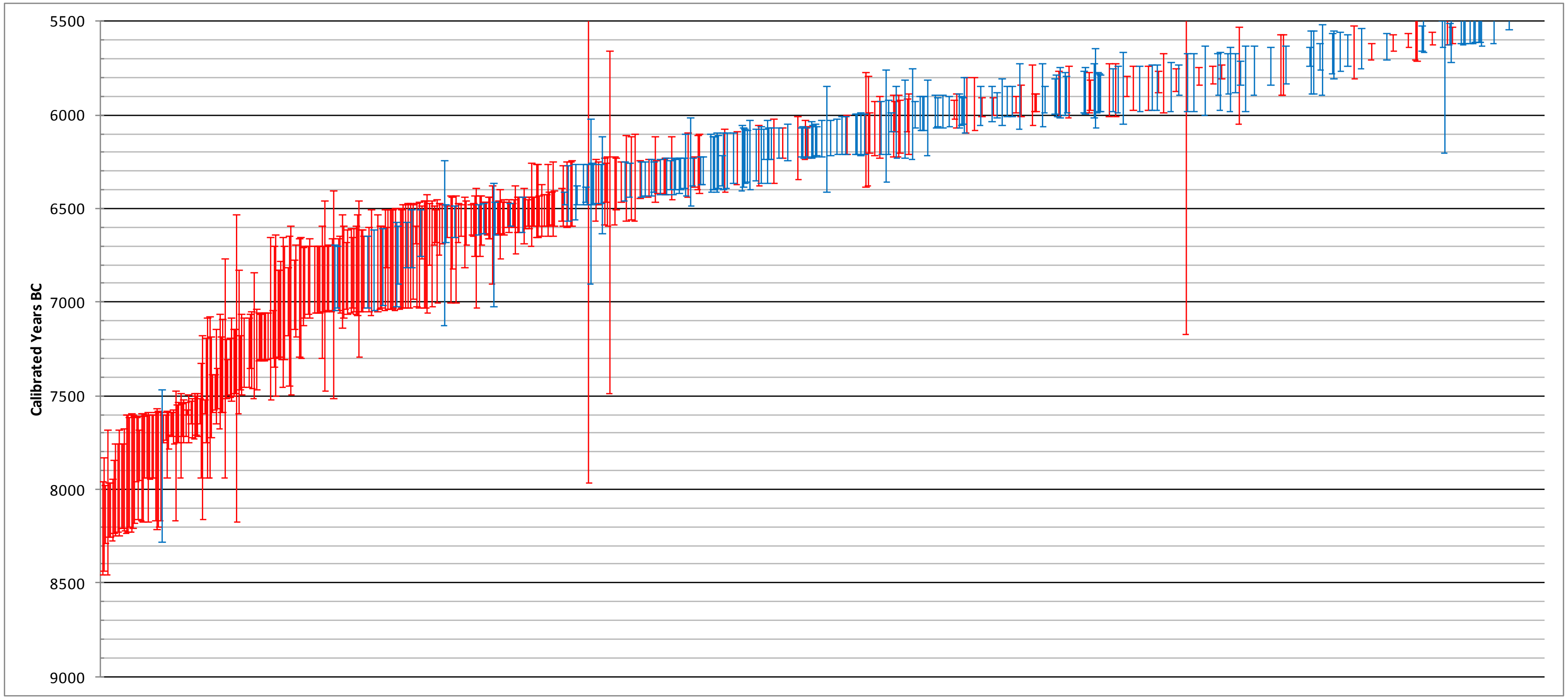

Figure 2. [14]C Backbone distribution of 492 calibrated radiocarbon intervals, at 2 standard deviations (95.4% probability), from 12 sites in Central Anatolia (red) and 14 sites in Western Anatolia (blue) during the interval 9,000-5,500 BC cal. The dates were re-calibrated using the IntCal09 atmospheric curve (Reimer et al. 2009) in OxCal 4.2 (Bronk Ramsey 2013). The intervals are ranked in chronological order from the oldest to the youngest date BP.

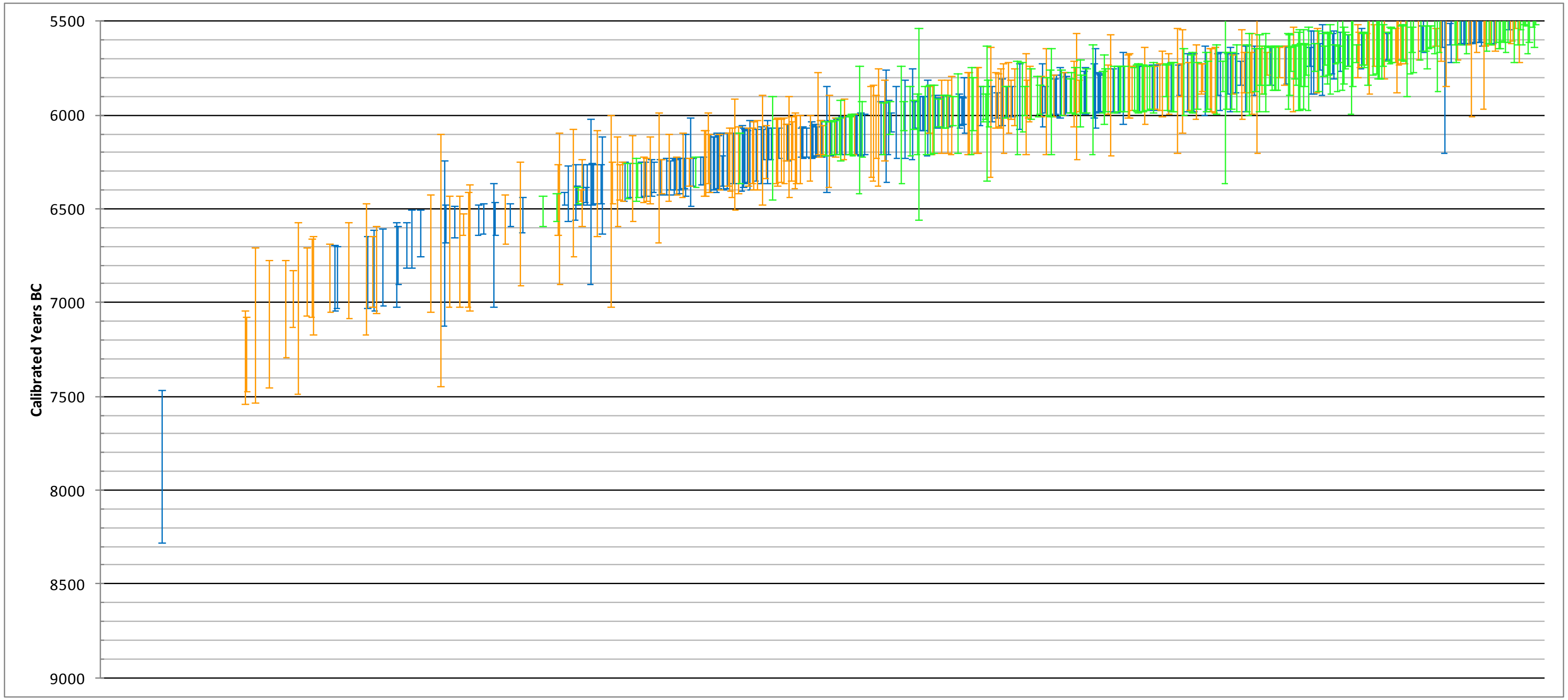

Figure 3. ^{14}C Backbone Distribution of 538 calibrated radiocarbon intervals, at 2 standard deviations (95.4% probability), from 14 sites in Western Anatolia (blue), 17 sites in Greece (orange) and 16 sites in Thrace (green) during the interval 9,000-5,500 BC cal. The dates were re-calibrated using the IntCal09 atmospheric curve (Reimer et al. 2009) in OxCal 4.2 (Bronk Ramsey 2013). The intervals are ranked in chronological order from the oldest to the youngest date BC.

1.2.3 A fault-line between Central and Western Anatolia

In this section, I use some of the traditional markers of the Neolithic as identified by Vere Gordon Childe and others to characterise the Neolithic phenomenon in two regions of Anatolia: food production, as indicated by the introduction of plant and animal domesticates, settled village life, ground stone tools, pottery and weaving implements. A full analysis would require one to put each and every one component of the Neolithic way of life into broader historical context, which is beyond the scope of this introduction (see Zeder 2009). It is enough, for now, to highlight the ‘tip of the iceberg’, namely the pregnant contrast between Central and Western Anatolia regarding the advent of Neolithic innovations.

1.2.3.1 Central Anatolia

In Central Anatolia, the various elements that make up the Neolithic pattern of existence did not emerge concomitantly, but one after the other over a period of two thousand years.

Domestic Food Plants. The first evidence for the appearance of domestic food-plants in Central Anatolia seems to be at Boncuklu in the Konya Plain and at Aşıklı in Cappadocia. Certainly, by about 8,300 BC cal., morphologically domestic cereals, including wheat and barley, are found in Central Anatolia (Baird 2012b, 440; Asouti and Fairbairn 2002, Table 1). The botanical assemblage at Boncuklu includes Neolithic founder crops, such as emmer wheat, possibly einkorn, hulled barley and an archaic form of free-threshing wheat (Baird *et al*. 2012, 230). Alongside crops, wild plant species, especially wetland taxa, were exploited for food (Baird *et al*. 2012, 230).

Early Neolithic subsistence strategies at Boncuklu contrast markedly with those that were in place at Pınarbaşı in the 9th millennium BC cal.; the open-air promontory site produced no evidence for plant cultivation despite similar sampling strategies (Baird 2012a, 196; 2012b, 438). There is a marked contrast in the content of the food plant assemblage from one site to another, but sites with the larger exposures, such as Aşıklı in Cappadocia and Çatalhöyük in the Konya Plain, have yielded the most complete package of crops (Asouti and Fairbairn 2002, Table 1). It has been observed that domestic wheat and barley probably had no wild ancestors in the Konya Plain and therefore that they were probably introduced in the region from the southeast (Asouti and Fairbairn 2002, 189; Colledge *et al.* 2004, fig.5; Baird *et al.* 2012, 232).

Domestic Animals**.** A proto-domestication of sheep and goats, based on the large number of perinatal bones, has been proposed at Aşıklı (Buitenhuis 1997, 659; see also, Martin *et al* 2002, 195; Pearson *et al.* 2007). At Boncuklu, by contrast, there seems to be a marked preference for hunting wild cattle and wild boars (Baird *et al*. 2012, 232). The first unambiguous evidence for domestic animals in the record dates to after c. 7,400 BC cal., when large numbers of domestic sheep suddenly appear in the basal levels of Çatalhöyük and at Suberde, together with evidence of selective culling (Arbuckle 2008a, 219; Arbuckle *et al.* 2009; Zeder 2011, S227; Baird 2012b, 440; but see Peters *et al.* 2013, 92; 97; 107). These animals seem to have been primarily exploited for meat.

Morphologically domestic cattle are not important in the Çatalhöyük faunal assemblage until the second half of the Çatalhöyük East sequence, after c. 6500 BC cal. The site itself is no longer regarded as an independent centre of cattle domestication (Russell *et al.* 2005, S104; Arbuckle and Makarewicz 2009). A recent review article claims that the introduction of morphologically domestic pigs and, subsequently, of a four-tiered animal husbandry system on the Central Anatolian Plateau was delayed until the 5th millennium BC cal. (Arbuckle 2013 ; see also Martin *et al.* 2002; Russell *et al*. 2005; Arbuckle 2008b; Zeder 2009, 37; Conolly *et al.* 2011). The late adoption of pigs on the Plateau is unlikely to relate to ecological factors, given the ubiquity of wild boars at Boncuklu. The continuation of traditional practices, such as large game hunting, may help to explain this pattern (Arbuckle 2013, 1811). In contrast, all four domestic animal taxa were present from the start at Mersin-Yumuktepe on the coast of Cilicia – suggesting that the site belonged to a different cultural sphere in the 7th millennium BC cal. (Buitenhuis 2004; Caneva 2004a, 35).

Settled Village Life. The emergence of sedentary or, for that matter, "sedentarising" behaviour (Baird 2012a, 182; 2012b, 438) on the Anatolian Plateau, marked out by significant investment in domestic facilities, repeated use of a particular locale over time, year-round occupation or, at least, multi-seasonal occupation, has been traced back to the first half of the 9th millennium BC cal. (Baird 2012b, 438). Stratified exposures on the small promontory at Pınarbaşı in the Konya Plain have revealed a sequence of occupation at least 80 cm deep, consisting of curvilinear, semi-subterranean structures with plastered floors and plastered interior walls (Baird 2012a, 193-194). The floors and walls were re-plastered at intervals – up to seven times in Building 3 (Area D) – and were occasionally covered in red ochre (Baird 2012a, 193). Remarkably, Building 3 cut into an earlier structure with a red floor, which suggests repeated use of the same plots for construction (Baird 2012a,193). Collapsed material recovered within the fill of these buildings suggests that they were initially covered with a wattle-and-daub superstructure (Baird 2012a, 193). Building 5 in Trench A was provided with a hearth area, located towards the centre of the structure, as well as what appears to be a work surface, a shallow plaster basin and a small pit (Baird 2012a, 193). The occupation of this area of the site was radiocarbon dated to the 9th and early 8th millennia BC cal., which makes Pınarbaşı contemporary with Early PPNB sites in the Northern Levant (Baird 2012a, 197; 2012b, 438).

The chronologically overlapping site of Boncuklu demonstrates the intensification of settlement in the Konya Plain in the 9th and 8th millennia BC cal. (Baird *et al*. 2012, 221). Boncuklu witnessed the first use of mudbrick in the architecture in this region; this material, combined with the distinctive practice of continuous reconstruction in the same place – up to six times in Area K – led to the formation of a small artificial mound made of accumulated settlement debris (§5.2.1; Baird *et al.* 2012, 221; 232- 234). Houses at Boncuklu are curvilinear in plan, partly sunken in the ground, and coated in multiple layers of plaster. They document practices, such as a structured division of space and sub-floor burial, which recall, albeit in a general sense, practices observed at the later site of Çatalhöyük, only 9 km to the south (Baird *et al.* 2012, 234; see Hodder and Cessford 2004; Hodder 2006). Further to the east, in Cappadocia, one observes a shift from sub-circular to rectilinear forms of architecture in the basal sequence of Aşıklı (Özbaşaran 2012; Baird 2012a, 197). This coincides with the adoption of a cellular house pattern, consisting of densely clustered neighbourhoods of houses accessed through the roof by means of a ladder, of which a more elaborate form can be seen at Çatalhöyük (Hodder 2006; Düring 2006). By 7,000 BC cal., large agglutinated villages have become the standard settlement form in this part of Anatolia.

Ground Stone tools. If ground stone tools are conspicuous by their rarity in the lower levels of the rockshelter at Pınarbaşı (B), dated to the later Epi-Palaeolithic on the basis of lunates and other microliths with parallels with the Natufian in the Levant, they occur in great frequency in the subsequent 9th millennium open-air site at Pınarbaşı (Baird 2012a, 185; 187-188; 195). Some of the ground stones, such as querns, handstones and heavy duty pestles, which could be used in combination with bedrock mortars, were evidently used to process nuts, which were gathered in significant number at the site (Baird 2012a, 195). In addition, greenstone axes, which show evidence of reworking, might have been exchanged and curated (Baird 2012a, 195).

Pottery. It is useful to distinguish small-scale attempts at producing unfired or lightly fired clay and plaster containers – such vessels are known from Boncuklu for instance (D. Baird, personal communication; see also Baird *et al*. 2012, 231) – from fullscale pottery production, which can be dated to no earlier than c. 7,000 BC cal. in Central Anatolia (Last 2005, 102; Hodder and Cessford 2004, 19). The early levels at Çatalhöyük, Levels XII-IX, yielded an incipient ware, characterised by simple forms with thick walls and chaff temper; this is rapidly superseded by a type of pottery with thin walls and fine mineral inclusions resembling, albeit in a general sense, the Dark-faced Burnished Ware of the Amuq Plain and Mersin-Yumuktepe in Syro-Cilicia (Balossi-Restelli 2006; Cauvin 1994, 214). Hole-mouth vessels, globular jars and deep bowls without sharp carination tend to be idiosyncratic of this horizon (Balossi Restelli 2006, 39; Thissen 2000, 116-117). It is generally assumed that dark mineraltempered vessels took over the role of cooking from the clay balls at Çatalhöyük after Level VII, c. 6,600 BC cal. (Hodder 2006, 53; Yalman 2006, 37-38).

A further development in pottery production seems to have been the introduction of red-slipped burnished wares on the Central Anatolian Plateau, characterised by mineral inclusions and a slip in shades ranging from yellow to red (Godon 2008). The fine, lustruously burnished vessels, with little trace of secondary burning (Özdoğan 2006a, 26), perhaps served a different function as storing and serving vessels. Earlier examples of red-slipped burnished pots decorated with elaborate appliqué scenes representing both domestic and wild animals, as well as human figures involved in everyday activities, were recovered at Köşk and Tepecik Çiftlik in Cappadocia (Godon 2008, 444). Red-slipped sherds are then encountered in Level V at Çatalhöyük, c. 6,400 BC cal. (Last 2005). Occasionally they were painted red, and this form of decoration became widespread by the time of the Çatalhöyük West occupation (Çilingiroğlu 2009c).

Weaving. The dating of the first appearance of weaving practices on the Central Anatolian Plateau relies in part on our interpretation of the stamp seals – also known as *pintaderas* – as cloth markers. Çiler Çilingiroğlu made a convincing case for such an interpretation on the basis of contextual evidence from the chronologically-overlapping site of Ulucak in Aegean Anatolia (Çilingiroğlu 2009b, 5). Earlier *pintaderas* at Çatalhöyük stem from Level VII and can be dated to no earlier than c. 6,600 BC cal. (Lichter 2005b, 69; Hodder 2006, 233). Another strand of evidence is flax cultivation, which has been documented at Çatalhöyük East (see Düring 2011, 198). Recently, a finely woven linen cloth, made from flax, was recovered in one of the sub-floor burials of Building 52 in the 4040 area; the cloth was inadvertently preserved when the building was set on fire (Hodder 2013a, 24).

1.2.3.2 Western Anatolia

In contrast to the pattern observed in Central Anatolia, all the elements that make up the Neolithic as defined by Childe (1936) emerged more or less concomitantly in Western Anatolia, at or shortly before c. 6,500 BC cal.

Domestic Food Plants. Preliminary study on the plant remains in the basal level of Ulucak, Level VI, dated to c. 7,000-6,500 BC cal., indicates that the first settlers cultivated einkorn and emmer wheat, barley, durum wheat, free-threshing wheat and lentil (Çilingiroğlu *et al.* 2012; Erkal, personal communication). There were few wild species; changes over time pertained more to the proportion of specific cereal and pulse species than to the composition of the archaeobotanical assemblage itself (Erkal, personal communication).

Domestic Animals. Similarly to the pattern observed for plants, morphologically domestic species dominated the archaeozoological assemblage at Ulucak, Level VI. The fact that all four domestic animal taxa were present from the start of the sequence at Ulucak suggests the transplantation of an artificial agricultural system initially unreliant, or less reliant, on wild resources (Çakırlar 2012a; 2012b; Çilingiroğlu and Çakırlar 2013). This pattern stands in remarkable contrast with that observed on the Central Anatolian Plateau, where cattle and pigs are unlikely to have been domesticated until late in the sequence (Arbuckle 2013). Interestingly, domestic pigs were scarce or altogether absent in the Eastern Marmara region (Çakırlar 2012b, 88). Wild boars occasionaly occurred at Barcın with butchering marks (Gerritsen, personal communication). The four-tiered animal husbandry system evidenced at Ulucak has so far been identified at only one other site in Western Anatolia: Bademağacı, Levels EN I/7-EN II, after c. 6,700 BC cal. (De Cupere *et al.* 2008, 385; Çakırlar 2012b, 88). To add to the complexity, a recent study of mitochondrial DNA of pigs suggests that Western Anatolian pigs had different haplotypes than Near Eastern ones (Ottoni *et al.* 2013). In sum, although it is clear that food-producing economies and the main domestic species were introduced exogeneously into Western Anatolia after c. 7,000 BC cal., it is still difficult to pinpoint where they came from exactly. A single origin would appear to be unlikely in view of the regional diversity between Northwest and Southwest Anatolia.

Settled Village Life. The advent of settled village life in Western Anatolia was considerably later than in Central Anatolia, after c. 7,000-6,500 BC cal. The evidence comes from a myriad of sites in the Lake District (Hacılar, Kuruçay, Bademağacı, Höyücek), the Aegean Coast of Anatolia (Ulucak, Yeşilova, Ege Gübre, Çukuriçi) and the Eastern Marmara region (Fikirtepe, Pendik, Ilıpınar, Barcın, Menteşe, Aktopraklık). There may be evidence for earlier Neolithic occupation at Hacılar, based on one conspicuously old radiocarbon date (BM-127: 8700±180 BP = 8281-7467 BC cal. at 2σ) from levels without pottery in trench Q (Mellaart 1970a, 92). Although a single date can hardly be interpreted as unequivocal evidence of existence of an aceramic phase at the site, this and other features discussed in §9.1.1 raise the possibility of an earlier Neolithic horizon in Southwest Anatolia, as yet uncharted.

Level VI at Ulucak, which sits just above the bedrock, is virtually 'aceramic'; this deposit is securely dated by a series of twelve internally consistent dates to between 7,040 and 6,440 BC cal. at 2σ (§9.1.2). Owing to the limited size of the exposure, it is not yet clear whether Ulucak VI can be taken as evidence for sedentary behaviour. Nevertheless, Level VI demonstrates a repeated use of the same locales over time and a significant investment in facilities, indicated by the near-vertical superimposition of three or more red lime-plastered floors, which delineate rectangular or sub-rectangular spaces (Ç. Çilingiroğlu, personal communication). At present, it is still unclear how these structures were spanned, but a timber frame with an outer row of posts seems likely (Ç. Çilingiroğlu, personal communication). On-going excavations at Çukuriçi near Ephesus may help to clarify the early architectural history of Southwest Anatolia (Horejs 2008; 2012).

Ground Stone Tools. Ground stone tools first appeared in Late Epi-Palaeolithic context, such as Phase IV in the cave of Öküzini in the Antalya Bay, dated to c. 10,500 BC cal. (Albrecht 1988, 221; Kuhn 2002, 206; Martinoli 2004). Since grinding slabs and other tools involved in the processing of cereals were common-place in the Levant from c. 12,000 BC cal., and appeared much earlier, at Ohalo II, for instance, their occurrence in Western Anatolia before the horizon of Neolithic expansion only demonstrates that ground stone tools are hardly a criterion on their own to indicate a 'Neolithic' stage of culture (Piperno *et al.* 2004; Zeder 2009, 17-18).

***Pottery*.** There is no incipient ware in this region; pottery is immediately indicative of an advanced stage of production (Çilingiroğlu 2009a; 2012). In the Lake District, the basal levels of Bademağacı-Kızılkaya (EN I 9-8) have yielded dark gray sherds with mineral inclusions, relatively thin walls, and light burnishing, which have traditionally attracted comparison with the Dark-faced Burnished Ware of the Amuq and Mersin-Yumuktepe (Mellaart 1961b, 169–171; Duru 2008, 54). In the region of Izmir, the earliest ceramic levels at Ulucak (V) have yielded brown burnished ware, described by Çiler Çilingiroğlu as dark-coloured sherds with medium-fine mineral inclusions, burnished, with thin walls (Çilingiroğlu 2009a, 88). Çiler Çilingiroğlu observes that the sherds were moderately fired. The brown burnished ware is especially associated with hole-mouth jars (Çilingiroğlu 2009a, 88; 484). In Northwest Anatolia, the region of Marmara is characterised by the Fikirtepe tradition. In its earlier form – the 'Archaic' Fikirtepe – pottery strongly resembles the dark burnished wares of Central Anatolia, suggesting a transfer of technology from this region (Thissen 2000, 116–117; Özdoğan 1999, 216–217). It is generally dark in tone, grey or light brown. The clay has mineral inclusions. Sherds are thin-walled and well burnished (Thissen *et al.* 2010). Hole-mouth vessels with simple profiles predominate in the assemblage (Özdoğan 1999, 213).

Weaving. Spindle whorls were common-place in Hacılar VI and subsequent levels (Mellaart 1970a, 20). Direct evidence of textile-related activities, in the form of impressions in the wet clay, were also encountered at this site (Mellaart 1970a, 20). Flax or linseed was cultivated at Ilıpınar (Düring 2011, 198).

1.3 Statement of the hypothesis

A cross-section of Anatolia, comparing two chronologically-defined entities, Central Anatolia and Western Anatolia, highlighted a strong contrast between a punctuated Neolithic development in Central Anatolia over a period of two-thousand years, starting at around 8,300 BC cal. and a model, in which all the components of the Neolithic lifeway seem to have emerged more or less concomitantly in Western

Anatolia after c. 6,500 BC cal. A new series of radiocarbon dates from the basal level at Ulucak, Level VI, may push this threshold back by up to five hundred years, without fundamentally altering the current chronological imbalance. Although pottery was perhaps missing from this incipient ‘package’, as soon as it was adopted it reflected the advent of a fully-fledged Neolithic and the latest version thereof.

Considering that the Neolithic in Western Anatolia was immediately compounded of a number of distinctive elements, such as ground stone tools, settled village life, domesticated plant and animal species, which occurred dissociated from each other in Central Anatolia (Figure 4), implications are: (1) that societies on either side of this fault-line did not contribute equally to the development of the Neolithic pattern of existence and (2) that one society probably drew its knowledge of agriculture from the other (or both drew from a common tradition in Southwest Asia). Consequently, the thesis’ central hypothesis is that the Neolithic transition in Europe was not only ‘fast-tracked’, but imported into Europe – diffused in effect by societies at a different level of social and economic advantage[11]. Diffusion is meant here in a broad sense to encompass both cultural and ‘demic’ diffusion.

[11] On the ‘advantage’ of Neolithic farmers, see Sherratt (2004, 61): “It was probably the capacity of farming populations for very rapid expansion when opportunity allowed, together with their extensive information networks and the ability to migrate with their sources of food over relatively long distances, which gave them their long-term advantage over the indigenous foragers. While catastrophe could afflict either group or both at once, the farmers could bounce back faster” (Sherratt 2004, 61).

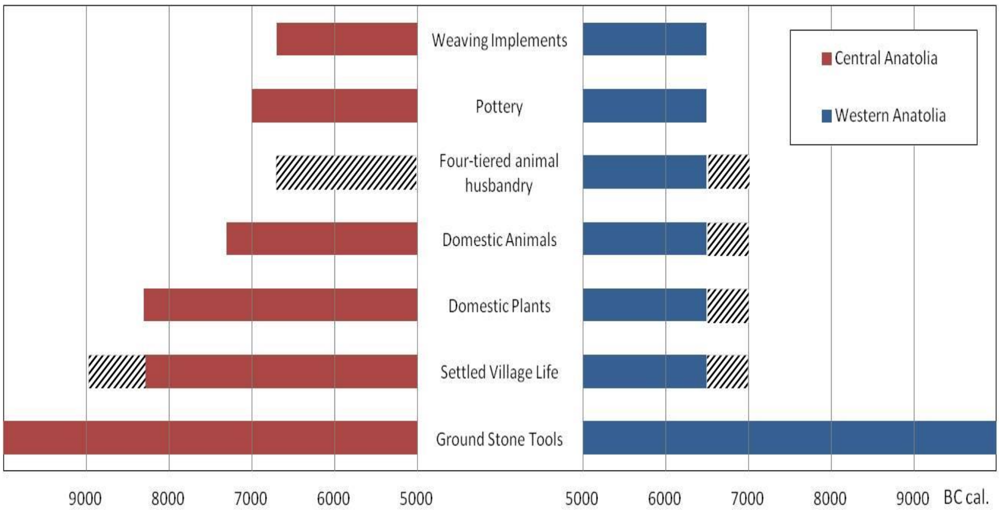

Figure 4. Comparison chart of the advent of selected components of the Neolithic pattern of existence in Central and Western Anatolia. The dates attempt to reflect the latest state of research at the moment of writing. Unclear status is indicated by hatches (data after Albrecht 1988, 221; Arbuckle 2013; Baird 2007; 2012b; Brami and Heyd 2011; Çilingiroğlu 2009a; 2009b, 5; 24; Hodder and Cessford 2004; Kuhn 2002, 206; Martin et al. 2002; Russell et al. 2005; Zeder 2009, 37; 2011, S227).

2

Approaches to the Spread of the Neolithic into Europe

The spread of the Neolithic pattern of existence from what was once referred to as 'Mesopotamia' into Europe is an old issue that can be traced back to Vere Gordon Childe, a founding father of modern archaeology (Childe 1950, 41). Over the years, the question 'how did farming spread to Europe, from its origins in the Near East?' has given rise to a plethora of approaches, not least by some of the most prominent figures of the discipline. In situating this research within current scholarship, a flaw in our interpretation of the spread of farming emerges – a flaw, which, again, can be ascribed to Childe's very first formulation of the research question. The question 'how did farming spread to Europe?' has often translated into an enquiry into the modes of reception of Neolithic innovations in Europe (in effect the question 'who spread farming?') or into the paths of neolithisation ('along which routes did farming spread?'), when these enquiries are in fact subordinate to the very issue of 'what was spread?'. This chapter follows two lines of investigation: firstly, it outlines a brief history of how the research question developed (§2.1); secondly, it provides a thematic review of current approaches of the spread of farming (§2.2).

2.1 A brief history of the research question

Vere Gordon Childe turned what was essentially a fashionable motto at the turn of the 20th Century in Britain – *Ex Oriente Lux,* literally meaning 'out of the east, light' – into a research question demonstrable by empirical evidence (Sherratt 1989[1997], 59). He suggested that the so-called 'Neolithic revolution' – the shift from an appropriative economy based on hunting and gathering to a productive economy based on farming and herding – had taken place within the confines of the Near East; only thereafter had Neolithic agriculture spread westward into Europe (Childe 1954, 1-2; 238; 244). The most explicit formulation of the question appeared in the book *Prehistoric Migrations in Europe,* in which Childe outlined a model of

"Neolithic colonisation of the Balkans" (Childe 1950, 36). This model drew on two strands of evidence: firstly, the geographic configuration of the Balkan Peninsula and the Aegean islands, which made Greece and Bulgaria the most likely recipients of innovations spreading from the east (Childe 1950, 41); secondly, similarities between Greek and Levantine pottery styles (Childe 1950, 63). Childe was compelled to resort to comparisons between vastly remote sites – a thousand kilometres at the least – because no Neolithic occupation was known at the time between the Plain of Cilicia in Southeast Anatolia (site of Mersin-Yumuktepe[12]; Garstang 1943) and the island of Chios in the Aegean (Agio Gala; Hood 1981). In spite of the lack of evidence, Childe viewed the Anatolian Peninsula as a 'landbridge' for innovations spreading from the east (Childe 1950, 41).

It is clear from this outline that many of the pieces of the jigsaw that was to become the 'spread of farming to Europe' were present, if only in embryonic forms, in the writings of Vere Gordon Childe. Childe, however, was not satisfied with simply raising the question. He also suggested a framework of interpretation: in his view, farming had spread as a result of small-scale 'infiltration' by transhumant herders into European territories and assimilation of indigenous populations, who were easily persuaded by the benefits of the new mode of subsistence (Childe 1950, 50-51). Other authors stumbled particularly over this contentious explanation. By imposing his own interpretation of the data, Childe framed the scope of the original question and introduced a flaw in the research enquiry. After Childe, the origins of Europe's first farmers and the respective importance of colonisation, acculturation and indigenous development started to occupy centre-stage in the debates – a position they held until now (e.g. Price 2000).

2.1.1 The search for the missing link

Vere Gordon Childe's model for the spread of farming in Europe served as a guide for a young generation of archaeologists, who surveyed vast regions of Europe

[12]Childe himself was involved in the excavation of Neolithic levels at Mersin-Yumuktepe immediately after World War II (Garstang 1953, 4).

and Anatolia in search of ‘missing links’ in the grand narrative. Since Childe himself did not belong to any regional tradition, his model appealed to both European and Near Eastern specialists. To replace these developments in the context of the 1950s, it is worth stressing that the sites of Mersin-Yumuktepe and Tarsus-Gözlüküle in Cilicia were still regarded as “western outposts of Syria and Mesopotamia” at the time (Mellaart 1978, 9), while no less a respectable scholar than Seton Lloyd, the then Director of the British Institute of Archaeology at Ankara, speculated on the possible absence of Neolithic occupation in Anatolia (Lloyd 1956, 53-54).

Problem-oriented, extensive surveys, where a few researchers walked across an entire landscape in search of prehistoric sites, were a feature of the time (Mellaart 1954; 1978). The emphasis was placed on putting together a chronological sequence for each region and on establishing parallels between regions in order to gain an insight of the ‘big picture’. James Mellaart surveyed the southern part of the Anatolian Plateau, including the Mediterranean coast, the Lake District and the Konya Plain, at the intersection of historical trade routes (Mellaart 1954). His surveys partly overlapped with Halet Çambel’s investigations in Afyon (Mellaart 1954). Jointly with Kurt Bittel, Halet Çambel was responsible for the excavation of the site of Fikirtepe in Kadıköy (Istanbul), which led to the definition of the Fikirtepe culture in the region of Marmara (Bittel 1971). David French collected material along the main routes of neolithisation from Anatolia to Europe in order, as he explicitly stated, to investigate the link between these regions (French 1961, 99). This aim brought him to the Aegean coast of Turkey, the Akhisar/Manisa and Balıkesir region and the Iznik-Bursa area south of the Sea of Marmara, which Mellaart had briefly investigated a decade earlier (Mellaart 1955; French 1961; 1967a; 1969). French pursued the “European Connection”, as it came to be known (Mellink 1993, 105), even further, by embarking on a survey of prehistoric sites in Thrace, Macedonia and Thessaly (French 1961).

In Greek Neolithic research, the ‘orientalist’ school (cf. Kotsakis 1999, 66) was represented by Vladimir Milojčić and Demetris Theocharis, who in 1967 published his thesis under the title *The Dawn of Thessalian Prehistory* in reference to Gordon Childe (Theocharis 1967). While these authors entertained the possibility of direct Near Eastern imports, in particular of domestic animals and plants (Theocharis 1973, 38), they devised an evolutionary sequence for Thessaly on the model of the Pre-Pottery Neolithic in the Levant. An initial stage of incipient farming, characterised by round semi-subterranean houses and a marked absence of pottery, was followed by a monochrome phase, in which architecture shifted to the rectangular plan and pottery was invented; finally, pottery was painted with increasingly elaborate motifs (Theocharis 1973). Evidence for a "preceramic" (or "Initial Neolithic") phase came mainly from the sites of Argissa and Sesklo in Eastern Thessaly (Theocharis 1973, 35; Perlès 2003a, 103). The discovery of a 'preceramic' phase in Knossos on the island of Crete, about 8.5 m below the Central Court of the Minoan Palace, added to the controversy (Evans 1964; 1971). Modern Greek scholarship thus developed both in continuity and in reaction with the theories of Gordon Childe.

One of the far-reaching outcomes of these pioneering investigations was the discovery of the mound of Hacılar in the Turkish Lake District, Southwest Anatolia, which, throughout the 1960s and 1970s, held the status of chief 'missing link' between Neolithic communities in the Near East and Europe (Mellaart 1970a, xii; 1978, 9; for a recent overview, see Brami and Heyd 2011). The site occupied a convenient location in what Gordon Childe had described as the "Anatolian Rails, the great natural route across the plateau from Central Asia" (Childe 1950, 41; see also Mellaart 1964a, 4). Hacılar was excavated by James Mellaart for four short seasons between 1957 and 1960, and the excavation proceedings appeared in four intermediary reports in the journal *Anatolian Studies* (Mellaart 1958; 1959; 1960; 1961a). Hacılar produced a stratigraphic sequence supported by radiocarbon dates, which comprised thirteen superimposed building-levels spanning the 7th and early 6th millennia BC cal. (Mellaart 1970a, 92). In addition, elusive evidence for an aceramic phase, which could presumably push the origins of Hacılar much earlier in time, invested the site with significant research potential (Mellaart 1964a, 6-7; 1970a, 3). The influence of Hacılar on contemporary scholarship was so great that it may be possible to speak retrospectively of a Hacılar 'model', based as much on the geographic 'in-betweenness' of the site as on extensive similarities in nearly every aspect of material culture between Hacılar and Sesklo (Mellaart 1958, 154-156; Brami and Heyd 2011).

With Hacılar a model of similarities in the comparison of pottery-bearing cultures, elements of material culture, such as painted pottery, became a means to the end of establishing the Anatolian ancestry of the European Neolithic (Schachermeyr 1976; Mellaart 1960, 90; 1965a, 118).

2.1.2 Regionalisation of scholarship?

The end of work at Hacılar and the shift to Çatalhöyük emphasised a paradigmatic shift from the synchronisation of prehistoric cultures to the reconstruction of past daily lives. This development could be ascribed in part to Mellaart's changing interests at the time, but also to broader developments in the discipline – in particular a greater autonomisation of scholarship trajectories in each study region and the rise of the New Archaeology. The closure of the Hacılar dig (1960) coincided with the start of the excavation at Çatalhöyük (1961). Initially it was thought that Çatalhöyük, with its continuous sequence spanning the entire ceramic Neolithic period, could fill in the gaps that Hacılar had failed to resolve. Interest for chronology quickly faded, however; and the extraordinary preservation of the site gave rise to a different form of archaeology, less culture-historical in emphasis, which was reflected in James Mellaart's final publication of the results (Mellaart 1967). Attention was given to the Çatalhöyük society as a whole, its daily subsistence, the structure of its exchanges, the composition of wall-paintings and reliefs, and so forth (Mellaart 1967). The text was enhanced with vivid reconstructions of the houses and the so-called 'shrines'. Given its sheer size and complexity, Çatalhöyük contributed to establishing the originality of the Neolithic phenomenon on the Central Anatolian Plateau. Çatalhöyük was branded as a Neolithic 'town' (Mellaart 1967) – a term that was used to distinguish it from contemporary settlements in Anatolia and Europe.

Academic developments at Çatalhöyük foreshadowed a broader trend of regionalisation of scholarship, which was partly linked to the economic and political contexts of the time. In Turkey, the economic effort shifted to the southeast in the later part of the 1960s with the construction of several large-scale dams on the upper reaches of the Euphrates River (e.g. Keban Dam, 1966; Kolars and Mitchell 1991).

The large-scale development plan, which was aimed at controlling water supply for geostrategic reasons as well as reducing the nation's reliance on foreign imports of energy, came to be known as the Southeastern Anatolia Project (GAP T.C. Kalkınma Bakanlığı Güneydoğu Anadolu Projesi Bölge Kalkınma İdaresi Başkanlığı). The State supported rescue excavations in the southeast (e.g. M.E.T.U. Lower Euphrates Project; Özdoğan 1977), while funding and permits for archaeological excavations elsewhere started to dry up. For instance, David French, as the newly appointed Director of the British Institute of Archaeology at Ankara, responded to the invitation by the Turkish authorities to work on the Keban Dam survey in 1968, and his excavations at Can Hasan in the Konya Plain were interrupted (Mitchell 1998). As new discoveries were made in Southeast Anatolia, especially at Çayönü – where excavation started in 1964 – and later on at Nevalı Çori (Braidwood *et al*. 1981; Çambel and Braidwood 1983; Özdoğan 1995; Mellink 1984, 441; 1993, 105; Hauptmann 2002), scholars became increasingly wary of earlier views of Anatolia as a mere 'backwater' for Neolithic innovations. It was felt that Anatolia should be regarded as a 'cradle of civilisation', due to the great ancestry of the Neolithic in the southeast and the "creative originality" that it displayed (Özdoğan and Başgelen 1999; Mellink 1993, 105). Mustafa Kemal Atatürk had actually expressed a similar view during the foundation of the modern Republic of Turkey[13].

In Europe, two broad trends may be discerned in this period. On the one hand, excavation at Franchthi in the Argolid, from 1967 to 1979, by an American team directed by Thomas Jacobsen, led to a re-appraisal of the Palaeolithic antecedents of the Neolithic in Greece (Jacobsen 1981). Consequently the emphasis shifted to longer-term reconstruction of the transition to farming. The case for an oriental 'connection' significantly weakened after the deaths of Milojčić and Theocharis (Runnels 1995, 703). The PPN-like sequence, which these authors had introduced in Greece, was challenged by Marija Gimbutas after renewed excavations at Achilleion failed to produce evidence for 'preceramic' occupation (Gimbutas 1989, 24-26). One of the most outspoken proponents of the indigenous development of food producing

[13] For instance, Çatalhöyük and the 'cradle of civilisations' served as a theme for the Turkish Pavilion at the 2010 Shanghai Exposition.

economies in Europe was Robin Dennell, who suggested that wild cereals, legumes and sheep had dispersed naturally into Europe prior to their widespread domestication (Dennell 1983, 152; 158; 163-164; see also Dennell 1978, 152; 155-157; Kotsakis 2006b, 111). A new generation, represented by scholars like Colin Renfrew and Catherine Perlès, stressed the role of exchange networks – in particular of raw materials such as obsidian, which was acquired from the islands of Melos or Giali in the Aegean – to explain the development of such specialised practices as seafaring, deep-sea fishing and itinerant knapping (Renfrew 1973b; Perlès and Vitelli 1999, 97). Most of these practices, they suggested, could actually be traced back to the Mesolithic period (Perlès 2001, 18). In sum, it became increasingly difficult to speak of the Anatolian origins of the Greek Neolithic.

On the other hand, the colonisation hypothesis regained support in Europe thanks to the development of archaeogenetics, radiocarbon calibration, modelling and linguistics. The first use of radiocarbon dates for modelling Neolithic expansion across Europe may be ascribed to Grahame Clark (Clark 1965). It was, however, the model of "wave of advance" introduced by Albert Ammerman and Luca Cavalli-Sforza, which attracted most attention and controversy (Ammerman and Cavalli-Sforza 1984). Combining information on site location and radiocarbon dates, these authors measured by regression analysis the average rate of Neolithic spread across Europe. They found this rate to be about one kilometre per year on average, which was consistent with a demic model of "wave of advance", whereby a wave front, in which agriculture was being practised for the first time, advanced at a constant radial rate (Ammerman and Cavalli-Sforza 1984, 61; 135). Demic diffusion implied the actual spread of farmers, caused by population expansion (Ammerman and Cavalli-Sforza 1984, 61).

To demonstrate that actual people had moved, Ammerman and Cavalli-Sforza highlighted that the Rhesus gene map of modern populations showed a strong genetic gradient across the Middle East and Europe indicative of "a Middle Eastern expansion towards Europe of groups with Rh+ blood, which mixed along the way with other peoples who had largely or exclusively Rh- blood" (Cavalli-Sforza and Cavalli-Sforza 1995, 144; 150). Colin Renfrew added a further dimension to the "wave of advance" model by suggesting that Proto-Indo-European language had spread to Europe alongside the first farmers (Renfrew 1989, 126-129). While these approaches re-affirmed the centrality of the Near East and/or Anatolia, these regions served merely as a 'fictional' point of origin to support the demonstration. Little attention was given to comparative and contextual information obtained through archaeological investigations. These approaches also signalled a split between the study of the processes of transmission of Neolithic innovations and the study of its modes of reception.

2.1.3 Reviving the grand narrative

Archaeologists working on the origins of agriculture in the Levant reintroduced, from the 1980s onward, the grand narrative 'from the Near East to Europe'. Jacques Cauvin, for instance, was one of the first to posit in quite concrete terms the existence of a "great exodus" of Late Pre-Pottery Neolithic B (thereafter PPNB) societies[14], which he ascribed in part to the development of nomadic pastoralism in the Western Middle Euphrates core area (Cauvin 1994, 181-275). Relying on comparative knowledge, which he gained by conducting fieldwork on various Neolithic sites in the Northern Levant and Southeast Anatolia, including Byblos, Mureybet, the El Kowm oasis and Cafer Höyük (Cauvin 1968; 1981; 1987; Cauvin *et al.* 1979), Cauvin suggested that the coast of Syro-Cilicia represented the first milestone of the "great exodus" to Europe between 7,500 and 6,300 BC (Cauvin 1994, 192; 205; Cauvin and Cauvin 1993, 27; see also Brami 2009). This model received support from a number of scholars, because it suggested that maritime interactions between the Near East and Europe had in effect bypassed much of continental Anatolia (e.g. Perlès 2003a, 107).

The Anatolian hypothesis found itself a champion in the person of Mehmet Özdoğan, who too started his professional career in the Northern Levant (Özdoğan 1977; Steadman 1995, 16). Özdoğan ascribed changes in regional occupation around

[14] Cauvin also saw an earlier Neolithic colonisation in the Taurus Foothills, which he referred to as the Taurus PPNB (Cauvin 1994, 113-118).

7,000 BC in the Taurus Foothills and in the Western Middle Euphrates to a widespread “collapse” of PPNB societies (Özdoğan 2005, 19; Sagona and Zimansky 2009, 76). This, in turn, would have triggered the westward expansion of the Neolithic way of life. The next logical step was to explore the routes of neolithisation across Anatolia into Europe. Mehmet Özdoğan’s research in Marmara and Turkish Thrace contributed to revitalise the Western Anatolian model, which had so far relied mainly on the evidence from Hacılar. Hacılar, it was felt, was no longer a useful model, due to its remoteness from the three main gateways to Europe, namely the Aegean islands, the Dardanelles and the Bosphorus (Brami and Heyd 2011, 194). New excavations were undertaken at the intersection of these routes of diffusion by Turkish archaeologists (e.g. Özdoğan and Başgelen 1999; 2007; Özdoğan *et al*. 2012; Özdoğan 1983; 1999; 2005; 2006a; Çilingiroğlu et al. 2004). Ilıpınar, Ulucak, Hoca Çesme and Aşağı Pinar count among some of the most remarkable sites that were investigated as part of this latter trend (Roodenberg 1995a; Roodenberg and Thissen 2001; Roodenberg and Alpaslan Roodenberg 2008; Çilingiroğlu *et al*. 2004; Çilingiroğlu and Çilingiroğlu 2007; Çilingiroğlu 2009a; Özdoğan 1999; Karul and Bertram 2005; Karul *et al*. 2003; Parzinger and Schwarzberg 2005). The aforementioned sites constitute what might be termed the new ‘in between’ – a notion, which has received increased support from scholars working on the other side of the border (e.g. Demoule 1993; Boyadzhiev 2009, 10; Gatsov and Nedelcheva 2009).

Alongside these developments, Çatalhöyük continued to be a powerhouse of ideas for the Neolithic in general. The Çatalhöyük Research Project , initiated by Ian Hodder, resumed excavation at the site in 1995, using new research strategies and methodologies (Hodder 1996a; Hodder and Matthews 1998). The academic continuity through the Institute of Archaeology in London, to which Childe, Mellaart and Hodder were affiliated at one point or another in their career, should perhaps not be understated (Green 1981, 106-126). It helps to explain, why Hodder, as a former student of Mellaart, decided to re-open Çatalhöyük (Hodder 1990, 3). Although the Çatalhöyük Research Project was not directly involved with the question of the spread of farming from Anatolia to Europe, it set out to “demystify” some of Mellaart’s claims about the unusual nature of the site (Hodder 1996b, 366); and in doing so it contributed to re-placing Çatalhöyük within the broader historical context of the emergence of early village societies in the Near East (Hodder 2006; 2007). In addition, the Konya Plain Survey undertaken by Douglas Baird explored the regional background and ancestry of Çatalhöyük (Baird 1996). This led to the excavations of two earlier sites, Pınarbaşı and Boncuklu, which shared interesting links with Çatalhöyük (Watkins 1996; Baird 2010; Baird *et al.* 2011). The perceived isolation of Çatalhöyük, which still has currency outside the Çatalhöyük Research Project[15], relates less to the inadequacy or inaccessibility of the data than to the difficulty to integrate different scales of analysis and in particular vast amount of extremely fine-scale data produced by specialists (see, in particular, Düring 2006 on this issue).

2.2 Current approaches of the spread of farming

Before one delves into the multiplicity of approaches that underlie this topic, it may be useful to stress that the field of Neolithic studies has been divided, since its onset, between two competing paradigms. One might reluctantly term these 'diffusionism' and 'autochthonism', though both approaches must not be confused with actual academic schools or traditions (Guilaine 1987a, 344). The divide opposes, on the one hand, those who after Vere Gordon Childe regard the Neolithic as a hearth/dispersal phenomenon, and those who see it instead as an evolution from one form of social organisation to another (Guilaine 1987a; see also Sherratt 1997, 12-13). Both of these viewpoints are probably correct, insofar as they are reflections of the same question. However, each has its own set of terminology and references. For instance, what some authors may refer to as the 'spread of farming', others may call the 'Mesolithic-Neolithic transition'. To say that the two approaches are irreconcilable may be too strong a statement, but they only overlap on specific issues, such as to determine how much societies borrowed from one another and how much was (re)-invented locally.

[15]On the "splendid isolation" of Çatalhöyük in the Neolithic period, see Gérard (2002, 107).

The 'autochthonist' perspective does not preclude foreign influence and exchange, but emphasis is placed on the adoption of foreign elements and on their incorporation within a pre-existing system. It is thus a view from Europe, which gives but little importance to upstream phenomena. In contrast, the current thesis is concerned not only with the reception, but also the transmission of Neolithic innovations; and in that respect it inherently assumes that something was spread, though it remains to determine the time, routes, manners of spreading, and most importantly the content of the Neolithic complex that spread. Consequently, returning to the initial question of how farming spread to Europe, from its origins in the Near East, one observes that it encompasses in fact a number of distinct issues, which may be listed as follows:

When did farming spread to Europe?
Who spread farming?
Along which routes did farming spread?
What was spread?

While the spread of farming as a generalising phenomenon was endorsed by all but a few, the fragmentation of scholarship may be ascribed to the diversity of questions that authors have chosen to address. This section thus sets out current approaches of the spread of farming thematically by research question. The question of why farming spread to Europe, which is distinct from the question of how it was spread, is not addressed here[16].

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[16] There are at least five main models of explanations for why farming spread into Europe: (1) the ever-expanding requirements of the farming system (e.g. Childe 1936); (2) a collapse in the social order, induced by either (a) abrupt climate change, the 6200 BC cal. event (e.g. Weninger *et al.* 2005; 2007; Clare and Weninger, in press) or (b) social unrest in the core of neolithisation (Özdoğan 2005, 19; Sherratt 2007, 14); (3) rapid population growth linked to increased regional carrying capacities and rise in female fertility, in turn resulting from adoption of sedentism and agro-pastoral economies (e.g. Bocquet-Appel and Bar-Yosef 2008; Bocquet-Appel 2011; see also Bocquet-Appel *et al.* 2009; 2012; Shennan 2008; Shennan 2009; Shennan *et al.* 2013); (4) a shift to nomadic pastoralism in marginal zones, induced by increased aridity, desertification and/or overgrazing (e.g. Cauvin 1994, 247); and (5) ideology-driven expansion (Hodder 1990; Cauvin 1994).

2.2.1 When did farming spread to Europe?

Culture-historical and chronological approaches attempt to answer the question 'when?' by studying the synchronic relation of Neolithic societies through similarities in material culture. The assumption is that the more similar two sites are, the more likely they belong to the same chronological horizon. The spread of the Neolithic is seen as one such horizon marked out by the introduction of farming, pottery, ground and polished stone tools, rectilinear architecture, etc. These objects are not considered for what they are, however, but merely for what they stand for; that is, they are proxies to trace Neolithic conditions. Despite the current lack of enthusiasm for culture-historical approaches (Dunnel 1982, 5; 1986, 149, 158; Flannery 1982, 274), they continue to exert a strong influence on modern scholarship, because a solid (and thoroughly materialist) chronological framework is seen as almost a prerequisite for any other form of archaeological enquiry. The latest example in point is Çiler Çilingiroğlu's thesis on Central West Anatolia at the transition from the 7th to the 6th Millennium BC cal., which advocates the need for a "new culture-historical Archaeology" to lay out the spatio-temporal foundations that are lacking in the region (Çilingiroğlu 2009a, 1). Ulf Schoop's thesis follows a similar line of reasoning. The starting point of his research is the realisation that a chronological framework for the Chalcolithic of Anatolia is missing (Schoop 2005b, 13). Both authors use the classification of ceramic types within stratigraphic sequences as a chronological framework, because the technological properties of the medium make it "thoroughly cultural" and thus ideal for the definition of chrono-cultural traditions (Hoopes and Barnett 1995, 1-2; Barrett 1991, 201-2; Rice 1987, 52). Similar approaches can be found in lithic studies for instance (e.g. Gatsov 2003).

It is not so much the ethnic dimension of culture history as the 'holy trinity' of time, space and form reflected in the production of chronological charts and distribution maps, which appeals to these authors (Lyman *et al.* 1997, 178; Trigger 2005, 165; 173; Rowlands 1984, 154). For instance, there is a long-standing tradition in archaeology to represent the spread of the Neolithic as arrows or radial waves on a map (e.g. Gronenborn 2007; Özdoğan and Başgelen 2007). Another rationale is to clarify and harmonise nomenclature, which so far hampers more than it facilitates, interregional reconstruction. Clemens Lichter notes, for instance, that the Late Neolithic of Turkey coincides with the Early Neolithic in Greece, while the Early Chalcolithic synchronises with the Middle Neolithic in Greece and the Early Neolithic in the Balkans (§3.4.3; Lichter 2005a, 7).

A slightly different entry into this subject matter is the role of techniques and of *chaînes opératoire*s in establishing chronological affiliation. The assumption is that the tacit knowledge and skills involved in making artefacts are learned through a complex process of imitation, reproduction and embodiment involving the participation of an instructor for a set number of lessons over a period of time. Techniques are therefore inherently difficult to replicate without direct interaction, on a face to face basis, which makes them ideal proxies to trace the spread of Neolithic innovations and of specialists in time and space. Martin Godon's dissertation on the Red Slipped Burnished Ware illustrates the applicability of this approach on a broad scale (Godon 2008). This is comparable in scope to Francesca Balossi Restelli's study of the Dark-faced Burnished Ware horizon in the Near East (Balossi Restelli 2006).

The emphasis has shifted, however, from the relative chronology of Neolithic assemblages to the absolute dating of the introduction of Neolithic practices. Both types of chronologies are complementary, but they tend to be studied in isolation; and preference is given to independent scientific dating evidence in the British academic tradition. The overall goal remains the same, however; that is, essentially, to establish the chronological basis of the Neolithic spread of farming. This evolution is evidently linked to the embracing of methods and techniques, such as ^{14}C dating, radiocarbon calibration, and Bayesian modelling, which challenge traditional understandings of chronology (Renfrew 1973a; Harris *et al.* 1987; Bayliss and Whittle 2007). Of particular significance here is the research undertaken by the CANeW Project and affiliated researchers, who compiled databases of radiocarbon dates from Anatolia, Upper Mesopotamia, Greece and Bulgaria in order to scrutinise their quality and establish a common chronological framework for the Neolithic in the Near East and Europe (Gérard and Thissen 2002; Thissen 2002; 2004; 2006; Reingruber and Thissen

2005; 2009; Bischoff 2004). One of the main outcomes of this research was the thorough reassessment of the radiocarbon basis for the so-called “preceramic” period in Greece (e.g. Reingruber 2011a). The contribution of Craig Cessford, who combined radiocarbon and stratigraphic information to establish a new dating sequence for Çatalhöyük East, is also worth mentioning, given the central importance of the site in modern chronological schemes (Cessford 2001; 2002).

2.2.2 Who spread farming?

The second type of enquiry involves research into the manners of spreading of the Neolithic, whether through colonisation, acculturation or a combination of both. In effect, this amounts to asking the question ‘who spread farming?’ and establishing the origins of the first farmers. This enquiry is distinct from the one outlined above, insofar as material culture is used here as a marker of identity instead of as a marker of chronology. However, one enquiry leads to the other. For instance, a variation on the issue of ceramic synchronisation is ceramic style. This approach is firmly rooted in the Germanic school represented by Fritz Schachermeyr and his theories on the cultural affiliation of Hacılar and Sesklo (Schachermeyr 1976). Pottery allows a rich repertoire of decorative motifs and patterns, which may be used to express cultural identity and/or belonging. Holger Schubert’s thesis on the Early Neolithic painted pottery of Southeast Europe draws an interesting distinction between ceramic technology and ceramic style (Schubert 1999). Although Schubert concedes that pottery-making technology may have spread from Anatolia to Europe at the onset of the Neolithic, he suggests that decorative motifs on painted pottery show regional variations indicative of cultural autonomy (Schubert 1999, 193-196). Moreover, as far as painted pottery styles are concerned, a backflow of ideas from west to east cannot be ruled out. Incised patterns on clay tokens and seals are being used to draw similar inference about the nature of the degree of cultural interrelationship between Neolithic societies (e.g. Budja 2003).

The role of material procurement and exchange is also commonly emphasised to suggest a co-evolution of Neolithic societies through exchange across an Aegean-wide region (Reingruber 2008; 2011b; Thissen 2000). This approach inherently assumes that structures were already in place among local, hunter-gatherer societies to accommodate a shift to agriculture. Consequently, in this approach there is no room for population displacement on any significant scale. The agency of exchanged goods and their role in the adoption of Neolithic practices are central to this approach. Obsidian, due to its geochemical signature which allows a precise identification of sources of extraction, is ideal to visualise ancient exchange routes. Melian obsidian is found all around the Aegean basin and as far north as Macedonia (Renfrew 1973b, Perlès 2001; Reingruber 2011b). The fact that Melian obsidian is now also known from Western Anatolia, for instance at the site of Çoskuntepe, about 330 km away from the island of Melos, suggests that farmers on both sides of the Aegean Basin shared a common knowledge of obsidian sources and were involved in the same exchange networks (Perlès *et al.* 2011). Perhaps a specialised class of "itinerant knappers" was involved in procuring and disseminating the raw material among increasingly sedentary communities (Perlès and Vitelli 1999, 97). A similar exchange network for the procurement of Cappadocian obsidian is known to have been important on the Central Anatolian Plateau (e.g. Conolly 1999; Carter *et al.* 2008).

All of the above approaches assume no, or only a minimal input by colonists. On the other hand, colonisation is supposedly supported by the repetitive occurrence of a set of traits within Neolithic assemblages, which form the basis of what is commonly referred to as the Neolithic 'package' (Reingruber 2011b, 293). For instance, Catherine Perlès points out that "the Neolithic in Greece appears already fully formed from the beginning, without transitional or 'progressive' phases" (Perlès 2001, 302). This model excludes long-term adaptation by hunters-and-gatherers. The Neolithic 'package', when used to study the "functional relatedness" of cultural traits in Neolithic assemblages, is a relatively new concept, which perhaps demands a more complex understanding than has been offered so far (Çilingiroğlu 2005, 2). Mehmet Özdoğan suggests, for instance, that there is not one, but several Neolithic 'packages' spreading from Anatolia to Europe, each entailing different elements of material culture (Özdoğan 2005; 2006a; 2007b; 2010a). The assumption is that different groups of colonists were involved in spreading farming beyond the boundaries of the Near

East. One of the significant weaknesses of the ‘package’ approach, however, is its inability to pinpoint the exact origins of the first European farmers. As much as the occurrence of certain traits is meaningful, so is their absence in Neolithic assemblages (Perlès 2005). The lack of bone spoons and of other elements of material culture in Early Neolithic Greece when these are present in Anatolia undermines the case for a direct transfer from Anatolia to Greece (Perlès 2005). Perlès ascribes this discrepancy to the amalgamation of traditions and migrants from various origins, some of whom travelled from as far as the Levant (Perlès 2001; 2003a; 2005). This model finds similar echoes in the writings of Mehmet Özdoğan (Özdoğan 2010a, 886).

Lastly, the development of archaeogenetics and other scientific approaches provides direct evidence for population movement during the Neolithic. The model of “wave of advance”, which relies on nuclear allele frequency data (for a recent re-appraisal, see Pinhasi *et al.* 2005), has been reassessed using other genetic markers, in particular mitochondrial DNA (Richards *et al*. 1996; 1997; 1998; 2000; 2002; Richards 2003) and Y-chromosome DNA (Semino *et al.* 1998; 2004) of modern-day Eurasian populations. Past demographic events are dated using a molecular clock – an estimated rate of DNA mutation (Richard *et al*. 1998, 241). Both approaches tend to confirm the contribution of Near Eastern settlers to the European gene pool, with significant demographic events happening in the Neolithic period (Richards *et al.* 1997, 252). Martin Richards and his team suggest, however, that most of the extant mitochondrial sequences in Europe, c. 85 per cent, have their origins in the European Upper Palaeolithic – suggesting that Ammerman and Cavalli-Sforza’s “wave of advance” over-estimated the scale of Near Eastern colonization and population replacement in the Neolithic period (Richards *et al.* 1998, 242). In particular, Richards *et al.* suggest that, although the Linearbandkeramik (thereafter LBK) in Central Europe is likely to have included a substantial “demic” component, this model does not apply to the Mediterranean region, where the data from Iberia would support instead a model of pioneer colonization with an important contribution from the indigenous Mesolithic population (Richards *et al.* 2000, 1271; but see Gamba *et al.* 2011).

Mitochondrial DNA and Y-chromosome DNA studies provide the opportunity to isolate female (mtDNA) and male (Y-DNA) lineages. Consequently, Roy King and Peter Underhill have correlated the distribution of Neolithic painted pottery and ceramic figurines with Y-chromosome lineages in the Balkans to suggest that sections of the Neolithic population (i.e. males) were involved in demographic events that had primarily symbolic or ideological significance (King and Underhill 2002; see also King *et al.* 2008). Studies that bring to congruence genetic markers and material evidence seem to represent the way forward. In the last few years, archaeology has witnessed the dramatic development of ancient DNA studies using human remains from a range of Neolithic sites in Europe (Pinhasi *et al.* 2012). Results are compared to the database of extant Eurasian populations to establish patterns in the past (e.g. Bramanti *et al.* 2009). One such study of 21 individuals from a LBK graveyard at Derenburg Meerenstieg II in Germany points, for instance, to strong Near Eastern affinities (Haak *et al*. 2010). Besides the genetic evidence, Ron Pinhasi and his colleagues have re-introduced craniometry to assess the "demic" diffusion hypothesis in Europe (Pinhasi 2003; 2006; Pinhasi and Pluciennik 2004; Pinhasi and von Cramen-Taubadel 2009).

2.2.3 Along which routes did farming spread?

Those who attempt to determine the main paths of Neolithic expansion into Europe usually examine the practical feasibility of Neolithic transfers across space. In the case of sea transfers, however, this question is somewhat redundant, insofar as Neolithic domesticates cannot possibly have reached remote islands such as Crete or Cyprus without human intervention (Broodbank and Strasser 1991; Efstratiou *et al.* 2004, 44; Colledge and Conolly 2007b). The same holds true for Melian obsidian, which is found at Franchthi in Argolis and at so many other mainland sites (Broodbank 2006, 208). Approaches in terms of paths of neolithisation are more successful in the theorisation and reconstruction of the in between space, particularly the geographical and environmental conditions, which may have affected the spread of farming. One strand of research concerns seafaring capacity, that is, the types of boats that were used by prehistoric people, which must presumably have been stable and large enough to accommodate a few ungulates. There is no direct evidence of these; the first depictions of prehistoric boats in the Aegean basin are found on the so-called 'frying pans' of the Cycladic Early Bronze Age[17], which display a ship or a sort of extended canoe with a high stern and a relatively low projecting bow, propelled by either paddles or oars; not a single mast is displayed (Broodbank 2000, 99; McGrail 2001, 109).

Another strand of research considers the effects of winds, currents and tides on prehistoric navigation and helps to rule out certain routes, deemed to be too impracticable in prehistoric times, such as the pourtour of the Cape Malea, the most southern point of Greece (McGrail 2001, 96; Papageorgiou 2008). The Aegean Sea being nearly impracticable in the winter months, from mid-November to mid-March (it was *mare clausum* in classical times), there is a particular window of time, when sea voyages could have happened (McGrail 2001, 92-3). We know from the work of Cyprian Broodbank that many Aegean islands became separated from the mainland only at a late date (Broodbank 1999, 22) and that islands in the Cyclades are distributed in chains at relatively short distance and intervisible from one another, which means that a large body of water such as the Aegean Sea could be crossed in a series of smaller journeys by "leapfrogging" (Broodbank and Strasser 1991).

Most regional models now consider the implication of sea-level rise and other changes in geographic conditions (van Andel 1989; van Andel and Runnels 1995; Lambeck 1996). For instance, the scarcity of Mesolithic sites in Greece is generally ascribed to the expectation that these may have occurred along the seashore, where they are likely to have been submerged following eustatic rise in sea level (Perlès 2001, 22; Galanidou and Perlès 2003). Likewise, the hypothesis of a late flooding of the Black Sea sometime in the Neolithic period, and its significance for our understanding of Neolithic spread into the Balkans, comes under intense scrutiny (Yanko-Hombach *et al.* 2007; Özdoğan M. 2007a). This is due to the long-standing expectation that so-called 'transitional' assemblages are to be found in Thrace (Brami

[17] Late Neolithic log boats for navigating on lakes are known from the site of Dispilio in Northern Greece (Hourmouziadis 2008). The earliest depictions of sea-going ships date to the Ubaid period, after c. 5,500 BC cal., in the Persian Gulf (Carter 2006).

and Heyd 2011, 173). For instance, Hoca Çeşme, north of the Dardanelles, at the mouth of the river Maritsa, has been afforded the role of transitional gateway between Anatolia and Europe (Demoule 1993; Özdoğan 1999; 2005).

Land routes are particularly difficult to infer from the archaeological record, given that there are no evident geographic barriers to constrain current reconstructions of the spread of farming. Consequently, the evidence relies mainly on the chronological primacy of regions or sites. For instance, it has long been assumed that the southern part of the Balkan peninsula, including Bulgaria, had been neolithised, not from east to west (i.e. through the Maritsa and Tundzha river valleys in Eastern Thrace), but from west to east (i.e. through the Struma valley), on account of the fact that there were no known Neolithic sites in Western Turkey old enough to have contributed to the spread of the Neolithic (see discussion by Lichter 2006). Current research has re-established the primacy of Western Anatolia in the advent of Neolithic economies (Özdoğan and Başgelen 1999; 2007; 2012). The issue remains of whether the Neolithic spread by land across the Anatolian Plateau or, on the contrary, by sea routes from the Levant (Perlès 2001; 2003a). Chapter 9 provides evidence in support of both land and sea routes.

2.2.4 What was spread?

One finally turns to the question of determining the content of the Neolithic complex that spread to Europe, which is central to all the aforementioned enquiries, insofar as domestic animals, plants, small objects and representations may not be spread in the same manner. Content-based approaches enjoy relatively mixed fortunes, partly because the content of the Neolithic ‘package’ is often taken for granted in current reconstructions of the spread of farming. In fact, many different contents have been ascribed to the Neolithic without there being a clear theorisation of just how much diverse elements may have spread together or separately even. There is also no agreement as to which content featured more prominently in the ‘package’, or as to whether the Neolithic complex was primarily economic or also cultural in character (see Guilaine 1987a, 344; 1987b, 750).

Plants and animals are one of the least problematic content ascribed to the Neolithic 'package', due to the conclusive argument that domestic caprines, emmer einkorn and barley occurring in Greece had no local wild ancestors (Hansen 1991, 21; 163; Halstead 1996b, 298-299; Alram-Stern 1996, 186; Zohary 1996; Zohary *et al.* 1988[2012], map 4; Colledge *et al.* 2004, fig.5). Traditionally the debate has revolved around the agency of humans in spreading the plants and animals (see Dennell 1983, 158). On Cyprus, where the advent of Neolithic economies goes back to the 9th millennium BC cal. or earlier, there is evidence for relocation of wild and domestic progenitors from the continent, while independent domestication of plant taxa on the island cannot be ruled out (Willcox 2000). Sue Colledge *et al.* conducted a systematic archaeobotanical study in the Eastern Mediterranean to determine the content of the crop 'package', including founder crops (emmer and einkorn wheat, hulled barley, flax, lentils, peas, bitter vetch and chick peas), wild and weedy taxas, that spread across Anatolia and into Europe (Colledge *et al.* 2004). They concluded that the crop 'package' was introduced exogeneously into Central Anatolia and the Aegean Basin, alongside the first farmers. Research has also established the 'package' of domestic animals, comprising the main livestock species of sheep, goats, cattle and pigs, which were domesticated in Southwest Asia and subsequently introduced in Europe (Zeder 2008; 2011).

Studies of modern and ancient DNA of domestic animals provide another source of evidence (Larson *et al.* 2007; Fernández *et al.* 2006; Beja-Pereira *et al.* 2006; Götherström *et al.* 2005; Brudford *et al.* 2003). It appears that there is a broad consensus on the overall process and direction of spread. One potential issue is whether there was hybridisation of domestic species with wild ones in Europe, as has been suggested for instance in the case of cattle (Götherström *et al.* 2005). This particular study has come under scrutiny for the methods used (see Bollongino *et al.* 2008), but it nonetheless raises important issues about the nature of early domestication and stock-keeping practices (see Conolly *et al.* 2011). A recent study suggests admixture of introduced pigs and wild boars in Europe (Ottoni *et al.* 2013).

Likewise, in archaeobotany, the debate revolves around the origins of plant cultivation and domestication, and Nikolai Vavilov's model of geographical centres of origins (core areas) of crop plants, where the current diversity of related varieties is greatest, comes under intense scrutiny (Vavilov 1992; Zohary *et al.* 1988[2012]; Jones and Brown 2000; Fuller *et al*. 2011). However, the identification of several 'independent' centres of food plant and animal domestication does not inform the recognition of 'primary' and 'secondary' areas of neolithisation, nor the existence of diffusion processes from one to the other. One of the questions that has attracted more attention in recent years is to determine which economic practices, if any, may have diffused alongside the first domestic plants and animals (e.g. Halstead 1987; 1996a; 1996b; 2004; Bogaard 2004a; 2004b; 2005; Asouti and Fairbairn 2010). Andrew Sherratt's model of "secondary products revolution", although mainly relevant to changes in the fourth millennium BC, provides an interesting analytical framework to tackle the spread of economic practices, such as dairy farming, shearing, traction and riding (Sherratt 1997). Some of these practices have been traced back to the Neolithic period. Laurens Thissen *et al.* show, for instance, how the effective combination of different strands of evidence – lipid residues in pots, ceramic morphology and mortality profile of cattle in faunal assemblages – provide an insight into the spread of dairy practices in Anatolia (Thissen *et al.* 2010; see also Evershed *et al.* 2008).

Apart from plants and animals, there is a suggestion that the Neolithic 'package' may have included standard or otherwise distinctive artefacts (Çilingiroğlu 2005). Heiner Schwarzberg suggests that anthropomorphic figurines and "Külttische" – also known as prismatic polypod ceramic vessels – had a wide distribution in Anatolia and Southeast Europe during the Neolithic period (Schwarzberg 2005). Similar studies draw lists of small finds, such as figurines, pintaderas, ear plugs, sling missiles and bone spoons, to establish the content of the Neolithic 'package' or 'packages' that spread to Europe (Çilingiroğlu 2005; Özdoğan M. 2006a; 2007a; 2007b; 2008; 2010a; 2011a). This is usually done by studying the presence and absence of iconic finds, which fall into standard categories, and are therefore easily recognisable in Neolithic assemblages. Recently, Mehmet Özdoğan added what one would classify as architectural techniques, for instance wall buttresses or lime floors, to this list (Özdoğan 2010a). Was pottery included in the initial 'package' that spread into Europe? Several authors suggest that pottery was invented on the spot in Greece, though the evidence is far from conclusive (Schoop 2005b, 67; Thissen 2000, 195).

One of the main criticisms levelled against content-based approaches is their lack of contextualisation of the data. What does it mean if certain types of figurines spread into Europe? In his authoritative synthesis on *The Birth of the Gods and the Origins of Agriculture*, Jacques Cauvin adapted structuralist theories to suggest that there were symbolic behaviours attached to these objects; and that symbolic representations may have contributed to the emergence of a Neolithic religion that was initially dominated by female figures and later on by male ones (Cauvin 1994). The development of a dominant, inherently expansionist ideology in the PPNB, marked out by powerful male and bull symbols and the occurrence of large, deadly weapons (i.e. big arrowheads), was a key trigger for the diffusion of the Neolithic outside of the Levantine core area in this model (Cauvin 1994, 68; 176). Ian Hodder is credited for the other important 'ideational' model – that of a *Domestication of Europe* by people who did not introduce agriculture, but a conceptual system dominated by a set of binary oppositions about the domestic and the wild, the inside and the outside, male and female, etc. (Hodder 1990). Hodder used case studies drawn from the study of European prehistory, in particular Çatalhöyük and Lepenski Vir, to support his model (Hodder 1990, 21). However, he bypassed the question of whether the Neolithic diffused or not by suggesting that elements of a shared tradition between the two sites were ascribed to a social and symbolic domestication – the emergence of the concept of the "domus" – which preceded economic domestication (Hodder 1990, 31-32).

In addition, language features prominently in the 'package' of non-material innovations that spread into Europe, thanks to the work of Colin Renfrew (Renfrew 1989). Renfrew rejected earlier suggestions by Marija Gimbutas that the development of Indo-European languages could be ascribed to a hypothetical spread of Kurgan Culture from a homeland in the steppes of Southern Russia and other work by linguists suggesting a steppic origin for Proto-Indo-European (Renfrew 1989, 17). He suggested that the homeland of Proto-Indo-European language could instead be located in Anatolia (Renfrew 1989, 47). The initial linguistic transformation, which led ultimately to the Proto-Greek language, was ascribed to the same movement of people and cultivars out of Anatolia into Greece that Ammerman and Cavalli-Sforza had mapped out using demographic and genetic modelling (Renfrew 1989, 129; 160).

2.3 Statement of the aims

This thesis is not concerned with the question 'who spread farming?'. Unless biological markers are included, it is impossible to make a definite statement on the respective importance of colonisation and acculturation. The question 'along which routes did farming spread?' is briefly touched upon at the end of this thesis, but the paths of neolithisation are inferred from chronology, rather than from geography (§9.1). It follows that the question 'when did farming spread to Europe?' is at least as important as the question 'what was spread?', because any discussion of the latter is bound by the quality of the chronology. The ^{14}C Backbone introduced in §1.2.2 provides a backdrop to address the central issue of this thesis: 'what was spread?'.

In a large field of research such as this, it is somewhat curious that the core question of the content or structure of the Neolithic that spread has been barely touched upon, or, when it has, subsequent answers have been so diverse that it may no longer be possible to discuss the Neolithic as a unified or even as a unique phenomenon – a view, which deserves thorough reconsideration in light of the evidence presented in Chapter 1. Moreover, the spread of the Neolithic has been, to a large extent, framed from a European perspective, considering only the reception of Neolithic innovations and their integration within existent social systems; this approach in effect ignores processes happening upstream, in Anatolia and the Levant, which are presumably at the root of the whole mechanism of change.

In view of these discrepancies, it is now possible to refine the aims of this study to address more clearly the content of the Neolithic pattern of existence that spread into Europe. Two main aims can be set out:

(i) to identify which elements of the Neolithic spread, and which did not.

(ii) to establish the extent (if any) to which the Neolithic was introduced as a coherent set or system of interrelated elements, for instance as a lifeway, or 'package', in Western Anatolia and Southeast Europe.

All this depends on what we understand by the term 'element'. In the following chapter, I propose to use a different unit of analysis, 'practices', defined by reference to theories of social action. Practices shift the focus of archaeology from culture traits and similarities to patterns of social behaviour, internalised through everyday life action.

3
A Method Based on Practices

To go beyond mere comparison of material assemblages, I propose to use a different unit of analysis, 'practices', defined by reference to the theories of social action as normative acts or ways of doing. The use of 'practice' in this context owes more to Bourdieu than to Giddens, insofar as human action is (pre-)determined by the contextual structure in which it takes place; that is, it assumes action without agency (§3.2.1). A further premise is that Neolithic societies, like any other preliterate societies, had rules and norms, and thus institutional structure (see Bourdieu 1972[2000]). To use practice theory as a methodological framework, it will be necessary to address its main limitation, namely its inability to deal with the category of space and to conceptualise relations outside or 'in between' societies as more than mere conditions in a closed system (Garcia Rovira 2012). Being system-bound, practices are, by their very nature, resilient to change, which raises the issue of what is meant if two societies share the same practice or elements of a practice.

This chapter outlines the method employed by first highlighting the relevance of practices to archaeology (§3.1); second, by defining practices with reference to the theories of social action (§3.2); and third, by describing the method used to reconstruct practices from their material expression (§3.3). The final section gives an account of how the data were collected (§3.4).

3.1 Beyond similarities in material culture

The traditional way of engaging in research on the spread of the Neolithic has been to draw similarities between assemblages of sites and culture-regions (Table 1). The criticism levied against this approach is that it is static; arbitrarily-defined segments of material culture, such as ceramic types, are being compared to find out whether they are the 'same' or, on the contrary, whether they are 'different'. The nature of the archaeological data is such, however, that no two elements of material culture are ever exactly the same, at least until the introduction of the potter's wheel and of other methods of standardised production, so that the interpretation of similarities is always heavily dependent on the observer and, I would add, on the ideological line that he or she has decided to follow (see Sherratt 2004, 56; Özdoğan 2004). Debates over perceived similarities in material culture typically end up in a standoff. For instance, specialists are still at odds in deciding whether Early Neolithic pottery in Greece was Greek or Anatolian in design (e.g. Schubert 1999; Schoop 2005b, 67; Thissen 2000, 195).

A more serious issue concerns the use and strength of conclusions drawn from a list of similarities, such as the one outlined by Mellaart for instance (Table 1). Should one assume that one society derived from the other? Or, that both societies were in contact and developed through interaction? A reasonable assumption might be that both societies responded to a similar set of conditions (e.g. environmental) by developing along very similar lines. Similar objects may also hold different meanings in different societies. As I hope this example demonstrates, similarity-based approaches simply lack explanatory power to resolve the question of the spread of the Neolithic. In order to go further in our understanding of human interaction, it will be essential to clarify the context in which the similarities and differences emerged. As Andrew Sherratt pointed out: "Contact and context must be evaluated together: it takes two to tango" (Sherratt 1997, 26).

(1) *Architecture*.– The use of mudbrick walls, often, but not always, without stone foundations : Hacılar V-II, Otzaki. Stone foundations : Hacılar I, Tsangli, Lerna. Square plans with internal buttresses : Hacılar II, Tsangli, Otzaki.
(2) *Pottery*.– *Wares* : Red on white slip (Aзβ)
Red on polished buff ground (Aзγ),
wet-painted or burnished (Aзζ),
Monochrome red and brown ware (Aı).
Absence of matt-painted ware in the Sesklo period proper and at Hacılar.
Dark paint, end of period.
Shapes : Flaring dishes, carinated bowls, funnel-necked jars, piriform jars, straight-sided bowls, etc. Oval vessels.
Motifs : Solid style (Early Sesklo) : step-patterns, triangle.
Linear style (Middle and Late Sesklo) : multiple chevrons, parallel lines bordered by triangles (Hacılar I only), stepped triangles.
Linear-Late Sesklo : e.g. elaborately painted interiors like Hacılar I.
Plastic decoration : Knobs, crescents, warts and human figures (Sesklo culture, Ayio Gala, Hacılar).
Lack of grooved and incised ornament.
(3) *Zoomorphic vessels*.–Bull rhyton from Hacılar II, goddess rhyton from Thessaly.
(4) *Clay altars on four feet*.–Hacılar V, IV and II. Sesklo.
(5) *Pottery ladles*.–Hacılar II, Sesklo culture in Thessaly.
(6) *Stamp seals*.–Hacılar II and Sesklo. (clay) ; Tsani (stone).
(7) *Oval clay plaques with two perforations*.–Hacılar II and Sesklo.
(8) *Female figurines*.–Clay, rarely in stone (Beycesultan). They have in common : the position of the arms, the sagging stomach, the steatopygy and in some types the stalk-like heads with clay pellets, and plaits of hair. Naturalistic ones rare in Thessaly, but see Lerna, which is the only specimen that in size compares with the Hacılar ones.
(9) *Animal figurines*.– Less prominent in both cultures.
(10) *Stone vessels*.–Marble and other stone. A bowl with flaring sides on a ring base is found both in Hacılar II and in Thessaly .The Sesklo bowl is found in stone at Hacılar.
(11) *Polished ground stone tools and objects*.–Axes, set in antler sockets, miniature green stone celts, chisels, pounders, mortars, querns and palettes are virtually identical on both sites. Stone beads.
(12) *Chipped and flaked stone industry*.–Blades, cores, scrapers of flint, chert and obsidian are similar in both cultures. Some pressure flaking is practised.
(13) *Bone and shell*.–Shell is used for making finger rings; bone for awls, spatulas, less commonly for needles and for pins with segmented tops.
(14) *Copper axes*.–Two copper axes were found at Sesklo of a flat axe shape, resembling stone ones from Hacılar.
(15) *Weapons*.–Sling-stones, or clay substitutes are common in the Sesklo culture and at Hacılar. Maceheads are again found, but the bow and arrow appears to be unknown in both cultures.
(16) *Trade*.–Both cultures imported obsidian ; that at Hacılar is of Central Anatolian provenance; in the Sesklo culture some may be Melian, but some is definitely not and is possibly imported from C. Anatolia.
Lumps of red ochre, possibly local, were also found at Sesklo. The metal axes may also have been imported.
(17) *Burial customs*.–Burials within the settlement are as conspicuously absent in Thessaly as they are at Hacılar. Extramural burial was probably practised. One intramural burial was found at Lerna.
(18) *Agriculture*.–Hacılar: wheat (type not yet known), barley, vetch and lentils.
Thessaly: Wheat of Einkorn variety, native to the Aegean and western Anatolia, and barley.
(19) *Cattle breeding*.–Ox, sheep, goat and pig are found in both cultures, but whereas pig is by far the most common in Thessaly, it is apparently rare at Hacılar.
(20) *Hunting and fishing*.–Boar and various type of deer were hunted in both areas.
Fish hooks in Thessaly are common, rare at Hacılar.
Notice the preference for settlements near lakes in both cultures and their neolithic predecessors. (Pisidian Lakes, including that of Burdur, Karla Lake in Thessaly, Copais in Boeotia, etc.).

Table 1. List of similarities between the Hacılar and Sesklo cultures (Mellaart 1958, 154-156).

Practices address at once the 'regional' level of interaction and the 'context' of action, because they are tied to a peculiar set of rules or norms, which are shared among members of a society or class. Any discussion of Neolithic practices is bound up with the research conducted by Ian Hodder and his team at Çatalhöyük (e.g. Hodder 1996b; 2004; 2005; 2006; Bogaard *et al.* 2009; Carter 2007; Düring 2001; 2005; 2006; 2007; Tung 2009; Russell 2012). This site has emerged over the years as a powerhouse of ideas regarding practice, by which I mean ancient practices like sub-floor burial. The focus remains, however, on how practices are reproduced through time at the scale of one site (diachronic approach) and not on how practices diffuse from one site to another (synchronic approach). This thesis attempts to address both levels of understanding: the change of practice and the diffusion of practice. But first, we must return to the definition of practice according to theories of social action.

3.2 Theoretical basis

Considering that theories of social action are founded on the premise that an act involves logically an actor or an agent[18] (Parsons 1968, 44-45), one is compelled to interrogate their relevance to a discipline like archaeology, which has never had access to the historical agents whom it studies. Worse still, the archaeological record is patterned in such a way that it is quite impossible to systematically and extensively isolate individual human action; to clarify, past people are 'anonymous' in the record. In the absence of texts, prehistorians cannot treat History like some historians do – as a recollection of events and relations initiated by prominent actors[19].

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[18] Talcott Parsons defines an act as involving logically (1) an agent or 'actor'; (2) it must have an end; (3) it is initiated in a situation with several possible outcomes, over which the agent has control or not; lastly, (4) there is a normative orientation of action; that is, within the area of control of the agent, the means employed to achieve an end are determined by prior knowledge of the concrete course of action (Parson 1968, 44-45).

[19] The definition of 'history' adopted by prehistorians like Vere Gordon Childe and others follows Karl Marx and Friedrich Engels: "[...] we must begin by stating the first premise of all human existence, and therefore of all history, the premise namely that men must be in a position to live in order to be able to 'make history'. But life involves before everything else eating and drinking, a habitation, clothing and many other things. The first historical act is thus the production of the means to satisfy these needs, the production of material life itself" (Marx and Engels 1940[1938], 16).

3.2.1 A theory of action without agency

Archaeologists are compelled to resort to a theory of action without agency. By this I do not mean to imply that there was no agency in the past (see Moore 2000; Gardner 2004). But individual and collective agencies are blended in the archaeological record; therefore a voluntaristic theory of 'agency' emphasising the reflexive knowledgeability of actors, who monitor their own action as they act, and who subsequently exercise informed decision-making to influence social structures[20] (Giddens 1979, 57; 1984, 2-8) is of less relevance to (prehistoric) archaeology. One of the conditions of archaeological research is that the material record is actually quite repetitive – structured in such a way that agency, whenever it occurred, was constrained into producing an existing 'type' (Childe 1956, 4). On this basis only can archaeologists define assemblages and divide up the material record into discrete units of culture. If we assume that prehistoric societies, like any other societies, be they preliterate or not, had a structure reinforcing and inhibiting agency, it was not institutionalised in the way that it is today. Rules and norms were not necessarily articulated into an explicit code of practice or laws, enforced by a central authority (Hodder and Cessford 2004).

3.2.2 Practice and habitus

The French sociologist Pierre Bourdieu defined the terms of this collective "orchestration without a conductor" (Bourdieu 1972[2000], 265). At the centre of his theory is the relationship between 'habitus' and 'practice'. As a (virtual) principle for generation of (actual) practices, the 'habitus' can only be understood within a theory of practice (Bourdieu 1972[2000], 256; 262; 277). Practice refers in this context to normalised types of act, which are recursively implicated through day to day activity – learned, in effect, by doing – literally embodied and turned into a permanent disposition (Bourdieu 1977[2007], 120; 1980, 121; see also Barrett 2001, 155). Members of a same group or class share a similar habitus of practices, a "community

[20] Anthony Giddens defines agency as the "continuous flow of conduct" – "the stream of actual or contemplated causal interventions of corporeal beings in the ongoing process of events-in-the-world" (Giddens 1979, 55; 1993, 81).

of dispositions", which determines how they sit, walk, eat or carry themselves (Bourdieu 1977[2007], 79). The habitus conditions their taste, their choices and therefore also their chances in society.

By emphasising practice as the basic unit of the habitus, Pierre Bourdieu's *Outline of a Theory of Practice* offers a methodological framework to examine human action in preliterate societies. The coordination of habitus within a group requires no central authority (Bourdieu 1972[2000], 271), no written set of laws (Bourdieu 1972[2000], 314) and no reflexive knowledge of its internal rules and logics (Bourdieu 1972[2000], 276) – in other words, no agency in the Giddensean sense. Of the three accounts of Kabyle ethnography illustrating the theory of practice, the second one on the Kabyle house has most relevance for archaeology, because it considers domestic space as a symbolic environment organised around a set of dichotomies, such as the inside and the outside, east and west, light and dark, public and private, male and female, culture and nature (Bourdieu 1972[2000], 61-82). The argument relies on two complementary strands of evidence, performative acts in the real world and performative utterances in language: the observation of repeated patterns in the orientation of the Kabyle house, which suggest a structured division of space into two distinct yet intersecting realms, is coupled to a review of semantic oppositions in proverbs[21] (e.g. Bourdieu 1972[2000], 68). For obvious reasons, only the first part of this approach, which involves practices that have a material expression, is of direct relevance to archaeology[22].

[21] The sentiment of honour in the Kabyle society provides another illustration of this approach: Bourdieu suggests that gender differentiation was achieved in the Kabyle society through a system of opposition between "the straight" and "the bent", assurance and restraint. The Kabyle man walks at a constant pace, the head held upright, and looks at people in the eyes, always with an air of determination. By contrast, the model for the Kabyle woman is "the bent": she looks reserved, versatile and reluctant to engage (Bourdieu 2000 [1972], 48).

[22] By projecting the dialectic of the *domus* and the *agrios* as universal or descriptive of societies, Ian Hodder (1990) ingeniously circumvented the absence of written record, and therefore of a relevant corpus of semantic oppositions, in prehistoric societies. His model assumes that the opposition between the *domus* and the *agrios*, which is used as a metaphor for the domestication of people and society, was as important to prehistoric societies as it is to us. But Ian Hodder himself has conceded since that "[...] the importance of the house or domus [did] not need to be based on an opposition with the wild" (Hodder and Cessford 2004, 20).

3.2.3 Change of practice

A key issue that structuration theory has struggled to address is the shift in daily practice. The habitus being self-reproductible, how do practices change? In action theory, this question is usually dealt with by reference to the actualisation of the norm; through causal action, agents create new conditions (Giddens 1993, 79). In other words, the habitus is constantly, albeit very slowly, re-invented as practices change and vice versa. Hodder suggests that day-to-day practical activities at Çatalhöyük introduced both repetition and (infinitesimally small) change (Hodder 2006, 233; see also Hodder 2000b, 21-22). Sometimes a small change in the system could trigger a far-reaching transformation in society: "By moving an oven one can confront social status or gender relations. By scuffing some dirt into a 'clean' area one could challenge accepted roles" (Hodder 2006, 247). Since the habitus contains within itself its own contradiction (see Bourdieu 1977[2007], 79), it could well be argued that the forms of resistance described by Hodder are rooted in the very structure which they wish to challenge: by deliberately moving an oven, one acknowledges that ovens have a definite place in the house; by scuffing dirt into a 'clean' area, one intrinsically submits to the established division of space.

A dramatic change of habitus, or a wholesale replacement thereof, requires a different explanatory framework. Pierre Bourdieu mobilises external actors who, suddenly projected in a society or class that they have not grown in, of which they have not embodied the rules, find that their habitus is out of tune – lacking the suitable 'capitals' to play the game and take advantage of its opportunities (Bourdieu 1972[2000], 278). Those mobile agents[23], who carry with them a habitus of practices, which is not attuned to the 'field' – society or class – which they (currently) occupy, are the real purveyors of change. New habituated practices emerge in the creative confrontation of different habitus, which are linked to different histories.

[23] Mobility refers here indiscriminately to residential and social mobility.

3.3 Outline of the approach

Archaeologists do not witness action. They are not bystanders watching as people deliberately burn their houses. They only come across residues of action – in this case, burnt houses. Consequently, the operationalisation of a method founded on practice as the basic unit for our understanding of human action in the past is conditioned upon the elaboration of a pragmatic scheme to reconstruct practices from their material expression. In the example outlined above, it is the context in which evidence of burning is found which helps to determine whether the house burned down deliberately or accidentally, and, if burning was intentional, whether it was by enemy forces or by the people themselves, for practical and/or symbolic reasons. It is also the context which helps to ascertain that the burning of *this* house could be ascribed to a broader practice of deliberate house-burning in this period. Thus, the reader can see that an understanding of the context of action is central to a redefinition of practice in archaeology.

3.3.1 Practices with a material expression

Practices, as we have seen, exist in virtually infinite forms and encompass areas of human life as diverse as cuisine, ritual, sport or medicine. Practices do not refer primarily to symbolic action, but to structured behaviour, by which one implies that they refer to a habitus-like structure asserted by the force of repetition. As their name suggests, practices may fulfil practical as well as symbolic purposes. A practice is not a practice, however, if it only allows for one concrete course of action. Eating, drinking, sheltering, dressing cannot be considered practices as such, because they fulfil essential biological needs, such as sustenance, protection from the elements and thermoregulation[24]. Access to a source of water, for instance, can be assumed as a given for every human society without this requiring further explanation or discussion.

[24]Eating, as a biological need, is never removed from its social context. In *Distinction*, Pierre Bourdieu demonstrates that the manners of eating and, indeed, taste, are socially constructed (Bourdieu 1989). Cooking styles or cuisines reflect the diversity of eating habits and as such are usually regarded as important areas of practices to understand past human interactions (e.g. Hastorf 2012).

By contrast, the forms of access to water, be it by building next to a river, by digging a well, or by any other practical solution, are contested realms useful for conceptualising social action.

Unfortunately, archaeologists have never had access to ancient informants, so the traditional methods of social anthropology aimed at collecting practices, participant observation for instance, are inapplicable. The ways in which people sit, walk, eat or carry themselves are never accessible to archaeologists other than through indirect evidence like representations, texts, or the built environment. Prehistorians face the additional difficulty of having no written record at their disposal, so that all the practices linked to the use of language, understood here as verbal discourse, are lost.

3.3.2 Residential and construction practices

Once it has been accepted that prehistorians are limited to those practices that have a material expression, it is a matter of identifying which ones amongst them are relevant to address the Neolithic as a lifeway or 'package'. In particular, the practices under review should be implicated, directly or indirectly, in the reproduction of the new pattern of existence. Undoubtedly, economic practices were central to the Neolithic, or at least to the model of Neolithic revolution and expansion proposed by Childe (1936). On the other hand, new research on plant cultivation has made clear that the uptake of intensive forms of agriculture in Europe was not possible without a long-term investment in fixed locales, which were maintained and used for several generations – the implication being that people had to stay with their crops (§1.1.4; Bogaard 2004a, 161). Consequently, the argument can be levelled that sedentism was not a consequence, but rather a condition of the adoption of food-plant economies in Europe (Bogaard 2004a, 169).

Although sedentism may be conceptualised in a variety of ways and may not be mutually exclusive of residential mobility, adopted by, for instance, a section of the population with different economic practices, one important aspect of its definition is a strong commitment to place (Bar-Yosef and Belfer-Cohen 1989, 452; Rocek and Bar-Yosef 1998; see also Tung 2009). In the Neolithic period, houses and homes became more permanent features, ingrained in the landscape. Incidentally, some of the practices under review in this thesis, such as house superimposition and residential burial, tied people to a place. There is abundant reference in the literature to an abstract concept, variously referred to as "repeated house" (Bailey 1990, 24-25; 31-32), "continuous house" (Tringham 2000b; Düring 2006, 246), or "history house" (Hodder 2005; 2006, 219; 2007, 143; Hodder and Pels 2011) – the idea namely that the house was a sort of repository for past social action, useful to its reproduction. The house as a normative framework, somehow 'lived on' through successive phases of occupation and provided, as it were, a fixed point of reference for successive generations of occupants. Accordingly, this was an acquired trait – the result of rebuilding the exact same house in the exact same location for a number of generations (§5.2). There can be no doubt that, in the absence of collective institutions to teach or 'indoctrinate' the rules and norms of the society, houses themselves were, as Ian Hodder argues, an "important location for socialization into roles and behaviours" (Hodder 2006, 138).

Besides all of the above, the decision to focus on residential and construction practices is motivated by the fact that there should be sufficient evidence to answer the question conclusively: houses are currently our main source of information about the Neolithic in Anatolia and Southeast Europe. Unlike economic practices, which are typically studied by reference to the botanical and faunal records, and thus only indirectly through material (grains, bones) recovered during excavations, residential and construction practices are directly linked to knowledge gained from archaeological excavations (§3.4.1). The particular sample of practices adopted in this thesis reflects, to a large extent, a desire to integrate Çatalhöyük within a broader regional context than that provided by Central Anatolia (see Hodder 2007; 2013b) and to clarify what role the practices observed at the site have played in the adoption of (a) Neolithic lifeway(s) elsewhere in Anatolia and Southeast Europe. This objective gains particular significance from the fact that the Çatalhöyük East occupation and the first expansion of Neolithic societies in Europe were broadly contemporaneous. The practices fall under five broad categories or areas of practices: house ‘closure’, house replacement, residential burial, spatial organisation in the rectangular house and agglutination. These categories may be arbitrary, but they reflect important aspects of the life of Çatalhöyük, in particular social strategies to maintain continuity over time.

Houses in the archaeological record rarely appear as they did in the past. Even the best preserved examples do not show a true reflection of how houses were lived in during the lives of their inhabitants. The only exception is when catastrophe suddenly halted everyday life. This is what happened at Pompeii after the eruption of Mount Vesuvius. But these instances are necessarily rare. Under every other circumstance, houses were disposed of in structured manner before they entered the archaeological record. This has important implication for the order in which practices are discussed in this thesis: houses in the archaeological record are *not* ‘living’ or systemic contexts (Schiffer 1972; 1985 *contra* Binford 1981; see also Chapman and Gaydarska 2007, 71-80); in other words, archaeological floor assemblages cannot be taken to represent discrete activity areas within the house, because, as argued in Chapter 4, specific deposition, retrieval and discard activities happened when houses were abandoned (Chapman 1999). Consequently, this thesis does not follow the chronological order of construction, use-life, abandonment and post-abandonment of houses generally encountered in the literature (e.g. Gerritsen 2001).

Incidentally, as Chapter 4 makes clear, house ‘closure’ at Çatalhöyük was the first act of the foundation of a new house, insofar as newer buildings were always conceived in relation to pre-existing ones. This practice cannot be understood, however, without reference to the fact that the dead were normally buried under the floors of the houses at Çatalhöyük. Yet the house was also conceived as a space for the living and a very peculiar layout was adhered to, in which members of a family unit lived within a single rectangular room. Finally, houses were tightly clumped together without streets at Çatalhöyük and this peculiar arrangement served a purpose, which I will try to clarify in due course. The coherence of the practices *inter alia* will emerge more fully after they have been reviewed in Chapters 4 to 8.

3.3.3 Contextual evidence

Each practice is made up of a sequence of choices, conscious or unconscious. Sub-floor burial, for instance, involves: (1) the dead person being buried inside the house; (2) the house still having been in activity when burial took place; (3) the deceased being buried under platforms that are used for sleeping or working; and so forth. Negative evidence is also revealing: in the case of sub-floor burial not all members of the community were entitled to be buried within the settlement. Each of the aforementioned options has a material expression, which can be studied archaeologically by using information about the context (Hodder 1987). For instance, to determine whether the house was indeed in use when burial took place, it is necessary to consider, first, whether the burial pit cut into a living platform or surface; second, whether it was sealed by one or more layers of plaster (§6.1.1). The latter condition is essential to establish continuity of occupation after inhumation took place.

Four main categories of contextual evidence may be used to draw inference about choices that were made in the past[25]. (a) *Relational*: how an object relates spatially to other objects in a given context. For instance, the occurrence of human remains within the context of domestic space is a necessary precondition for the existence of the category sub-floor burial. (b) *Depositional*: how an object relates chronologically to other objects in a sequence of depositional events. The replacement of one sort of object by another sort of object in a stratigraphic sequence is suggestive of a change of practice or of its continuation in other form. Changing cooking practices at Çatalhöyük are, for instance, indicated by the replacement of clay balls, presumably used to boil water and heat up food, by ceramic vessels after level VII (Hodder 2006, 53). (c) *Typological*: how the object relates to a type of similarly-defined objects within a classification. As an example of typological evidence, one

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[25] This scheme broadly overlaps with that defined by Ian Hodder (1987, 5-7), but introduces two changes. First of all, temporal and depositional categories of contexts are merged here, because any episode of deposition is an event happening in time, whose interpretation depends on integration within a sequence of stratigraphic events. Second, the object itself is considered here as a form of context. It may be argued that anything provides context to everything else; in other words, an object is never fully removed from its contextual background, since it is at least the sum of its parts and its interpretation always depends on prior understanding drawn from experience.

may consider the functional interpretation of individual ceramic vessels with reference to widely distributed ceramic wares, such as the Dark-faced Burnished Ware or Red-slipped Burnished Ware in Anatolia (Balossi Restelli 2006; Çilingiroğlu 2009a; 2009b; Godon 2008; Özdoğan 2006a, 25-26). (d) *The object itself*: intrinsic characteristics of the object on macroscopic or microscopic level can also inform our understanding of ancient practices. For example, lipid residues from pottery vessels in Anatolia show that they were used for processing and perhaps boiling milk (Evershed *et al*. 2008; Thissen *et al.* 2010). Presence/absence-types of evidence are also meaningful within the last category of evidence.

3.3.4 Interrelationship of practices

An important issue in studying practices is how to define their conceptual boundary. For example, two of the practices under review in this thesis, house infilling and vertical superimposition of houses seem to have been embedded in a continuous stream of intended consequences and action (Chapter 5). Although a chronological spacing of up to 100 years has been suggested between these series of action during the 'life sequence' of selected buildings or building sequences at Çatalhöyük (see Love 2006, 382-383), the two practices were so closely related – functionally speaking – that it becomes difficult to distinguish them and address each separately. Suggestion is made that disused houses were deliberately infilled in preparation for rebuilding on the same site (Farid 2007, 52). The issue at stake is not just how to divide up chapters in such a way as to account for overlap in scope of different practices, but also crucially to ascertain whether practices diffused alone or as part of a set of functionally-related behaviours.

The Synthesis and Discussion Chapter takes on this challenge directly by interrogating the functional relationship or coherence between residential and construction practices in the Neolithic period. This chapter proposes to conceptualise practices within habitus or networks of interrelated social practices – in sum networks of networks. In so doing, it also draws attention back to the process of diffusion itself, insofar as the enquiry concerns both the practices themselves and the norm or value underlying them. What is passed on, in other words, is either the knowledge of action and resources (what or how to do), or the entire set of meanings and relationships presiding over the creation of practices (to what purpose). In order to address this issue, it is necessary to study several practices that fall into different categories: those that have a wide distribution, those that remain localised and those that transform. One may then discuss the interrelationship between practices based on, for instance, membership to the same category of human experience (e.g. intermittent collective action).

3.4 Data collection

Before moving on to discussing the types of sources that were used in this thesis, the place of fieldwork and the nature of knowledge gained in fieldwork need to be addressed briefly. Practices draw their normative character from the repetition, time after time, of the same acts. We have seen that an act consists, in turn, of a sequence of smaller actions or events. These acts are no different from the acts that archaeologists retrieve or infer from the depositional history at a site, by re-tracing the order in which sediments were accumulated over time. For instance, a 'cut' in archaeology is the residue of a concrete action, such as the digging of a pit in prehistory[26]; although we cannot be certain of the identity of the actor(s) responsible for digging this pit in particular, we gain information about the period to which he, she or they belong by studying the content of this feature and its relationship to the underlying and overlying strata. It follows that archaeologists who dig are exceptionally well placed to tackle past human action. The difficulty arises later on, when archaeologists attempt to ascribe this particular action, which they uncover from the material record, to a larger social practice, such as structured deposition in this instance. They have to deal in effect with two levels of understanding: micro and macro.

[26] Archaeological contexts are generated by human action and taphonomic processes, such as erosion, weathering and animal burrowing. Taphonomic processes should not trouble us beyond measure here, because the vast majority of sites under review in this thesis are artificial mounds or 'tells', wherein sediments are anthropogenically-derived and accumulated through successive episodes of human occupation (Chapter 5).

3.4.1 Fieldwork

Although the choice of the broader topic of the spread of the Neolithic derives from my reading of the literature, my understanding of practices draws mainly from my experience of fieldwork, in particular through my involvement with the Çatalhöyük Research Project. Participation to this and other projects, such as Boncuklu, Ulucak, Barcın and Aşağı Pınar, since 2007, has fuelled my interest in research on the Neolithic of Anatolia. Fieldwork informed my understanding of similarities and differences between Neolithic communities on the Central Anatolian Plateau, in Western Anatolia and Thrace. The opportunity to re-study material from older excavations at Hacılar and Mersin-Yumuktepe, although not essential to this study – because this research is not directly concerned with artefacts –, has helped to clarify matters of chronology and interaction, which are explored here through the agency of practices.

Yet this thesis contains little unpublished information, other than that which was made available by the heads of the projects and relevant scholars whom I contacted, and which is duly referenced in the text. Incidentally, as interpretations change over time as refinements are made to the stratigraphic sequence and other aspects of the archaeology, it is often safer to use published sources. The question is how one might extract useful information about practices from the published record. Practices as such are rarely mentioned in the primary literature, such as field reports, and usually only appear in passing, in the course of a more general description of the architecture or of the burial record. It is thus essential that one knows what sort of information is needed before one actually looks for it in the record. In this research, a lot of time and attention has been devoted to defining the categories of practices and the criteria that one might use to reconstruct them accurately from the archaeological record.

3.4.2 Nature of sources

I have found it useful to refer to how larger excavation projects, such as the Çatalhöyük Research Project or the Çayönü Tepesi Project, have tackled practices, not because they necessarily provide a relevant model to interpret others, but because they have invested more effort and resources in dealing with these issues. With the benefit of several decades of excavations in the same site, researchers who worked on these projects have had to re-think their own interpretation of the data on several occasions; consequently, they have developed very complex understandings of the material record, which it is essential to capitalise on. Considerable work on practices has also been conducted by scholars working in the Balkans, in particular Ruth Tringham, John Chapman and Douglass Bailey (Bailey 1990; 1999a; 2000; Chapman 1990; 1997; 1999; 2000; Stevanović 1997; Tringham 1991; 1994; 2000a; 2000b; 2005). These studies are not necessarily concerned with the Neolithic period, but they provide a methodological framework in which to situate a discussion of residential and construction practices in the Neolithic. The first step of the analysis was to define the different categories of practices.

Once I established which information would be useful to identify practices from the literature, I started to notice repetitions in the published record, such as countless mentions of burnt houses. These references were collected in a database and an attempt was made to 'map' them both spatially and temporally (Appendix B). The research proceeded to, as it were, build a case for each practice, using an array of information usually treated in isolation. The main difficulty at this stage was the absence of a frame of reference, or of an established set of methodological steps with which to compare my own. As a result, this research remains fairly exploratory in nature, and I believe that it could be drawn to a far more advanced level than it currently has, for instance by quantifying the data. But practices, by their very nature, cannot be treated like more neutral categories of material life, such as ceramic wares or architectural traditions, because they are inferred rather than instantiated from their material expression using a range of proxies and assumptions. Practices are not *there* anymore.

The quality of sources available is another matter. As far as field reports are concerned, to a large extent the quality of sources is dependent upon the quality of fieldwork. The emphasis on practices meant *de facto* that one had to focus on excavated sites, which produced enough material in stratified context. Thus, results generated through survey were found to be of less relevance to this project and had to be left out. Since practices entail a sequential process, attention was given in priority to well-dated sites, which produced radiocarbon determinations, or at least enough evidence to place the data in a relative sequence. Inevitably, this approach exposed regional gaps in our understanding of Neolithic practices, which may be bridged by focusing on key sites that are used as a standard or proxy for the Neolithic of a region or regions.

3.4.3 Scope and terminology

The scope of this research encompassed more or less the whole of the Anatolian Peninsula, as defined in §1.2.1, and immediately adjacent regions in Europe, including the Aegean Basin and Thrace. The northern limit of the study area was set at the level of the Balkan Range. Sites in the Former Yugoslav Republic of Macedonia were not included, due to their geographical remoteness from Anatolia – though they were probably part of the same cultural complex in the Neolithic period (Gimbutas 1976). Although the scope of this project was fixed from the outset, for instance in the databases of archaeological contexts and radiocarbon dates that were collected, sites which fall outside the remits of the subject were included, where it was deemed necessary, to clarify the origins and development of particular social practices.

Research involved going through a large set of references written in at least six different languages and three alphabets. To cope with this issue, a database of archaeological references and bibliographical notes with over a thousand entries, searchable through keywords, was set up. This has helped enormously at various stages of this research. Another issue was terminology, which is not harmonised across the study region. Table 2 provides a basic synchronisation of Neolithic cultures in Anatolia and Southeast Europe. Notice that the ‘Near East’, as it is defined in this thesis, coincides with the Levantine corridor and the Taurus Foothills - thus excluding the Anatolian Peninsula – while ‘Southwest Asia’ refers to the broader Middle East, including Asia Minor.

Central Turkey	Western Turkey	Greece	Bulgaria
Aceramic Neolithic (Aşıklı)			
Early Pottery Neolithic (Çatal XII-VIB)	?Early Neolithic? (Ulucak VI)	?Initial Neolithic? (Knossos X)	
Late Neolithic (Çatal VIA-0)	Late Neolithic (Ulucak V)	Early Neolithic (Sesklo EN)	?Phase Ia? (Kovačevo Ia-Ib)
Early Chalcolithic (Çatal West)	Early Chalcolithic (Ulucak IV)	Middle Neolithic (Sesklo MN)	Early Neolithic (Karanovo I-II)

Table 2. Basic synchronisation of Anatolian and Southeast European Neolithic cultures. Each period or tentative period is illustrated with one or more type site (adapted from Lichter 2005a, 7; Özbaşaran and Buitenhuis 2002). NB: some authors working in Aegean Turkey have recently adopted Aegean or Greek terminology; accordingly they refer to the Western Anatolian Late Neolithic as the Early Neolithic (e.g. Erdoğu 2003).

3.5 Structure of the results

The outcome of this research is the production of a detailed typology of residential and construction practices revolving around a number of generic problems or areas of practices: house ‘closure’, house replacement, residential burial, spatial organisation in the rectangular house and agglutination. Each chapter is divided up into different sections arranged chronologically, from the older to the more recent practice, with the purpose of showing the evolution from one pattern of behaviour to another or, on the contrary, discontinuities over time. The extent or distribution of practices over space is mapped onto the chronological framework for each practice or area of practice – this in order to mitigate the problem that practices can change across both time and space. Given that the Southwest Asian Neolithic is older than the European Neolithic, under current reconstructions (Chapter 1), it follows that the discussion is broadly framed from east to west. This in itself is a result, as it provides indication of the general direction of the spread and sets in motion a dynamic of diffusion, which is explored in greater detail in the final chapters of this thesis.

4

House 'Closure'

This chapter is concerned with the way in which people discarded houses at the end of their use-lives. This issue takes precedence over others, due to the fact that abandonment deposits, which archaeologists encounter first when they excavate a disused house, usually reflect the final sequence of human activities before the house entered the archaeological record – altering and frequently obliterating evidence of earlier occupational history (§3.3.2). Attempts are made to retrace the diachronic trajectory of 'closure'-related practices in Anatolia and to offer a new interpretation of burnt houses and burnt villages in Neolithic Southwest Anatolia by reflecting on the findings and methods developed at sites such as Çatalhöyük and Çayönü.

House destructions in Anatolia have traditionally been interpreted as a product of accident or inadvertence (Mellaart 1966, 172; 1967; 1970a, 10), and more recently as deliberate action by enemy forces (Clare *et al*. 2008; see also Mellaart 1970a, 75). These models are based on the adverse premise that catastrophe, engulfing both the lives of the houses and their inhabitants, suddenly halted everyday life and created, as it were, a frozen 'snapshot' of a specific point in time. Fine-scale analyses of archaeological contexts at sites like Çatalhöyük and Çayönü demonstrate, however, that in some instances at least, it was the people themselves who were responsible for setting fire to their own houses, and that the practice of deliberately burning houses at the end of their use-lives was rooted in an emphasis on ritual 'closure' (Twiss *et al.* 2008; Cessford and Near 2005; Farid 2007; Hodder 2006, 130-131; Özdoğan and Erim Özdoğan 1998).

Besides making a case for deliberate house destruction as embedded social practice, I wish to draw attention to the transition that occurred from house infilling (§4.1) to house burning in the middle of the 7^{th} millennium BC cal. (§4.3). The review of one context in particular, Building 80 at Çatalhöyük, which was set on fire and intentionally buried, provides new insight into the dynamics of change in this period (§4.2).

4.1 House infilling

The first sedentary communities in Southwest Asia invested their homes with great symbolic meaning. The archaeological record from this region shows that houses were not just deserted, but also partly demolished and infilled for practical and/or ritual purposes. The 'closure' by infilling of later Aceramic Neolithic houses is a well-established theme in Anatolian archaeology (Hodder 1996b, 361; 365; 2006, 121-125; Özdoğan and Erim Özdoğan 1998; Özdoğan 2006b, 168). The idea has been mooted since the time of James Mellaart's excavations at Çatalhöyük in the Konya Plain (see, for instance, Mellaart 1966, 172; French 1963, 35), but we owe to the Çatalhöyük Research Project a more systematic exploration of this issue (Matthews 1996, 86; Matthews and Farid 1996, 294-297; Farid 2007, 52; Cessford 2007, 531-532; Twiss *et al*. 2008).

Another site where the practice of house infilling has been explored in great detail is Çayönü, near the headwaters of the Tigris Basin, Southeast Anatolia (Özdoğan and Erim Özdoğan 1989, 73; 1998; Özdoğan 2010b, 30; Erim Özdoğan 2011, 199; 208). The excavators of this site, Mehmet and Aslı Erim Özdoğan, have co-authored an article named *Buildings of Cult and the Cult of Buildings*, which has been influential in promoting the study of house infilling elsewhere in Anatolia (Özdoğan and Erim Özdoğan 1998). The debate particularly gained momentum after it was revealed that earlier temple structures at Göbekli Tepe had seemingly been abandoned in the same fashion (Schmidt 2011, 43; Banning 2011, 628). Many sites, which belong to either the Pre-Pottery Neolithic A (thereafter PPNA) or the Pre-Pottery Neolithic B (PPNB) period in the Near East, have been identified as likely candidates for this practice (e.g. Qermez Dere, Northern Iraq: Watkins 1990; Tell Sabi Abyad, Northern Syria: Akkermans *et al*. 2011, 2; 5; Bouqras, Sastern Syria: Akkermans *et al*. 1981, 495; 'Ain Ghazal, Northwest Jordan: Banning and Byrd 1987; Beidha, Southern Jordan: Byrd 2005; Wadi Faynan site 16, Southern Jordan: Finlayson *et al*. 2011).

4.1.1 Deliberate infilling and utilitarian levelling

In view of the enormous time-span involved, several methodological issues must be addressed. First of all, the recognition of infill deposits is only possible at sites where this question has been specifically targeted by the excavators. In other words, it is difficult to gain information about the fill of abandoned houses *a posteriori* from the published reports, when this question has not been purposely investigated in the field. Thus, in contrast to house burning, which has a high visibility in the record, house infilling often goes unrecognised. A case can be made for a much more widespread distribution of this practice than is currently known. It follows that any attempt to compare sites with this practice too closely is doomed by the lack of correlation between the sequences of the sites involved. A further difficulty with regard to the aforementioned issue is to distinguish ritual infilling from utilitarian levelling when, for instance, a new house has been superimposed on top of an earlier structure. The sequence of stratigraphic events may in some instances suggest that infilling was part of 'closure' rather than foundation activities, but infill deposits as such are not intrinsically ritual; they acquire this status through the sequence of actions.

Several criteria can be used to recognise the practice of infilling in the record (Table 3). Houses, which have been deliberately infilled usually display an excellent state of preservation due to the careful backfilling of features and spaces. Mouldings and wall plaster, which would peel off and crumble under normal circumstances, are preserved *in situ* in backfilled rooms (Özdoğan and Erim Özdoğan 1998, 589). Occasionally walls remain standing at elevations, which would have been inconceivable, had the houses not been immediately interred at the end of their use-lives: for instance, such walls held in place up to 3.3 m at Çatalhöyük ('Shrine' E.VI.10, Mellaart 1967, 63). There is considerable diversity, however, in the methods and materials used for infilling houses, even within a same site or archaeological level. Roof-level preservation of walls and internal features remains exceptional and many walls were truncated a little above foundation level (§5.2.2).

House infilling variables	Criteria
Preservation of walls up to roof level	maximum height of walls (h>2 m)
Restricted building access	blocked doorways
Deliberately introduced fill	soil macromorphology
	infill involves a single depositional event
	volume of infill far exceeds volume of building materials
	sterile infill
	no re-fits
Processed fill	homogeneous fill content
House foundations resting upon standing walls	vertical stratification ('tell' formation)

Table 3. Identification criteria for the practice of house infilling in the archaeological record.

4.1.2 Types of infill deposits

At Çatalhöyük, the excavators observe that the fill of abandoned houses consisted of either, (a) building debris which have been processed in some way (usually the debris have been finely crushed and sorted), (b) a 'sterile' infill (i.e. deliberately introduced mineral sediments), (c) organic-rich midden deposits, or (d) burnt structural debris (Matthews and Farid 1996, 294-297; Hodder 1996b, 365). At Can Hasan I, there is also one instance of a house that has been completely filled up with stacked mudbricks (French 1963, 35). Interestingly, houses which have been superimposed and 'repeated' on the same spot for several generations have usually been infilled with a 'sterile' infill (Düring 2007, 143). The case is less clear where houses have been backfilled with midden deposits. A strong indication of deliberate infilling is when the infill represented a single depositional event (Finlayson *et al*. 2011). It is worth noting that wherever a house was found to have been intentionally buried, other abandonment practices could be recorded as well, such as emptying and 'scouring' clean of the floors and features, post retrieval and structured deposition of artefacts in unusual places, such as post retrieval pits, ovens and storage bins (see Çatalhöyük: Cessford 1998; 2007, 531-535; 546; Hodder and Cessford 2004; Hodder and Meskell 2010, 48; Farid 2007, 52).

A further indication of the ritual significance of the practice of infilling houses is that infilled houses are hardly ever found to have been quarried away or robbed of their stones by their immediate successors, as though they had been sealed from external interference at the end of their 'use-lives' (Özdoğan and Erim Özdoğan 1998, 590). This is particularly evident during the PPNB period in the Northern Levant, when infilled houses were directly built-over with little disturbance to the fill or the stubs of the walls, which were incorporated in the foundations of succeeding houses (Hodder 2007, 108-113; Moore *et al*. 2000, 240; 248; 262; Kuijt *et al*. 2011, 507). In addition, although roof posts and beams were frequently salvaged for reuse elsewhere, successive generations of houses at Çatalhöyük almost never shared the same mudbricks, and old bricks were never re-incorporated, for instance, in succeeding houses (Love 2010, 159; 205). In the PPNA, by contrast, houses were frequently re-cut in the same place (compare Qermez Dere: Watkins 1990; and Çayönü: Özdoğan and Erim Özdoğan 1998).

4.1.3 'Closure' and renewal

The explanation of this practice may be sought in the emphasis on house renewal in this period, for the act of 'closure' represented in reality the first act of the foundation of a new house (Farid 2007, 52). Perhaps infilling only took place after the death of a prominent member of the village (Hodder 2006, 129). Since many houses outlived their inhabitants (see Düring, 2005, 16-18; 2007, 142), it is however unlikely that they were abandoned every single generation. The frequent association of the practice of house 'closure' with a death cult is further interpreted, on the basis that Aceramic Neolithic houses often preserved the remains of dead ancestors buried under the floors and the platforms, and thus also in the fill of abandoned houses. There are also functional explanations to this practice, pertaining to the agglutinated nature of some of the settlements, particularly in Central Anatolia, and the superimposition of building strata. Perhaps it was a way to deal with building debris in excess without the trouble of carrying the rubble off-site (Farid 2007, 53); or Neolithic inhabitants may have wanted to take advantage of the artificially raised elevation created by the buried houses to build stable and well-insulated homes on top (Cessford 2007, 531-532).

To sum up, it would seem that house infilling was a widespread practice, probably inherited from the PPNA and linked to the formation of Aceramic tells (Chapter 5). Several features may call one's attention to elements of a shared practice across a wide spectrum of sites: (1) in the aforementioned settlements infilling took place as part of a sequence of activities that involved filling up the existing house and building a new one on top; thus, (2) the infilling of the abandoned house was a pre-condition for the foundation of a new house and both events were organically related; (3) abandoned houses show no signs of having been untended or neglected prior to infilling; (4) in all the houses there is evidence of deliberately introduced and/or processed fill; (5) until about the middle of the 7th millennium BC cal. this practice did not involve the use of fire; (6) once a house had been sealed, there was little evidence in way of contamination from later levels; (7) this pattern was replicated many times during the occupation of a site and the successive accumulation of infill deposits led to the formation of artificial mounds or tells.

House infilling has not been addressed specifically in Western Anatolia. It is worth reporting, however, the recent observation that vertically superimposed red lime-plastered floors, belonging to the earliest ('aceramic') level at Ulucak near Izmir, were interspersed with 'sterile' deposits (Level VI: Çilingiroğlu 2011, 69). These deposits may be floor foundations or may indicate actual infilling. Both the lime-plastered floors and the sterile deposits may suggest a connection with Aceramic Neolithic traditions in Southwest Asia, explored in more detail in §9.1.2.

4.2 The case of Building 80 at Çatalhöyük and the dynamics of change

The introduction of fire in the sequence of 'closure'-related activities altered the nature of the ritual in place. I wish to outline the case of Building 80 at Çatalhöyük (Figure 5), which has been emptied, set on fire and infilled, for it is symptomatic of a broader transition from one method of 'closure' to another in the middle of the 7th millennium BC cal. It also provides an illustration of some of the phenomena described in this chapter. The excavation team, of which I was a member, confronted a problem when removing the post-occupational debris that filled the house (Regan and Taylor 2009; Regan 2010): on the one hand, the house appeared to have been destroyed by a blaze; on the other hand, it also appeared to have been emptied prior to abandonment and backfilled with managed debris. The reconstruction of the sequence of abandonment of Building 80, outlined below, shows that house burning was probably a deliberate act that was set within a broader sequence of 'closure' activities.

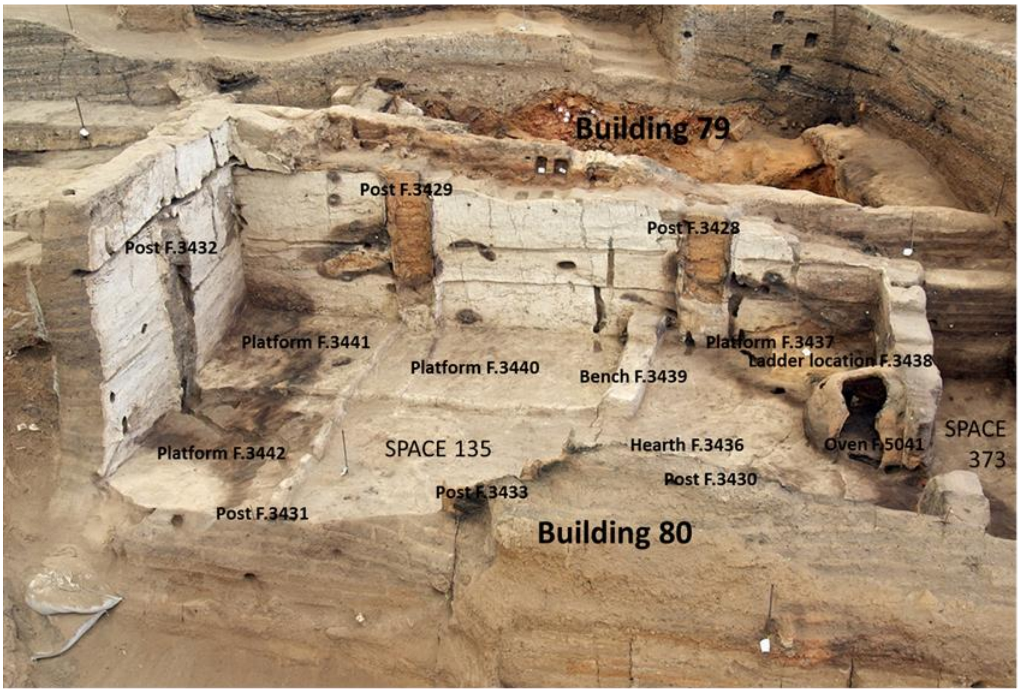

Figure 5. Building 80 after removal of the post-abandonment deposits. Adapted from Regan (2010, 14). Photograph by Jason Quinlan, Çatalhöyük Research Project.

Building 80 is located in the South excavation area of the East Mound. The rectangular structure, measuring at least 9.2 m long and up to 3.2 m wide, is divided into two rooms aligned along a northeast-southwest axis and connected by a crawlspace (Regan 2010, 13). The mudbrick walls of the structure are preserved in place more than 2 m above the highest floor surface (Regan 2010, 14). The northern room, Space 135, served as the main living space, while the southern room, Space 373, was used for storage. Chronologically, Building 80 belongs to Phase South.O in the new phasing and is roughly contemporary with Mellaart Level VIA (Farid 2008; in press). Excavation in Building 80 followed the standard single context excavation and recording method adopted by the Çatalhöyük Research Project (Farid 2000). Each context documents a single depositional event. The emphasis is placed on understanding the physical as well as stratigraphic relationships of different archaeological contexts. That way, past events can be interpreted in the precise sequence in which they happened. The contextualisation of data also extends to artefactual evidence (Hodder 2000a, 9). I used information from Regan (2010) and the original records from the Çatalhöyük Research Project Online Database[27] to reconstruct the following sequence of 'closure'-related activities in Building 80 (Table 4):

(a) Household goods were removed.
(b) The house was cleaned.
(c) A first series of artefacts, including obsidian arrowheads was abandoned or, more likely, purposely deposited on the floor of the house. A group of four obsidian tools was perhaps left intentionally inside a niche on the eastern wall of the main room (F.3434).
(d) The roof of the oven (F.5041) was deliberately 'knocked-in'.
(e) A cache of stones and animal bones (Unit 18955) was placed over the demolished roof of the oven (Unit 18956).
(f) The house was set on fire, probably from south. The roof, and possibly an upper storey or mezzanine, caught fire and partially collapsed. The ladder set in the southern wall of space 135 (F.3438) burnt *in situ*.
(g) The house was intentionally buried with both demolition and infill deposits. The upper section of the mudbrick walls and remains of the roof were seemingly 'knocked-in'.
(h) A second series of artefacts – mostly obsidian points and horn cores – was dumped within the fill of the house.
(i) A third series of objects was placed over the top of three of the roof posts arranged against the internal walls (F.3428, F.3431, F.3433).
(j) At some point during the infilling process, a pit was cut (18563), probably to retrieve an installation on the northern wall.
(k) A horn core was deposited at the bottom of the pit, which was later backfilled.
(l) The ruins of Building 80 were terraced and turned into a flat open area (Space 329, Space 333).

Table 4. Çatalhöyük; sequence of 'closure'-related activities in Building 80. Tentative, based on experience at the site.

[27] Çatalhöyük Reasearch Project Online Database (2013). Retrieved December 27, 2013 from http://www.catalhoyuk.com/database/catal/

The exact order, in which some of these events occurred, remains uncertain. It would seem, however, that the deliberate demolition of the oven roof – indicated by the presence of a cache of obsidian and burnt animal bones inside the dome of the oven on top of the collapsed remains of the roof – occurred prior to the burning of the house. This and the thorough cleaning of the house floor and surfaces, which involved removing nearly all of the household contents, suggest that the house had been deliberately set on fire. House burning is stratigraphically older than house infilling. However, the two events may not be too distant in time. Burnt timber posts belonging to the roof frame were buried nearly *in situ* in their demolished state, which helps to explain their excellent state of preservation. The recovery of hoards of objects, including obsidian, bone tools, miniature clay balls and small pebbles, inside the plaster of three of the pillars suggest these had originally been deposited on top of the posts. They may have gradually moved down the sides of the burnt posts as these degraded.

One observes important differences between Building 80 and earlier abandoned houses at the site (Figure 6). In Building 80 the whole building height (c. 2 m) was filled in and not just its foundations. The superstructure burnt *in situ* and no attempt was made to retrieve or reuse wooden fixtures. Moreover, the 'closure' of Building 80 did not coincide with the foundation of a new house on top. Instead an open area or terrace was created. This suggests that the activities described above related to the final abandonment of the house. What happened to the inhabitants who lived in Building 80? Did they leave the settlement, or only this area of the site? It follows similar observations in Area 4040, wherein houses that are roughly contemporary with Mellaart Levels VII-VI occupied the summit of the mound, that important changes occurred in this period (Farid, in press). For instance, a redefinition of the spatial distribution of the settlement with the opening of courtyards is noteworthy (Hodder 2006, 101; Düring 2001, 15; Düring and Marciniak 2006, 185). Every succeeding building level at Çatalhöyük displayed evidence of fire-related house destruction.

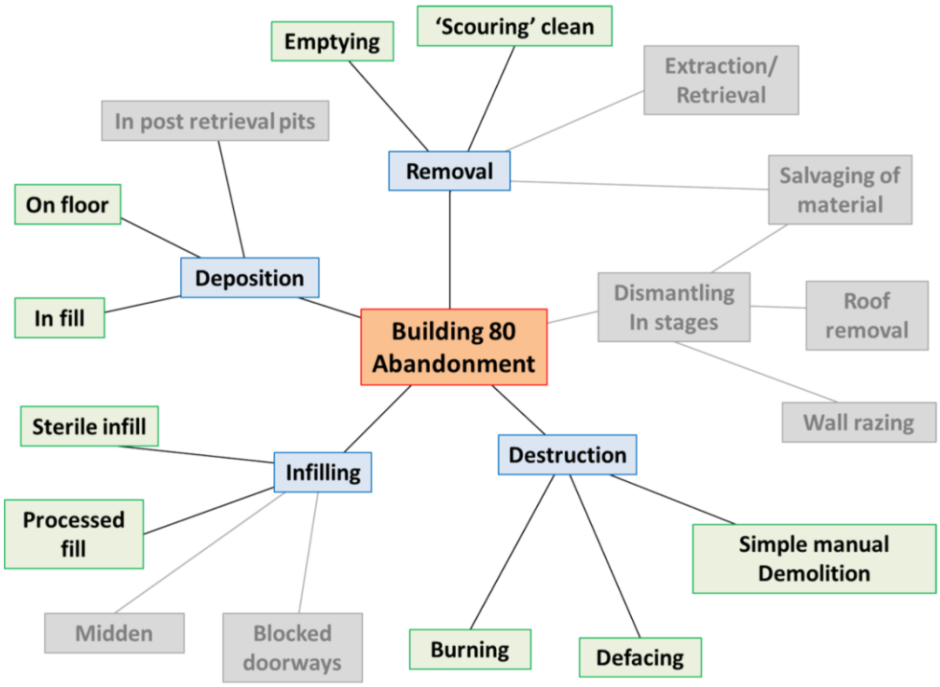

Figure 6. Diagram illustrating the range of abandonment practices observed in Building 80 at Çatalhöyük. Traditional practices encountered at the site, but not in Building 80, are shaded in grey.

4.3 House burning

House infilling and house burning have been assimilated in a number of publications. The argument holds that the practice of building 'closure' sometimes involved the use of fire, which is correct in light of the above (Hodder 2006, 130-131; Matthews and Farid 1996, 294-296; Özdoğan and Erim Özdoğan 1998). House burning as a separate practice has not attracted much interest until recently. Earlier writers, such as James Mellaart, insisted on the catastrophic nature of the fires that ravaged entire settlements, such as Çatalhöyük VIA and Hacılar VI (Mellaart 1966, 172; 1967; 1970a, 10). The origin of the archaeological concept of house burning must therefore be sought elsewhere, in the Balkan Peninsula, where this question received extensive scholarly attention, particularly at Opovo and other later Neolithic Vinča sites (Tringham 1991; 1994; 2005; Stevanović 1997; see also Chapman 1999). Ruth Tringham and Mirjana Stevanović, through their involvement in both the Opovo and the Çatalhöyük research projects, helped to define a research agenda for the study of burnt houses in the latter site (Tringham and Stevanović 2000; Hodder 1996b, 365; Cessford and Near 2005; Twiss *et al.* 2008). For instance, the Çatalhöyük Research Project supported the involvement of an expert in criminal fires (Harrison 2004; 2008). The release of an article connecting house burning with the practice of building 'closure' was one of the first attempts to address this issue for the prehistory of Anatolia (Twiss *et al.* 2008, 41; see also Cessford and Near 2005). A case for deliberate house burning has been made at other Neolithic sites in the Levant and Anatolia (e.g. Çayönü cell (c2) phase, Southeast Turkey: Erim Özdoğan 2011, 204; Sabi Abyad 6, Northern Syria: Verhoeven 2000; 2010; Akkermans *et al*. 2012; Aşağı Pınar 6, Turkish Thrace: Özdoğan E. 2007; 2011, 220).

4.3.1 The intentionality of burning

House burning poses a number of methodological issues, relating to the question of intentionality and to the interpretation of house burning as 'closure' rather than enemy-related activity (Table 5). Previous authors emphasized technological as well as contextual evidence to establish the intentionality of burning: burning temperature, number and location of ignition points, evidence for deliberately introduced fuels, content of floor assemblages, etc. (Stevanović 1997, Chapman 1999; Twiss *et al*. 2008). In particular, it has been observed that the burning of houses, whether they were being built of wattle-and-daub or of mudbrick, was not as straightforward as it appears. Ethnographic and experimental studies have demonstrated the resistance of mud-built houses when exposed to fire. In the absence of fuel other than construction wood, the fire quickly subsides after causing only superficial damage to the structure and walls (Bankoff and Winter 1979). There are competing interpretations of burnt houses in Anatolia, and a recent model ascribed these fires to increased instability and the emergence of warfare during the 6,200 BC cal. climatic event (Clare *et al*. 2008).

House burning variables	Criteria
Fire-related destruction	traces of burning (surface darkening, calcinations, scattered charcoal fragments)
Deliberately introduced fuel	high temperature burning
	presence of accelerants
Evidence of controlled fire use	multiple ignition points
	floor-level ignition
	complete combustion
	homogeneous fire pattern
	no fire spread
Structured discard	untampered artefacts in a burnt context

Table 5. Identification criteria for the practice of house burning in the archaeological record.

4.3.2 Burnt houses in Central and Southwest Anatolia

A transect of chronologically overlapping sites in the Konya Plain (Çatalhöyük), the Lake District (Bademağacı, Höyücek, Hacılar and Kuruçay), and the Aegean coast of Anatolia (Ulucak) shows a recurrent pattern of fire-related house destruction during the second half of the 7th and the first half of the 6th millennia BC cal. (Figure 7). Not only individual houses, but in some instances entire villages (e.g. Çatalhöyük VIA; Höyücek ShP; Hacılar VI; Ulucak Va; IVb) have burnt down completely and at repeated intervals. The extent of fire-related destructions at these sites must be contrasted with an apparent lack of burnt structures in earlier periods – prior to Çatalhöyük VIB[28]. When one examines the detail of the excavation reports, one finds a number of inconsistencies, which make the case for accidental or intentional burning by enemy forces highly unlikely (see also Düring 2011, 165). In the absence of detailed studies on evenness of burning and ignition points in Southwest Anatolia, contextual evidence is used to draw inference about the origin of fires.

[28] "It is, however, clear that after the fire in which part of Level VIB perished there is a marked tendency towards more open planning, which might have reduced the risk of fires sweeping through the entire settlement. If this was indeed the idea, the planners were unsuccessful, for whereas the crowded settlement of Levels VII and VIB were not – or only partly – destroyed by fire, all subsequent building-levels perished in conflagrations" (Mellaart 1966, 172).

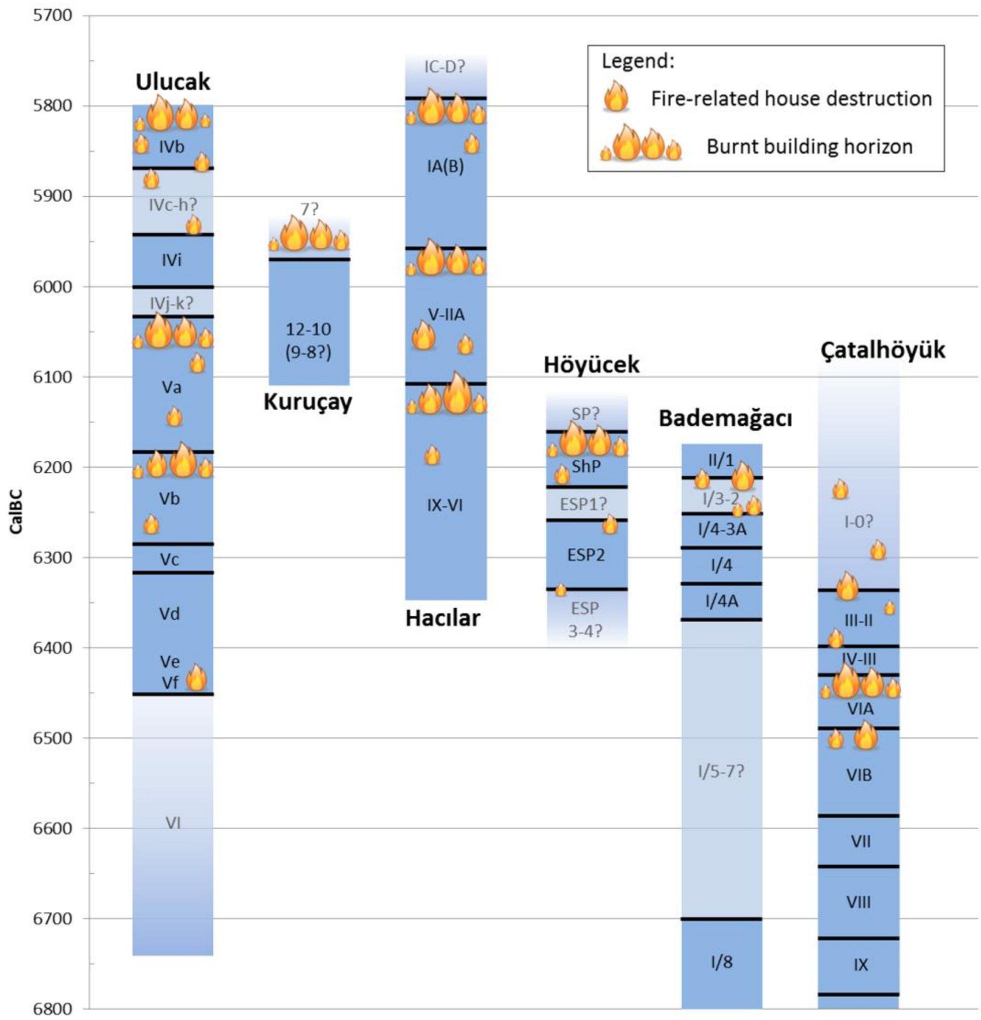

Figure 7. Incidence of fire-related house destruction in Central and Western Anatolia. Chronological chart adapted from Thissen (2010, fig.13). The sequence of Çatalhöyük was additionally plotted on this graph using C14 dates from the CANeW database (Thissen 2007) and the method of median estimators of phase boundaries (Thissen 2010). Calculations are based on the IntCal09 calibration curve (Reimer et al. 2009) in OxCal v4.1.7 (Bronk Ramsey 2011). Distribution of fire-related destructions after Çilingiroğlu 2009a; 2011; 2012; Çilingiroğlu and Abay 2005; Çilingiroğlu et al. 2004; Duru 1994; 1997; 2004; 2008; Duru and Umurtak 2005; Mellaart 1966; 1967; 1970a.

The stratigraphic sequence of Hacılar shows a highly unusual pattern, insofar as one building level alone, Level VI, accounts for nearly half of debris accumulation at the site (see Mellaart 1961a, 42). Mudbrick walls from this phase remain standing at an elevation of c. 1.8 m throughout the settlement, sometimes preserving windows and other features in the plaster (Mellaart 1961a, 42). On photographs from the original excavations, the walls appear to have been horizontally truncated at this elevation (Mellaart 1970b: 11, fig.xi.a; 12, fig.xiib). Mellaart suggests that the remains of Level VI houses, which were later turned into courtyards by Level V inhabitants and subsequently built-over in Levels IV and II, were infilled with burnt collapse debris (Mellaart 1961a, 42). Aside from re-excavating the well in area Q and burying three individuals within the fill of houses Q.VI.6 and Q.VI.2, Levels V-II inhabitants apparently never quarried the soil of the earlier mound and, as is evident from the east-west section published by Mellaart, they did not disturb Level VI remains (Mellaart 1970a, 20; 23). Interestingly, a collection of 45 female figurines was found deposited *in situ* on the floor of level VI houses (houses 3, 4 and 5: Mellaart 1970a, 166). The suggestion here is that Level VI houses at Hacılar have been deliberately set on fire as part of a sequence of 'closure'-related activities, which involved the deliberate deposition of ritually significant artefacts within a managed fill. It is worth noting that sets of figurines were also found deposited on the floors of some of the burnt structures at Çatalhöyük (Hodder 1996b, 365).

Höyücek provides additional evidence in support of 'closure'-related interpretations. During the so-called 'Shrine Phase', a neighbourhood of five 'houses' has burnt in two successive stages. Building 5 was completely devoid of finds, with the exception of a marble bowl, and all doorways had been blocked (Duru and Umurtak 2005, 167-168). In Building 4, deer antlers, as well as jaw and ankle bones of large mammals had been deposited on the threshold of the house and the floor of the building was littered with unusual stone and clay artefacts, such as a rhyton in the shape of a boot (Duru and Umurtak 2005, 167). Two grain bins had apparently been emptied out to make room for, among other finds, a small model of a table made of clay. There was also a cache of thousands of flint blades in a shallow pit in the floor. The excavators observed that Building 4 was so crammed with artefacts that circulation through the room was no longer possible (Duru and Umurtak 2005, 171). In Building 3, the same excavators struggled to explain why recesses in the walls on the sides of the entrance, which were interpreted as repositories for sliding door panels, had been filled up with ceramic vessels and stone chisels (Duru and Umurtak 2005, 165). Whatever happened at Höyücek, it is certain that the houses were not in a state to live in when the burning took place. Since the layout and architecture of the building complex was in keeping with the model of domestic architecture in the region (see Umurtak 2000), there is no reason to postulate that these buildings were special buildings (i.e. 'shrines'), but instead they probably were ordinary houses closed in a special way – made 'sacred' in effect by the act of 'closure' itself.

Although Ulucak presents a less clear case, in Level Vb there is evidence that the storage bins inside Building 30 had all been emptied out prior to the burning (Çilingiroğlu 2009a, 64). Here too the floor was crammed with artefacts – twenty-five ceramic vessels in total (Çilingiroğlu 2009a, 182-183). In addition, many houses from this and later burnt settlements were provided with piles of small bi-conical clay pellets, interpreted as 'sling missiles' (Korfmann *et al.* 2007; Çilingiroğlu and Abay 2005, 13-15). In the most extreme cases, up to two hundred of these objects had been stacked in a corner of the house (e.g. Level Va, rooms 23 and 28: Çilingiroğlu and Abay 2005, 13-15). Perhaps clay pellets are indication of warfare-related activities as suggested by Lee Clare *et al*. (2008), but we must remain open to other interpretations, particularly in regard of their number, which suggests a hoarding practice. It is worth emphasising that in nearby Bulgaria, these objects are traditionally interpreted as models of grains, after one such pellet was recovered among charred grains in a silo at the Neolithic site of Kapitan Dimitrijevo (Nikolov 2007, 68-69).

4.3.3 The destruction of entire horizons of houses

A note of caution must be sounded regarding the burning of entire villages (Table 6). At Çatalhöyük, where a cluster of roughly contemporary houses, including Buildings 80, 76, 79 and 86, underwent the same type of 'closure' activities, it remains unclear whether houses had burnt individually or collectively, despite the agglutinative layout of the settlement (Farid 2010, 11). The latter suggestion shall not rule out *de facto* intentional burning by the inhabitants themselves, for at Çayönü there is evidence that entire villages have been repeatedly abandoned, buried and rebuilt in the same place with only slightly different orientation (Özdoğan and Erim Özdoğan 1998, 591). Perhaps the burning of entire villages in the later Neolithic was a continuation of this practice in another form. In what follows I look at the extent of the phenomenon in Western Anatolia and Southeast Europe.

Site	Context	Reference
Çatalhöyük	Level VIB, 4+ buildings	Mellaart 1963, 61; 1964b, 57 ; 1964c, 40; 1965b, 43; 1966, 172; 174-176 ; 1967, 117
	Level VIA, whole settlement except S. sector	Mellaart 1963, 48; 50-51; 59; 75; 1964b, 42; 78; 1966, 172; 174-176; 1967, 63-64; 119; 126-127
Can Hasan I	Level 2B, 3+ buildings	French 1967b; 1998, 27; Düring 2006, 272-273
Höyücek	ShP phase, 5 buildings	Duru and Umurtak 2005, 164-172; Duru 2008, 36
Hacılar	Level VI, 7+ buildings	Mellaart 1970a, 10, 17-20
	Level IIA, whole settlement	Mellaart 1970a, 16; 30; 34; 37
	Level IIB, whole settlement	Mellaart 1970a, 75
	I B, whole settlement	Mellaart 1970a, 76
Kuruçay	Level 7, whole settlement	Duru 2008, 15; 46-47
Ulucak	Level Va, 7 buildings	Çilingiroğlu 2009a, 175; Çilingiroğlu and Abay 2005, 13
	Level IVb, 11+ buildings	Çilingiroğlu 2009a, 125-126; 128; 209
Ilıpınar	Level X (end), part of the village around the 'burnt house'	Roodenberg 2008a, 1, 5-7
	Level VI, 16+ buildings	Roodenberg 2000, 186-187; Roodenberg and Alpaslan Roodenberg 2007, Fig. 4; Claasz Coockson 2008, 149; 153-155; 2009, 151-153.

Table 6. Evidence for large-scale fire destructions in Central and Western Anatolia. Note that the evidence relates to the second half of the 7th and the 6th millennia BC cal.

While it was customary to set fire to entire villages in Southwest Anatolia, from c. 6,500 BC cal. onwards, there was no clear evidence of this practice in Northwest Anatolia until after c. 5,800 BC cal. Only single houses burned in Ilıpınar X, Menteşe and Barcın – suggesting that houses were normally left to collapse by themselves or were manually pulled apart at the end of their use-lives (Roodenberg *et al.* 2003, 18; Roodenberg 2008a, 1; 5-7; Gerritsen *et al.* 2013). A horizon of houses may have burned at Fikirtepe in the Eastern Marmara region, but the site remains poorly documented (Bittel 1971). After c. 5,800 BC cal., in Ilıpınar VI, at least 16 mudbrick houses arranged in a semi-circular row burned in concert, at a temperature exceeding 1,000°C (Claasz-Coockson 2010, 153). Achieving such a high temperature would have required a continuous input of fuel into the fire (Stevanović 1997, 365-374). With regard to the observed lack[29] of grains in Ilıpınar VI houses, a reasonable assumption is that they were recovered before the inhabitants left the site. The destruction of entire horizons of houses was not confined to Anatolia: at Aşağı Pınar 6, where another row of agglutinated houses arranged in a semi-circle burned to a high temperature, the excavators observed that the fire path, the extent of fire destruction, and the rooms' contents, were consistent with a model of intentional burning of the entire settlement (Özdoğan E. 2011, 220).

In the Upper Thracian Plain of Bulgaria, two contiguous structures in Stara Zagora-Okruzhna Bolnitsa, representing perhaps a house and its annex, burned to a high temperature with a complete assemblage of ceramic objects (Kalchev 2010). The concentration of finds accumulated is impressive and calls attention to the deliberate deposition of "burnt house assemblages" on the last floor surfaces (see Chapman 1999, 121). Thirteen or more structures burned at Azmak within a single building-level (Georgiev 1965, 7) and there were many traces of burned buildings in the old excavation at Karanovo (Mikov 1959, 93). Both single and multiple houses burned in Rakitovo, Kapitan Dimitrijevo and Sofia-Slatina (Radunčeva *et al.* 2002, 13; Nikolov 2000, 52; Nikolov and Sirakova 2002). House burning was less common in the Struma Valley (but see Pernicheva-Perets *et al.* 2011, 22). The only evidence for fire-related destruction at Kovačevo has been ascribed to Level Id, when two houses, built one on top of the other in sector K, apparently perished in consecutive blazes; the uppermost house was empty, apart from a vessel turned upside-down (Demoule and Lichardus-Itten 1984, 574; Lichardus-Itten et al. 2002, 108-114).

House-burning was common-place in Mainland Greece and Crete in the second half of the 7th and the first half of the 6th millennia BC cal. In Knossos, Level IX, two superimposed buildings, Houses D and E, showed evidence of burning –

[29] "At the time of the blaze the buildings' containers were empty. This circumstance suggests that the catastrophe had hit the inhabitants in late spring when last year's food supply was finished and new crops not yet gathered" (Roodenberg 2008b, 75).

presumably intentional (Tomkins 2007, 190; personal communication). At Sesklo in Eastern Thessaly, entire horizons of houses burned at the end of the Early Neolithic and Middle Neolithic periods (Andreou et al. 1996, 540). This in sum would suggest that the fires were disruptive and caused a (temporary) hiatus in the occupation of the site. A layer of destruction with red-burned collapsed mudbricks and large charcoal fragments is still visible today in the exposed profile at the north of the tell (personal observation at the site). One of the best preserved contexts from the MN III B period, the so-called “Potter’s House” on the summit of the tell, acquired its name from the fine complete vessels deposited on the last floor surface (Theocharis 1973, 55). Some of the doorways were blocked when the house was set on fire (Souvatzi 2013, 52-53). The conflagration, which caused the abandonment of the MN III B settlement was felt in both the tell itself, Sesklo A, and in the flat extended settlement, Sesklo B, which was located at the foot of the mound and some distance away on a raised terrace (Pyrgaki 1987, 81). Fire destructions were particularly widespread in the Middle Neolithic period in Thessaly, at sites such as Tsangli and Elateia for instance (Wace and Thompson 1912, 121; Weinberg 1962, 160-163). In Central Macedonia, the so-called ‘shrine’ in Nea Nikomedeia burned with a large assemblage of stone and ceramic objects, including fragments of large female figurines, two greenstone axes, and hundreds of flint blades (Rodden and Rodden 1964a, 564; 1964b, 604; Kotsakis 2008, 239). At present it is still unclear whether only this and neighbouring structures burned or whether the fire was more widespread (Souvatzi 2008, 75). Burnt horizons were also recurrent at Servia 3-5, in the Middle Neolithic period, where the houses burned with remarkable assemblages, including in some cases boar’s tusks; Structure 7, which was one of the best preserved context, yielded 17 complete or restorable vessels and over 50 small finds (Mould and Wardle 2000a, 32-37; 42; 2000b, 89).

4.3.4 Why ‘close’ houses with fire?

Burning enhances the load-bearing capacity of loam and its durability in face of such processes as prolonged weathering (Rosenstock 2005, 223). Exposed to temperatures of between 800 and 1,200°C, loam floors fuse into a solid mass, which is nighly impossible to cut into (Chapman 1997, 162; Tringham 2005, 102). In sum, the act of burning a house may actually hamper house replacement if the new house is to be situated immediately above the former one. According to John Chapman, fragments of burnt houses held considerable agency (Chapman 2000). Thus, if there was indeed a transition from one method of 'closure' to another as proposed in this chapter, it was from a model in which the house, or the idea of the house, 'lived on' by reference to a fixed point in the landscape, which was subsequently built-over, to a model in which the house essentially 'survived' through its materials, and thereby became more 'portable'.

The fate of the 'burnt house' in Ilıpınar X illustrates a trend of on-site reuse of burnt material for the purpose of improving insulation against heat loss and moisture. Red-baked clay from the upper section of the demolition layer, which sealed the 'burnt house' in sub-phase X/3, was shovelled out in sub-phase IX/1 and re-deposited in the foundation trench of structure H2 within the same quadrant (Roodenberg 2008a, 7; 9-10). The pattern of spread of the rubble across this and other houses in the settlement indicates that this was the result of deliberate action. The evidence points to a disruption in settlement occupation between the time of the fire and the foundation of Building H2 (Roodenberg 2008a, 5). The Ilıpınar IX inhabitants apparently felt it acceptable to dig the ruins of the burnt house and to reuse its materials to infill part of the settlement surface, certainly for practical reasons, as mentioned above, but also for symbolic reasons, to retain possession of the disused house through its materials.

Another intriguing phenomenon is the deposition of human bodies in burnt houses or burnt fills. Research at Sabi Abyad 6 in Syria has established that two skeletons, one male and one female, were originally placed on the roof of one of the burnt structures, among a collection of 'horned' clay objects, which fell into the building when the roof collapsed (Verhoeven 2000, 48-50). Although no study of this kind has been conducted in Anatolia and Southeast Europe, evidence of 'trapped' bodies in burnt settlements, such as Can Hasan I, may alert one to the uptake of similar mortuary or sacrificial practices involving fire in the second half of the 7th and the first half of the 6th millennia BC cal. At Can Hasan I, a complete articulated adult skeleton was found deposited in the West Room of House 3 in Layer 2B with a copper bracelet and a large assemblage of figurines, apparently scattered on the last floor surface (French 1964, 22). Of particular significance was the wealth of finds in this room in comparison with that in the rest of the settlement (French 1964). In the Southwest Anatolian Lake District, evidence of five burnt skeletons[30], which apparently fell from an upper storey during the fire in Hacılar IB, called attention to a similar practice, especially in regard of the fact that no attempt was made to retrieve them from the ruins (Mellaart 1970a, 76; 90). Three skeletons were 'informally' buried in the fill of Hacılar VI houses (Mellaart 1970a, 20; see also, Düring 2011, 165). In Bademağacı EN I/3, nine individuals, including two adults and seven children, supposedly 'perished' in the conflagration, which destroyed their home, House 8 in grid square C 4-5/III (Duru 2004, 15-17). Another burial in hocker position occurred just outside the doorway of this building (Duru 2004, 17). Admitting that the fire was accidental and that people were unable to escape, this interpretation fails to explain why the bodies were not pulled from the debris and afforded proper burial by the rest of the community. Fine-scale analysis of this and other contexts in the future could help to elucidate the nature of fire-destructions in Neolithic Anatolia.

The practice of house burning emerged and developed out of the practice of house infilling, and there is indication that: (1) some burnt houses have been deliberately infilled; (2) the practice of abandoning entire villages continued during the later phase of the Neolithic in Anatolia; on the other hand, it is evident that the introduction of fire in the sequence of 'closure'-related activities changed the nature of the ritual in place; for instance, (3) the emphasis shifted from strict house renewal, as seen in the practice of infilling PPNB houses, to the act of 'closure' itself; the evidence lies in the fact that many of the settlements mentioned above, while continuing the tradition of building 'tell', show gaps in occupation and significant changes in settlement pattern and architecture from one phase to the next; (4) ritual elaboration reached its peak in the second half of the 7th millennium BC, when "burnt

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[30] "During the conflagration the upper floor collapsed into the lower rooms forming a black greasy ashy deposit, often as much as 2 m thick, filled with pottery, objects, charred wood and the grisly remains of the burnt skeletons, especially children, who had been trapped in the burning furnace. The fire was such that skulls had become calcined and even the teeth were burnt green and blue. The fattiness of the deposit is hard to explain unless much oil, animal fat, skins or textiles had been kept in these upper rooms". (Mellaart 1970a, 76).

house assemblages" (see Chapman 1999, 121), including a great deal of non-utilitarian artefacts, were deliberately deposited inside abandoned houses, as is evident at Höyücek ShP; (5) the reason for why people deployed fire in ritual is not clear, given the amount of effort involved. I am inclined to suggest that house-burning was an abandonment practice, coinciding with the end of a vertical sequence of buildings and the abandonment of a site, or a part thereof, when the inhabitants left to settle elsewhere.

4.4 Summary

- Buildings were intentionally infilled at the end of their use-lives during the Aceramic and Early Pottery Neolithic periods in Central Anatolia. Depending on the projected use of each parcel of land, buildings were infilled with either demolition debris, midden deposits or deliberately-introduced mineral sediments (§4.1.2).

- The precise extent of the practice of house infilling in Western Anatolia and Europe is unknown. Unless informed excavation strategies are undertaken, house infilling cannot be recognised in the record (§4.1.1).

- After c. 6,500 BC cal., fire was introduced in the sequence of 'closure'-related activities at Çatalhöyük. The example of Building 80 demonstrates that burning was a deliberate act set within a series of action, which involved intentional infilling and specific retrieval and discard activities (§4.2).

- A "burned-house horizon", similar to that identified in Southeast Europe by Mirjana Stevanović and Ruth Tringham (Stevanović 1997; Tringham 2000b; 2005; 2012), was found to have stretched from Central Anatolia to the Aegean Basin during the interval c. 6,500-5,700 BC cal. (§4.3.2). Entire blocks of houses burned at repeated intervals with anomalously large concentrations of ceramic and figurines deposited on the last floor surfaces. Some of the houses were not in a state to live in when a fire broke out.

- This horizon of synchronically burned houses in Central and Western Anatolia is best explained by a diffusion of the practice of deliberate house-burning alongside the main wave of Neolithic expansion after c. 6,500 BC cal.

5
House Replacement

In the previous chapter, it has been suggested that the practice of infilling houses was part of a broader social strategy, which consisted of superimposing new houses on top of old, disused structures. The act of building a house was thus driven by considerations of both extant and future built environments. It also entailed a practice far removed from our own, insofar as the superimposed house retained, not only some of the original character of the structure it replaced, but also the actual fabric and contents of the disused house, carefully buried under its foundations – so that each reconstruction in effect raised the site on which the house was built (Lloyd 1963, 13-14; Taylor 1987, 7). Consequently, the material expression of this practice was the formation, after a number of generations, of an artificial mound made of a build-up of settlement debris – a phenomenon known as 'tell' accumulation (for earlier syntheses on tells, see Lloyd 1963; Miller Rosen 1986).

Academic consensus has it that the distribution of tells paralleled the dispersal of the first fully sedentary communities in Southeast Europe, who practised a form of agriculture that did not impinge much on the fertility of soils, and therefore that this form of settlement could be used as a marker for the dispersal of Neolithic agriculture (Childe 1950, 41; 1957, 60; Sherratt 1980; 1983, 192; 1994, 172; for discussion, see also Chapman 1997, 139). However, not only are tells *not* a universal settlement form during the period under review, but the term also obscures a considerable diversity within this group – tells existing in almost every size and shape imaginable throughout the later prehistory of Southwest Asia and the Balkans (Chapman 1990). It is unlikely that an interpretation of tells divorced from the context in which this post-depositional formation came to be – by definition, every tell starts as a flat site – can contribute useful insights into the problem of Neolithic diffusion (Chapman 1997, 158-159).

The first section of this chapter provides a brief introduction to the problem of tell formation and highlights the contrast between two profiles of mounds in Anatolia:

Aceramic mounds of the Çatalhöyük type, on the one hand, characterised by a vertical or near-vertical alignment of stacked and nested rooms; on the other hand, later Neolithic mounds on the model of Hacılar, characterised by more horizontalisation and imbrication of successive building strata (§5.1). I suggest that this contrast is a reflection of different practices, pertaining to the location and bearings of new houses in relation to pre-existing ones. The former stratigraphic profile coincides with the practice of vertically superimposing houses (§5.2). Unsurprisingly, given the distribution of large Neolithic tells, one observes that the secular recurrence of construction on the exact same location, using the stumps of the old walls as foundations for new walls, had widespread appeal from the Near East to Europe. The latter stratigraphic profile, by contrast, reflected coordinated destruction and relocation of the entire village at interval – in effect, shifts in the focus of occupation over time, or abandonment and resettlement (§5.3).

5.1 Building on a tell

The purpose of this section is to put forth the idea that large Aceramic tells in Central Anatolia were unlike other Neolithic tells, because the horizontal truncation and infilling of houses at 'closure', and the direct superimposition of walls onto walls, conspired to create a highly unusual stratigraphic profile, in which sediments artificially accumulated in perfectly stacked and nested horizontal layers within each sequence of buildings. In other words, Central Anatolian tells, which were regularly levelled for social and practical reasons, displayed a 'layer-cake' alternation of plastered floors and room fills in each vertical stack of superimposed houses. Suggestion is made that this profile, or an attenuated version thereof, was widely distributed during the latter phases of the PPNB period in the Levant – differences pertaining mainly to the height at which abandoned houses were truncated before they were replaced.

Tells are a physical expression of the practice of vertically superimposing buildings and building strata over many years (Tringham 2000b). Three conditions are necessary: a strong commitment to place, by which is meant that the same parcels of land are repeatedly – if not continuously (see Bailey 1999a, 97) – occupied; a particular management of settlement debris in excess, which are deliberately kept on site and consolidated; and the use of mud in architecture. As such, tells are indirectly linked to one of the core components of the Neolithic pattern of existence – sedentism. One may well argue that mobile foragers too displayed a strong commitment to place by returning to the same caves, over and over again, until leaving deep, stratified deposits. But it would be hazardous to equate caves and tells on the basis that both types of sites demonstrate considerable time depth. Tells are thoroughly cultural objects, *made*, if not with a clear intent, at least with a degree of awareness of how this type of sites is formed. In this respect, and this respect only, can we speak perhaps of a distinct practice of tell building (Bailey 1990, 38-39; 1999a, 97).

In any case, there are as yet no known Mesolithic tells in Europe. A corollary to this statement is that Mesolithic communities probably had different residential practices – they did not normally build one house on top of another, or their structures did not have a high mud content. Rather provocatively, Dušan Borić recently suggested that the site of Lepenski Vir in the Iron Gorges was an "ersatz tell", because of the great depth of deposits and the neat accumulation of building strata at the site, which evoke, albeit in a remote sense, that encountered on Neolithic mounds in the southern end of the Balkan Peninsula (Borić 2008, 118). But Lepenski Vir may not be considered a typical Mesolithic site in any shape or form; and the deposits referred to above are ascribed mainly to the period of 'transition' to the Neolithic, after c. 6,200 BC cal., when trapezoidal houses were superimposed onto much older, stone-lined hearths (Borić 2003, 54; 2008, 114).

5.1.1 Tells and non-tells

If there is generally agreement that a tell is an artificial mound formed by accumulated settlement debris (Miller Rosen 1986, 4), there is far more uncertainty about the threshold height at which a stratified site qualifies as a tell. In particular, there is a grey area between 1 and 2 m, when the mound barely stands in the landscape. This is an important question, because current understandings of tells in Neolithic Europe are based on the contrast between tells and non-tells, or flat extended sites (Kotsakis 1999). Eva Rosenstock states that a tell should have at least 1 m of accumulated deposit where the exposure was maximum (Rosenstock 2005, 222). By this standard, many sites traditionally identified as flat extended sites would re-qualify as tells (Appendix A). For instance, the idiosyncratic site of Kovačevo, with up to 2 m of anthropogenically derived deposits in place (Lichardus-Itten *et al*. 2002, 102), should perhaps be ascribed to the tell horizon on account of this definition. In regard of some of the practices at the site, particularly the superimposition of floors and structures in sector E, for instance, the idea would not be entirely absurd[31] (Demoule and Lichardus-Itten 1994, 575; Lichardus-Itten *et al*. 2002, 110). The external aspect – whether the site has the appearance or not of a mound – can be equally misleading, for research has established that large Neolithic tells such as Ulucak and Yeşilova, which were sited in active alluvial fans and plains, were almost entirely submerged under alluvium; today, these sites barely rise in the landscape (Çilingiroğlu *et al*. 2004; Derin 2012a; 2012b; see also Grove and Rackham 2001, 343-345; fig.18.17).

This begs the question of whether it is useful to draw such an arbitrary distinction between tells and non-tells. As pointed out by John Chapman, tells reflect distinct social practices. A minimal condition for tell formation is vertical accumulation of three or more generations of buildings in the same place (Chapman 1990, 51-52). It is worth noting, however, that our societies continually reuse the same parcels of land for construction, without this necessarily leading to a vertical stratification of our cities. Other factors enter in the constitution of tells; particularly, the degree of locational stability, the amount of mud in the architecture, and the concentration of the built area (Sherratt 1983, 193). On the other hand, there are

[31] Large-scale pitting activities at Kovačevo resulted in a complex stratigraphy dominated by negative features (Brochier 1994, 627; Lichardus-Itten 2010, 6; Demoule 2011, 11). Although the site appears to be flat or only slightly raised, its flatness is not due to a lack of vertical stratification. For instance, a house was built at least thrice on the same building plot in Sector E (houses 2019-1730-1714; Demoule and Lichardus-Itten 1994, 575; Lichardus-Itten *et al*. 2002, 110). The section through the mound shows a vertical succession of drainage pits, referred to as “vides sanitaires”, which were presumably spanned by suspended floorboards inside of each structure (Lichardus-Itten 2010, 13-14; Demoule 2011, 11). The implication is that the locations of the houses were significantly repeated from one building horizon to another.

factors adversely affecting the vertical expansion of tells. Chief among them is the on-site reuse of building materials, which may prevent, or otherwise stop, the formation of a mound (Brochier 1994, 627-628). In this case, the site consists mainly of negative features such as clay extraction pits.

5.1.2 On the distribution of tells

Tell is the Arabic word for a settlement mound, and is broadly equivalent to *höyük* in Turkey, *toumba* and *magoula* in the Balkans, although the latter two words may refer to artificial hills in a broader sense (Rosenstock 2005). The distribution of tells follows closely the first expansion of Neolithic societies into Anatolia and Southeast Europe. Whereas tells are found as early as the 9th millennium BC cal. on the Central Anatolian Plateau, this settlement form occurs no earlier than about 6,500 BC cal. in Western Anatolia and in Greece. The reader can see on Figure 8 that large settlement mounds with several metres of stratified deposits are not the only settlement type for the period under review (Chapman 1997, 139). Along with them occurs a category of flat extended sites, characterised by different residential practices: less emphasis on a strict vertical superimposition of houses, a more effective management of settlement debris. Flat sites are particularly ubiquitous in the Eastern Marmara region, where they form a seemingly coherent ensemble known as the 'coastal' Fikirtepe culture (Karul 2011, 57-58), and in the Struma Valley in Southwest Bulgaria; in the latter region, tells in the traditional sense are only found to the north of the Kresna Gorge (Lichardus-Itten *et al.* 2006, 83).

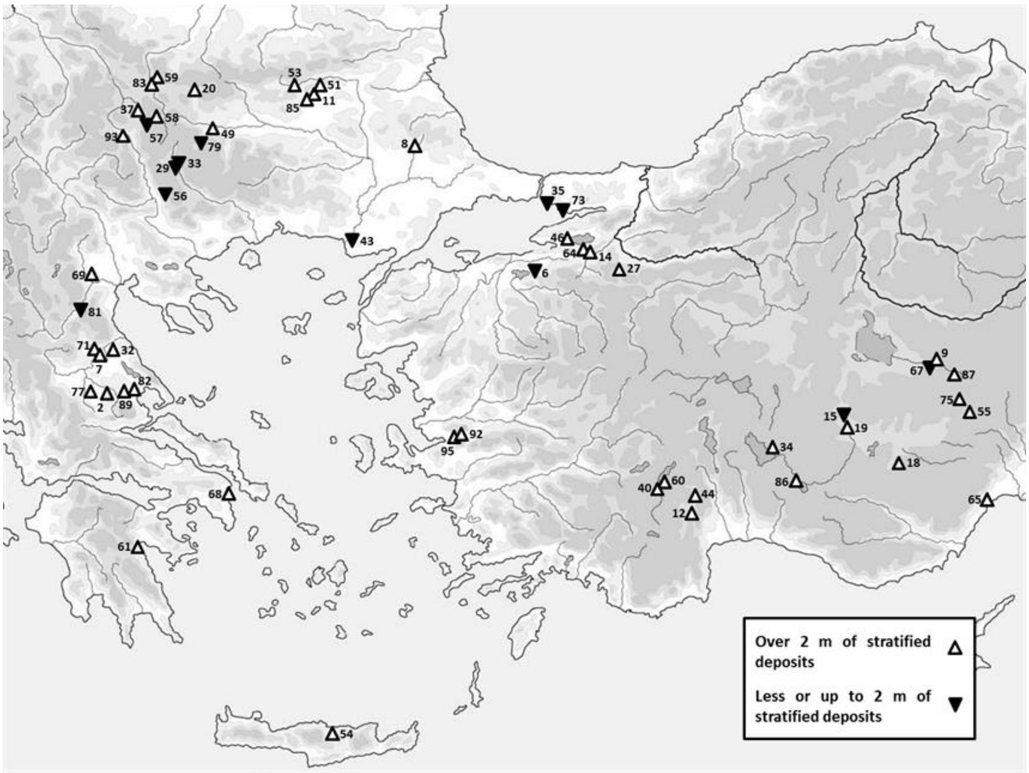

Figure 8. Distribution of selected Neolithic sites in Anatolia and Southeast Europe according to the maximum depth of stratified deposits. Some of the sites were reused in later periods; deposit accumulation resulting from this occupation has not been corrected here (see Rosenstock 2009). The numbers refer to sites listed in Appendix E.

Large Neolithic tells, such as Karanovo and Kapitan Dimitrijevo, both of which have over 12 m of accumulated deposits, are mainly ascribed to the Thracian Plain in Southeast Bulgaria, including the river catchments of the Maritza, the Tunja and the Arda (Hiller and Nikolov 1997; Nikolov 2000; 2004a; 2007). They belong to a slightly later chronological horizon, Karanovo I and II, and as such can be tentatively dated to the first half of the 6^{th} millennium BC cal. The mountains of the Balkan range, which provide the northernmost limit of our study region, apparently also mark the northern limit of the distribution of tells for the earlier phase of the Neolithic (Sherratt 1983, 191-2; Chapman 1990, 51; Whittle 1994; Tringham 2000b, 117). Tells became widespread from the Balkan range to the Great Hungarian Plain only in the 5^{th} millennium BC cal. (Bailey *et al.* 2002; Bailey 1999a, 97; Chapman 1997, 159).

Tells were located mainly in alluvial plains and followed the course of the river valleys. Seasonally-flooded environments, such as the Plain of Larissa and the Basin of Kardhitsa in Thessaly were favoured and became rapidly filled with hundreds of *magoulas* at the onset of the Neolithic (Johnson and Perlès 2004). According to Andrew Sherratt, early agriculturalists, who practised more intensive forms of cultivation and land-use, relied upon seasonal flooding for soil-fertility replenishment (Sherratt 1980; 2007, 8). The hydrological system was less stable in the north than in the south of the Balkan Peninsula; this environmental contrast perhaps helps to explain the dissociation between the spread of the Neolithic and the distribution of tells in the early phases of the Neolithic in the north of the Balkans (Bailey *et al.* 2002, 349-350; 354).

5.1.3 Mound formation and social practices

There is no straightforward relation between the shape of tells – how they appear today in the archaeological record – and social practices. Tells are the end-product of complex physical and geomorphological processes, each in turn affected by the actions and choices of the people who inhabited them. Although man-made deposits are the main constituent of tells, natural deposits, such as wind-blown dust and water-laid sediments, call attention to the fact that settlement mounds also behaved like geological features (Miller Rosen 1986). There is surprisingly little understanding of what exactly was driving the vertical expansion on tells (Rosenstock 2009, 187). The length of settlement occupation alone fails to explain the depth of accumulation or, for that matter, the size of the mounds. It is enough to compare the height-to-duration ratio of selected tells to see that the length of occupation is irrelevant to our understanding of tell formation: (a) Çayönü, which was continuously occupied for over 2,200 years, according to the excavators, has 4.5 m of cultural deposit in the south and 6.5 m in the north (Erim Özdoğan 1999, 38; 2011, 188; 192); assuming that the rate of accumulation was constant and that a house was occupied on average for 60 years, one metre of deposit at the site amounts to between 338 and 489 years of occupation, or between six and eight superimposed generations of houses; (b) Çatalhöyük, with over 21 m of accumulated deposits and 1,400 years of occupation

(Hodder 2006, 7), displayed a much faster accumulation rate of one metre depth for every 67 years of occupation, or one generation of buildings. These ratios have little intrinsic value other than to provide basis for discussion.

Traditional models ascribed tell formation to the accumulation of wall collapse and, to a lesser extent, human detritus or midden (Lloyd 1963; Davidson 1976, 26; see also Steadman 2005, 287). In the hypothesis that house walls were allowed to collapse by themselves, and rain-washed mud was swept over the entire surface of the mound until forming a homogeneous layer that could be built over, one has to assume, first, that tells were abandoned and re-settled at interval (Bailey 1999a, 97) and, second, that the rate of mound accumulation was very slow (Chapman 1997, 144). One problem in particular would be the consolidation of sediments in the absence of a clear boundary delineating the edge of the site (Chapman 1990, 60). The continuous extraction of daub and other materials from low-lying areas outside a site may *a terme* contribute to the formation of a fixed boundary, materialised on the ground by a ditch or a series of pits. But even that would require a clear incentive to build in the same place (Rosenstock 2009, 221). If, on the contrary, the inhabitants constantly reused materials extracted from the surface of the mound to build their homes, the tell accumulated at a much lower rate. Tell accumulation thus supposed a continuous input of allochthonous soil (Brochier 1994, 627-68; Rosenstock 2005, 222).

Unless the entire surface of the mound was levelled by succeeding inhabitants, they inherited the irregular topography of the abandoned village (Miller Rosen 1986, 9). This situation was usually compensated for by structural adjustments and rapid accumulation of deposits in low-lying areas. As a result, a highly irregular stratigraphic profile formed, wherein the excavator might, on a same elevation, encounter remains of occupation belonging to periods far removed. This pattern of deposition is referred to as “spiral” stratigraphy in the literature, to reflect the way in which buildings may have organically shifted over the surface of the mound to harmonise its contour (Young jr. and Levine 1974, 19-20). Central Anatolian tells were no exception to this pattern. Renewed excavations at Çatalhöyük highlighted that the horizons of construction published by James Mellaart were in fact a conflation of an ‘ideal’ plan at particular moments in time (§8.1.1; Düring 2006); if one excepts site-wide destruction events, such as the fire in Level VIA, houses on a same absolute level were not strictly contemporaneous (Tringham 2000b, 127; Düring 2006; Farid, in press).

On the contrary, within each sequence of vertically superimposed buildings, the pattern of sediment accumulation showed a remarkable regularity (Rosenstock 2009, 142). Deposits accumulated in broadly horizontal layers, without significant disturbance or contamination. The section of the deep sounding in trenches 4G-H at Aşıklı shows a near-vertical alignment of wall stubs across up to seven generations of vertically superimposed houses (Figure 9; house P/RI, see also ME/MS; Esin and Harmankaya 1999, figs.8-9). The absence of inter-level (aeolian) deposits in between succeeding layers of occupation may be ascribed to either houses having been immediately reconstructed after their predecessor went out of use or, more likely, levelling activities after a lapse of time. We have seen that house spaces were artificially filled at ‘closure’; this prevented the collapse of walls, which were horizontally truncated at a high elevation.

At Çatalhöyük, section 7 in Area E, as published by Wendy Matthews and Shahina Farid, shows a succession of infilled superimposed rooms spanning Mellaart Levels IX-VI, labelled IX.29, VIII.29, VII.31, VIB.31 and VIA.31 (Matthews and Farid 1996, fig.14.6). They refer to a space, which belonged successively to Building 29 and Building S31 in the South excavation area. Elevations recorded by the project (Matthews and Farid 1996, tab.14.2) suggest that accumulation reached a maximum depth of 0.96 m for IX.29, 1.04 m for VIII.29, 2.72 m for VII.31-VIB.31 and 0.66 m for VIA.31. This is in effect the level to which each of these spaces has been horizontally truncated before it was built over. Each generation of houses at Çatalhöyük thus contributed a record accumulation of deposit and the mound grew very quickly, at the rate of one metre or so every generation of buildings.

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Esin U. and Harmankaya S. (1999), ‘Aşıklı’. In: Özdoğan M. and Başgelen N. (eds.), *Neolithic in Turkey. The Cradle of Civilization* (Istanbul: Arkeoloji ve Sanat Yayınları) 114-132.

Figure 9. Aşıklı; schematic section of the deep sounding in trenches 4 G-H. Building phases of Levels 2-3 (Esin and Harmankaya 1999, fig.9).

To sum up, large tells on the Central Anatolian plateau displayed a highly distinctive stratigraphic profile, associated to a rapid accumulation of deposits within each vertical stack of buildings. Successive houses stood on a raised fill, securely held in place by the walls of the structures underneath. This was *not* a result of organic development as earlier contended, but of structured action; the practice of superimposing houses onto the stumps of disused houses at Aşıklı and Çatalhöyük was the main driving force for the rapid vertical expansion of these mounds (see Rosenstock 2009, 221).

5.2 Vertical superimposition of houses

Neolithic sites in Anatolia often displayed a neat succession of houses and features, repeatedly constructed over the same location. In this section, I argue that the “vertical superimposition of houses”, as it is referred to in the literature (see Tringham

1991, 120; 2000b, 117-118), was a normative act, revolving around three sets of mutually reinforcing strategies: locational stability, a self-referential system and the sacralisation of the abandoned house. 'Locational stability' refers to the way in which parcels of land were continuously re-occupied. A 'self-referential system' involves that houses were always constructed in relation to pre-existing houses; consequently, individual building sequences developed along independent trajectories. The 'sacralisation of the abandoned house' implies that there was a taboo regarding the functional reuse of the 'dead' house and its products once it had entered the soil matrix.

The question is *not*, why use earlier walls as upstanding bases for later walls, for this behaviour may be explained functionally by the avoidance of low load-bearing soils when laying out walls, such as recently deposited, unsettled, infill deposits (Hodder 1996b, 364; discussion of soil load-bearing capacity can be found in Murthy 2003, 480; 794; Salgado 2008, 88) – but instead, why choose to build on top of abandoned houses in the first instance? Moreover, if reusing the same space, why keep the rubbles from abandoned houses indoors, thereby raising the level of occupation above its former level? I shall argue that purely functional explanations, based for instance on the limited availability of space on tells, fail to explain why houses were superimposed even on sites where space was more readily available. In what follows, I make a brief digression in time to pin down the origins of the practice of vertically superimposing houses.

5.2.1 Re-cut houses and the onset of sedentism

Vertical superimposition of houses may be seen as a marker of intensification of sedentary practices, which involve a commitment to place and a continuous occupation of the same locales. The question is, when was this residential strategy articulated into a coherent practice – or practices? Specifically, when did people start to build their homes on the foundations of disused houses? One observes some repetition in the spatial distribution and layout of successive houses as early as the beginning of the Aceramic period in southwest Asia, corresponding to the PPNA horizon in the Levant: the evidence suggests that curvilinear semi-subterranean houses were continuously re-cut in the same location for no apparent reason. The sites in question were not densely settled and, consequently, there was no limitation to the amount of space available for reconstruction. As noted by Douglas Baird *et al.*: "these reconstructions were not constrained by the presence of neighbouring structures […]" (Baird *et al*. 2012, 234).

The practice has been described in detail at the site of Qermez Dere in Northern Iraq (Watkins 1990, 338-339; Watkins *et al.* 1989). When a house was abandoned, the large plastered hole that served as the base of the main chamber was infilled. Subsequently, a new house was re-cut using the curvilinear footprint of the older one. Each house thus partially obliterated the remains of the previous one and there was no vertical succession of building strata in the way that would occur later on. Houses were slightly offset from their predecessors, so that part of the plastered cut and fill of the earlier houses were preserved (Watkins 1990, fig.3). Perhaps this was a deliberate effort on the part of the inhabitants to maintain a link with their ancestral home. In effect, why go through the trouble of infilling a house if the new house was destined to stand in its place? Specific retrieval practices were presumably associated with the excavation of a new foundation trench.

A degree of building continuity is encountered at Hallan Çemi and other PPNA sites in Southeast Anatolia, but this issue has not been addressed specifically by the excavators and little can be said about it (see Rosenberg *et al*. 1995; Rosenberg and Redding 2000, fig.1). The site of Boncuklu may be seen to continue the tradition of re-cutting houses in the same location on the Central Anatolian Plateau, thereby highlighting not only the widespread appeal of this practice, but also its remarkable continuity over time. In trench K, for instance, six buildings were constructed on top of each other (Baird *et al*. 2012, 234). Rather than taking out the fill of the abandoned house, here too the inhabitants chose the more laborious option of re-cutting a new hole for each succeeding generation of building. This was done carefully; in some instances the truncation stopped just above the level of the earlier floor (Baird *et al*. 2012, 224).

On account of the fact that only residential, or otherwise mundane, structures were repeated in the sites referred above, it is tempting to conclude that this practice was devoid of religious or cultic significance. However, some of the best known examples of Neolithic 'cult buildings' in Southeast Anatolia, characterised by megalithic or otherwise highly distinctive architecture with complex floorings and decorations (Özdoğan M. 2007b, 20), had intricate biographies stretching multiple reconstructions in the same place. For example, it is inaccurate to refer to the Skull Building at Çayönü in singular, for this building was renewed several times along the same general axis (BM-BM1/1a-BM2/2a) between the round 4 and cobble-paved 3 phases – each time on a different model (see the plans in Erim Özdoğan 2011). In several instances, the walls of the succeeding building were constructed in such a way as to circumscribe and "encircle" the site of the former building, without there being significant overlap between old and new walls sections (Özdoğan and Erim Özdoğan 1998, 590). Although successive buildings occasionally displayed similarities in form, there was no strict continuity in orientation or layout from one building horizon to the next. The new structure tended to be an 'enlarged' version of the building that formerly stood on the site (Özdoğan and Erim Özdoğan 1998, 591).

In some instances, there was a time lag between the abandonment of the earlier structure and the layout of the new one. Even though the level of occupation was raised, the emphasis was on marking the site of the former structure rather than on taking advantage of its raised elevation. Inter-level disturbance only affected those sections of the former building that protruded above the ground. A distinction was drawn between the sturdy stone foundations, which were as a rule always left *in situ*, and the flimsy superstructures, which were forcefully removed before any reconstruction (Özdoğan and Erim Özdoğan 1998, 590). The analogy may be far-fetched, but this was similar to the practice of incorporating the remnants of Classical buildings and sanctuaries into the foundations of early Christian churches in the 4^{th}-9^{th} centuries AD (Krautheimer 1965, 8). At San Clemente in Rome, the altar of the church was constructed directly above an earlier Mithraic Temple (Petersen 1969). By constructing on top of Pagan sacred sites, the early Christian church practised a form of syncretism aimed at retrieving or, at least, preventing others from accessing the magical properties of the place. One wonders whether similar motives prompted the reconstruction of the Skull Building at Çayönü.

In another variant, new structures were inserted inside the standing walls of the previous ones, again without significant interaction between old and new wall sections. Cult Building III (H13C) at Nevalı Çorı provides a good illustration of this practice (Hauptmann 2011, 96). In this case, the surface of the new structure shrunk in size, while the level of the floor was raised above the former fill. The effect was more symbolic than real; there was no significant accumulation of deposit at the site – in total, less than one metre of deposit was ascribed to the PPNB occupation. Both methods of replacement of 'cult buildings' demonstrate a deliberate avoidance of earlier wall sections. One may contend that this was due to the 'sacred' nature of disused structures once they had entered the soil matrix (Özdoğan and Erim Özdoğan 1998). Accordingly, it was acceptable to re-occupy the same site, but not to reuse earlier wall foundations to any significant extent. Alternatively, this was due to these being sunken structures. Buildings were cut down deeply and this would have affected the way in which the buildings were reconstructed.

5.2.2 Walls upon walls in Central Anatolia

Evidently none of the replacement methods described so far were very appropriate or effective if the intention was to artificially raise the level of the village, as has been suggested for some of the Southeast European tells (Bailey 1990, 38-39; 1999a, 97). Indeed, there was no major buildup of deposits in any of the aforementioned sites. The site of Çayönü demonstrates the shift from this mode of 'symbolic' appropriation of the abandoned house in the earlier phases (round, grill, channeled and cobble-paved) to a more 'effective' appropriation of its walls in the later phases (cell, large-room). This is particularly evident in the cell (c1-c3) phase, when buildings CU/CT, CX/CK/CV and Tb/Ta were renewed three times each on the exact same spot, often incorporating the stubs of earlier walls in their own foundations (Erim Özdoğan 2011). On account of the evidence from Çayönü, the habit of building new houses directly over the walls of earlier houses became widespread in a later horizon of the PPNB, perhaps starting in the mid-8th millennium BC cal. or slightly earlier. The practice was documented in all areas of the Levant (see Hodder 2007, 108-113). It occurred, for instance, at Jericho and ‘Ain Ghazal (Banning and Byrd 1987), at Beidha (Byrd 2005, 18), at Abu Hureyra 2 (Moore *et al*. 2000, 96; 204; 218-219) and Halula (Kuijt *et al*. 2011, 507). While the practice of superimposing walls was widely distributed in the Levant, it was nowhere as common as in Central Anatolia. Later Aceramic sites on the Central Anatolian Plateau, such as Aşıklı and Çatalhöyük were also remarkable for the significantly high level at which extant walls were horizontally truncated, habitually one metre or more, compared to only a few courses of mudbricks at Abu Hureyra 2 and other Levantine sites (Hodder 2007, 113).

At any rate, it is worth stressing that there was a functional advantage to building on stable walls rather than on an unsettled earthen fill, such as room fill or midden, with low load-bearing capacity. Without stone foundations, mudbrick walls were better placed on walls, providing that their lateral load was counter-balanced by the sideways pressures on the lower (extant) sections of the walls (Hodder 1996b, 364). By infilling the earlier house and horizontally truncating the walls in such a way that they were left protruding just above the raised fill, the Neolithic occupants effectively turned the earlier house into an upstanding platform, which afforded greater stability for subsequent reconstruction. It was a technical improvement over previous approaches of building replacement. An alternative to this practice consisted in using the upper sections of extant walls at the same time, and in conjunction with, later additions (Matthews and Farid 1996, 275-276). In the record, this is indicated by continuous plaster rendering across old and new wall faces (Hodder 1996b, 364). One such continuous wall held in place over 2.7 m at Çatalhöyük (Mellaart 1963, 75). This method of replacement was marginal at Çatalhöyük and accounts for the slight overhang between successive wall sections encountered inside some of the excavated rooms.

In many instances, it was difficult to define where the earlier house stopped and where the newer house started. New research on the morphology and composition of mudbricks at Çatalhöyük highlighted that old bricks retrieved at ‘closure’ were almost never re-incorporated in the fabric of succeeding wall sections, as though there was a taboo on the functional reuse of this building material (Love 2010; 2012). Thus, despite the fact that the succeeding house was located directly above the preceding house, it was an entirely new structure and not merely a *bricolage* of old and new materials. Wood was a different matter, however, inasmuch as reclaimed roof posts and beams were frequently integrated in succeeding houses – thereafter yielding dates older than the context in which they were found (Cessford 2001, 720). Continuity was expressed, not only in the significant overlap of old and new wall sections, but also in the spatial repetition of internal features, such as the hearth, across multiple generations of houses (Table 7; Özbaşaran 1998; Düring 2006; Hodder 2007, 113). This was due to both the self-referential system mentioned earlier on and to a rigid adherence to an organisational template common to all the buildings of a site – for instance the oven was normally attached to the south wall in the main sequence of Çatalhöyük East (§7.2.1).

Variables	**Criteria**
Walls constructed on or beside the stubs of the previous walls	over 75 percent of the surface of the preceding house is repeated in the succeeding house
	concurrent use of different types of bricks and mortars in succeeding wall sections
	continuous plaster rendering across old and new wall faces
Continuity of pattern	consistent orientation of walls and internal features across multiple phases
Vertical accumulation of deposits	vertically stacked or nested stratigraphic profile within individual building sequence

Table 7. Identification criteria for the practice of vertically superimposing houses in the archaeological record.

Douglass Bailey's definition (Bailey 1990, 31-32) of a "continuous" house, as a house in which 75 per cent or more of the walls were repeated from one generation of building to the next provides a framework to evaluate the degree of building continuity across successive phases of occupation at Çatalhöyük[32] (Table 8). One

[32] However strict this definition may be, unfortunately it is unwieldy to apply in any systematic manner, as Eva Rosenstock has pointed out (Rosenstock 2009, 142). Not only is the 75 per cent

observes that some buildings in the early levels at Çatalhöyük – Buildings 1, 8, 10 and 31 – were repeated more than six or seven times with little variation over a period of five or six hundred years (Table 8; see also Düring 2000, figs.3.26-3.65; 2006). In part, these reconstructions were constrained by the proximity of neighbouring structures in the cellular plan; but this argument fails to convince for a number of reasons. On the basis of the distribution of crawlspaces and party walls in successive building levels, it is reasonable to surmise that only central rooms were repeated to a significant extant from one generation of buildings to the next, whereas side chambers were often transferred from one house to its neighbour. To return to our earlier example, the south chamber of Building 29 in Level IX was first incorporated in the main room of the aforesaid building in Level VIII; then this end of the building was handed over to the neighbouring structure, Building 31, in Level VII. This is one of many transfers of ownership at Çatalhöyük. This practice did not fundamentally alter the structure of the village. More important still was the fact that only selected houses were consistently repeated on the same location. For every one "continuous" house (three generations and more) in Levels VII-VIA, there were two or more "non-continuous" houses, which were repeated only once, or not at all, and merely filled vacant plots and voids in the urban fabric. In particular, those buildings that were founded upon the "central midden area" in the South excavation area came and went out of use after only one or two generations, as though this very ground was unsuitable to build a stable household (Düring 2007, 143).

threshold difficult to evaluate in practice, but there is room for significant error if the analysis proceeds by overlaying the published plans. For unless all the buildings on a plan were levelled and renewed at fixed interval, each building followed its own individual course of reconstruction. Undoubtedly some buildings were renewed more frequently than others. It follows that the number of reconstructions listed in Table 8 should be regarded as an absolute minimum.

Horizon	One generation	Two generations	Three generations	Four generations	Five generations	Six generations	Seven generations
X						1/23*	8/18*
IX					29	10/17*	31
VIII	25; 2*		3	7/4*; 14; 24; 27			
VII	17; 19; 21; 27; 33; 35; 36; 37; 39; Z4(32); Z5(31)	3/22; 23; 24/25; 26; 34	2; 4; 5/30; 6/12; 9; 18; 20; 22; 37/38/39		44; 45		
VIB	15/13/17; 52; 53/54; Z7	3; 11; 25/26; 55/56; 61/62; 63; 65; 66; 67; Z1; Z3/Z4; Z5; Z6	49; 50; Z2				
VIA	Z2	26; 51					
V	2; 3; 4/Z7; 7; 14; 17; 61; 75; F7; Z3; Z4; Z5; Z6; Z8; Z9; Z10	9/11; 10; F1					
IV	2; 6; 7; 11; 12/13/14; Z1; Z2						
III	2; 4/5; 6; 8/9/11; 10/12	1/7; 3; 14; Z1					
II	A1; A3; B2; B3; B4; B5						

Table 8. Longevity of buildings in the South Excavation Area at Çatalhöyük, based on the number of generations buildings were renewed on the same foundations. A building is repeated if over 75 per cent of its walls were repeated in consecutive building horizons. A two-generations building, for instance, would appear in two successive building horizons; a three-generations building in three successive horizons; and so forth. Method after Bailey 1990, 31-32; Tab. 2.1.
***Çatalhöyük Research Project Building Number**

The big tells of Central Anatolia are the culminating expression of the Near Eastern practice of vertically superimposing houses for hundreds of years. Did this practice or practices spread into Western Anatolia and southeast Europe? Hacılar and other Southwest Anatolian Late Neolithic sites demonstrated a departure from the Aceramic tradition of building houses over the stumps of their predecessors. With regard to earlier, possibly ‘aceramic’ occupation in Western Anatolia, one observes that the deposit excavated in a small sounding in area Q at Hacılar was compounded of seven floors belonging to successive buildings and reaching a thickness of 1.5 m in total (Mellaart 1970a, 3). From this description, one can safely assume that each successive floor stood on a levelled lot, though the actual height at which consecutive fills were truncated was comparatively small, never exceeding the height of two bricks (Mellaart 1970a, 3). At present it is unclear if walls sections were placed directly onto earlier ones, as was the case in Central Anatolia. ‘Aceramic’ levels at Ulucak (VI) in Southwest Anatolia show a similar succession of red lime-plastered floors, each presumably set over a raised ‘sterile’ infill (Çilingiroğlu 2011, 69).

5.2.3 Building plots in the Eastern Marmara region

Evidence for locational stability and a clear respect of building plots over many generations can be found at Ilıpınar and Menteşe in Northwest Anatolia. These sites differ markedly from the ‘coastal’ Marmara sites, with which they share the same material culture, Fikirtepe, Pendik and Aktopraklık C. In effect, the latter sites are completely flat and only cover one major phase of occupation (Karul 2011, 57-58). Thus, even in this region of Anatolia, the picture is contrasted. The accumulation of deposit reached 5 m at the centre of Ilıpınar and 4 m at Menteşe (Roodenberg 1995b, 1; Roodenberg 1999, 21; Roodenberg *et al*. 2003). In the lowermost levels at Ilıpınar, Levels X-VII, the architecture consisted of mud-slab, post-wall and, more rarely, wattle-and-daub (Roodenberg 2000, 185; 2008a). The last two construction materials were evidently ill-suited for a strict reconstruction of walls upon walls of houses, because wood rotted away and necessitated a support, in the form of a wall ditch or a line of posts, which was likely to cause significant damage to earlier structures. Yet the excavators found that "rebuilding on the same plot was customary during Ilipinar's early phases, when up to eight times parcels had been built over with similar dwellings" (Roodenberg *et al.* 2003, 21).

In Ilıpınar, the task of excavating a new trench for wall support was complicated by the fact that the stumps of earlier, rotten posts were deliberately left in the ground (Roodenberg 1995c, 38). As a result, newer walls were built in slight recess from earlier ones; though they followed closely the same orientation and layout. In addition, succeeding posts were set at much shallower depths to avoid re-cutting earlier ones (Roodenberg 1995c, 38). The whole process was deemed “awkward” by Jacob Roodenberg. It is not clear if he meant for practical or symbolic reasons (Roodenberg 1995c, 38). The effort invested in maintaining a pre-established division of the village into standardised plots has been ascribed to the inheritance system at Ilıpınar (e.g. Gérard 2001, 198-199), but this interpretation fails to explain the consideration given to extant buildings, which were seemingly preserved, if only as footprints. Similarly, a building was repeated at least thrice at Menteşe (Roodenberg *et al.* 2003, 21). In contrast, the burnt house, which presumably held great significance in regard of the way in which it was discarded, had neither predecessor nor successor (Roodenberg *et al.* 2003, 21).

Another site, Barcın, is interesting for the contrast between upper levels, which were regularly quarried into by the Neolithic inhabitants – thereafter causing tremendous damage to abandoned structures – and lower levels, which were seemingly intact and devoid of pits from a certain depth onwards (F. Gerritsen, personal communication). Presumably the first settlers held the mound in greater respect than their successors. This and earlier comments about Ilıpınar highlight perhaps a form of ‘sacralisation’ of the abandoned space inherited from the PPNB tradition.

5.2.4 Repeated houses in Greece

The mode of replacement of buildings in Mainland Greece has been described as the perseverance and predilection for reconstruction in the same place, the clear respect of building plots, the construction of walls onto walls; in short, if not the same, at least a very similar practice (Kotsakis 2008, 240-241). Vertically superimposed houses have also been documented at Knossos, in Level IX, where House D overlaid the burnt remains of House E (Tomkins 2007, 190; P. Tomkins, personal communication). Repeated houses and walls were ascribed to a variety of Early Neolithic sites all over Greece, including Elateia, Lerna, Achilleion, Prodromos 3, Gediki, Otzaki and Giannitsa B – encompassing many different styles of architecture (see Perlès 2001, 175; Nanoglou 2008). At Elateia, for instance, ten superimposed floor surfaces were discovered immediately below the burnt debris of a Middle Neolithic house – spanning over 2 m of accumulation and reaching down to virgin soil (Weinberg 1962, 163; fig.2). The section through Square E7 in Area JA-JB at Lerna, as published by Caskey (1957, fig.5), shows a neat succession of horizontal floors overlaying each other (Figure 10); eight can be counted. The stone foundations of three successive buildings stand one above another, indicating that "later builders […] used the remains of an earlier wall as a sound bedding" (Caskey 1957, 156).

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Caskey J.L. (1957), 'Excavations at Lerna, 1956'. *Hesperia* 26(2): 142-162.

Figure 10. Lerna; diagrammatic section through Square E7 in area JA-JB, as seen from the east (Caskey 1957, fig.5). 15 to 24: floors of successive Neolithic houses.

Evidently a characteristic of Greece's earlier Neolithic settlements, the practice of vertically superimposing houses continued into the Middle Neolithic period at sites like Halai (Furuya 2003, 54-55; 61), Sesklo (Theocharis 1973, 65; Pyrgaki 1987; Kotsakis 1999; 2006a), Tsangli (Wace and Thompson 1912, 115-117) and

Servia (Mould and Wardle 2000a, 25; 2000b, 75). Sesklo in southern Thessaly has become the epitome of the phenomenon of tells in Europe and of many of the contradictions that it entails. The site consisted of two separate areas, Sesklo A, which refers to the acropolis or Kastraki (in reality a 0.5 ha tell), and Sesklo B, a flat extended settlement covering at least 13 ha at the foot and some distance from the mound on a raised terrace (Kotsakis 1999, 69; 2006a, 208; Pyrgaki 1987, 66). Both sections were probably occupied in concert during the Middle Neolithic period and they experienced the same general conflagration at the end of the MN IIIB phase (Pyrgaki 1987, 81). It is worth noting that deposits reached a thickness of 4 m in Sesklo B and encompassed at least three phases of occupation (Kotsakis 1999, 71; 2006a, 212). So it was not 'flat' in the sense that we earlier contended: there was more than one phase of occupation (compare with Fikirtepe and Pendik). Successive buildings or building compounds occupied different parcels of land – heralding a tendency for "horizontally drifting house reconstruction" (Halstead 1999, 88; see also Kotsakis 2006a).

Sesklo A was a different story. Although it was not more densely settled, the site accumulated 8.5 m of deposits – some of the remains dating back to the initial stages of the Neolithic in Thessaly (Kotsakis 1999, 69). Interestingly, the upper reaches of the mound were consolidated with retaining walls and thus the site had a clear boundary at its summit (Pyrgaki 1987, 48-49). Inside the tell, mudbrick houses were repeated to a significant extent. For instance, in the centre, Building 7-8-9 was reconstructed twice after two fire-related destructions. Each reconstruction proceeded by levelling the earlier fill, raising the floor and setting out new walls onto earlier ones. In one instance, an earlier doorway had been blocked and a new entrance immediately installed above the former one (Pyrgaki 1987, 94). Likewise, House 50, in the northeast section of the mound, was partly repeated onto the walls of an earlier building, House 45 (Pyrgaki 1987, 87; 90; Kotsakis 2006a, fig.2). Different replacement practices thus contribute to explain the contrast between the tell and the flat extended site at Sesklo. Why were two sections of the same community involved in different practices? This pattern recalls the situation in the Eastern Marmara region, where people sharing a similar material culture adopted different replacement practices. Kotsakis suggests that there was no functional difference between Sesklo A and B, insofar as both areas displayed similarities in architecture and the same organisation in building compounds with access to small internal yards (Kotsakis 2006a, 211). Perhaps the tell itself held special significance, due to its association with the ancestors who founded the site.

The widespread practice of vertically superimposing houses raises the question, why did Neolithic societies persevere to build houses upon houses in the same site? The evidence which has been presented in this section indicates that earlier reconstructions: (1) were not constrained by the lack of space in the settlement; (2) they did not lean on or take advantage of the structural stability of extant wall sections; and (3) they displayed no deliberate effort to accumulate a (big) tell. Thus we can only speculate on the motives that led Neolithic communities to adopt this practice in the first instance. Perhaps it was connected with the passing of descent property from generation to generation – an operation which was both real and symbolic, for a link was maintained with the ancestral home. It should also be recalled that at Aceramic sites, such as Boncuklu, Aşıklı and Çatalhöyük, people were buried under the floors of their houses (§6.1); so the tell was a composite assemblage of dead houses and dead ancestors, neatly stacked over many generations. In economic terms, the vertical superimposition of houses emerged perhaps as a strategy for accumulation of symbolic capital: presumably building continuity helped to establish the role of successful households in society and to legitimise their claim over the land and resources (§9.2.1).

5.3 Horizontal displacement of houses

Two decades ago, Ruth Tringham highlighted a trend towards greater horizontal displacement of houses in the Balkans, which she opposed to the strict vertical superimposition of buildings in Southwest Asia (Tringham 1991, 120-121). In particular, she suggested that “horizontal displacement [was] not mutually exclusive of the formation of a tell”, citing the examples of Karanovo and Vinča (Tringham

1991, 120). It is worth examining this assumption in more detail and with the benefit of hindsight. Did tell-living communities in Southeast Europe really situate their houses differently? Are we dealing with two distinct practices for building replacement? Unambiguously, I find that the answer is yes. The rift between the two practices is more chronological than spatial, however, as post-6,500 BC cal. societies on the Anatolian Plateau also demonstrate a trend towards horizontal displacement, not merely of individual houses, but of entire neighborhoods or villages. The introduction of fire in the sequence of 'closure'-related activities described in §4.3 is partly held responsible for this pattern: villages were burned, deserted (?), levelled and reconstructed as part of the same cooperative effort. The surface of the mound was reappropriated by successive or separate settlers, who adopted a new layout that bore little in common with the earlier one. Consequently, the focus of occupation shifted from strict vertical continuity to horizontal integration.

5.3.1 Shifts in the focus of occupation in Çatalhöyük V-IV

The later phases of the Çatalhöyük East sequence were characterised by shifts in the focus of occupation over time, but it is unclear if they concerned the entire site or only specific sections of the mound (Farid, in press). The reader can see in Table 8 that the strict vertical continuity, which characterised the earlier occupation of the site, was interrupted after Level VIA, c. 6,500 BC cal., as no house from the Mellaart excavation was repeated more than twice after this date (see also Hodder and Pels 2011, 162). The Çatalhöyük Research Project has confirmed this pattern of disruption from Level South.P in the new phasing – equivalent to Level V in Mellaart's scheme (Farid 2008, 20). Changes were even more dramatic in the North area of the site, which was deserted after phases acribed to Mellaart Levels VII-VI on the basis of typological similarities in pottery and chipped stone traditions. On the other hand, from Level South.Q onward (~ Level IV), it is as though the system "beg[an] to re-steady itself and revert[ed] back to the recognizable characteristics of the settlement, one of incremental construction and closure" (Farid, in press). For instance, Çatalhöyük Research Project Building 69 in the South shelter spanned at least three reconstructions: B.69, B.56 and B.44 (Farid 2008, 20).

At present, too little is known about the Çatalhöyük West occupation to draw similar inference about building continuity (Biehl *et al*. 2012). Can Hasan I, which was explored in greater detail, has produced extensive evidence for "insertion" of houses over and, in some instances, inside, the standing remains of earlier houses (French 1998, 46; see also discussion by Düring 2006, 262-263). Walls held upon the stubs of earlier walls in nearly every building level uncovered at Can Hasan I (French 1968, 47; 1998, 20; 22; 25; 27), and this may be taken as indication that the practice of vertically superimposing buildings re-emerged on the Central Anatolian Plateau, after a period of a few centuries when it was discontinued.

5.3.2 Horizontally drifting villages: Hacılar IX-I

Whereas the 'aceramic' sequence of Hacılar was characterised by a seemingly regular succession of floors in Area Q, the profile of the Late Neolithic/Early Chalcolithic mound, Levels IX-I, was far more uneven and complex. James Mellaart assumed a hiatus of more than a thousand years between these phases of occupation, based on a single radiocarbon date from Aceramic Level V, BM-127: 8700±180 BP: 8282-7468 cal. BC at 2σ (Mellaart 1970a, 92; 190). The reliability of this date need not be addressed here (see §9.1.1). In any case, the reason why Later Neolithic inhabitants chose to re-settle this particular location in the landscape remains unclear: the aceramic mound itself rose a mere 1.5 m above the surrounding plain and was quite distant from the abrupt limestone rock and the spring, which formed the most conspicuous landmarks in the surroundings (Mellaart 1970a, 92). Thus, Late Neolithic/Early Chalcolithic Hacılar also demonstrated a degree of locational stability; however, this stability was *not* expressed through a strict vertical superimposition of houses.

In general terms, succeeding building strata at Hacılar, Levels IX-I, overlay each other, but there was no repetition in layout and features from one building horizon to the next. In particular, individual houses were not repeated on the same plot. The north-south section through the mound published by Mellaart shows that the walls of the Level VI settlement remained standing at an elevation of c. 1.8 m

(Mellaart 1970b, fig.38). I have already suggested that the disused village was artificially truncated at this elevation after the site experienced a site-wide conflagration (§4.3.2). It is worth stressing that the entire village was levelled rather than individual houses, hence the consistent depth of this layer, both inside and outside the houses. The suggestion is that the Late Neolithic mound consisted of a succession of villages, broadly constructed one top of the other, but with little continuity in the way that individual structures were situated. Houses were *not* constructed in relation to pre-existing houses or house plots, but to fit a horizontal layout, which was established in advance for each building-level or phase.

The plan of Hacılar with the distribution of the three main phases of occupation highlights the degree of horizontal displacement of houses that was customary at the site (Figure 11). Only in Trench Q can we see perhaps a deliberate effort to superimpose houses in later phases; but the orientation of buildings was not consistently respected. In the north-south section referred to above, a Level V wall was situated directly on top of the stub of a Level VI wall in Area E, perhaps to take advantage of its stability. This was not, however, common practice at the site (Mellaart 1970b, fig.38). Each consecutive village in effect occupied a different segment of the mound, and levels only overlapped in the centre (Mellaart 1970a). Until Level II, it was not customary for people to quarry the mound or to disturb it to any significant extent. Exceptions were made for the well in Area Q and the few burials that disturbed Level VI houses (Mellaart 1970a, 20; 23). However, to construct the 'fortress' that surrounded the perimeter of the mound with an unbroken row of rooms (see discussion in §8.2.2), the Level I inhabitants chose the more radical option to terrace the sides of the mound – thereafter causing considerable damage to earlier levels. Seton Lloyd recalls this in his book:

> "[...] Mellaart extended his excavations to a lower point on the flank of the mound, where thicker walls seemed to portend a much larger version of the same village. And sure enough, here, outside the area of the walled village and at a considerably lower level, he found houses with walls as much as five feet thick. He noted that they were locked together, side by side, as though to form a fortification around the perimeter of the settlement, which was itself on a larger and more ambitious scale than the one he had already cleared. But now symptoms

began to appear of a disconcerting stratigraphical paradox. The perimeter buildings of the lower settlement did not seem to extend inwards beneath those of the smaller ones. Furthermore, archaeological evidence began to suggest that the former was later in date than the latter. The problem was of course solved by cutting a broad connecting trench between the two, and making a close study of the section. In this one could see with remarkable clarity an almost vertical earth-face connecting the two levels, just inside the lower peripheral buildings; and one could infer that the ruins of the smaller settlement must already have been in existence when the building of the larger settlement was planned. Before it was built, a wide terrace had been cut around the full circuit of the mound. Upon this the peripheral buildings had been constructed to form a roughly circular fortification, and the remains of the older settlement had been levelled to make a central enclosure, perhaps for cattle or for a refugee population in time of danger" (Lloyd 1963, 106).

This text box is where the unabridged thesis included the following third party copyrighted material:

Brami M. and Heyd V. (2011), 'The Origins of Europe's First Farmers: The Role of Hacılar and Western Anatolia, Fifty Years On'. Prähistorische Zeitschrift 86(2): 165-206.

Figure 11. Plan of Hacılar with the three main building-levels (Brami and Heyd 2011, fig.1).

Mellaart ascribed the disruptions in Level I to the arrival of newcomers, who assimilated some of the techniques and motifs of the earlier Hacılar community;

hence, there was a degree of continuity in ceramic traditions for instance (Mellaart 1970a, 75). One may equally argue that, by integrating the earlier mound in the fabric of their own village, the Hacılar I inhabitants consciously reappropriated this ground, for practical and/or symbolic reasons, perhaps after a lapse of time. Houses were constructed in such a way, however, that they did not reference individual building plots. Likewise, the original plans of the site (Mellaart 1970b) demonstrate that houses in a same building-level were interlocked with party walls and, consequently, that they were probably built in a single phase of construction. In effect, what is suggested here is that each destruction event identified in §4.3.2 triggered a site-wide reconstruction, involving the collective effort of an entire neighbourhood or community.

There is extensive evidence to suggest that (1) Southwest Anatolian tells, like some of their counterparts in Europe, showed a tendency towards more horizontal displacement of houses, which no longer abided to a strict adherence to a system of building plots; (2) the mounds were collectively reappropriated by an entire community or neighbourhood, either immediately or after a hiatus in occupation; (3) this strategy did not apparently hinder the formation of big tells; (4) Çatalhöyük demonstrated a similar shift away from a strict vertical superimposition of houses after c. 6,500 BC cal.; (5) intriguingly, however, this trend was at least partly reversed at the end of the Çatalhöyük East sequence and at Can Hasan I, where houses were significantly repeated on the same plot, as though these settlements had experienced a disruption in residential practices followed by a phase of re-stabilisation (Farid, in press).

5.4 Summary

- Settlement mounds or tells are ubiquitous from the Levant to the Balkan range and their distribution follows closely the first expansion of Neolithic societies into Anatolia and Southeast Europe (§5.1.2).
- Tells are formed in a variety of ways and reflect distinct social practices. Later Aceramic and Early Pottery Neolithic tells in Central Anatolia, such as Aşıklı and

Çatalhöyük East, acquired their shape through the continuous replacement of houses, one on top of another, for hundreds of years (§5.2.2). In contrast, Later Neolithic/Early Chalcolithic tells in Southwest Anatolia, such as Hacılar for instance, were characterised by horizontal shifts in the focus of occupation, as entire villages were relocated over the surface of the mounds at interval, without reference to individual building plots (§5.3.2).

- The practice of vertically superimposing houses originated in the Near East during the Pre-Pottery Neolithic period (§5.2.1). Later Aceramic and Early Pottery Neolithic tells on the Central Anatolian Plateau were only remarkable for the comparatively high level at which disused structures were truncated, habitually one metre or more, and the fixity of houses and features across up to seven generations of houses, which had few parallels elsewhere (§5.2.2). Evidently the same, or a very similar practice, was in place in Mainland Greece, from the onset of the Neolithic period (§5.2.4).

- I agree with Ruth Tringham that tell-living communities in Southeast Europe generally situated their houses differently from later Aceramic Neolithic societies in Southwest Asia (Tringham 1991, 120-121). But the rift between the two practices was more chronological than spatial. A trend towards greater horizontal displacement of houses is evident in the upper levels of Çatalhöyük East, VIA and after, and heralds perhaps a transition from vertical superimposition of houses to horizontal displacement of houses after 6,500 BC cal. A similar transition occurred at Hacılar in Southwest Anatolia (§5.3.2).

- Suggestion is made that it is this second mode of building replacement, involving no strict vertical superimposition of houses, which diffused into Europe and contributed to the remarkable explosion of tells in this region after 6,500 BC cal.

- The pattern of building continuity in Greece, which shows the same vertical fixity than was customary in the early levels of Çatalhöyük East, appears anomalous in regard of the chronology and the geographical pattern outlined above.

6
Residential Burial

In the previous chapters, we have seen that houses were seldom allowed to collapse by themselves in the Neolithic of Anatolia and Southeast Europe; rather it was the inhabitants who chose when and how houses were to be terminated (see Tringham 2005). This special treatment afforded to houses, which I am reluctant to call 'death', because death in the biological sense escapes cultural experience, gains particular significance from the fact that death and burials were ubiquitous in the residential environment at that time. One of the most remarkable residential practices in the Neolithic of Anatolia and Southeast Europe is the burial of the dead in or around houses. This is far removed from our own tradition to segregate the dead from the living. Primary inhumation, as a rule in a flexed position with tightly contracted (tied up?) arms and legs on one side in a rounded pit, which was too small – consequently the body often appears to have been crammed into the ground – calls attention to a common tradition across a wide spectrum of sites. In this chapter, I review the context of deposition of the burials in order to gain more insights into the nature and extent of the practice(s) of residential burial. Particular attention is drawn to the relation between the dead and the architecture.

It is worth stressing, from the outset, that the number of people buried in the aforementioned manner is usually too small to account for all the deaths at any given site, and this regardless of the depth of excavation (Appendix C; Özdoğan 2008, 157). Only the site of Çatalhöyük, which has yielded the single largest concentration of discrete individuals for this period (over 1000[33]), may have provided an accurate or near-accurate sample of the community: the average number of burials per house was estimated to between 3.8 (based mainly on the Mellaart data – see Düring 2006, 206; 2011, 107) and 8 (according to the latest excavations, see Whitehouse and Hodder

[33] Bleda Düring estimates to about 685 the number of skeletons excavated by James Mellaart and his team during the 1960s excavations (Düring 2006, 206). To this number one can add about 400 individuals reported from the new excavations conducted by the Çatalhöyük Research Project (Boz and Hager, in press).

2010, 137). Assuming an average use life of over 60 years per building, this would amount to a burial every 7 to 16 years in each individual house. However, there is a great deal of variation in the distribution of burials across the site (Mellaart 1967, 206; Düring 2006, 207; Boz and Hager, in press). Craig Cessford estimates to about 1/3 the number of burials that occurred off site (Cessford 2005). As is evident from the map below (Figure 12), Çatalhöyük is at the higher end of the spectrum regarding the number of inhumations, and many sites from this period have yielded no or only a few graves. I shall therefore refer to residential burial as a minority practice within a larger set of existing, but perhaps less visible burial practices[34], with all the problems that such a condition entails for our subject (see, for instance, Perlès 2003b).

[34] What of other burials? Disarticulated and highly fragmented human remains in secondary context are a significant component of the bone assemblages from this period (Chapman 2000). At Çatalhöyük, the disarticulated remains of a large number of adult skeletons were found in the KOPAL area North of the mound (Hodder 2006, 124-125). Another case in point is Nea Nikomedeia in Northern Greece where, out of a total of 105 people represented in the Early Neolithic village, only about 35 came from regular burials and were fairly complete (Angel 1973, 103). At Franchthi in Argolis, small fragments of a maximum of 90 skeletons were reported both from the Cave and the site of Paralia, while the number of discrete burials for the Early/Middle Neolithic phases totalled 17 (Cullen 1995; 1999; see also Cavanagh and Mee 1998, 6-7; Reingruber 2008, 494). The type site of Karanovo in Northern Thrace yielded one collective grave within a dwelling space consisting of a large number of disarticulated remains of children (Băčvarov 2000, 138). Likewise, skull fragments and five mandibles were reported at Kazanlăk (Băčvarov 2002b, 247). Insofar as it is not clear if the aforementioned remains stemmed from disturbed burials and/or other contexts, such as foundation or 'closure' deposits, they need not concern us further here, except to stress once again the close association of death and settlement in this period.

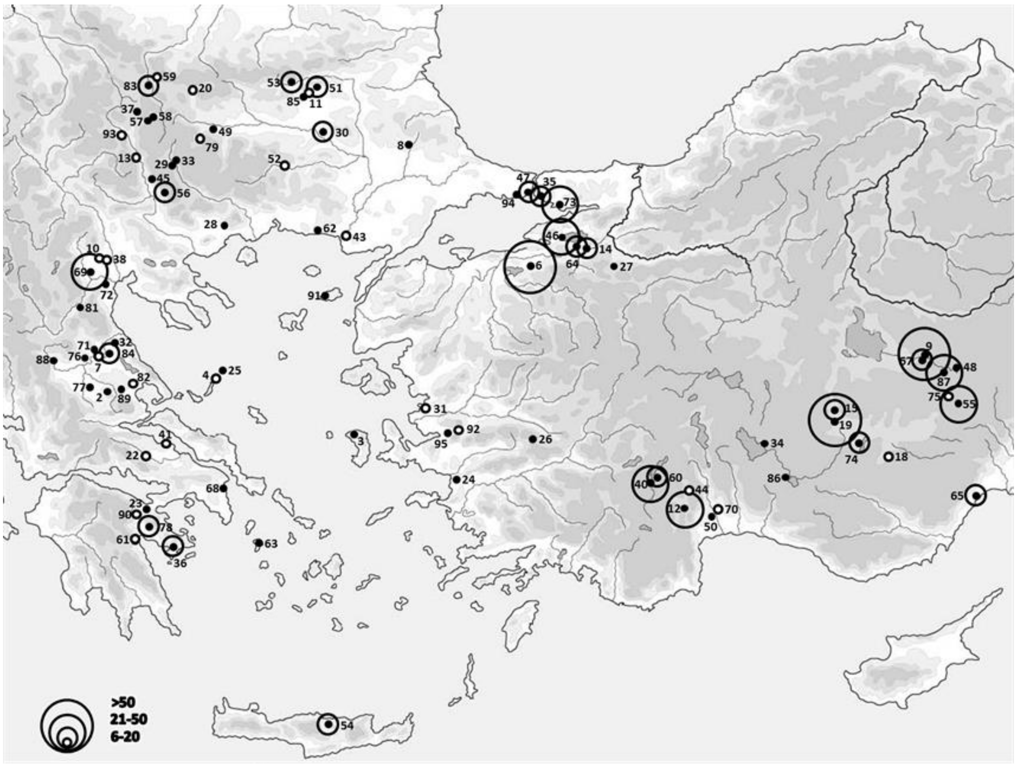

Figure 12. Quantitative distribution of Neolithic/Early Chalcolithic 'burials' in Anatolia and Southeast Europe during the interval 8,500-5,500 BC cal. 'Burial' refers to discrete burial deposits which may contain multiple individuals. Single dots indicate a lack of burial data or no burial. For the full list of burials, see Appendix C. The numbers refer to sites listed in Appendix E.

In this chapter, a distinction is drawn between the practice of sub-floor burial (§6.1), defined as burial under the floor of an active household, in the strictest sense, and practices of in-fill and inter-dwelling burials (§6.2), which do not imply that people actually lived with the dead bodies inside of their houses. Did a particular attitude to death and the disposal of the body spread alongside Neolithic innovations?

6.1 Sub-floor burial

Burial under the floor of an 'active' household, which is referred to here as sub-floor burial, is one of the key practices characterising the Aceramic and Early Pottery Neolithic periods in Central Anatolia. Chronologically, sub-floor burial spans two millennia in this region from the start of the Aşıklı sequence (c. 8,300 BC cal.) to the upper section of the Çatalhöyük East occupation, perhaps excluding levels II-0 as explained in §6.2.1 (c. 6,300 BC cal.). There are some indications that sub-floor burial may have been practised as late as Levels XXVI-XXIV at Mersin-Yumuktepe[35] on the coast of Cilicia (Garstang 1953, 33-34; 53-54), but this result was not confirmed by the new excavations at the site, which have documented burial away from the houses in the Late Neolithic phase, Level XXV and after (Caneva 2004b, 49; 2010, 27; 2012, 7). Sub-floor burial was a standard method of inhumation at five of the sites from this region: Aşıklı Höyük, Boncuklu, Çatalhöyük East, Köşk Höyük and Tepecik-Çiftlik (Baird *et al*. 2012; Bıçakçı 2011; Bıçakçı *et al*. 2008; 2012; Büyükkarakaya *et al*. 2009; Düring 2003; 2006, 86-93; 201-211; 2011, 67; Esin and Harmankaya 1999, 120; 126; 2007; Hodder 2006, 237-241; Mellaart 1967, 204-209; Özbek 1998a; 2009; Öztan 2012)

The roots of this practice have been ascribed to the Late Natufian tradition of burying the dead within houses in the Southern Levant (e.g. Hodder 2007, 111; Parker Pearson 1999, 158; see also Wright 1978; Bar-Yosef and Belfer-Cohen 1989; Bar-Yosef 1991; Belfer-Cohen and Hovers 1992; Belfer-Cohen and Bar-Yosef 2000; Byrd and Monahan 1995; Cauvin 1994; LaMotta 1998). At present, there is no compelling evidence that burial occurred under the floor of active Natufian households nevertheless (Bar-Yosef 1998, 164; O. Bar-Yosef, personal communication). Unambiguous evidence for sub-floor burial may be attributed to the Pre-Pottery Neolithic horizon in the Levant (see, for instance, Kuijt 1995, 138-140; 1996; 2008; Kuijt *et al.* 2011; Guerrero *et al.* 2009; Verhoeven 2002; 2004a; 2011, 802-804; Rollefson 2005, 6; Banning 2011, 627), and the practice has been extensively documented at sites like Abu Hureyra 2 (Moore and Molleson 2000) and Halula (Guerrero *et al*. 2009; Croucher 2010, 288; Kuijt *et al.* 2011) on the western loop of the Syrian Euphrates. Over 650 burials have been uncovered at Çayönü in the Upper Tigris Basin, and a large proportion of those occurred intramurally under house floors (Özdoğan 2008, 157).

[35] "It can [...] be said that occasional burial under the house floor is shown [...] to have been established as a local practice by discoveries in the Level above, and it was common in early Anatolia [...] A large hole in the original house floor shows clearly that this interment had been made after the construction of the building, and thus excludes the possibility of a foundation sacrifice" (Garstang 1953, 33-34).

Sub-floor burial goes hand in hand with the practice of removing and curating human skulls, caching "triplets of skulls" (Rollefson 1986, 49-50) or depositing heads in separate buildings such as the 'Skull Building' (BM) at Çayönü (Braidwood and Çambel 1982; Schirmer 1990; Özbek 1998b; Özdoğan 2008, 157). Due to its exceptional nature, the so-called "skull cult" (Kenyon 1956, 186), ascribed to the Pre-Pottery Neolithic horizon in the Levant, has tended to obscure the bulk of burial data from this region. On the Central Anatolian plateau, this treatment was evidenced by only a small minority of skeletons. Headless bodies buried under floors are known from Çatalhöyük, Köşk Höyük, Tepecik-Çiftlik and Mersin-Yumuktepe, while bodiless skulls occur at Boncuklu, Çatalhöyük, Musular, Köşk Höyük, Tepecik-Çiftlik and Mersin-Yumuktepe (e.g. Bienert 1991; Garfinkel 1994; Kuijt 1995, 140; 2000; Özbaşaran 2000; Bonogofsky 2002; 2003; 2005; Goren *et al.* 2001; Mithen 2004; Hodder 2006, 162-163; Talalay 2004; Özbek 1998b; 2005; 2009; Meskell 2008, 375-381; Testart 2008; 2010; Hodder and Meskell 2011; Langis-Barsetti 2011; Baird *et al.* 2012).

6.1.1 Burial under the floor of an active household: an archaeological definition

Sub-floor burial may be defined as a burial cutting a floor and subsequently sealed by one or more floor surfaces (see also Düring 2006, 201; 2011, 107). Central to this definition is the idea that the context (i.e. the house) was under occupation when burial took place. This suggests an intimate relation between the living and the dead, who shared the same platforms for resting temporarily in sleep or more permanently in death (Mellaart 1964b, 92; 1967, 204-205; Düring 2003, 2; 2006, 201-211; 2007, 137-142; 2008, 604-605; 2011, 108-108). The interaction of plaster with decaying bodies may have been associated with specific smells and bodily experiences (Hodder 2012, 44-45), which may have been part of "[the] human obsession with the material presencing of the dead among the living" described by Michael Parker Pearson (1999, 158).

I wish to call attention to two aspects of the definition: a) the burial pit must have been cut after the original house floor was laid out to indicate that the burial took place after the house was built; one is not dealing with a foundation practice; and b) there must have been some attempt to patch up the floor and continue occupation in the house after the burial took place. Stratigraphically speaking, sub-floor burial is thus located in between two successive floors of occupation and should occur as follows (or any variation thereof) in the matrix (Figure 13):

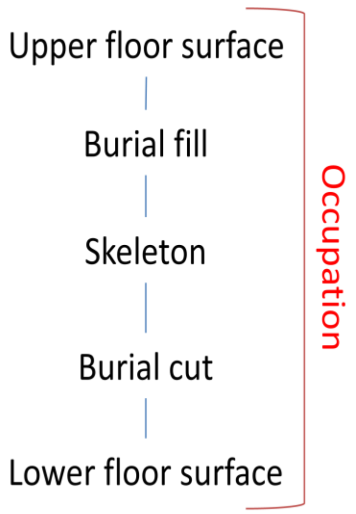

Figure 13. Typical sequence of stratigraphic contexts associated with sub-floor burial.

The sequence of stratigraphic events associated with sub-floor burial usually appears more complex at Çatalhöyük, due to the custom of re-opening the grave to bury the newly-dead, with the consequence that older bones were frequently pushed aside and jumbled. Some bones were also retrieved for specific purposes (Mellaart 1967, 205; Hodder 2006, 133; Boz and Hager, in press). James Mellaart assumed, on the basis of iconographical rather than anthropological evidence, that the corpses were initially exposed outside the settlement for excarnation – by vultures, according to the famous 'vulture' frescoes – and that they were reburied after they were defleshed and thoroughly 'cleaned' in this manner (Düring 2006, 203; Russell and Düring 2006, 75, Mellaart 1964b, 93; 1967, 204). The Çatalhöyük Research Project has clearly demonstrated that single primary, that is, fully fleshed inhumation, was the norm at Çatalhöyük, although bodies were frequently dismembered and bones were taken out (Boz and Hager, in press; Hodder 2006, 133; Düring 2003, 4). It is worth asking whether the burial in tightly flexed position in a small oval pit had anything to do with the burial under floor – perhaps to minimise the impact of burial on the built environment and avoid the phenomenon of slumping that occurred when laying a floor on a pit.

Several factors must be taken into consideration, which have important implications for other practices under review in this thesis. First of all, the fact that sub-floor burials occurred under active households indicates *de facto* that death was (generally) not a trigger for house 'closure' or abandonment. In contrast to patterns observed at Körös settlements in Central Europe, where death was apparently so "absolutely polluting" that the houses of the recently dead were not considered a suitable environment for building and occupation (Chapman 1994, 80; 2000, 150; Parker Pearson 1999, 158), the Central Anatolian farmers saw apparently no harm in living with the newly-dead and may even have valued their contact (Hodder 2012, 135). Second, since sub-floor burials occurred in a context of vertical superimposition of houses, it follows that the burials also cut into the fill of earlier, abandoned spaces. This incision into the ancestral past was no doubt severely constrained, but this reinforces the impression that the dead played a specific role in the life of the settlement.

6.1.2 Living with the dead in Central Anatolia

The tradition of burying the dead under the floor of an active household – in other words, to live with the dead – is remarkably consistent in Central Anatolia, with changes pertaining more to the location of burials within the house than to the type or definition of the practice itself. New research at Boncuklu, 9 km to the north of Çatalhöyük, indicates that sub-floor burial was practised in the 9th millennium curvilinear structures, which have also provided evidence for domestic activities such as cooking, sleeping or eating (Baird *et al.* 2012; Baird and Baysal 2011, 267-268). At

Boncuklu, the southern and eastern floors were used for burying the deceased, whereas at Çatalhöyük East burial generally occurred in the central room away from the hearth and oven under the northeast platform (Baird *et al*. 2012, 234; Hodder 2006, 131; Boz and Hager, in press; see also Mellaart 1962, 51). This was a strict rule and no adult was ever found in the southern occupation area of the room at Çatalhöyük. Exceptions were made for young children and neonates. Neonates, in particular, were never buried in the central northern area (Hodder 2006, 131; Boz and Hager, in press).

At Aşıklı, 34 out of 44 studied burials, that is, 77 per cent, occurred under the floors of rooms that contained a hearth (Özbaşaran 1998, 560), while the proportion of burials relative to floor space (4 burials in 65 rooms) was low in the deep sounding in the quadrant 4H/G (Düring 2011, 67). For comparison, the dead were normally buried under the entrance of the structures at the contemporary site of Halula in Syria and the graves never intersected each other (Croucher 2010, 288; Kuijt *et al*. 2011). There was therefore some leeway in how different communities practised sub-floor burial and it was not a monolithic practice in any sense. Surprisingly, neither Suberde nor Erbaba in the Beyşehir-Suğlar Basin have yielded any burial, and one suspects that this may be due to the fact that excavations only proceeded to floor level (Bordaz 1969; 1970; 1973; Bordaz and Alpers Bordaz 1976).

The dead were normally buried in contracted position on one side at Çatalhöyük (Mellaart 1967, 205) and more rarely in vertical sitting position (Mellaart 1966, 182) or in extended position on the back (Mellaart 1964b, 92). The body was deposited in an oval pit c. 60 cm in depth (Mellaart 1967, 205). Decision about the shape and orientation of the grave was made before the grave was cut, hence the regular outline of the oval cut, which aligned with the longest part of the flexed body (Boz and Hager, in press). One sometimes gains the impression that the skeletons were forced in an unnatural position into a narrow grave, but this is due to the practice of burying individuals in extreme 'hocker' position with the knees drawn closely to the chin (Hodder 2006, 238). At least 58 individuals at Çatalhöyük have provided evidence for bindings, wrappings or clothing of some sort, and many neonates and infants were found enveloped in phytoliths (Boz and Hager, in press). Some Infants were buried in a basket or together with an adult (Mellaart 1964b, 85; 1966, 182). There was no definite orientation of the body, but 65 per cent of the burials had their head pointing towards the west and south directions (Boz and Hager, in press), which would confirm Mellaart's assessment that the head was usually oriented towards the centre of the room (Mellaart 1964b, 92). Objects directly associated with the graves included over 40 different types of tools, personal adornments – especially beads – and other objects, but never any ceramic (Nakamura and Meskell, in press; Hodder 2006, 133).

At Aşıklı and Çatalhöyük, where the burials received extensive scholarly attention, the vast majority of graves occured within houses below the floors of the structures (Mellaart 1967, 68). Several exceptions are sufficiently remarkable to be mentioned. An adult male skeleton was buried under a courtyard in grid 11K at Aşıklı during the final occupation of the Level 2 settlement (Esin and Harmankaya 1999, 125-126). The satellite site of Musular, where a minimum of eight burials has been uncovered, also displayed different burial practices, which may be ascribed to the specialised function of the site. For instance, two of the burials occurred within a stone wall, of which some of the stones had apparently been removed and subsequently re-placed over the deceased (Özbaşaran 1997, 5; 1999, 149; 2000, 133-134; 137). At Çatalhöyük, about 7 per cent of burials occurred in midden deposits; only males were found in the external areas (Boz and Hager, in press; Nakamura and Meskell, in press). An adult male, Skeleton 3368, was buried in a tightly contracted position in a midden area in between houses in the South excavation area (Space 115). The condition of the bones suggests that this individual was diseased and afflicted with a disability, which perhaps led to his treatment as an 'outcast' by other members of the community (Çatalhöyük Research Project Online Database).

At Çatalhöyük, there were variations in the forms of residential burial, and some burials did not occur under floors, but in foundation/construction deposits or in room fill (Boz and Hager, in press; Nakamura and Meskell, in press). In one case, a foetus had been buried in a brick (Mellaart 1963, 75). Ian Hodder (2006, 148) also reports the highly unusual example of a female, Sk.11306, holding the remodelled skull of an elderly male, Sk.11330, in her arms. Interestingly, the burial had occurred prior to the construction of Building 42 in the South area, which was built on a former midden area. Hodder argues that “the foundation deposit seemed to imply that if one could not erect a building over an ancestral building one could erect one over an ancestor” (Hodder 2006, 148). Disarticulated human remains, especially the skull, were sometimes inserted inside domestic features. For instance, the stray cranium of an infant, Sk.11621, was deliberately deposited at the bottom of a pit dug through a platform, F.1320, before the construction of bench F.1310 in Building 44 (Çatalhöyük Research Project Online Database). In another case, the skull of an adult female, Sk.5022, was placed in a posthole, F.4604, presumably before the insertion of a post that supported the roof of Building 17 (Farid 2000, 20). In Building 3, in the BACH Area, two skulls had seemingly been deposited in such a way that they ‘faced’ each other on top of a hearth installation, F.159, shortly before or during the abandonment of the structure, marked by a layer of roof collapse, F.157 (Çatalhöyük Research Project Online Database).

Who was buried at Çatalhöyük? The Çatalhöyük Research Project demonstrated that there was no clear gender bias regarding the distribution of individuals, with a nearly equal proportion of young adult males and females represented in the sample (Hamilton 1996). However, the number of older adult females, which was significantly greater than that of older adult males, suggests that either women lived longer or that some elder males were buried away from the site (Boz and Hager, in press). If one excludes the number of beads, likewise, there does not seem to be a marked distinction between males and females regarding the distribution of grave goods (Nakamura and Meskell, in press). Social differentiation on the basis of age was more pronounced, and infants and children usually received more grave goods, in contrast with neonates and adolescents who received very little material attention, perhaps due to the transitional status of these age groups (Nakamura and Meskell, in press).

Were people buried in the house that they lived in? Although there is no doubt that burials occurred beneath the floors of active households, they occurred more frequently under the floors of certain households, which attracted burials from a larger community or clan. Bleda Düring listed for instance six buildings, VI.10, VI.1, F.V.1, VIB.34, VII.31-east and Building 1 from the Çatalhöyük Research Project, which contained more than 30 inhumations each (Düring 2006, 207; see also Mellaart 1967, 205-206). In Building 1, where a minimum of 58 individuals was interred, it is unlikely that all 58 individuals had lived in that space, even if allowing for successive generations. According to Ian Hodder and Craig Cessford, in this configuration over 30 individuals would have been alive at the same time, which is not consistent with the size of the building itself (Hodder and Cessford 2004, 30-31). Mellaart already observed that two thirds of the burials in level VI occurred in the so-called 'shrines', but the identification of these buildings as special buildings is contradicted by the domestic nature of some of the activities that took place within them (Mellaart 1967, 206). The input of science helped to clarify this issue. The work of Marin Pilloud on dental metrics and morphology to map genetic difference suggested that individuals buried within larger houses were not more closely related to each other than the population as a whole (Pilloud 2009; see also Hodder 2012, 151).

6.1.3 Burial under floorboards in Northwest Anatolia?

This section interrogates the extent to which sub-floor burial as a distinctive Near Eastern practice for disposal of the body made its way into Europe. What authors usually refer to as 'intramural' burial in Western Anatolia and Southeast Europe (e.g. Băčvarov 2002b, 259; Reingruber 2008, 498; tab.7.1) alludes to the formal disposal of the body inside the house, but not necessarily the *active* house, and may be taken to refer to anything from sub-floor burial, deposits below floors, burials on the floor of abandoned structures or even burial in the fill – sometimes cutting the former floor – of the house, generations after the building fell into disuse. Intramural burials have been reported from a variety of contexts, ranging from Hacılar IIA and IB in the Lake District (Mellaart 1970a, 36; 88-89), a house from Bademağacı EN 3 (Duru 2003, 583), one of the projecting towers of the enclosure at Kuruçay 11 (Duru 1994; 2008, 43), the settlement of Ege Gübre on the Aegean coast of Anatolia (Sağlamtimur 2007, 376), Kefalovrysso and Prodromos in Western Thessaly (Hourmouziadis 1973, 210). In Thrace, some of the dead were buried 'intramurally' at Azmak, Karanovo, Kărdžali, Rakitovo and Vaksevo (Băčvarov 2000; 2002a; 2002b; 2003; 2006).

In many respects, these finds are isolated and too far apart, both geographically and chronologically, to constitute evidence of a consistent tradition *per se*, and they probably allude to a wide range of different practices, which have similar material expressions, insofar as the dead are found buried in the house. Prodromos in Thessaly, which has yielded a collective grave beneath a floor consisting of 11 skulls and some long bones, remains enigmatic, because the bones were accumulated in three successive depositional events according to the excavators (see Hourmouziadis 1973, 211-212). Unfortunately, the excavation lacks detail, but if the stratigraphy were correct, this would suggest that the burial pit was re-opened on three successive occasions during the occupation of the building. While the grave at Prodromos evokes, albeit in a remote sense, sub-floor burial and an emphasis on skulls[36] as in Central Anatolia (see Perlès 2003b, 199-200; 202; see also Talalay 2004), nothing more can be said about it at this stage.

There is one region, which stands out significantly from the rest, because it has yielded the largest sample of Neolithic burials outside Central Anatolia: the Eastern Marmara region of Northwest Anatolia (Figure 12). The sites, which have been ascribed to the so-called 'coastal' Fikirtepe tradition, including Fikirtepe itself, Pendik, Istanbul-Yenikapı and Aktopraklık C (although Aktopraklık is an inland site),

[36] Agathe Reingruber (2008, 498) is correct in stating that, since the heads at Prodromos were still associated with long bones, there is no reason to assume a 'skull cult' in the Levantine sense (*contra* Talalay 2004). The stray cranium discovered inside the Cave of Tsoungiza in Nemea remains so far a unique find in Greece (Caskey and Blegen 1975, 258). Skulls and skull fragments were over-represented in the secondary bone assemblage at Franchthi Cave and Franchthi Paralia (Cullen 1999, 168), but this cannot be taken as evidence for deliberate skull removal and curation, since the bones were highly fragmented and jumbled. Lauren Talalay observes, on the contrary, that skulls were neither plastered nor painted in Neolithic Greece (Talalay 2004, 148). At Kazanlâk in Northern Thrace, deliberate selection of the skull and of five human mandibles has already been mentioned (Băčvarov 2002b, 247). Further evidence for selection of the head can be found at Azmak and Vaksevo (Băčvarov 2002a; 2002b; Nikolova 2006), but here too, the reports lack detail and may as well pertain to secondary burial practices in the broader sense without referring to a 'skull cult' specifically.

have produced evidence for a distinct cultural tradition, characterised by round 'huts', built in wattle-and-daub, with semi-subterranean floors. The dead were buried in shallow pits beneath the floors of these structures (Karul 2011, 62; Özdoğan M. 2011a, S423). The close proximity of houses and death in this region was already noted by Kurt Bittel, whose excavations at Fikirtepe produced four adult graves in extreme hocker position in flat pits under, or in one case in between, the burnt remains of semi-subterranean floors (Bittel 1971, 6; 9). There was also one instance of a stray cranium buried beneath a floor (Bittel 1971, 9). Of the 30 graves or so excavated at Pendik, we know very little, except that they were "organically" related to the architecture and contained a majority of adults, 19 adults and 11 juveniles (Pasinli *et al*. 1994, 150-151). Rescue excavations for the Marmaray Project in Istanbul-Yenikapı yielded six inhumations and seven cremation burials in urns, with the interesting detail that some of the burial pits contained both inhumations and cremations (Kızıltan 2010, 5-11; Kızıltan and Polat 2013a; 2013b). The link between the dead and the houses has not been clearly documented yet. Further evidence for cremation was found at Fikirtepe and Yarımburgaz 4 (Özdoğan M. 2011a, S423).

Aktopraklık is a flat site near Bursa, which has produced evidence for two discrete and apparently unrelated phases of occupation, dated to the Late Neolithic and Early Chalcolithic in Anatolian terminology (Karul and Avcı 2011). The earlier settlement, Aktopraklık C, yielded the plan of several poorly preserved pit-houses or 'huts' with semi-subterranean foundations; the floors, which may have been made of organic material, were not recognised; graves occurred in very shallow pits at the centre of the stone circles (Avcı 2010; Karul and Avcı 2011, 3; Alpaslan Roodenberg 2011, 32). It was not possible to differentiate the borders of the floors from that of the burial pits; consequently, it is not clear whether the graves were sunk deliberately through the floorboards during building occupation or at 'closure', or whether the graves were cut prior to the foundation of the buildings (N. Karul, personal communication). One cannot formally discount that the graves were intrusive. Only direct dating of the bones can confirm their belonging to an early cultural horizon. Inland Fikirtepe sites, such as Ilıpınar, Menteşe and Barcın, characterised by different, rectilinear architecture but similar ceramic industries, produced limited evidence for deliberate burial inside houses (see for instance Alpaslan Roodenberg 2006, 48-51). Two of the burials from the earlier level at Menteşe, a child (UJ) and a young woman (UK) with wooden planking under and over her body, were originally interpreted as sub-floor burials, because they occurred in pits c. 0.50 m beneath house floors (Roodenberg *et al*. 2003, 18-19; Alpaslan Roodenberg 2006, 51). Here too, the absence of a detectable floor and difficulties to establish the clear outline of the burial pits precluded a more confident interpretation.

In sum, sub-floor burial may have been practised in the Eastern Marmara region for a limited period of time at the start of the Neolithic occupation, but the absence of good contextual evidence prevents us from drawing firm conclusions. Burials occurred in a different context of circular semi-subterranean structures of rather flimsy design that bear no resemblance to 7th millennium houses in Central Anatolia (Chapter 7). If burials were inserted beneath floors, these were not plastered floors in the Central Anatolian sense, but wooden floorboards or planking that left few or no archaeological traces. Of particular significance is the fact that adults as well as juveniles and infants were buried indiscriminately in this manner, which provides a parallel to the practice observed at Çatalhöyük and other Central Anatolian sites. It may not be possible to speak of a diffusion of practice *per se*, but of elements of a shared tradition between the two regions – a deliberate emphasis on burying the dead within the house. The occasional finding of cremation burials in the Eastern Marmara region, which is so far unique in the Anatolian context, if we except finds from the Halafian levels (XIX-XVIII) at Mersin (Garstang 1953, 111; Breniquet 1995, 15), would suggest that Northwest Anatolia amalgamated different traditions and cultures – some which were more Neolithic in character, such as sub-floor burials, others perhaps Mesolithic or European in character, such as cremation (see Perlès 2001, 274-276; 2003b for a discussion of cremation burials in Southeast Europe). A Late Neolithic burial from Aktopraklık C yielded a single radiocarbon date (OxA-20596: 7444±37 BP – 6399-6233 BC cal. at 2σ), which is consistent with the dating of the lower stratum (level 3) at Menteşe and falls within the horizon of sub-floor burial outlined above (Karul and Avcı, 2011; Roodenberg *et al*. 2003).

6.2 In-fill and inter-dwelling burials

Sub-floor burial was characterised by a strong interaction between the living and the dead, who shared the residential floorspace. As soon as the dead was taken out of the active household to be interred in between houses (inter-dwelling burial) or in the remains of abandoned houses (in-fill burial), the practice of residential burial was invested with different meaning. Some burials still occurred intramurally, that is, within the confines of the village, but people did not live, interact or care for death on a daily basis. They did not welcome their ancestors inside of their houses, except perhaps as piecemeal and disembodied fragments of whole human beings (Chapman 2000, 138-142).

The transition from Pre-Pottery Neolithic to Pottery Neolithic societies in the Northern Levant seems to have been characterised by a major overhaul of burial customs. The paucity of burial data over the course of the 7th and 6th millennia BC cal. in Southeast Anatolia and Northern Syria points to a broader shift to burial away from the house and the built environment (Özdoğan 2002; Akkermans 2008, 621; see also Özdoğan and Erim Özdoğan 1993). At Çayönü, for instance, in the Upper Tigris Basin, there was a distinct absence of burials in the latest Neolithic phase with Large Room buildings, dated to between c. 7,200-6,200 (?) BC cal. at 2σ (Erim Özdoğan 2011, 213). On this basis, it would seem that Çatalhöyük East and other Central Anatolian sites, such as Tepecik-Çiftlik and Köşk Höyük, were unusual in continuing the tradition of burying the deceased inside the house well into the Pottery Neolithic (Hodder 2006, 124).

Yet, Central Anatolian sites have also documented a shift to burial away from the house at a later date, perhaps after c. 6,500 BC cal. and certainly by the time of Çatalhöyük West. Once again, the broader picture is quite informative. Excavation of contemporary levels at Tell Sabi Abyad in Syria have yielded over 24 child burials sunk mainly into the ruins of abandoned houses or domestic features, such as a disused oven, on the one hand, and what appears to be a separate burial ground for adults only, on the other hand (Akkermans 2008, 623-626). Adult graves were dug through the standing remains of an earlier village after the settlement shifted location.

6.2.1 New burial forms on the Anatolian Plateau

On the Early Chalcolithic mound of Çatalhöyük West, two rather "informal" burials occurred in the fill of abandoned structures (Biehl *et al.* 2012, 56). It is interesting to note that the ancestral Neolithic mound (Çatalhöyük East) was apparently not reused as a burial ground in this period and it would seem that the majority of burials now occurred extramurally (Hodder 2006, 251; 2012, 109). Current research suggests that changes in burial customs were already under way in the upper levels of Çatalhöyük East, dated to after c. 6,500 BC cal. It is significant, for instance, that an inter-dwelling space, Space 144, was used as a small communal burial ground for seven neonates and infants in Level South.Q in the new phasing, which is broadly equivalent to Mellaart Level IV (Farid, in press; Çatalhöyük Research Project Online Database). Moreover, after Level VI, an increasing number of intramural burials were located in side rooms, rather than the main chamber – pointing to a wider shift in burial location (Boz and Hager, in press).

Even more dramatic changes occurred at the very end of the Çatalhöyük East sequence in the TP area, dated to Mellaart Levels II-0 (Farid 2008, 26). Reports on these excavations are still in a preliminary stage, but certain patterns are already discernible. On one of the highest points of the mound, what appears to be a 'charnel room', that is a separate room or building specifically designed to house the dead, Space 327, was inserted in the northern platform of an earlier house, Building 81 (Marciniak and Czerniak 2008, 82). This deliberate truncation into the symbolically-significant corner of the house, which probably contained burials, points to continuity in symbolic space. Interestingly, a foundation deposit, comprising a cluster of large animal bones, especially horncores, and disarticulated human remains, was found under the floor of Space 327 (Marciniak and Czerniak 2008, 77). The collective tomb, Space 327 was a small room, 2.8 x 0.9 m in size, decorated with a highly unusual incised spiral motif on three of its walls. The remains of at least eight individuals, including a headless female (Sk.17698) with grave goods, were found deposited on the floor (Marciniak and Czerniak 2007, 119; 2008, 76).

Directly superimposed on top of Space 327 was found Space 248, 2.7 x 1.7 m in size, which apparently also served as a 'charnel room' (Czerniak and Marciniak 2005, 80). At least nine individuals, comprising two infants and seven or eight adults were buried on the floor in a generally articulated but incomplete condition; one of the human skeletons, Sk.11566 was abutting a large cattle skull, also deposited on the floor (Czerniak and Marciniak 2005, 81). The bodies were interred in at least two episodes of deposition marked out by the subsequent deposition of a layer of silty plaster on the bones; here too, there is evidence of skull retrieval (Czerniak and Marciniak 2005, 81). The discovery of 'charnel rooms' at Çatalhöyük East parallels the recent discovery of a collective burial chamber, structure BB, in level 5 at Tepecik-Çiftlik, which contained the disarticulated remains of about 60 individuals in a deposit more than half a meter in height, topped by the single primary inhumation of an adult (Bıçakcı 2011, 85; Bıçakcı *et al.* 2012, 95; Büyükkarakaya *et al*. 2009). At Köşk Höyük, a separate building from Level II housed two caches of human skulls – in total 19 skulls, including 13 plastered and modelled skulls – deposited under and over a platform or bench (Özbek 2009; Öztan 2012, 36). These findings recall the Skull Building (BM) and other 'charnel rooms' from the PPN phase in the Levant, such as room 3 in phase 8 at Abu Hureyra 2 (Moore and Molleson 2000, 278-280), but also the later 'Death Pit' at Domuztepe in Southeast Anatolia, which contained the disarticulated and highly processed remains of 40 individuals (Croucher 2010; 2012).

In any case, it is significant that a conservative settlement such as Çatalhöyük East, in which the same practices were repeated over hundreds of years, should experience changes in burial customs and the introduction of new burial forms at the end of its sequence of occupation. Both the sites of Tepecik-Çiftlik and Köşk Höyük in Cappadocia, which span the Çatalhöyük East-West transition, have documented a gradual dismissal of sub-floor burial and related forms of burial in the house in their upper levels (Bıçakcı *et al.* 2012; Öztan 2012). Already in Level 4 at Tepecik-Çiftlik, there was a separate burial ground for 16 adults outside the building complex in the southeastern section of square 16K, while an additional nine graves, consisting of four adults, two juveniles and three babies, including one in a jar, were concentrated in Square 16J (Bıçakcı *et al.* 2012, 94). Level 4 at Tepecik-Çiftlik is dated to between 6,434 and 6,095 BC cal. at 2σ (Clare and Weninger, in press). The case of infants buried in ceramic jars, of which we also know some examples from Köşk Höyük and Pınarbaşı-Bor in the region, would suggest a continuation in other form of the practice of burying infants in baskets observed at Çatalhöyük East, but the link with the house is much attenuated or even completely missing (on this issue, see Băčvarov 2004; 2006; 2007; 2008).

In sum, to conclude this section on Central Anatolia, the broader cultural transition associated with the shift from the East to the West mound at Çatalhöyük – already under way in the upper levels of the Çatalhöyük East settlement (Level IV onward) dated to after c. 6,500 BC cal. – was marked out by the experiment of new forms of disposal of the body[37], an apparent diversity in burial customs and a gradual surrender of the practice of living with the dead, in the sense that people were no longer buried under active households. This trend towards burial away from the active house, but still within the perimeter of the settlement, can be traced further west and into Europe, suggesting a diffusion of the practice of intra-settlement burial.

6.2.2 Intra-settlement burial: context of deposition and methodological implications

Burial in a disused or unbuilt area of a settlement mound is likely to result in truncation of earlier cultural layers and building debris, without this necessarily implying that specific meaning was ascribed to *that* space, or that abandoned houses were deliberately targeted to be turned into a 'repository' for the dead. Burials may in fact postdate the context in which they are found by several generations. In this respect, many burials from earlier excavations were incorrectly ascribed to the level in which they were found and this chronological bias should be taken into account when

[37] The disposal of human bodies in burnt houses has already been mentioned elsewhere (§4.3.4). At present it is not clear if this was a burial practice, as at Sabi Abyad for instance (Verhoeven 2000a, 48-50), or a sacrificial practice.

reviewing the evidence (see Reingruber 2008, 497). The sequence of stratigraphic events linked to burial within the fill of an abandoned house may be summarised as follows (Figure 14).

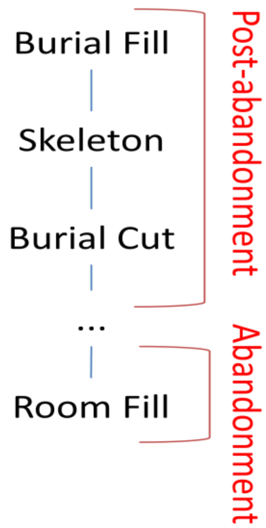

Figure 14. Typical sequence of stratigraphic contexts associated with in-fill burial.

The reader can see that in-fill burial in a general sense is a post-abandonment practice, which bears no or only little relation to the actual context (i.e. the house) in which it is found. Unless the walls of the house were standing at elevations higher than the top of the burial cut, one cannot assume *a priori* from the context of deposition that burial was definitely intended to be domestic in character. In addition, this identification is usually hindered by the difficulty to establish the exact outline of the grave. On the other hand, it is true that burial on a tell, whatever its meaning, can never be rid entirely of symbolic content (Chapman 2000, 145). There is little difference between in-fill and inter-dwelling burial. The fact that a burial is found in a house does not mechanically imply that burial was related to *that* house. The difficulty stems from the fact that sub-floor and in-fill burials have very similar archaeological expressions, insofar as both types of burial occur within the house and may be cutting earlier floor surfaces. But in the case of in-fill burial this should be recorded as a physical, and not as a stratigraphic relation, because the two events – laying the floor and cutting the burial pit – are stratigraphically unrelated.

6.2.3 Communal burial grounds in the Eastern Marmara region

Returning to the region of Marmara, the marked contrast in architecture noted earlier between coastal sites, characterised by circular semi-subterranean structures, and inland Anatolian sites, with rectangular post-wall houses, tended to fade at the turn of the 6th millennium BC cal. and the rectangular plan was adopted everywhere. In the field of burial customs, likewise, there was a trend towards uniformisation of practice, with the emergence of communal burial grounds at three of the sites from this region: Aktopraklık B, Ilıpınar X-IX and the upper levels at Menteşe (Alpaslan Roodenberg 2001, 1-7; 2006, 48-51; 2011; Alpaslan Roodenberg and Maat 1999, 37-41; fig.1; Roodenberg 1999, 197-198; Roodenberg *et al*. 2003, 18-19). Barcın, which starts earlier but partly overlaps these sites, presents a more contrasted picture, insofar as the dead occurred in a variety of contexts, but generally in between houses or in the fill of abandoned houses (Figure 15; Gerritsen 2010; Gerritsen and Özbal 2009; 2011; Gerritsen *et al.* 2013; Roodenberg *et al*. 2008; personal observation at the site). The fact that the dead remained ubiquitous in the built environment, although they were no longer associated with active households, suggests a continuity of practice in this region.

Figure 15. Barcın; adult skeleton in extreme ‘hocker’ position in an inter-dwelling space, Trench M13. The grave cut was only c. 0.6 m in diameter. A sheep hoof was deposited on the chest of the deceased. Photograph by the author.

After the Late Neolithic settlement at Aktopraklik (C) was abandoned, the settlement shifted horizontally and was relocated a few dozen metres away (B), perhaps after a hiatus of several hundred years; the disused settlement area (C) then served as a collective burial ground c. 1400 m^2 in extent, which was sparsely populated with graves (Karul and Avcı 2011, 5; Alpaslan Roodenberg 2011, 18-30). Over 12 graves were recovered in this perimeter, while some burials also occurred in closer proximity to the settlement in area B. They consisted mainly of single primary inhumations of adults in flexed (‘hocker’) position in shallow pits. Two exceptions are noteworthy: a collective grave containing an adult male, an adult female and a child aged two to four (89E-9.1.2.3 - AKT'07), and two adult males buried in hocker position, seemingly one with the head on the foot of the other (89D-17.1 & 14.1) (Alpaslan Roodenberg 2011). The rich repertoire of burial goods, which included in one instance 929 limestone beads and six complete vessels (92B(4.1)-AKT'07), suggest an embryonic form of social differentiation (Alpaslan Roodenberg 2011). This suggestion is also supported by the fact that some of the adult males were differentially buried with a stone axe close to their skull (89E(17)-AKT'08 and 89F-6).

At Ilıpınar, 48 individuals were buried in a 200 m^2 unbuilt space in between houses, which perhaps served as a communal burial ground for several families (Roodenberg 1999, 197-198). Single primary inhumation in tightly flexed position was the norm (Alpaslan Roodenberg 2006, 48-51). The sample included a majority (31) of juveniles and infants, while adult females (12) were also over-represented among the adults. In contrast with Aktopraklık, the grave inventory was rather scanty with only a few pots, perforated shells and one bead (Alpaslan Roodenberg 2006). Interestingly, some newborns were disposed of in post-holes (Alpaslan Roodenberg 2008, 36). At Menteşe, it has been observed that children were sometimes buried in 'refuse' areas and presumably in former refuse pits (Alpaslan Roodenberg 2001, 1-7). Some of the individuals at Menteşe (UA-JK16, UC-SSK15 and UG-JK15) were buried in extreme flexed position with the knees drawn to the chin (Alpaslan Roodenberg and Maat 1999, 37-41). A minimum of seven individuals occurred in an inter-dwelling space, while the graves of two adult males, UF and UH, ascribed to a somewhat later Early Chalcolithic horizon, cut into the fill of the 'burnt house' (Alpaslan Roodenberg 2001).

The settlements in the Eastern Marmara region served both as a place for social and domestic interactions and as a burial ground for the deceased, who remained in close proximity to houses, but were no longer buried under active households. What makes this region particularly distinctive is the concentration of graves and, in the case of Aktropraklık, the rich inventory of burials, which suggest that we may be dealing with an early form of 'cemeteries', which were still intramural in character. Lolita Nikolova called attention to the practice of communal burial in the village, which she referred to as "village burial" or "settlement burial", and these terms would appear to match the evidence presented here (Nikolova 2006). In Northeast Bulgaria, the site of Malăk Preslavec near the banks of the Danube, shows a similar concentration of graves (19 graves, including 11 adults and 7 juveniles and infants) in close proximity to the settlement (Băčvarov 2009, 39-41). The site remains poorly dated and any speculation about broader connections at this stage would be premature.

6.2.4 A conspicuous absence of burials: accounting for the exception

We now turn to the evidence from Southeast Europe. The first observation that comes to mind is that this region shows a highly contrasted picture, insofar as the dead is scarcely represented in the record. For the whole of Early Neolithic Greece, the number of single primary inhumations uncovered by excavations was estimated to about 40 (Perlès 2003b, 199), and the total number of individuals deliberately interred within habitation layers barely exceeded 60 (Perlès 2001, 273; Cavanagh and Mee 1998). I should like to stress that these estimates include a large proportion of individuals buried inside caves, such as Franchthi, Prosymna and Tsoungiza (Perlès 2003b; see also Treuil 1983, 425; 429; Fowler 2004). Moreover, some of these burials should be ascribed to the Middle and later Neolithic phases on the basis of stratigraphic observations (Reingruber 2008, 497). In Thrace, the number of discrete burials ascribed to Early Neolithic levels (pre-Karanovo I to Karanovo II period) amounted to about 100 in total – a very low estimate considering the length of occupation and the number of settlements excavated in this region (Băčvarov 2000, 137; 2003; Nikolov 2007). In Aegean Turkey, the emerging picture is similar; I only came across seven burials from three of the sites of this period: Hoca Çeşme, Ege Gübre and Ulucak (Özdoğan 1999; Sağlamtimur 2007; 2012; Sağlamtimur and Ozan 2012, 228; Ö. Çevik, personal communication).

How to interpret this evidence – or rather lack of evidence? Several hypotheses have been put forward to explain the overall scarcity of graves in this period. Agathe Reingruber suggested that the size of excavations at sites in the wider Aegean region was too small to produce an accurate picture of burial practices (Reingruber 2008, 493; tab.6.2). For instance, the site of Nea Nikomedeia in Greek Macedonia, which was investigated over a larger exposure, yielded the remains of 105 individuals, including 35[38] from regular burials (Angel 1973, 103). However, this hypothesis fails to account for the extremely low density of graves at sites like Sesklo (1) in Greece or Ulucak (2) in Southwest Anatolia. Considering that the surface of excavation at Ulucak was over 750 m^2 and occupation spanned over 15 discrete building layers or subphases, the complete absence of burials from levels V-IV is surprising to say the least (Çilingiroğlu 2012, 16). Even small fragments of human remains seem to have been an oddity at the site (personal observation at the site). We seem to be dealing with a deliberate social practice of avoidance of the dead.

Catherine Perlès (2001; 2003b) stated the obvious when she suggested that burial was extramural and that our burial record from settlement sites is only the tip of the iceberg. The small cremation 'cemetery' from Soufli Magoula in Eastern Thessaly, which included 14 pits with the remains of cremations and two large funeral 'pyres', discovered by chance during the excavation of a drainage ditch in the eastern end of the mound, would support this interpretation (Gallis 1980; Perlès 2001, 273-275; 2003b, 199-200; Fowler 2004, tab.3.3). Accordingly, Perlès concluded that formal inhumation in the settlement was the "exception" (Perlès 2003b). Considering that discrete burial deposits have been recovered from over 15 sites in Greece, however, I would call into question the exceptional nature of this practice. Residential burial was a widespread phenomenon. It is the sheer density of burials per site, usually comprised between 0 and 5, that strikes one as an anomaly, especially when comparing this number with the densities observed at Fikirtepe sites in the Eastern Marmara region. Intra-settlement burial was common enough, however, to be tolerated on the margin. Here we find perhaps a much attenuated version of the practice of burying people in the village observed in the Eastern Marmara region (Nikolova 2006).

Consequently, the next set of questions concerns the identity of the people who were buried in the settlement. Intra-settlement burial, as a distinct practice, derives its consistency from the peculiar way in which the body was disposed of in

[38] For reasons that remain unclear to the author, this estimate provided by the physical anthropologist who worked at the site and which includes burials ascribed to EN levels (Angel 1973), is generally discounted in the literature (Cavanagh and Mee 1998; Perlès 2001; Reingruber 2008).

this period – by frequently reusing features, such as clay source pits, refuse pits or postholes, whose shapes and sizes were not necessarily suited to the deposition of a fully articulated skeleton in flexed position. This trend was apparently common from Anatolia to the Balkans, and suggests elements of a shared tradition (e.g. Rodden and Rodden 1964b, 605-607; Chapman 1983, 7; 2000, 140; 145; Bailey 1993, 207; 2000, 124; Perlès 2003b, 199; Băčvarov 2004, 151; 2006, 101-102; Alpaslan Roodenberg 2008, 36). The dead was compressed into a narrow hole, as though there was a restriction in the amount of residential space that it could occupy. In Southeast Europe, burials usually showed little elaboration or differentiation. There were few grave goods, if any; hence the traditional assumption that the dead bodies were simply 'thrown away' or denied proper burial, because they belonged to enemies for instance (see discussion by Băčvarov 2004, 151).

And yet, the persistence with which Neolithic people continued to bury some of their ancestors in tightly flexed ('hocker') position on one side, which implies that the dead had to be bound or tightly wrapped shortly before *rigor mortis* occurred or, more likely, immediately after the effect subsided, strikes me as a contradiction. Even more so, if this method of burial only applied to selected individuals. In purely functional terms, was it not easier to dig a new grave or widen an existing pit rather than force at all costs a body into a narrow hole? As a note of caution, I would like to stress that burial pits were usually interpreted as refuse pits on the basis of their contents alone – a few animal bones and ceramic sherds – which usually derived from the redeposited soil matrix (Băčvarov 2004, 151). This has no proper justification in the literature. Thus, it would seem more appropriate to conclude that the burial pit was filled with midden-like material after the body was deposited.

Of further significance is the fact that burial assemblages from this period frequently demonstrate a positive over-representation of children and infants (Souvatzi 2012, 33). At Nea Nikomedeia, there were 22 juveniles and infants among those that were given formal inhumation (Angel 1973). Two of the children were buried with an adult female (their mother?), while three children occurred conjointly in a collective grave (Rodden and Rodden 1964b, 606). At Franchthi, likewise, there were at least nine children and infants among the 17 Neolithic burials recorded at the site (Cullen 1999; Fowler 2004, tab.3.2); this estimate takes into account data from the Cave and the outdoor Paralia site. In Knossos, all seven burials belonged to juvenile and infants (Treuil 1983, 425). The same holds true for Kovačevo in the Struma Valley, where the seven graves were ascribed to newborns and very young children (Lichardus-Itten *et al*. 2002). A similar over-representation of juveniles and infants was already noted at Ilıpınar, which provided a much larger sample of graves.

The evidence may suggest, therefore, that contrary to the earlier practice of sub-floor burial, which concerned indiscriminately adults and juveniles or infants, in-fill and inter-dwelling burials were primarily intended for children of a very young age, who were sometimes buried in the settlement close to, one assumes, their parents' home. This interpretation is limited by the lack of research on infant mortality rate in this region and by approximations regarding the age at death, which has rarely been established by anthropologists. Gary Rollefson estimates infant mortality to about 30% in the Middle PPNB period (Rollefson 2002, 170), but mortality profiles of juveniles aged 0-5 at Aşıklı and Çayönü show significant discrepancy after 24 months – suggesting that infant mortality varied from site to site depending on other factors, such as the age of weaning (Pearson *et al.* 2010, 454; fig.4). Thus, the distribution of adults versus juveniles is a poor indicator of differential burial in the absence of systematic study of infant mortality rates in Southeast Europe. Indications of specific burial practices reserved to a section of the population – in this case, children – are more convincing. In his thesis, Krum Băčvarov listed many instances of jar burials containing newborns or infants in Southeast Europe, which he ascribed to the tradition of burying children in baskets and subsequently in ceramic jars in Central Anatolia (Băčvarov 2003). At Azmak in Eastern Thrace, a jar containing the remains of an infant occurred within a house close to an oven (Georgiev 1972, fig.4). It is not clear whether the jar occurred on or under the floor of the house, but this deliberate attempt to retain the dead infant within the built environment, perhaps while it was still lived in, strikes one as a further element of continuity with Anatolia.

6.3 Summary

- Burial beneath the floor of an active household, or sub-floor burial, is one of the key practices characterising Aceramic and Early Pottery Neolithic societies on the Central Anatolian Plateau. Although most of the dead were buried in this manner in the main sequence of Çatalhöyük East, some houses attracted more burials than others; some had none at all (§6.1.2).

- There is insufficient evidence to conclude that sub-floor burial was practised in Western Anatolia, Greece or Thrace during the Neolithic period. Houses in which burials occurred were not necessarily lived in at the time of burial. This cannot be established unless detailed attention is given to the sequence of deposition of the burial (§6.1.1). At most, one can perhaps point out a strong association between death and architecture in the Fikirtepe culture of Northwest Anatolia (§6.1.3).

- The presumed lack of close interaction between the living and the dead in Western Anatolia and Southeast Europe may be explained by the fact that sub-floor burial had become marginal by the time of the main expansion of Neolithic societies into Europe, after c. 6,500 BC cal. At Tepecik Çiftlik, Köşk Höyük and in the upper levels of Çatalhöyük East, Levels IV-0, the dead were frequently buried in disused areas, inter-dwelling spaces and 'charnel rooms' (§6.2.1).

- Suggestion is made that this new practice or practices, falling under the umbrella of intra-settlement burial, diffused westward to Greece and Thrace after c. 6,500 BC cal. A lingering trait, which spanned virtually all of the sites known to have produced burials in the study area, was the laying of the body in contracted position on one side in a shallow rounded pit – an effect, which was produced by tying or wrapping the deceased before *rigor mortis* or immediately after the effect subsided (§6.2).

- Intra-settlement burial, as a second practice for disposal of the body, found different expressions in different parts of Anatolia and Southeast Europe. In the Aegean Basin, there was a conspicuous absence of burials in the traditional sense;

infants and young children were occasionally buried in close proximity to, one assumes, their parents' home (§6.2.4). By contrast, communal burial grounds in the Eastern Marmara region foreshadowed the emergence of real cemeteries (§6.2.3).

7

Spatial Organisation in the Rectangular House

The appearance of the rectangular house form marks the onset of the Neolithic in Western Anatolia and Southeast Europe. This is surprising for a number of reasons. First, scholars were quick to point out that Neolithic communities could not have derived the rectangular shape of their dwellings from a close observation of nature, given that nature does not provide models (or so few[39]) of rectilinear structures and organisms (Cauvin 1994, 171-176). Second, the wholesale and seemingly instantaneous adoption of the rectangular plan in many parts of Anatolia and the Balkans after c. 6,500 BC cal. provides an unlikely contrast to the punctuated replacement of circular structures by rectangular ones initiated two millennia earlier in the Near East, coinciding with what Kathleen Kenyon identified as the PPNA/PPNB transition at Jericho (Kenyon 1956). This begs the question of whether the rectangular form in architecture was, as it were, 'imported' from the Near Eastern centre of neolithisation, inasfar as it is ever possible to spread a geometric design or pattern like any material object.

The distinction between circular and rectangular houses is unambiguous, and archaeologists are usually able to tell them apart without much difficulty. Consequently, the question is not if houses became rectangular, but when houses became rectangular and whether the rectangular plan entailed a specific mode of spatial organisation, which may have diffused alongside it. In his study of the Kabyle house, Pierre Bourdieu demonstrated that the way in which the building space is organised and lived – the "built environment" (Rapoport 1969) – is a major arena of practice (Bourdieu 2000[1972]). By this, it is meant that the form, orientation and internal division of houses are structured by human action, thereby reflecting not only individual agency, but also collective rules and norms. It is useful to give a real-world example. While undoubtedly modern houses in Britain show variations in shape and size, they usually adhere to the conventions of the built environment, insofar as the

[39] With the exception of crystalline forms (Ruskin 1849, 90).

internal layout is rectilinear; the main doorway gives access to a common area; rooms have doors; bedrooms may be located upstairs; parents and older children sleep in separate spaces; sleeping, cooking and toilet facilities are all clearly distinguished, and so forth. This arrangement may be functional in a modern sense, but this explanation fails to account, first, for the diversity of solutions adopted by different human societies; second, for changes to the requirements of the 'ideal' home over time.

Traditional concerns with building form typology underpin our understanding of Neolithic construction practices. I shall first address the diversity of architectural forms in Southwest Asia from the 9th to the 7th millennia BC cal., to suggest that buildings in Anatolia and Southeast Europe fall within one broad category only, derived from the large room with an open floor plan of later Aceramic structures in the Taurus Foothills and Central Anatolia (§7.1). Attention is drawn to the shift in spatial organisation from an earlier division into two flooring areas, segregating the dead from cooking activities (§7.2), to a model in which the oven took central stage in the house (§7.3). Appendix D provides illustrations of some key Neolithic buildings referred to in this chapter.

7.1 Large room with an open floor plan

Rectangular houses in Anatolia and Southeast Europe shared a number of characteristics, which set them apart not only from earlier curvilinear houses in the Levant, but also from a category of multi-roomed structures with cell-like divisions in the Northern Levant, dated to a comparable horizon. In the Anatolian and Southeast European Neolithic, one observes that the 'living room' – a wide open space in which people slept and carried out daily activities – took central (if not unique) place in the home. A tendency to scale up the size of the main room, without actually increasing the number of rooms, is evident from the start of the 7th millennium BC cal. This chapter finds that even the larger rooms were only slightly rectangular (i.e. squarish) in plan, which posed significant challenge in regard of roofing system.

7.1.1 Near Eastern origins of the rectangular plan

To trace the earlier origins of the large room open plan, it is necessary to make a brief digression in time, in the 9th millennium BC cal., when, perhaps for the first time in history, rectilinear houses were built in place of curvilinear ones. The sequence of building development indicates that the shift was not as dramatic as is traditionally portrayed in the literature. Edward Banning and Bryan Byrd used space syntax to show that some of the more elaborate circular structures with internal partitions at Mureybet, for instance, and simple rectangular structures, like the 'pier-houses' of Jericho and Beidha, shared similar connectivity patterns: internal compartments radiated from a central node, in an arrangement that lacked clear hierarchy and restriction (Banning and Byrd 1989, 478). On the other hand, while circular houses could be internally subdivided, rectangular houses could be expanded virtually to the infinite through the addition of rooms (Aurenche 1981, 188; 197-199).

The 'agglutinative' property of rectangular architecture meant that it could accommodate a larger population. Hence the argument that the shift from circular to rectangular architecture coincided with a change in the family unit, the emergence of the nuclear family (Flannery 1972; 2002). Drawing on ethnographic analogy, Kent Flannery suggested that extended families lived in residential compounds, in which each family member, or group of members, occupied a circular hut. The development of the rectangular plan was a functional adaptation to the shift to nuclear families, insofar as the co-residence of parents and children under the same roof expanded the needs for space and storage (Flannery 1972). At the risk of reigniting the debate on diffusion versus convergent adaptation, Jacques Cauvin argued that the rectangular plan could not be a functional adaptation to a nuclear-family structure, because the emergence of nuclear families pre-dated the invention of the rectangular form in the Levant (Cauvin 1994, 172). Until this form was invented and diffused, it did not belong to the repertoire of shapes at the disposal of humankind.

Unless assuming a diffusion of the model of nuclear family-hood, at a dramatic pace, with dramatic consequences, Flannery's model fails to explain the widespread shift to rectangular buildings in the Levant. The rectangular plan presumably provided a model, which could be exported (Appendix B). Europe was one of the recipients of the rectangular plan (Figure 16; Cauvin 1994, 172-173). Interestingly, however, the transfer of pattern only took place at a much later date, in the 7th millennium BC cal., when Neolithic farming spread from Anatolia to Europe. Scholars have traditionally assumed that Southeast Europe experienced a shift unrelated, but similar to that from PPNA to PPNB houses at the onset of the Neolithic – with circular pit-houses replaced by rectangular houses at the start of the building sequence[40] (e.g. Theocharis 1973, 35; for a reappraisal, see Whittle 1996; Bailey 1999b). Why such a transition should occur and immediately give rise to, in the space of one or two hundred years, a more advanced form of housing in evidence in the Northern Levant and Anatolia, is not clear, unless assuming that the rectangular plan was actually introduced from elsewhere (i.e. the Near East).

[40] Oval pits, traditionally interpreted as ‘pit-huts’, were discovered in the earlier levels of the tells at Argissa, Sesklo and Soufli Magoula in Thessaly, as well as in Dendra in Argolis (Halstead 2011, 136; see also Pyrgaki 1987, 69-71). More recently, similar structures were found at the sites of Paliambela-Kolindrou and Revenia-Korinou in Northern Greece (Halstead 2011, 136). Paul Halstead draws a distinction between oval ‘pit-huts’ and more substantial round semi-subterranean houses, such as those found at Giannitsa B in Macedonia or at Nea Makri in Central Greece, which were large enough to accommodate a nuclear family (Halstead 2011, 136; see also Pantelidou Gofa 1991, fig. 27; 1996; 1997). Critics pointed out that ‘pit-huts’, usually lacking domestic features and facilities, were more likely to be clay extraction pits (Perlès 2001, 77). In Western Bulgaria, large circular or oval depressions in the ground, formerly interpreted as dwellings, were reinterpreted as drainage pits under suspended floorboards (Lichardus-Itten 2010, 13-14; Demoule 2011, 11; Pernicheva-Perets *et al.* 2011; but see Bailey 1999b).

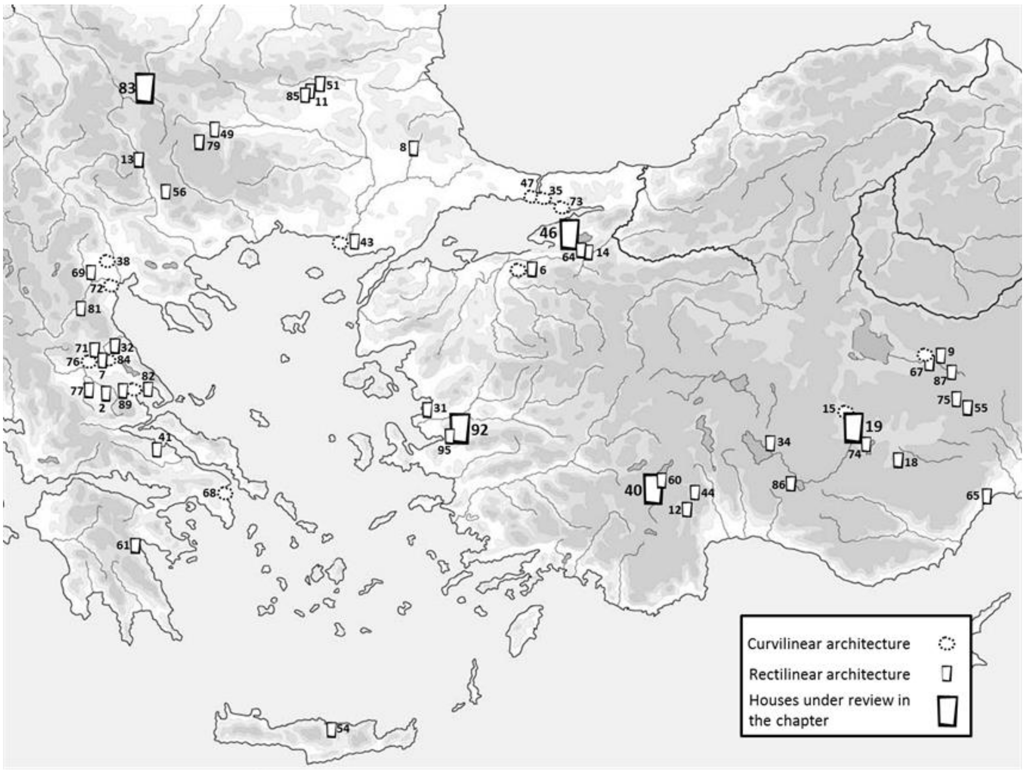

Figure 16. Geographical distribution of curvilinear and rectilinear forms of architecture in Anatolia and Southeast Europe during the interval 8,500-5,500 BC cal. The numbers refer to sites listed in Appendix E.

7.1.2 Multi-roomed buildings in the Northern Levant

In the upper reaches of the Euphrates and Tigris basins, the shift from circular to rectangular architecture was followed by the introduction of diverse forms of housing that were broadly rectangular in plan, but which also displayed a complex layout of rooms and foundations (Figure 17). The site of Çayönü, with its long building sequence spanning the 9th, 8th and 7th millennia BC cal., is emblematic of this transition (Braidwood and Çambel 1982; Çambel and Braidwood 1983; Schirmer 1983; 1990; Özdoğan and Erim Özdoğan 1998; Erim Özdoğan 1999; 2011; Özdoğan 2010b). At Çayönü, there was a remarkable homogeneity in plan within each building level, conveniently termed after a type of architecture or a distinctive feature that was prevalent at the time, that is, round (r1-4), early grill (g1-4), late grill (g5-6), channeled (ch1-4), cobble paved (cp1-3), cell (c1-3a-b) and large room phases (lr1-6) (Erim Özdoğan 2011, 192). This sequence of building development followed a consistent course, and there was much continuity from one phase to another. For instance, a tripartite division of houses can be traced across several building phases (Cauvin 1994, 113-115). This homogeneity was disturbed only by the existence for each building level or phase of non-domestic structures, particularly the Skull building (BM) in its multiple forms, which were clearly distinguished in shape, size and elaboration from contemporary houses (Schirmer 1983; 1990).

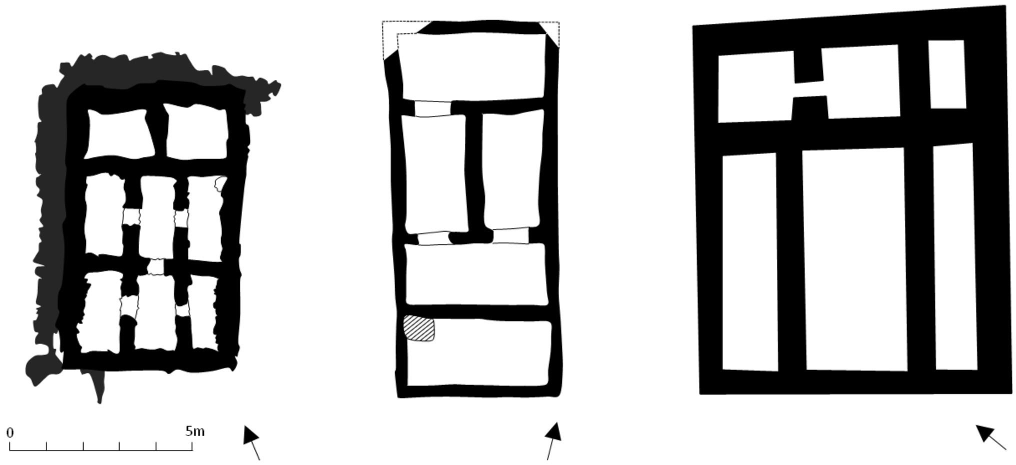

Figure 17. Floor plans of typical multi-roomed buildings from the Northern Levant. From left to right, Çayönü (Building CA), Abu Hureyra 2 (Phase 5 house) and Bouqras (Building 11). Redrawn after Schirmer 1990, fig.9; Moore *et al.* 2000, fig.8.51; Akkermans *et al.* 1981, fig.7.

The adoption of the cell plan in a later horizon of the PPNB, perhaps after c. 7,500 BC cal., is not exclusive to Çayönü and can be traced more broadly in the Taurus foothills at sites like Cafer Höyük, Levels VIII-V, and Gritille, Phase B (Cauvin *et al*. 2011; Voigt 1985, 13; 1988, 221-222). Cell buildings share in common a tripartite arrangement into three parallel rows of rooms which run along the long axis of the house. The rooms, which range between four and ten and are little more than cells, may only have been used as basements, and there is evidence to suggest that some of the cell buildings had a suspended floor (Erim Özdoğan 2011, 203-204). Thus, the system of a lower floor of small cells probably supported an upper room, which one might assume to be large and rectangular (Cauvin *et al*. 2011, 9-10). Further south, on the western loop of the Middle Euphrates, the cell plan or a variant thereof was evidenced at Akarçay Tepe, Layers 6-4, Mezraa-Teleilat, Level IV, Halula and Abu Hureyra 2 (Balkan-Atlı *et al*. 2001; Akman *et al*. 2002; Özbaşaran and Duru 2011; Özdoğan M. 2011c, 207; fig.3; Estebaranz *et al*. 2006, 65; Guerrero *et al*. 2009; Moore 1975; Moore *et al*. 2000). At Abu Hureyra, the interior division of the house followed a different pattern, insofar as the rooms were arranged parallel to the short axis of the house and contained domestic features such as hearths and platforms, which indicate that occupation was concentrated at ground level (Moore *et al*. 2000, fig.9.2).

Of broader significance is the fact that after 6,800 BC cal. – at the transition from Pre-Pottery Neolithic to Pottery Neolithic societies in the Northern Levant – several sites experienced a shift from cell buildings to large rooms, which also coincided with the abandonment of non-domestic forms of architecture of the type seen in earlier periods at Çayönü (Erim Özdoğan 2011). In the large room phase, houses consisted of one room only, partly sunken in the ground, lined with somewhat flimsy stone walls and a superstructure in *pisé* (Erim Özdoğan 2011, 212-213). The large unicellular plan did not necessarily display less elaboration, because of the difficulty of roofing over a greater surface, but it certainly entailed a different understanding of the built environment, which was less clearly partitioned.

Whereas the western part of the Northern Levant engaged in the adoption of the new building plan (see Bischoff 2007), multi-roomed structures continued to be built in the Balikh and Khabur valleys, and corresponding sections of the Syrian Euphrates. For instance, Sabi Abyad II and I both yielded a complex settlement layout consisting of large irregular multi-roomed structures with small cells, many of which were used for storage. At Sabi Abyad II (3A-C), the buildings contained few or no domestic features and many activities may have taken place outdoors (Verhoeven 2004a, 182; 2004b; Verhoeven and Akkermans 2000). The 'burnt village' at Sabi Abyad I, dated to c. 6,200-5,800 BC cal. at one standard deviation, shows a comparable pattern, and also the introduction of round 'tholoi', which became characteristic of the Halaf culture at the end of the 6th millennium BC cal. (Akkermans 1993; 1996; Akkermans and Duistermaat 1996; Akkermans and Schwartz 2003, 115).

Further east, at the mouth of the Khabur on the Syrian Euphrates, multi-roomed structures with a tripartite organisation dominated the built environment at Bouqras. Bouqras spanned the Pre-Pottery Neolithic-Pottery Neolithic transition and could be tentatively dated to c. 7,500-6,200 BC cal. at 1σ (Akkermans *et al.* 1981; de Contenson 1985; Akkermans and Schwartz 2003, 121). Houses 11, 16, 18 and 19 at Bouqras displayed a standard plan with three narrow rectangular rooms and three squarish cells on one side of the building (Akkermans *et al*. 1981, 496). Surprisingly, these rooms had ornamented walls, ovens, hearths, bins and cupboards, which suggest that they provided the main living environment. Alongside residential buildings, there was another type, represented by Building 26, with elongated rooms extending over the entire width of the building (Akkermans *et al*. 1981, 496). In this case, some of the rooms were not connected by doorways, and could only be accessed from the roof; the suggestion is that Building 26 had a special purpose – perhaps large-scale communal storage (Akkermans *et al*. 1981, 496; 499).

This brief detour into the architectural traditions of the Northern Levant has demonstrated that the large room open plan was not self-evident, and that there were indeed alternative forms of rectangular structures coexisting and overlapping with this type. The cell plan, or a variant thereof, only occurred marginally in Level XXVI at Mersin-Yumuktepe (Garstang 1953; Breniquet 1995; Caneva 1999; 2004b) and does not seem to have been significant in any other site of our study region. Whether the cell plan was the direct ancestor of the large room open plan is a question in itself, which would require a longer analysis, but the evidence from Çayönü would support this interpretation.

7.1.3 Scale up of the main room

Whereas the Northern Levant witnessed the development of highly segmented, multi-cellular, specialised and non-domestic forms of architecture, particularly on the Middle Euphrates at the end of the PPNB, architecture in Anatolia and Europe was rooted on its domestic, unspecialised, undifferentiated and multi-functional character.

Anatolian and Southeast European houses revolved around one central room, which provided discrete sleeping, cooking and storage facilities. Figure 18 shows that central rooms usually ranged between 15 and 50 m^2 in size. In agglutinated sites, such as Çatalhöyük and Ulucak, living rooms rarely exceeded 35 m^2, so it is tempting to assume that there was a limitation on the amount of space available for reconstruction in this type of sites. On the other hand, Bleda Düring successfully highlighted a trend of enlargement of rectangular buildings from the later phases of the Aceramic Neolithic to the Early Pottery Neolithic periods on the Central Anatolian Plateau (Düring 2006). He found that the mean interior size of building units was steadily increasing over time from 11.0 m^2 at Aşıklı to 17.8 m^2 at Canhasan III, 27.8 m^2 at Çatalhöyük, 25.7 m^2 at Erbaba and finally 37.1 m^2 at Canhasan I (Düring 2006, fig.9.1; see also Cutting 2005, 136-137; Hodder 2012, 247). In effect, the suggestion here is that the tendency to scale up the house floor by enlarging the main room in Central Anatolia, to which Bleda Düring drew attention (Düring 2006), continued in Western Anatolia and Southeast Europe.

In contrast with the pattern observed in the Northern Levant, however, the increase in building size did not coincide with an increase in the number of rooms. Side rooms and annexes, which rarely exceeded two (Figure 19), were smaller than the main room; they served as storage spaces, workshops or outdoor kitchens, but rarely provided enough space for extended sleeping. Why some activities were distinguished spatially, while others were not, remains unclear. With a possible exception at Nea Nikomedeia (Pyke 1996, 46), there was no room for stalling animals inside Neolithic houses or their annexes (e.g. Nikolov 2007, 34). Interestingly – and this was a further technical difficulty – houses were only slightly rectangular and there was no significant imbalance in the ratio length:width, except in the side chambers and annexes (for instance, a ratio of 1:8 in the side room of the 'big house' at Slatina). At this stage, one did not witness the emergence of 'long houses', such as found in the LBK in Central Europe. The increase in size of the main room went hand in hand with, I shall argue, the adoption of new discrete functions for this space. The central room became truly multifunctional and embodied many aspects traditionally ascribed to the Neolithic, such as production, consumption and storage.

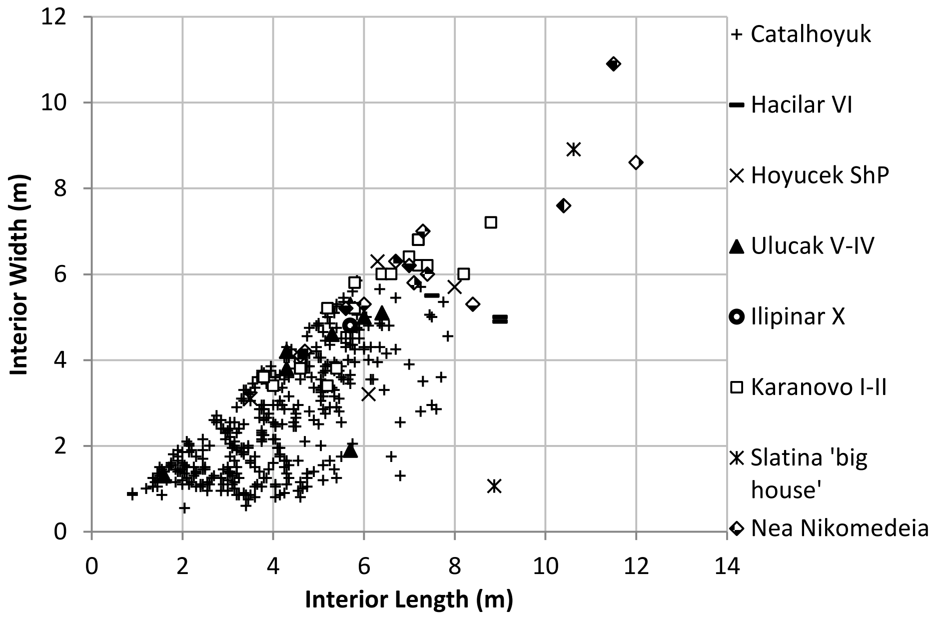

Figure 18. Comparison scatter plot of interior dimensions of fully excavated rooms in selected Neolithic houses from Anatolia and Southeast Europe. Method and Çatalhöyük xy points after Düring (2006, fig.6.9). Karanovo measures after Hiller (1997, 74-75). Other measures obtained by the author using original plans (Çilingiroğlu *et al.* 2004; Çilingiroğlu 2012; Duru and Umurtak 2005; Mellaart 1970b; Nikolov 1989; Pyke 1996; Roodenberg 2008a).

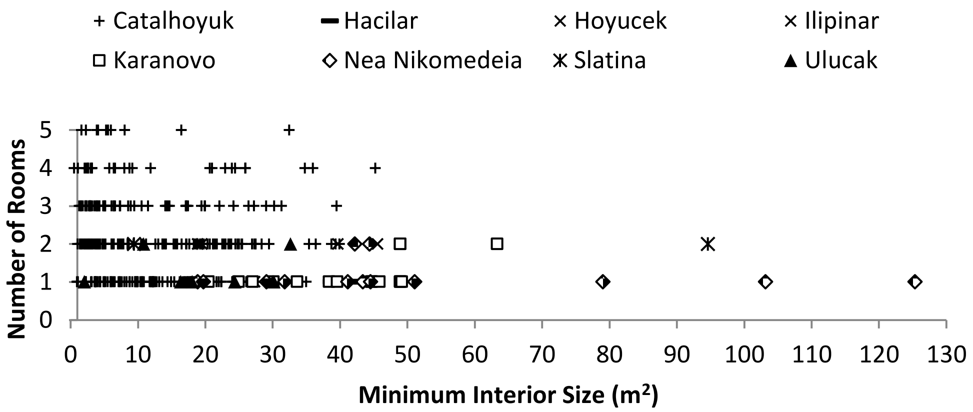

Figure 19. Comparison scatter plot of number of rooms in building against minimum interior size of fully excavated rooms in Anatolia and Southeast Europe. The Çatalhöyük determinations refer to Levels IX-V (Mellaart 1967, figs.4-10). Measures obtained by the author using original plans (Çilingiroğlu *et al.* 2004; Çilingiroğlu 2012; Duru and Umurtak 2005; Mellaart 1970b; Nikolov 1989; Pyke 1996; Roodenberg 2008a).

A few outlier rooms from Nea Nikomedeia and Sofia-Slatina ('big house') reached dimensions of circa or slightly over 100 m^2, and used multiple posts, beams and rafters to span the roof (Rodden and Rodden 1964a, 564; Rodden 1965, 85; Nikolov 1989). The reasons for these extra large rooms are not known. Perhaps they too fit into a general trend of enlargement of the main room during the 7th and early 6th millennia BC cal. With two lateral aisles separated by parallel rows of massive timbers, Structure 2 in Group 4 at Nea Nikomedeia remains exceptional, though its architecture was in keeping with the surrounding area, and a domestic function cannot be formally discounted (See Souvatzi 2008, 70-71). Further west than Cappadocia, not a single Neolithic building differed markedly in shape or elaboration from contemporary residential structures, and it is safe to assume that they were for domestic use only (Bailey 2005). Even those buildings that were traditionally interpreted as 'special buildings', on the basis of their contents, such as the so-called 'shrines' at Çatalhöyük (Mellaart 1967) and Höyücek (Duru and Umurtak 2005), displayed the same basic plan, internal organisation and combination of features found in every house from the same period.

The domestic character of Western Anatolian and Southeast European building traditions stood in remarkable contrast to the communal and monumental architectures characterising the Aceramic Neolithic period in the Near East. The latter tradition went as far back in time as the PPNA in the Northern Levant. Göbekli Tepe, Nevalı Çori, Jerf el Ahmar and Çayönü have yielded some of the best examples of 'cult buildings' with highly unusual features, such as full height stone walls, complex terrazzo floors, relief-decorated megalithic pillars, and so forth (Özdoğan M. 2007b, 20; Kornienko 2009). There is as yet no satisfactory explanation for the prevalence of domestic architecture – or rather, for the absence of "buildings of the grand design tradition" (Rapoport 1969, 2) – in Western Anatolia and Southeast Europe. One may assume with Mehmet Özdoğan that only the lower sections of the population were involved in spreading the Neolithic pattern of existence (Özdoğan 2002). Perhaps the concept of the *domus* had more universal resonance (Hodder 1990). Chronology also helps to explain this pattern, insofar as most of the 'cult buildings' referred above vanished at the onset of the Pottery Neolithic period in the Levant – at the same time as Neolithic farming expanded into Europe.

7.1.4 Incorporation of domestic features in the fabric of the building

So far, we have considered building space as a static entity defined by walls. But Neolithic houses were rarely finished products; they were constantly redeveloped according to the needs and desires of the people who inhabited them. In this section, I suggest that despite their ability to change and transform, Neolithic houses conformed to a pre-established layout and maintained a consistent orientation and internal organisation through time, which were, as it were, permanently ingrained in the structure of the built environment. The location of features across the internal space demonstrates that people and activities clustered within one room only.

In trying to ascribe function to space, one tends to assume that artefact assemblages define occupation and activity areas within the house, and thus that they relate to everyday practice, such as discard for instance. In reality, houses were often rid of their material contents at 'closure' and unrelated material was deliberately deposited on the last floor surface for symbolic or ritual purpose (Chapter 4). Fine-scale analysis of deposits on floors shows that even those artefacts that escaped the final sweeping and became trapped in between layers of plaster were frequently moved from their original location by repeated sweeping and trampling action (Matthews *et al*. 1996; Hodder and Cessford 2004). In some instances, it is not clear how these objects became embedded in the matrix, for instance through construction or use (Hodder and Cessford 2004; Hodder 2005, 130). Consequently, the analysis undertaken in this section relies primarily on those objects that do not move, for instance internal features and furnishings, and *immobilia*, such as heavier grindstones set in platforms (see Düring 2006, 34; Claasz Coockson 2009, 130-133).

An important factor, which relates virtually all of the houses that fall within the remits of the subject, is that domestic features, such as the hearth, the oven, the bins, the basins and the platforms, were incorporated in the fabric of the buildings.

These features were built of clay or stone, and like the rest of the interior of the buildings they were often plastered. Catherine Perlès sees this as a distinctively “Near Eastern” trait (Perlès 2001, 197). As archaeologists, we are fortunate that these features were manufactured to last. They allow us to reconstruct the range of activities that took place within Neolithic houses (Table 9). The interpretation of interior features generally proceeds from an *a priori* assumption on their function, which is rarely established by direct evidence. Generically, the ‘oven’ refers to a fire installation with a closed chamber, in which a substance (i.e. food) was heated for cooking purposes. But this does not preclude that Neolithic ovens were put to other use, such as grain parching on the oven roof or ceramic firing for instance (Atalay and Hastorf 2006, 299). The same holds true for every other category of features.

Like our modern furniture, fixed internal features provided a spatial setting in which people lived and carried activities. Unlike us, however, Neolithic people were tied to a specific orientation and organisation of inner space. They could not move the furniture around as they pleased. As houses were re-modelled over time, there were structural adjustments. For instance, a house which started as a single large room could be subsequently subdivided into smaller spaces, without major alteration to the original layout, which remained centred around one big room (e.g. Building 1 at Çatalhöyük: Hodder 2006, fig. 44). Fire installations, such as the hearth, were renewed up to twelve times during the life of a building at Çatalhöyük (Düring 2006, 180). As a rule, these were always placed near the south wall of the main room and usually in the same location as before (Düring 2006, 185). Minor reconstruction events, which happened on a seasonal basis and contributed to maintenance efforts, often involved laying out new floors and plaster surfaces over existing ones. The suggestion here is that Neolithic settlers were not only tributary of a pre-established template, imposed by, for instance, the builders of the structures during the initial phase of planning or construction, but that they also chose to maintain and reproduce this spatial configuration through time.

Feature	Definition
Hearth	A fire installation that lacks a superstructure
Oven	A fire installation with a closed chamber
Grinding installation	A grinding slab or stone set in a platform
Bin	A clay or plaster structure with upstanding edges
Basin	Similar to a bin but with a shallow bowl and a low rim
Silo	Similar to a bin but with a cover and a shutter at the base
Cupboard	A vertical recess in a wall with a flat surface
Niche	An alcove-like recess in a wall
Cache/hoard	A cluster of artefacts deliberately placed in a pit
Platform	A raised flat surface with a ridge
Bench	A high narrow platform
Sub-floor burial	A burial cut in a floor and sealed by one or more plaster surfaces
Wall painting	A painting applied to a wall surface
Moulding	A plastered relief or sculpture applied against the face of a wall
Bucrania	A set of horns integrated in a wall or a bench
Pilaster	A plastered post applied against the face of a wall
Post	A wooden post used for roof support. Usually only the cut of the post-hole survives
Buttress	A projecting support built against a wall
Screen	A thin partition that does not extend to the roof
Doorway	The entranceway to a room or building
Crawlhole/space	A hole in the wall connecting two chambers
Ladder	An inclined set of steps with or without a frame. The emplacement of a ladder is usually marked by a scar in the wall

Table 9. Definition of recurrent features and *immobilia* encountered in the Neolithic period. Definitions adapted from the Çatalhöyük Research Project Online Database; Atalay and Hastorf 2006; Bogaard *et al.* 2009, 659-661; Düring 2006, 184-6; Hastorf 2012, 77-78.

7.2 Division of the space into two flooring areas

With its distinctive mode of access via the roof and its compartmentalisation into two distinct flooring areas marked out by separate platforms, the Çatalhöyük East house emerges as a somewhat unusual forerunner of a recurring type of large-roomed houses evidenced throughout Western Anatolia and Southeast Europe. This section retraces changes in the spatial setting of Neolithic houses through case studies.

As significant as the shift to rectangular houses may be, we must be careful not to give undue attention to the form and size of the buildings at the expense of consideration of the types of organisation and activity that occurred within them. For instance, Douglas Baird *et al*. found significant overlap in spatial organisation between curvilinear houses at Boncuklu and rectilinear houses at Çatalhöyük (Baird *et al*. 2012). In both examples, the main room was internally divided into two distinct flooring areas, characterised by different layers and quality of plaster, which were presumably reserved for different types of activities – cooking on the one hand, sleeping and sub-floor burial on the other (Baird *et al*. 2012, 234). Notwithstanding the fact that houses looked and were different, the assumption is that they may have been lived-in in much the same way, or that one type of houses gave way to the other. The construction of curvilinear houses at Boncuklu and in the basal levels of Aşıklı, at a time when rectangular houses were the norm throughout the Levant, may well be regarded as an oddity (Baird *et al*. 2012; Özbaşaran 2011; 2012). The builders of these structures did not demonstrate ignorance, but deliberate distortion of the rectangular plan; for here too the prismatic (i.e. 'rectangular') brick was the basic unit of construction (Baird *et al*. 2012).

7.2.1 The Çatalhöyük East house

The standard house type at Çatalhöyük consisted of a large oblong room with fire installations, platforms and subfloor burials, and one or more adjoining cells, which were smaller in size and did not contain the basic combination of features found in the main chamber (Mellaart 1967, 61: fig.11; Düring 2006, 176-177; 2011, 97). Ian Hodder has referred to this type as the "classic Mellaart house" (Hodder 2006, 100), but many of the houses uncovered by the current Çatalhöyük Research Project, including the building that the South team and I excavated in 2010 (Regan 2010), conformed to this template. The central living room was accessed through the roof by means of a ladder, which was without exception placed against the south wall. A visitor entering the space would first have noticed the east wall, which was often decorated with wall paintings and bucrania. The access hatch in the roof also served as a ventilation hole to draw the fumes from the hearth and the oven, which were conveniently placed to the south directly underneath it (Mellaart 1976[1964]; Todd 1976, 27-29). Thus, the southern part of the 'living' room, which occupied about one third of the space, was invariably dedicated to kitchen and other domestic activities (Mellaart 1967, 58).

The access and kitchen areas were separated from the north part of the living room by a 'bench' about 0.3 m high attached to and running perpendicular to the east wall (Düring 2006, 177). Cattle horns and bucrania were occasionally set into or above this 'bench'. Plastered-over wooden pilasters, which served a decorative or symbolic function, were set along the walls at the intersection of platform ridges. The northern section of the house, and in particular the higher northeast platform, was reserved for sub-floor burial and (symbolic?) activities such as sleeping (and dreaming). The rectangular platforms in which burials frequently occurred, along the east, northeast and less frequently north walls, raised only a few centimetres above the surrounding space and, like the pilasters, they probably served mainly as a visual reminder of the compartmentalisation and inner structure of space (Düring 2006, 181). Given their size, form and the impressions of matting, some of the larger platforms were undoubtedly used as sleeping couches or beds (Hodder 2006, 119).

Despite the dense packing of houses at Çatalhöyük, each house had its own set of outer walls and functioned as a separate productive unit (§8.1; Hodder 2006, 135). Space was remarkably standardised and structured. Ian Hodder has argued that the main organisational principle governing the use of space at Çatalhöyük was a north-south division of the central living room into a 'clean' area, where platforms for burial and sleeping occurred, and 'dirty' surfaces around the hearth and the oven (Figure 20; Hodder and Cessford 2004; Hodder 2006, 119; see also Hastorf 2012, 78). The use of different types and quality of plasters in different parts of the house contributed to enhance this contrast (Hodder 2006, 119). Other members of the Çatalhöyük team have drawn attention to the distinction between the display of cattle horns and bucrania in the living room and the concealed grain and food stores in the anterooms, which could only be accessed with difficulty through a crawlspace (Bogaard *et al*. 2009; but see Düring 2006, 186).

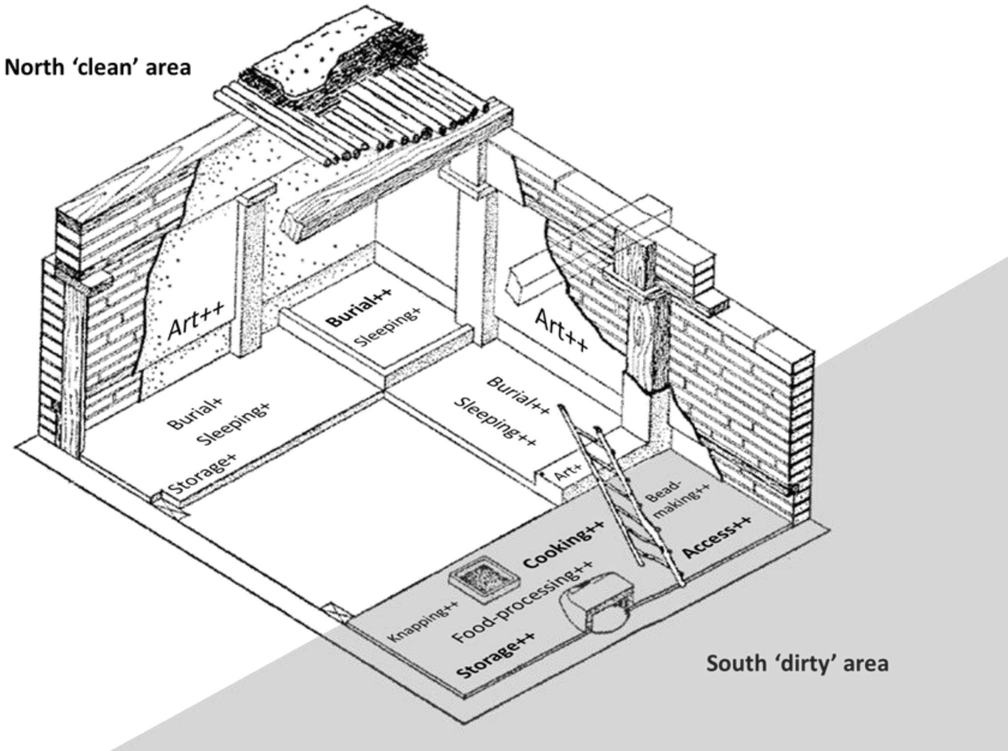

Figure 20. Çatalhöyük; 'clean' and 'dirty' areas of a typical main room. Text and line/shapes on an isometric drawing by Mellaart (1967, fig.11). For the frequency and distribution of features across space, see Düring (2006, 130-247).

In sum, many authors have stressed the internal division of space as being central to our understanding of the Çatalhöyük East house. But these authors have perhaps failed to address a more important issue: why was the desired compartmentalisation of space achieved by separate platforms rather than separate rooms, as was the case in many parts of the Northern Levant? This fact alone would suggest that space was comparatively less restricted at Çatalhöyük, as women and men, old and young, living and dead equally shared one large open room, in which the essential of the activities took place. There was undoubtedly a regulation on how different people were allowed to move around the space or to use the platforms, exemplified by the spatial distribution of the burials for instance (§6.1.2). But there was no obvious pattern of privacy inside the main room. While cooking activities were certainly offset vis-à-vis symbolic activities, such as burial, the oven and the hearth were placed in a strategic location, close to the entrance hatch, from which one could control the comings and goings of all the residents (Hastorf 2012, 77-78).

The internal division of the Çatalhöyük house into ‘clean’ and ‘dirty’ areas is presumably a local substratum inherited from earlier Neolithic communities in the Konya Plain, who also buried their dead in a specific corner of the house under cleaner, whiter plaster surfaces (Baird *et al*. 2012, 234). It may be contrasted, however, with the layout at Aşıklı in Cappadocia, where the spatial distribution of hearths and burials was more uneven, despite overarching similarities in how buildings were constructed or accessed (Özbaşaran 1998; Cutting 2005, 136; Düring 2006, 84-86; Atalay and Hastorf 2006, 299).

7.2.2 The Ilıpınar VI house

Despite the absence of sub-floor burials in Ilıpınar, Level VI, houses displayed a fixed spatial orientation in which the oven was offset in one of the corners of the main room, usually in the front right hand corner at exact opposite of the grain bins (Figure 21; Claasz Coockson 2008, 155-156). Houses were rectangular or slightly trapezoidal in shape and divided into three aisles by means of two central roof posts, attached to, or provided with, low platforms or “tables” of clay, whose function remains unclear (Claasz Coockson 2008, 155-156; 2009, 139). The central aisle, which provided access into the building, was usually devoid of platforms or features, although at least three of the houses had a protruding niche or cupboard opposite the central doorway (Claasz Coockson 2008, 154). The layout of the room seems to have been determined by the location of the main doorway, which opened onto a porch or ‘veranda’ with activity platforms at the centre of the continuous row of buildings (Claasz Coockson 2008, 154). This arrangement may be seen to have developed locally from a type already observed in Ilıpınar X (Claasz Coockson 2008, 156). The assumption is that sleeping, storage and cooking activities were spatially segregated into different areas of the main room. The site of Aktopraklık B provided further illustration of this layout; in this case, activities were more severely constrained by internal buttresses and recesses, which created privacy patterns in the main room (Karul 2013, fig.4).

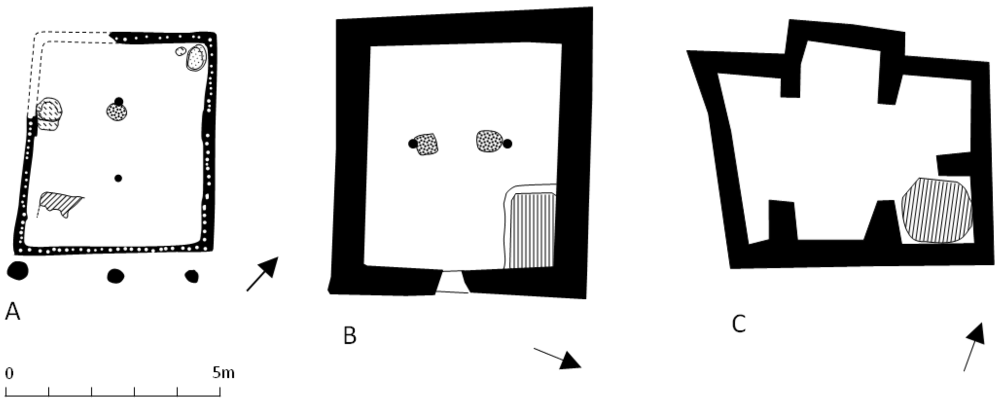

Figure 21. Floor plans of selected Neolithic houses in the Eastern Marmara region. Ilıpınar X 'Burnt House' (A); Ilınar VI-Building H17 (B); Aktopraklık B (C). Redrawn after Roodenberg 2008a, fig.4; Gérard 2001, fig.11, Karul 2013, fig.7.

The houses in Ilıpınar VI were built of mudbrick and of one-brick wide walls. They were unusual in that there were two storeys, both supported by suspended wooden floorboards. The collapsed upper storey was provided with a matching pair of roof posts and the same basic combination of features found on the lower residential floor (Claasz Coockson 2008, 155). On account of this evidence and their remarkably small size, one is tempted to suggest that activity was distributed between two residential floors. On the other hand, the 'burnt house' of Ilıpınar X, which was smaller in size, was only one-storey high. It is unclear whether the Ilıpınar VI houses were provided with a fireplace or hearth. Ben Claasz Coockson suggests that these would be difficult to identify in the absence of a dirt or plastered floor, because the fire would be set over large flagstones to avoid running the risk of the floor catching fire (Claasz Coockson 2009, 123). Although the Aktopraklık B houses were buttressed and evidently more apt to support a substantial upper storey, they were reconstructed by the archaeologists as being only one storey high (Karul 2013, fig.6). Another difference between the two sites is that the Aktopraklık B houses were provided with extensive platform areas inside the main room, on which people slept and carried activities, such as food preparation and consumption (Karul 2013).

7.3 Axial orientation of the oven and the main doorway

The sequence of Çatalhöyük East bears witness to a change in internal organisation of the main room in the upper levels of the site, after c. 6,500 BC cal., characterised by a relocation of fire installations to the centre of the space. Houses acquired a new internal symmetry. The rectangular shape of the exterior responded to the axial orientation of the interior space, which was often organised around a large oven set in line with, and opposite, the main doorway (Figure 22). This axial arrangement, akin to that of the "megaron" in Mycenean Greece and often named accordingly (Hiller 1997, 68; Perlès 2001, 188; Wright 2000, 117), may have had functional or symbolic significance. Depending on the orientation of the house, the oven could be exposed to direct sunlight, and it was one of the best lit installations in the main room.

The functional integration of an oven, in addition to the main hearth, was a recurrent feature across most of the sites in the study region (Appendix B). The "hearth-oven complex", as it has been referred to in the literature (Derin 2005, 92), fits into the Late PPNB trend of enhanced "privatisation of milling, cooking, storage and dining", observed by Katherine Wright in the Levant (Wright 2000, 117). Earlier Neolithic houses on the Central Anatolian Plateau, at Aşıklı 3-4 for instance, were rarely provided with a hearth, and never with an oven (Özbaşaran 1998; Düring 2006, 84). The hearth and the oven presumably served different or complementary functions. Without speculating on the purpose of these items, one can safely assume that houses which were provided with a similar set of fire installations, demonstrated a degree of overlap in practice and use.

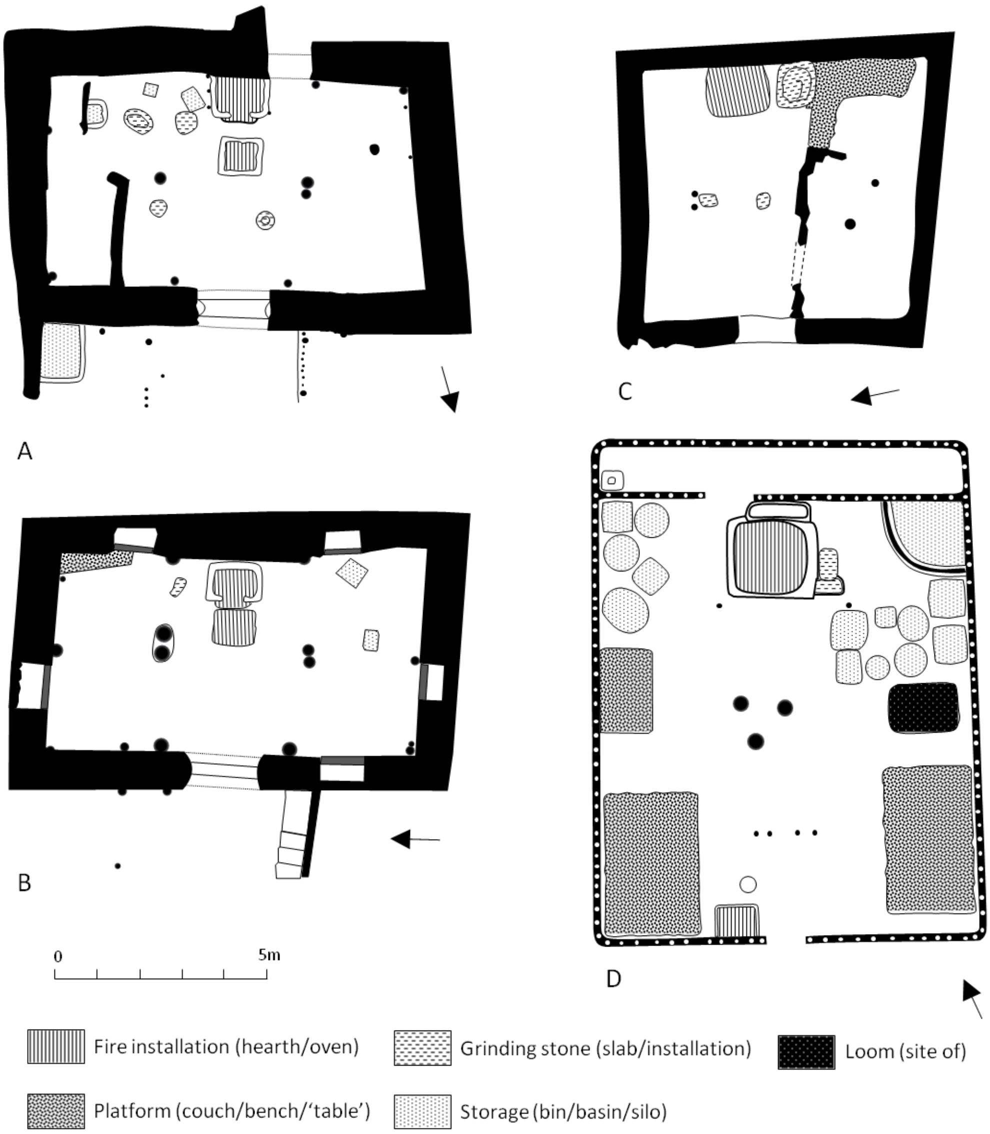

Figure 22. Floor plans of selected Neolithic houses in Anatolia and Southeast Europe. Hacilar VI-House Q.2 (A); Hacilar VI-House P.1 (B); Ulucak IVb-Building 13 (C); Sofia-Slatina-'Big House' (D). Redrawn after Mellaart 1970a, fig.7; Derin 2005, fig.4; Nikolov 1989, fig.1.

7.3.1 Changes at Çatalhöyük

From Level IV onward, in Çatalhöyük East, the hearth was repositioned to the centre of the main room (Hodder 2006, 251; Atalay and Hastorf 2006, 311; Hastorf 2012, 79). Central hearths were also found in Çatalhöyük West (Mellaart 1965c, 136; fig.1). The oven, which was formerly attached to, or located close to the south wall, moved into a more prominent position in later building levels (Hastorf 2012, 79). The shift in location of fire installations in the upper sequence of Çatalhöyük East and at Çatalhöyük West is significant in regard of contemporary developments elsewhere in Anatolia and Southeast Europe. These developments included the pairing of the oven and the hearth, and a reorganisation of the rectangular house around a central axis running from the oven to the main doorway.

This change in the layout of the big room has been interpreted by Ian Hodder as indication of an increased focus on the sphere of production, "elaborated and made central in the upper levels of Çatalhöyük" (Hodder 2006, 251). Seeing that the features themselves did not change, only their location across space (henceforth fire-related activities probably stayed more or less the same throughout this period), a more reasonable assumption may be that the hearth and the oven changed location in order to accommodate the shift in burial place identified in §6.2.1. In other words, the emerging picture from Çatalhöyük, after c. 6,500 BC cal., is that of a 'reappropriation' of the big room by the living and by activities of daily subsistence – a trend which can be followed in Western Anatolia and into Europe.

7.3.2 The Hacılar VI house

All domestic features concentrated in one large oblong room, revolving around a central kitchen, which consisted of a flat-roofed oven and a rectangular hearth (Mellaart 1970a, 9; 14). Hacılar VI houses were accessed at ground level and displayed no obvious preference for cardinal orientation. Internal organisation was determined by the axial orientation of the oven and the hearth, set in line with, and opposite, the main doorway in the middle of the long side (Umurtak 2000). In other words, the spatial layout and orientation of the room was adjusted to the location of the main doorway, which opened onto a courtyard area.

Alongside the main kitchen, there were one or more outdoor food-preparation areas in 'shed' structures on either side of the entrance, which reproduced on a much smaller scale the internal organisation of the central room, with an oven opposite the entrance. The existence of two kitchens, one indoors for winter use and one outdoors for summer use, is a recurrent feature in traditional and vernacular houses (Rapoport 1969, 89). It has been suggested that the axial orientation of Hacılar VI buildings reflected the need for ventilation, as the fumes of the oven were drawn through the main doorway (Umurtak 2000, 694). This explanation would suppose a nearly unbearable smoke-filled atmosphere every time the central kitchen was used, and does not appear realistic, unless assuming that the main oven was for display only. In houses P.2, Q.3, 4 and 5, a wide recess in the wall where the oven stood indicates the presence of a chimney or a smoke shaft, and one may reasonably assume that this was a standard feature for every Hacılar VI house (Mellaart 1970a, 14).

There was a matching pair of roof posts on either side of the central axis, in the middle of the main room. These were in line with wooden poles and stakes set along the walls and in front of the house, thereafter reinforcing the impression of a central 'corridor' framed by a porch. The posts created a tripartite division in the main room between a central access and kitchen area, and lateral spaces presumably used for sleeping and storing goods. James Mellaart suggests that textiles hanging on the cross beams served to enhance this division and create privacy patterns (Mellaart 1970a, 20). Only one house (Q.5) had a side room, whose function remains unclear (Mellaart 1970a, 17). Plant foods were kept in grain bins set in the corners or along the walls of the main room. Apart from a large rectangular platform in house Q.3, which may have served as a sleeping couch, there was no obvious feature for sleeping, and one assumes that people slept directly on the floor or on mats (Mellaart 1970a, 19). Possessions were held in wall cupboards and in a screened-off area, which rather interestingly – if one considers the significance of the northeast platform at Çatalhöyük – was always located in the northeast corner of the main room.

The lavish use of wood in Hacılar VI houses did not primarily have a functional purpose, as the large mudbrick walls alone could bear the weight of a flat roof and of a hypothetical upper storey. On the function of this upper storey reached by an outdoor staircase, one can only speculate that it was used for keeping fodder or farming equipments. If, as Mellaart suggests, some of the upper storeys (houses P.1

and Q.5) were provided with domestic features like a hearth and an oven, one may tentatively suggest that they were used as the main living space by yet another family, although the co-residence of two family units under the same roof would be remarkable. The type represented by Hacılar VI houses, with an oven set in line with, and opposite the main doorway in the middle of the long wall, is well known from the Southwest Anatolian Lake District (Umurtak 2000). The so-called 'Shrine Phase' at Höyücek provided several examples of this arrangement, which only differed in the absence of freestanding hearths (Duru and Umurtak 2005). Bademağacı EN 3 also provided similar plans, although houses tended to be smaller in size (Duru 2001; 2003; 2008; 2012). Building 1 at Bademağacı yielded a wide internal platform, which could be used for sleeping, while ovens, hearths and clay boxes were standard features found in nearly every room (Duru 2003, fig.4). Several outdoor storage boxes or silos built of thin fired clay slabs, including a large example with six compartments in between Buildings 1 and 3, are so far without parallel, but their distribution recalls the use of outdoor kitchen and workshop areas at Hacılar (Duru 2012, 16).

The same basic arrangement, with an oven attached to a wall facing the main doorway in the middle of the long side, has been documented in other parts of Western Anatolia as well. One of the most remarkable examples is Building 13 in Level IVb at Ulucak, in Aegean Anatolia (Derin 2005, fig.4). The early 6th millennium BC cal. settlement at Ulucak IVb was characterised by a dense packing of houses, ca 40 m^2 in size, with one or two rooms, which opened on to streets or courtyards and displayed no standard cardinal orientation (Çilingiroğlu *et al*. 2004; Çilingiroğlu 2009a, 52-53). Workshops and porch areas attached to, and giving way to the houses, recall the layout observed in Hacılar VI.

7.3.3 The 'big house' at Sofia-Slatina

Remarkable by its dimensions, 117 m^2, and its complex flooring system, the 'big house' provides an illustration of a recurrent type of Neolithic structures in Thrace with a large oblong room and the full suite of features, including hearths, ovens, grinding stones set in mud platforms, storage bins and basins, which has come to typify the domestic layout of residential buildings in the study region (Nikolov 1989). These features were all integrated in the architecture of the house and constituted an immovable property. Significantly, at Sofia-Slatina we find the same axial arrangement than at Hacılar, with a large rectangular oven set in line with a doorway in the middle of the opposite wall. The central axis ran perpendicular to the middle of the short wall, however, and the hearth was offset in the front left corner. The central posts and stakes, which concealed the view of the oven from the outside, imposed a ring circulation within the living room. Food and storage areas were spatially separated from the sleeping platforms or couches, which were placed against the east and west walls.

The arrangement was completed by a long, narrow room at the north end of the building, in which a model of house was found, built of loam – interpreted by the excavator as being of “Anatolian” inspiration, given its flat roof and access hatch (Nikolov 2007, 76). The excavator contends that the side room was unroofed (Nikolov 1989, 42). One observes that the arrangement of the oven next to the doorstep leading to the north chamber mirrored the functional disposition of the hearth next to the main doorway – perhaps to overcome the challenge of heat loss in the main living space. The builders at Sofia-Slatina made lavish use of wood and, in addition to the 144 stakes framing the walls, settled at a depth of 0.7 m in the ground, there were six wooden stakes and three massive posts supporting a thatched or gabled (?) roof (Nikolov 1989, 1; 16; Nikolov *et al.* 1992, 157). The wooden frame was originally covered in wattle-and-daub (Nikolov 1989, 18-19). The floor consisted of a complex loam-coated planking system, which, according to Vassil Nikolov, had been repeatedly set on fire to harden and insulate the clay (Nikolov 2007, 43). The floor had been renewed up to fifty times by applying layers of plaster (Nikolov 1989, 43).

It has been suggested that the ‘big house’ may have had an upper storey or a substantial attic (Nikolov 2004b, 240-243). Given that the lower floor already incorporated the standard combination of domestic features found in every house, one may assume that the upper storey or attic only provided additional sleeping or storage capacity. The collapse of one oven on top of another in an Early Neolithic house at

Kapitan Dimitrijevo, points once again to a second residential floor (Nikolov 2004b, 242). It was not unusual for a house to incorporate more than one oven in its layout; this has been interpreted as a sign that some of the buildings may have been occupied by more than one family unit (Pernicheva-Perets *et al*. 2011, 89; 94). Houses at Tell Karanovo displayed the same axial arrangement with an oven and a doorway facing each other at corresponding ends of the living room (Hiller 1997, 68). As at Sofia-Slatina, houses were preferentially accessed from south or east through the middle of the short wall, but this was not a strict rule (Nikolov 2007, 36). Single-roomed, but also double-roomed and triple-roomed structures in a 'megaron'-like procession of rooms occurred, though the latter types were very unusual (Hiller 1997, 74-75)**.** Some houses were attached to a shed-roofed annex, which presumably was used for outdoor cooking (Hiller 1997, 74-75). The two burnt houses conserved at the Hospital of Stara Zagora (Okruzhna Bolnitsa), which share a party wall and have different surface sizes (respectively 43 and 16 m^2), may be interpreted as a house and its annex: in the smaller one, accordingly, there were no platforms or space where the inhabitants could rest (Kalchev 2010, 4-6).

7.4 Summary

- Insofar as it is dependent on the environment, climate, and the local availability of construction materials, habitation is regarded as one of the most conservative aspects of human life, rooted in regional traditions and local histories (Leroi-Gourhan 1945, 256; see also Rosenstock 2006; 2009). People tend to develop a strong attachment to a particular style of architecture, which becomes the physical embodiment of their ideal 'home' (Rapoport 1969, 52).

- Beyond or, in spite of, this expected diversity in architectural traditions, Neolithic buildings in Anatolia and Southeast Europe demonstrated the same underlying template, derived from the large rectangular room with an open floor plan of Later Aceramic and Early Pottery Neolithic societies in Central and Southeast Anatolia (Appendix B). A tendency to scale up the size of the house, without actually increasing the number of rooms, was evidenced from Anatolia to Europe in the late 7th and early 6th millennia BC cal. (§7.1.3).

- Although no two houses were exactly alike, one observed significant regularities in building form and organisation, including a focus on private and domestic use, a concentration of people and activities within one room only, incorporation of domestic features in the fabric of the buildings and a pairing of the oven and the hearth. The assumption is that each house was occupied by a nuclear family, comprising two parents and offspring, who shared the same residential floorspace and were involved in a range of production, consumption and storage activities.

- The main organisational difference between earlier houses at Çatalhöyük East and later Neolithic houses in Anatolia and Southeast Europe was the place afforded to the kitchen area, in particular to the hearth, which was initially offset in a corner at exact opposite of the platforms used for sleeping and burying the dead (§7.2). The hearth was relocated to the centre of the main room after c. 6,500 BC cal. A suggestion was made that this reconfiguration, albeit minor, was linked to the dead no longer being systematically buried under active households after Level IV at Çatalhöyük (§6.2.1).

- With the exception of houses in the Eastern Marmara region, which displayed adhence to a strict partitioning of space into two flooring areas, in spite of the absence of burials, later Neolithic houses in Anatolia and Southeast Europe usually revolved around a central kitchen area, set in line with, and opposite the main doorway (§7.3).

8
Agglutination

This chapter is concerned with the way in which people constructed their houses in relation to each other. Arguably one of the most distinctive aspects of Neolithic settlement on the Central Anatolian Plateau was the tight clustering of buildings in a streetless plan (e.g. Düring 2006; Hodder 2006; Cutting 2005). At Çatalhöyük and Aşıklı, buildings were normally entered through the roof by means of a ladder; people used the continuous roofscape to socialise and communicate from building to building (Mellaart 1967). Bleda Düring's statement that "this type of settlement [was] unique to the Central Anatolian Neolithic" finds echoes in recent literature on Central Anatolia (Düring 2011, 61; Bikoulis 2013, 20; Hodder 2006, 99; Özdoğan 2002). Yet if one accepts this as a valid statement, one must also assume that practices pertaining to the location of buildings in the overall settlement plan did not diffuse from Central Anatolia to Europe.

It is worth stressing from the outset that, taken individually, many of the supposedly distinctive features ascribed to Central Anatolia had a wider distribution. The practice of entering buildings from the roof was encountered at Hacılar I in the Southwest Anatolian Lake District (Mellaart 1964a, 19-20). The 'pueblo' mode of living was common-place in Late PPNB sites of the Southern Levant (see in particular Ba'ja and Basta: Gebel 2006; Goring-Morris and Belfer-Cohen 2008, 265). Lastly, the practice of building a perimeter wall of houses to serve as boundary or defence could be observed at Bouqras on the Syrian Euphrates (Akkermans *et al.* 1981, 500; Aurenche 1981, 280). More specifically, with regard to the region under examination, new research has established that buildings in Western Anatolia were almost always constructed one against another, though not as a solid block of buildings, but in small compounds alternating houses and courts, and in semi-circular rows of buildings (Çilingiroğlu *et al.* 2004; Derin 2005; Sağlamtimur 2007; 2012; Roodenberg 2008b; Özdoğan M. 2007; Karul 2013).

Agglutination is used as a rather loose term to refer to the habit of building houses side by side – to 'glue' them in such a manner that, once merged in the overall fabric of the settlement, they achieved a collective action purpose. This chapter reviews the different methods of agglutination of houses in Neolithic Anatolia and Southeast Europe and contends that, although the forms of agglutination were varied, there were significant overlaps in practice between these cultural horizons, particularly at the onset of the main expansion of Neolithic economies, c. 6500 BC cal. The first section gives an overview of Later Aceramic and Early Pottery Neolithic agglutinated villages on the Central Anatolian Plateau (§8.1). The second section shows the evolution towards courtyard-house complexes in Central and Southwest Anatolia (§8.2). The third section introduces the row houses of Northwest Anatolia and Eastern Thrace (§8.3).

8.1 Cellular house pattern

In Chapter 5, we have seen that new buildings were normally constructed on top of previous ones at Çatalhöyük. Despite the fact that individual structures were reconstructed at different rates, the settlement as a whole maintained a tightly clustered layout, in which individual structures were accessed through the roof by means of a ladder and via a maze of rooftops. In order to reconcile emphases for vertical and horizontal continuities, the builders of these structures had to resort to a 'trick' of construction: adjacent houses were built as though they were freestanding[41] (Farid 2006, 165; Hodder 2007, 113). Houses were not attached to, or supported by another dwelling. They did not normally share party walls with adjacent buildings. Moreover, a narrow gap was usually left in between adjacent walls.

[41] The fact that houses were thought of as 'freestanding', despite the overall cluster of buildings, may explain why James Mellaart and subsequent authors have disputed the 'agglutinative' character of Central Anatolian Neolithic architecture (Mellaart 1963, 59; Esin *et al.* 1991, 145; see also Düring 2006, fn.26): "Here there is no more case of 'agglutination' than there is in, e.g. the Cretan Palaces. On the contrary, the buildings were planned and it is very clear how they were planned [...]" (Mellaart 1963, 59).

This unusual layout, in which each building acted as an autonomous ‘cell’ or unit within a larger community plan, is most accurately described as a “cellular house pattern”, to adopt a term that was featured in a recent article (Bikoulis 2013; see also Düring 2006, 65). On-going excavations at the site of Aşıklı in Cappadocia suggest that this layout was already present in the 8th millennium BC cal. By the end of the Aşıklı sequence, the village was laid out with very narrow spaces or alleyways that perhaps served no other purpose than to divide up clusters of tightly agglutinated rooms, normally entered through the roof (Özbaşaran 2011, 33; 2012, 139). This section interrogates the manners in which large Aceramic and Early Pottery Neolithic settlements on the Central Anatolian Plateau acquired their final form. Were they conceived of as tight clusters from the start or did they become so over time? Why did people agglutinate houses? These are demanding questions to answer, because it is difficult to establish contemporaneity of buildings on a horizontal plan, in the absence of party walls and connecting spaces. The levels excavated to date do not belong to the initial phases of occupation of the sites.

8.1.1 Contemporaneity on a horizontal plan

Although there is evidence of early use of party walls at Çatalhöyük, in Levels XII-VIII, these were rarely encountered in subsequent levels, where houses were normally freestanding or joined to just one other house to form a semi-detached pair (Mellaart 1966, 168; Hodder 1996b, 365; 2006, 109; 114-115; Farid 2006, 165; Düring 2006, 254; Love 2010, 128). In a cellular house pattern, the walls of neighbouring structures did not bond together. Since the structures were accessed through the roof by means of a ladder, there were no spaces connecting individual buildings. From a stratigraphical point of view, it is extraordinarily difficult to demonstrate that houses on a horizontal plan were constructed, or indeed in use, at the same time. The Çatalhöyük Research Project has established that James Mellaart’s earlier phasing was a blanket for different episodes of rebuilding at the site (Farid, in press). The numerical levels correspond to the location of each building within a vertical stack of buildings (Figure 23). As pointed out by Shahina Farid, “a Level V building represent[s] the fifth building down in a stack of possibly thirteen buildings”

(Farid, in press). Faced with reconstructions that he had not expected, Mellaart was compelled to change his scheme on a number of occasions. One such amendment was the distinction drawn between Level VIA and Level VIB in subsequent publications (Mellaart 1964b, 40).

Although buildings on a same elevation occasionally featured compositionally similar mudbricks, indicating preference for specific mud sources during prolonged periods of time (Love 2010, 159; 205), houses were normally repeated at different intervals, depending on their respective use-lives, between 50 to 120 years, and occasional time lags between 'closure' and rebuild activities (Farid, in press). Until the introduction of a new phasing at Çatalhöyük, the Çatalhöyük Research Project relied on typological changes in selected components of material culture, such as a shift from organic to mineral temper in pottery in Level VII and a shift from flake to blade obsidian industry in Level VI, to establish overlap in use or contemporaneity of different sections of the site (Farid, in press; Hodder 2006, 247). The new phasing introduced in 2008 provided a more accurate area-specific framework by integrating both hard and inferential stratigraphic observations (Farid 2008). Where evidence did not permit accurate determination of stratigraphic relations, the discussion relied on abutting walls as indication of some degree of overlap in use between contiguous structures, while the trapped infill in the gap between neighbouring walls was seen to indicate a *terminus ante quem* for the construction of the two houses (Farid, in press).

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Mellaart J. (1964b), 'Excavations at Çatal Hüyük, 1963, Third Preliminary Report'. *Anatolian Studies* 14: 39-119.

Figure 23. Çatalhöyük; diagrammatic section through the South excavation area with the position of the levels (Mellaart 1964b, fig.3).

8.1.2 Radial boundaries

There are two competing paradigms regarding the way in which Çatalhöyük acquired its agglutinated form. James Mellaart assumed that defence against enemies or floods was a prime mover in the adoption of a clustered settlement layout; the outer row of buildings was constructed in such a way as to provide a line of blank walls to the exterior world (Mellaart 1967, 68-69; see also Cohen 1970, 124). In this model, the site expanded by addition of concentric rows of houses to the edge of the site (Mellaart 1967, 68-69). Another interpretation, which has received more support in recent literature (e.g. Düring 2001, 2; Hodder 2006, 101-102), is that the site developed from a dispersed layout at the start, in which buildings were normally constructed at a distance from each other or as part of smaller clusters of houses, to a very dense clustered layout in subsequent levels, particularly Level VI. Houses were gradually inserted in voids in the settlement fabric, such as pens and middens, in order to abut or come close to existing buildings, which acted as focal points for the community (Hodder 2006, 152; 161). Excavations of Levels pre-XII in the deep sounding have not produced evidence of houses, but a fine sequence of midden deposits, which would support the view that the initial settlement was dispersed (Hodder 2006, 251). The contention between these two positions is whether the development of Çatalhöyük was structured and collective, as suggested by Mellaart, or organic and household-based. At first hand, these models would appear to entail very different sets of practices regarding the placing of houses in the overall settlement.

One of the main difficulties in assessing principles structuring house-location in Çatalhöyük is that the original settlement plan, on which succeeding villages were built, is currently inaccessible to us – being, as it is, at the base of the mound. Both models presented above were arrived at by overlaying and comparing successive building-levels, to identify the manners in which new buildings were added over the course of occupation. Vertical superimposition of houses was doubtless an important strategy, but it was not the only one, given that some houses were more repeated than others, others not at all (§5.2.2). The discussion attempted here relies on evidence of two architectural features visible on the plans of successive building-levels at

Çatalhöyük, radial lines and terraces, which appear to be 'relicts' of an archaic plan (Figure 24). The assumptions are that : (a) houses were aligned along a number of predetermined axes, which ran from the top to the bottom of the mound; these showed as continuous lines of house walls and 'streets' radiating from a central point, probably the summit of the hill (see Hodder 2006, 101-102; 2012, fig.9.3); (b) houses were terraced down the slope in a series of concentric rows of houses (Mellaart 1963, 59; 1967, 69; Farid 2006, 167).

The name 'Çatalhöyük', which stands for 'fork-mound' in Turkish, stems from the mound having two eminences with a depression in the middle. A third mound, Çatalhöyük West, belongs to the Chalcolithic period and needs not trouble us here. The evidence suggests that the two summits of the East mound were used in concert during the main sequence of Çatalhöyük East, that is, Levels VII-VI and earlier. Radial lines of house walls could be seen in two distinct areas of the site (Hodder 1996b, 361; 2012, fig.9.3): the North, BACH and 4040 areas on the northern hill and the South area on the southern hill, which was the site of the original excavations of Mellaart. The North area showed a significant departure from the otherwise repetitive pattern of tightly agglutinated buildings separated by midden areas and pens. In this region of the site, clusters of houses were built on either side of what appears to be a fairly large 'street'. Research has established that this 'street' was not regularly walked or trampled on (Hodder 2006, 101). It was probably used as a dumping ground like the more conventional middens found elsewhere in the site (Hodder 2006, 103). Houses on either side of this 'street' or midden area presented, however, a more or less continuous façade running in a north-south orientation. The lines of house walls could be seen to extend outside the excavation area in the magnetometer survey that was conducted further north (Hodder 1996b, 361).

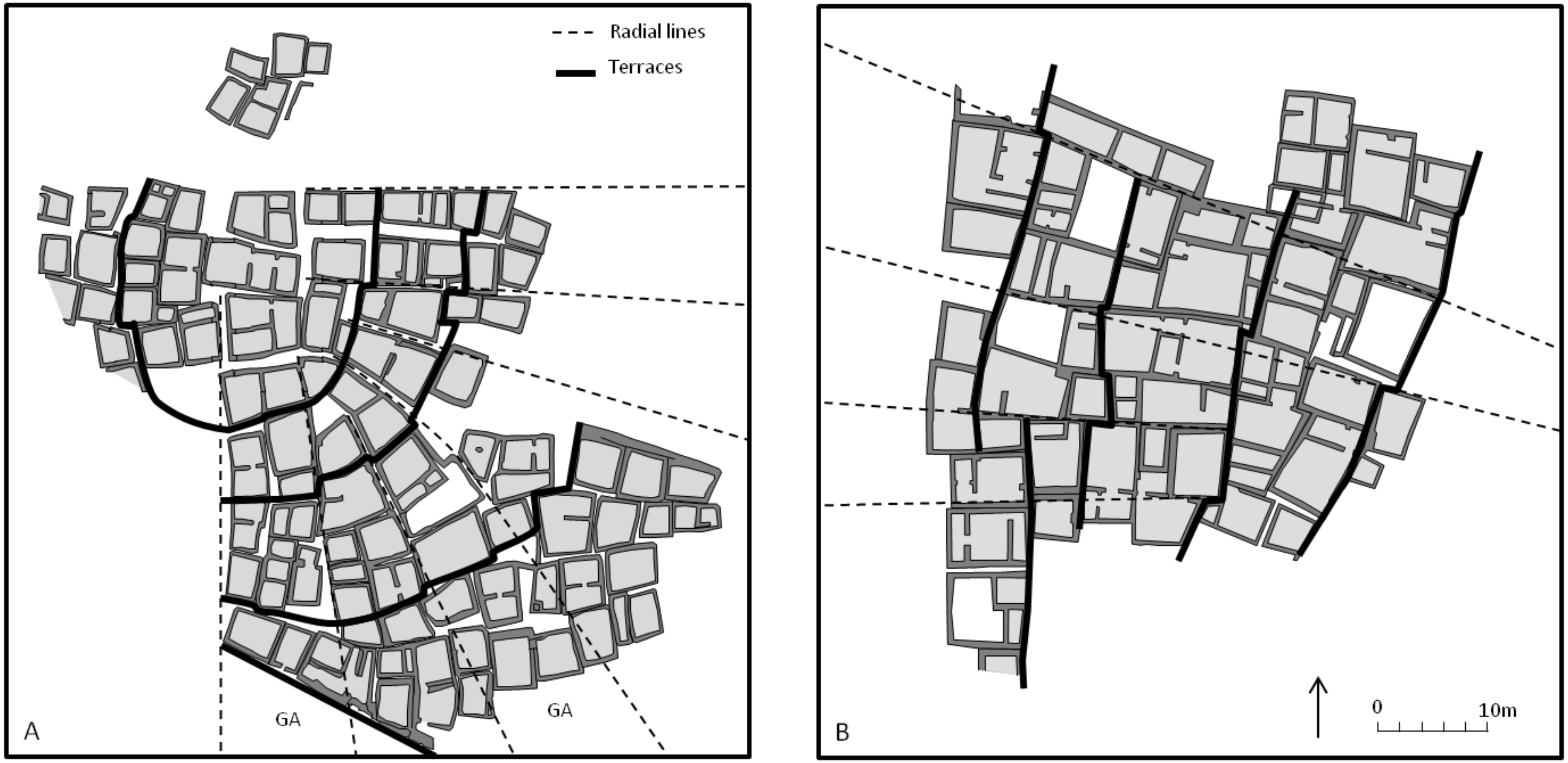

Figure 24. Radial lines and terraces in the northwest quadrant of Aşıklı (A) and the south area in Çatalhöyük VIB (B). Plans redrawn after Esin and Harmankaya (1999, fig.3) and Mellaart (1967, fig.9). The boundaries are adapted from Özbaşaran (communication[42]) and Hodder (2012, fig.9.3).

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[42] Özbaşaran M., 'The Cross-cuts to the Transformations between "Mobility to Sedentism", "Wild to Domestic", "Communal to Individual" in Central Anatolia'. Paper presented at the Templeton Conference, Çatalhöyük Research Project, July 2010.

The assumption is that buildings were aligned along radial axes, which ran from the top to the bottom of the hill. Buildings in the South excavation area displayed a similar arrangement, insofar as lines of house walls could be shown to descend from the top of the southern hill, this time in an east-west direction, in agreement with the topography of the mound (Hodder 2012, fig.9.3). Why did people adhere to these divisions and why were these divisions maintained across successive building-levels? Ian Hodder has argued that the radial divisions served a practical purpose by allowing used water, rain and snow melt-water to run off the top of the mound (Hodder 1996b, 361). This explanation would also account for the slight offsets observed between neighbouring structures, which would have served as drains (Hodder 1996b, 361). In this model, the radial divisions were a functional adaptation to living on tells. They needed not be present from the outset, when the site was flat. In support of this interpretation, it can be seen that many tell-settlements displayed radial layouts, both in Central Anatolia and elsewhere[43].

Amy Bogaard has recently suggested an alternative explanation for the radial layout of the settlement at Çatalhöyük. According to her, the radial divisions in the centre of the village mirrored the radial allotment of farmlands around the settlement, which was more or less equitable – each cluster of houses gaining access to both lands at close distance of the settlement's edge and some distance away (Bogaard, communication[44]; but see Roberts and Rosen 2009, 398-399). Accordingly, the radial boundaries are increasingly seen as "edges of zones", delineating clusters or neighbourhoods of houses, which were as much a distinct form of habitation in terms of access and control, as a mode of social organisation (Hodder 2006, 101; see also Düring 2006; Esin and Harmankaya 1999, 125; Özbaşaran 2012, 144). The radial layout perhaps also reflected the "cosmology" of tells (Steadman 2005, 301). These models remain speculative, but have the merit of reappraising the collective understanding and organisation of the site, beyond the minor practical arrangements

[43] One of the best examples in this respect is the 6th millennium site of Ovcharovo Gorata in North Bulgaria, which was arranged in a series of rows of houses radiating outwards from the summit of the tell (Todorova 1989, pl.3; Angelova 1992, fig.2-4).
[44] Bogaard A., 'Of Secret Stores and Garden Magic. Recent Archaeobotanical Work at Çatalhöyük'. Paper presente at the University of Liverpool, Early Village Societies Seminar Series, February 2013.

proposed by Hodder (Düring and Marciniak 2006). Radial lines of house walls overlay on one another in successive plans and were repeated until at least Level V, when the settlement was thoroughly reconfigured. The northwest quadrant of Aşıklı, known as the 'residential quarter', which was located at the summit of the tell, can be shown to have functioned in a similar manner, with radial divisions defining broad axes, along which houses were continuously reconstructed (Özbaşaran, communication[45]).

8.1.3 Terraces

Çatalhöyük was also organised as a series of terraces, running in a more or less perpendicular direction to the radial boundaries and rising up to the summit of the hill. The South excavation area has yielded four parallel terraces, which followed the contours of the slope (Hodder 2012, fig.9.3). According to James Mellaart, each terrace was laid out in two rows that alternated narrow rooms with an east-west axis and broad rooms with a north-south axis (Mellaart 1967, 69). The outer row of contiguous buildings formed a more or less unbroken line of walls, which provided a permanent defence against enemies or floods (Mellaart 1967, 69; Cohen 1970, 124). The interpretation that Mellaart gave for these terraces is that they marked the successive edge of the settlement, as it expanded outwards over time (Mellaart 1967, 69). The terraces, marked by continuous lines of house walls and steps in elevation, can be seen to have been created before Level VIII in the South excavation area. It is not clear when they were first developed at the site. The 'residential quarter' at Aşıklı displayed the same functional layout, insofar as the highest point of the mound was encircled by a series of concentric rows of rooms or terraces extending down to the paved road separating the northwest quarter from the 'public' buildings to the south; houses formed a more or less continuous façade along this road (Düring 2006, 77; 99).

Shahina Farid has suggested a more organic mode of settlement expansion at Çatalhöyük, linked to the accumulation of midden deposits at the edge of the site: "Waste was [...] thrown off-site around the edge of the settlement and as waste accumulated in these locations it provided the basis for the construction of new

[45] see 42.

buildings. The settlement therefore expanded in height and in all directions in the early phases of settlement growth and buildings towards the edge were terraced down the slope" (Farid 2006, 167). In this model, houses were built upon either: 1) pre-existing houses, 2) midden areas, or 3) 'reclaimed' agricultural land turned into midden (Farid 2006, 165; 167; Hodder 2006, 104). Like the radial boundaries, terraces thus structured occupation at Çatalhöyük and Aşıklı. Houses were not randomly located within the cellular pattern, but were inserted inside or around a pre-established grid (see French 1998, 46). This layout provided the flexibility needed for a vertical expansion, houses upon houses, of the village, which did not have to be rethought of collectively during every phase of reconstruction (Farid 206, 167; Hodder 2006, 94[46]; 2007, 113). From a practical point of view, the cellular house pattern was cumbersome. It did not allow for change, unless the entire structure of the site was amended (Farid 2006, 167). Many problems arose as soon as the site reached a certain size: access to water; distance to the fields; inconvenience of having to step on someone else's roof to access one's house; lack of privacy; accumulation of dump; etc. The place of domestic herds was particularly problematic at Çatalhöyük. The current project assumes that animals were kept in smaller enclosures in between houses on the outer row of buildings; where permitted, the herds (of sheep and goats?) were presumably brought over the roofs to more central locations (Hodder 2006, 101).

To return to the questions raised at the outset of this chapter, were large Central Anatolian Neolithic sites conceived of as tight clusters from the start, or did they become so over time? Site development was neither fully structured nor fully organic. The cellular house pattern emerged from an initially dispersed and more structured layout, in which buildings occasionally shared party walls. As buildings were individually (and organically) repeated over time, party walls were surrendered, but all buildings, including those that were newly inserted, abided to a pre-established layout and orientation, which too were consistently repeated across successive building-levels. Why did people agglutinate houses? Choices about location dominated over practical considerations. While defence may have been an important

[46] "To have party walls would restrict a particular house's ability to rebuild or to change" (Hodder 2006, 94).

factor in the initial uptake of an agglutinated layout, the main incentive appears to have been the proximity with existing houses and perhaps next of kin (Hodder 2006, 152; 161).

8.2 Courtyard-house complexes

After the fire in which part of Level VIA perished, entire sections of the Çatalhöyük mound were deserted. James Mellaart observes that "the lower part of the west slope of the mound was not covered by any buildings (at least not in the areas excavated). The settlement seems to have receded during Levels IV, III, II, towards the top of the mound" (Mellaart 1963, 44). The northern eminence, on the other hand, was almost completely abandoned after Levels VII-VI, according to research conducted by the Çatalhöyük Research Project (Farid, in press). In addition, from Level VIA onwards, there was a tendency towards more open planning (Mellaart 1966, 172). Although houses were still constructed side by side, the settlement plan was thoroughly reconfigured to make way for smaller clusters of houses centred around courtyards (Figure 25; Mellaart 1967, 68; Düring 2006, 303). Actual streets made their appearance in Levels III-II (Mellaart 1962, 46; fig.3; see Shillito and Ryan 2013).

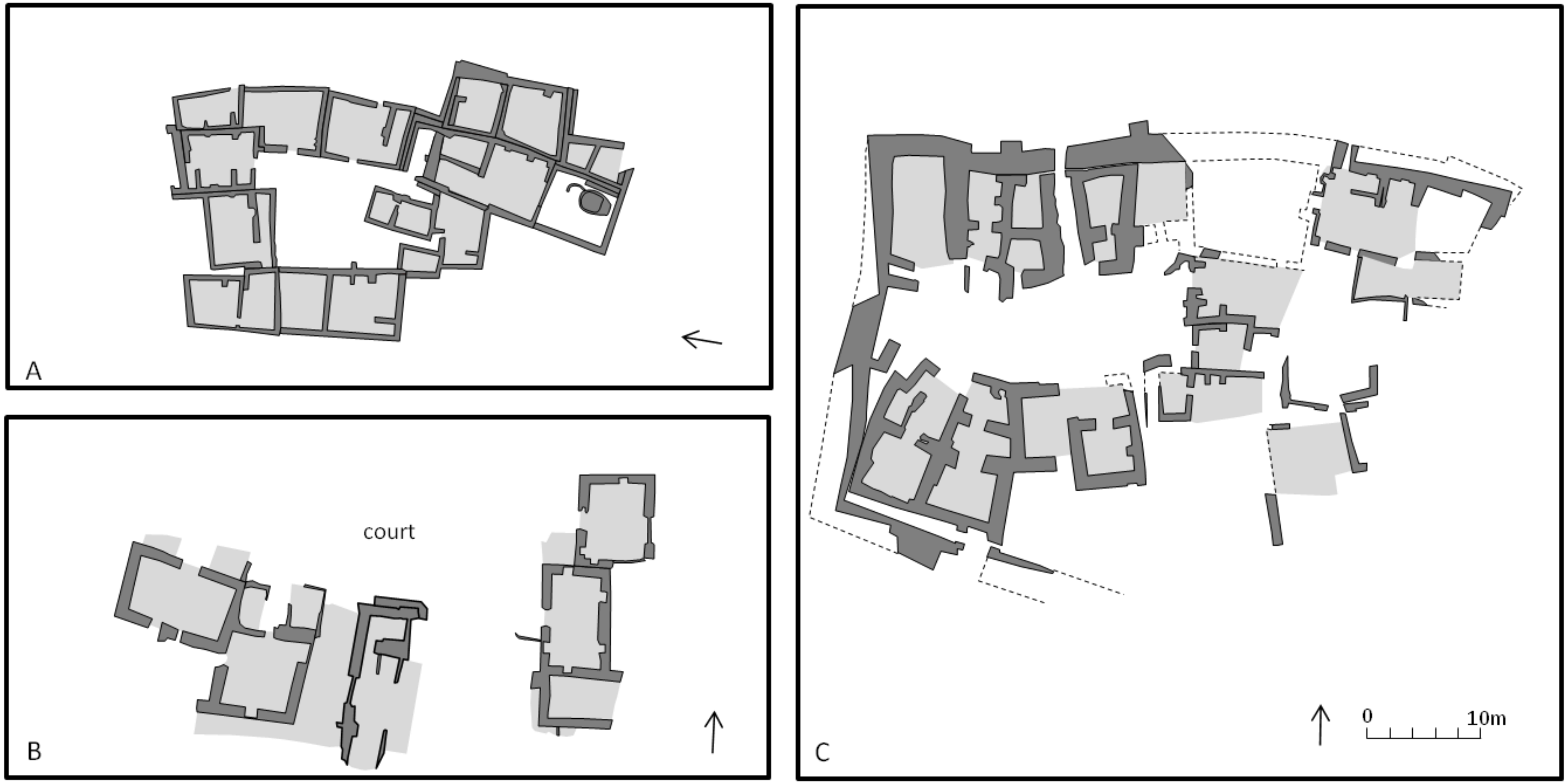

Figure 25. Courtyard-house complexes in Çatalhöyük, Level IV (A), Hacılar VI (B) and Hacılar IIA (C). Redrawn after Mellaart 1967, fig.6; 1970a, fig.7; 1970b, fig.20.

8.2.1 Emergence of courtyards at Çatalhöyük

Before Level VIA, open areas in between houses had been used mainly for specific discard activities, such as hearth and oven rake-outs, day-to-day waste disposal, sanitation, and animal penning – activities which were undoubtedly regulated by norms, but which involved limited human interaction (Hodder and Cessford 2004, 24; 29; Hodder 2006, 103-5; Düring 2011, 96; Mellaart 1964b, 115). Waste was simply thrown from the roofs of buildings and accumulated without the sort of spatial segregation observed inside houses (Farid 2006, 165; 167; Hodder 2006, 103). By contrast, the later courtyards in Levels VIA-II occasionally displayed outdoor features, such as large ovens, singly or in pair, associated with a range of production and consumption activities that were previously house-based (Düring 2006, 186). Mellaart suggested that these huge ovens, with diameters of 1.5-1.8 m, were used for bread production (Mellaart 1967, 63), but they also coincided with the intensification of pottery production at the site.

Courtyards were not public spaces and they were fenced off on all sides by either houses or walls. Incidentally, some of the yards may have been accessed directly at ground level through the surrounding buildings (Level IV; Mellaart 1962, 46, fig.4). In later publications, Mellaart back-tracked on this issue and denied that any of the houses had doorways, suggesting that those earlier identified were instead "accidental gaps in the walls" caused by excavation (Mellaart 1963, fn.12). For its part, the Çatalhöyük Research Project has not documented any, and one can only assume that roof-level access by means of a ladder was the norm throughout the later phases of the Çatalhöyük East occupation, although it was less practical in a more open plan (Farid, in press). The courtyards may be divided into two groups: the larger ones, with a total area of 100-120 m^2, surrounded by a dozen houses (Levels V-IV; Mellaart 1967, fig.6-7), and the smaller ones, up to 40 m^2 in size, which were attached to a house in particular, such as Building 15 in Level IV (Mellaart 1967, fig.6). The southern court in Level V was fenced on the west by an 8 m long stretch of wall of mudbrick, which did not belong to any house and appears to have acted as a boundary (Mellaart 1967, fig.7).

In sum, it would appear that the settlement consisted of a series of building complexes in the upper levels of Çatalhöyük East, comprising a dozen houses each, centred around large courtyards (Mellaart 1967, 69-70; Düring 2006, 234). It is worth pointing out that this layout was no less suited than the earlier one for defence; if anything, a smaller perimeter needed fewer people to defend it.

8.2.2 Defended 'farmsteads' in Southwest Anatolia

Although roof-level access was given up entirely at Hacılar, further west in the Lake District, the village developed along similar lines to the upper levels at Çatalhöyük East (Mellaart 1964a, 36; 1970a, 21). In Level VI, Hacılar displayed a series of L-shaped compounds, each consisting of two contiguous houses with a party wall – one house with its long side oriented along a north to south axis, the other along an east-west axis (Mellaart 1970a, 21). Two of the houses from the same building complex, Q.VI.2 and Q.VI.3, shared mutual access to what appears to be a backyard, fenced on two sides by mudbrick walls (Mellaart 1970a, 19). The function of this backyard remains unclear. Seeing that outdoor cooking activities took place at the front of the buildings, in the 'shed' structures on either side of the entrance, one may assume that backyards were not used for cooking (Mellaart 1970a, fig.7). This arrangement recalls the earlier construction of houses in pairs at Çatalhöyük, but differs by the absence of communicating doorways between the two contiguous houses (see Hodder 2006, 114-115; Love 2010, 128). Several L-shaped compounds were built side by side around a central courtyard in Hacılar VI. Interestingly, house Q.VI.3 was inserted in the gap between two compounds without walls of its own, and made use of neighbouring walls for roof support (Mellaart 1970a, fig.7).

Pushed to its logical end, the model of the courtyard-house complexes observed at Hacılar VI led to the development of small defended settlements of the type of Hacılar IIA (Mellaart 1970a). In this case, two rows of houses were built against a 1.5-3 m thick wall of mudbrick, with projecting bastions, which delineated the entire perimeter of the complex (Mellaart 1970a, 25). The wall was pierced by three narrow doorways, which opened on to covered passage-ways and antechambers (Mellaart 1964a, 18). Houses shared party walls and aligned around a central courtyard, the West Court, in which communal activities, such as grain parching in large ovens, apparently occurred (Mellaart 1964a, 18). One can see clearly from the plan and reconstruction that the houses have been inserted inside the perimeter wall after it was built, rather than the opposite (Mellaart 1970b, Figs. 20-21). The only structure that was integrated in the fabric of the outer wall, Building 8 in the north-east bastion, was interpreted by Mellaart as a granary, with built or sunk grain bins (Mellaart 1964a, 18). Although the interior of the compound was re-shuffled after the fire in Level IIA, the outer wall was maintained during at least one more phase of occupation (Mellaart 1970a, 39). The construction and upkeep of the perimeter wall suggest a central authority and a level of collective organisation; but the basic unit remained the one-roomed house, derived from the earlier template already observed in the region (§7.3.2; Umurtak 2000).

One may tentatively suggest that there were more than one courtyard-house complexes in Hacılar II, constructed on the same model, although the evidence is weak (Düring 2011, 171). In this respect, another walled compound, dated to roughly the same horizon, was found a few kilometres to the northeast of Hacılar, at Kuruçay (Duru 1994). The location of the site is unusual in that it occupies the summit of a small outcrop of bedrock overlooking the Lake of Burdur. Kuruçay looks more like a defensive outpost than to a farming site (personal observation at the site). The Level 11 settlement at Kuruçay was enclosed by a solid outer wall, built of mudbrick on stone foundations, with projecting semi-circular ‘towers’ (Duru 1994, 99). Only the southern and eastern halves of the enclosure survived to this date. Very little is known of the structures (houses?) that may have been inserted inside the enclosure. The rounded ‘towers’ were provided with doorways both on the interior and exterior walls, suggesting that they may have acted as the main gateways to the settlement.

A third walled compound was discovered at Ege Gübre on the Aegean coast of Anatolia. It consisted of standard rectangular buildings, c. 8 x 10 m in size, as well as eight round structures or *tholoi*, some as large as 4.10 m in diameter, centred on a central courtyard (Sağlamtimur and Ozan 2012, 230-231). The *tholoi*, which were not provided with any fire installation, were sometimes attached to one of the corners of a rectangular building, however without connecting doorways (Sağlamtimur 2012, 198). The central courtyard was fenced off on all four sides by either houses or walls (Sağlamtimur 2012, fig.2). The south-eastern part of the enclosure was delineated by a massive stone wall, 1.5 to 2 m in place, running parallel to the central courtyard over a 44 m long stretch (Sağlamtimur 2007; 2012, 199). A thinner wall made of smaller stones, c. 0.5 to 0.6 m in thickness, was built in the subsequent phase along the eastern side of the enclosure (Sağlamtimur 2012, 199). It ran in a straight line over 70 m and may have been associated to a palisade. The latter wall does not appear to have surrounded the entire settlement; its function was interpreted by the excavators as terrace or retaining wall, to counter the floods of the nearby stream (Sağlamtimur 2007; 2012, 199).

James Mellaart reconstructed the latest of these sites, Hacılar I, as a "fortress", c. 150 m in diameter, surrounded with a massive outer ring of buildings, radially aligned around a large central courtyard (Mellaart 1970a, 84; 1970b, figs.29-30). Of particular significance was Block A, which Mellaart interpreted as a multi-roomed complex and as the residence of a local ruler (Mellaart 1970a, 75-82). Remarkably, a number of Hacılar I buildings shared party walls, thereby indicating that they were built as part of the same concerted effort (Mellaart 1970a, fig.29). The rooms were only provided with round or oval hearths; domed ovens were located outdoors, in courts 17 and 21 (Mellaart 1970a, 82). The buildings, which had projecting buttresses and very thick walls, up to 3.5 m, were merely basements for a substantial upper storey. Some were apparently only entered from above by means of a ladder (Mellaart 1964a, 19-20). There is at present very little evidence to suggest that the settlement ran in a full circuit around the mound[47].

[47] In view of the reconstruction of the site offered by Mellaart, one is led to ask whether he drew inspiration from the plan of the Level XVI fortress at Mersin-Yumuktepe on the coast of Cilicia, which was already excavated at the time. The fortress at Mersin-Yumuktepe is much younger in date (Garstang 1953, fig.79).

8.2.3 Houses and courts in Middle Neolithic Greece

One problem in trying to compare building forms and practices in Anatolia and Greece is the scale of excavation. Few excavations in Greece were large enough to provide an extensive, let alone a complete settlement plan (Reingruber 2008, tab.6.2). In the 6th millennium BC cal., the site of Sesklo, west of the town of Volos in Southeast Thessaly, was organised as a series of clustered compounds – similar, at least in concept, with some of the settlement forms described earlier. The evidence comes mainly from the flat extended site, known as Sesklo B, founded on a terrace overlooking the tell. On the basis of the distribution of party walls, it was possible to isolate three clusters of houses, each comprising a set of four to six contiguous or adjacent buildings, constructed of mudbrick on stone foundation, sharing mutual access to small internal yards (Kotsakis 2006a, 211). Two of the clusters, H-Π-K-Ξ and E-Θ-Z-Z_1-Z_2-Γ-A-Λ-M, overlapped to an extent and it is possible to see that they were built one after the other in a succession (Kotsakis 2006a, 211; fig.3). The suggestion is that the same building cluster may have been reconstructed twice, more or less in the same location, by horizontal displacement of the entire block of houses. All the buildings were oriented in the same direction, with the four corners aligned to the four cardinal points (Souvatzi 2008, 85; Pyrgaki 1987, 115)

By contrast, houses on the tell, Sesklo A, were freestanding. Large retaining walls, traditionally reconstructed as a sort of fortification with a ramp and gateway, point to a degree of collective organisation and internal division (personal observation at the site). Kostas Kotsakis suggested that Sesklo A may have been divided into two additional clusters of houses and courts, organised along the same general lines than were referred to above (Kotsakis 2006a, 213). In addition, he observed that each cluster invariably comprised one building that was set apart by projecting buttresses, located either inside the room (House 4-5 in cluster 1, House E in cluster 2, House Ξ in cluster 3, House 11-12 in Sesklo A), or on the façade (House 37 in the NE part of Sesklo A) (Kotsakis 2006a, 213). Kotsakis concluded that “there are still strong indications preserved in the overall plans showing that these clusters were conceived and built as definable entities or sets” (Kotsakis 2006a, 213). The function of the courts remains unclear, as they were very small and evidently mirrored the internal layout of some of the structures. Some were provided with stone-built facilities, such as benches or platforms, and storage boxes, which point to a pooling of materials and resources (Souvatzi 2008, 95).

At present, the evidence from Early Neolithic Nea Nikomedeia would suggest that buildings were normally constructed at a distance from each other. Only the structures in group 8/3, interpreted as a house and its annex (for stalling animals?), were contiguous and shared a party wall (Pike 1996, 46). The mode of organisation at Nea Nikomedeia is not clear at present, although it seems that some of the structures may have been enclosed by a series of concentric walls and ditches (Rodden 1965, 84; Souvatzi 2008, 74-75).

8.3 Row houses

One of the most spectacular developments in the first half of the 6th millennium BC cal. in Anatolia and Thrace was the construction of continuous rows of houses, running in a straight line or in a semi-circle, with doors facing the same direction and opening onto a 'street' or 'courtyard' (Figure 26). In Anatolia, this phenomenon seems to have been restricted to the Eastern Marmara region. Nevertheless, Northwest Anatolian sites, in particular Ilıpınar VI, shared characteristics in common with earlier Central Anatolian sites – not least mudbrick architecture and an agglutinative layout, in which each house in a row possessed its own set of outer walls (see Thissen 2008, 91-92). Chronology helps to explain why this original settlement form was not found in Southwest Anatolia: the so-called 'boundary' settlements, of which Ilıpınar VI is one of the most remarkable examples, overlap in a short interval c. 5,800-5,600 BC cal. at 2σ. Incidentally, this period of occupation is currently not represented in the Lake District and on the Aegean Coast of Anatolia (§9.1.2).

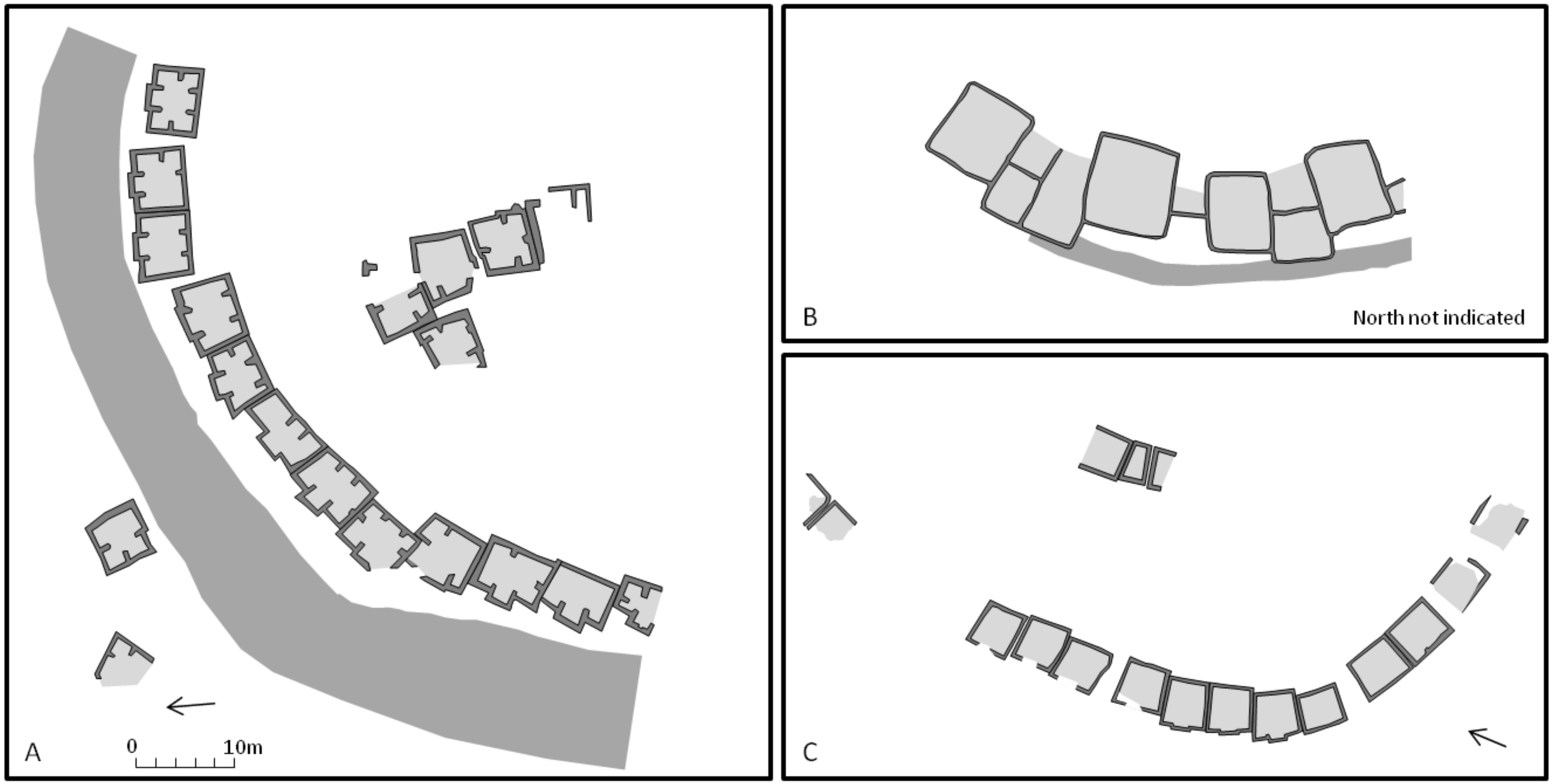

Figure 26. 'Boundary' settlements in Northwest Anatolia and Thrace: Aktopraklık B (A), Aşağı Pınar 6 (B) and Ilıpınar 6 (C). Plans redrawn after Karul 2013, fig.7; Özdoğan E. 2011, fig.2; Roodenberg and Alpaslan Roodenberg 2007, fig.4; Gérard 2001, fig.11.

8.3.1 'Boundary' houses in the Eastern Marmara Region

The earlier Neolithic occupation in the Eastern Marmara region, before c. 5,800 BC cal., was characterised by freestanding rather than agglutinated forms of architecture. At Menteşe and Ilıpınar X-VII, houses were sometimes constructed at considerable distance from one another and there was plenty of open space at the centre of the village (Roodenberg *et al*. 2003). The earlier houses were constructed of post-walls and c. 0.6 m thick mud-slabs (Roodenberg 2008b, 82). Level VI bears witness to the rather dramatic uptake of standard mudbrick architecture, characterised by comparatively thinner walls, only c. 0.3 m wide, and an agglutinative form of settlement layout (Roodenberg 2008b, 82).

Rectangular or slightly trapezoidal houses, which were referred to as "boundary houses" in the literature (Roodenberg 2008b, 74), were constructed side by side in a continuous row that curved around the settlement. Houses were constructed in slight recess one from the other, and some had a projecting niche or 'alcove' on the outer wall, whose function remains unclear (Claasz Coockson 2008, 154). Very similar rows or arcs of houses were found at Aktopraklık B near Bursa, where they seemingly appeared without transition or continuity with earlier forms of architecture (Karul and Avcı 2011; Karul 2009, figs.7-8). At present, the number of houses in each row can be evaluated to over 16. It is unclear if the rows of houses ran in a full circuit around the mounds. In Ilıpınar, the eastern part of the village is currently occupied by the spring and pond, which are likely to have been in the same location in prehistory (L. Thissen, personal communication; Düring 2011, 190). Thus, one assumes that the settlement did not form a complete outer circle.

The entrances to the 'boundary' houses were all facing the centre of the arc. Porches or 'balcony'-like platforms were occasionally set at the front of the buildings (Claasz Coockson 2008, 154). 'Boundary' houses were remarkably similar in shape and size within a same row (Claasz Coockson 2008, 154-155). The houses were single-storied at Aktopraklık and two storeys high at Ilıpınar (Claasz Coockson 2008, 155). There were narrow passageways, c. 1-2 m in width, between blocks of houses on the outer row; it is not clear whether these were left open or closed off with light structures, such as ‘sheds’ in prehistory (Roodenberg 2001, 231). Seen from the outside, ‘boundary’ settlements thus offered a more or less unbroken wall of houses like 7th millennium Çatalhöyük (Roodenberg 2008b, 74-75; fig.2).

The houses at Ilıpınar were set over a raised embankment that rose a few metres above the surrounding fields (Roodenberg 2008b, 76). Aktopraklık was surrounded by a lime-plastered ditch, with a diameter of c. 100-130 m, identified both in section and through geophysical survey (Karul 2013; 2009, figs.7-8; Düring 2011, 193). Lime is particularly effective at stabilising soils and repelling insects. The ditch was renewed a number of times. A row of postholes running parallel to it suggests a palisade of some sort (N. Karul, personal communication). Common to these sites was the remarkable effort in boundary-making with substantial earthwork, and the equally remarkable absence of a wall in the strict sense: the houses themselves formed the wall. Although the excavators at Ilıpınar ruled out defence as the purpose of this layout, it was evidently well-suited for protection against wild animals and external aggressors (Roodenberg 2008b, 76).

Plans and reconstructions of the Ilıpınar settlement give the false impression that the outer row of houses surrounded a large open area (Roodenberg 2008b, 76; Düring 2011, 190). In reality, houses were excavated in the centre of the arc, and they too were arranged in rows, although it is not clear if the rows aligned concentrically (Gérard 2001, 189). Open areas in between houses were characterised by greenish organic deposits, which were interpreted by the excavators as residues of animal (pig?) dung (Gérard 2001, 189). Presumably the form of the village reflected the importance of livestock, which was kept within the bounds of the settlement, in one or more pens (Roodenberg 2008b, 76-77). The perimeter wall of houses was good at keeping animals and people in, as well as keeping them out, and focused attention on activities at the centre. Communal activities such as bread- or ceramic-making can be seen to have been important at Ilıpınar and Aktopraklık, where huge ovens, c 1.5 m in diameter, with a dome of clay, have been discovered in courtyard areas (Claasz Coockson 2009, 118; N. Karul, personal communication).

Although the layout of the Level VI settlement at Ilıpınar was undoubtedly planned in advance, the absence of party walls suggests that houses were gradually inserted at both ends of the arc like ‘beads’ on a string (Roodenberg 2008b, 76; Claasz-Coockson 2008, 154). Aktopraklık B displayed more variation. Party walls were not a standard feature by any means, but some of the houses were sometimes built against a previous structure without a wall of their own or, more rarely, two houses were constructed side by side with a party wall (Karul 2013; 2009, figs.7-8). This arrangement recalled, albeit in a remote sense, that already encountered in Central Anatolia. The reason for maintaining a layout of clustered but ‘freestanding’ houses with separate outer walls in the Eastern Marmara region is unclear, however, in the absence of vertical continuity from one level to another. One has already suggested that the final act or ‘closure’ of the ‘boundary’ houses may have involved concerted destruction by fire (§4.3.3). After a row of houses was abandoned, a new one was relocated at short distance from the previous one, thus enclosing the same – or a broadly overlapping central space (see Gérard 2001, 178-179).

8.3.2 Anatolian influence in Thrace?

A third row of ‘boundary’ houses was excavated at Aşağı Pınar, Level 6, near the town of Kırklarelı in inland Thrace, close to the modern border between Turkey and Bulgaria (Karul 2003; Karul *et al.* 2003; Özdoğan M. 2007c, fig.29; Özdoğan E. 2007; 2011). A 60 m long stretch of the Level 6 settlement has been excavated so far, and geophysical survey indicates that over 40 m still await further excavation (Özdoğan E. 2011, 220). In this case, the houses followed the course and partly overlay the fill of a ditch, dated to Level 7, which presumably belonged to an earlier row of houses (Özdoğan E. 2011). The settlement, although broadly similar in shape and size with Ilıpınar VI and Aktopraklık B, also differed in a number of ways, which are worth recounting briefly.

First of all, the houses had post-walls and a rather light superstructure, perhaps in wattle-and-daub, which was in keeping with the architecture in the region (Özdoğan E. 2011, 215). The nine structures excavated so far were all connected by thin party walls, and one assumes that they were all built, not only according to a plan fixed in advance, but also as part of one and the same construction effort (Özdoğan E. 2011, 214). Houses did not abide by a standard template. They ranged in size from 30 to 65 m^2 and some had side rooms, which were as small as 15 m^2 (Özdoğan E. 2011, 214). It is not entirely clear if all the structures opened on to the centre of the arc (Özdoğan M. 2007c, fig.29). Eylem Özdoğan observes that there were no fire installations, no working areas or processing tools in the open spaces excavated outside the structures, in clear contrast to what has been observed in the Eastern Marmara region (Özdoğan E. 2011, 219). Most of the activities took place indoors. Four of the structures were provided with round or rectangular ovens, and all had a great number of storage bins and silos distributed in clusters alongside the walls (Özdoğan E. 2011, 217; personal observation at the site). The centre of the settlement has not been extensively excavated, but it seems that it was partly occupied by houses, such as Building 10 for instance (Özdoğan E. 2011, fig.2).

Although few Neolithic sites have provided extensive plans in Bulgarian Thrace, their description fits that of 'boundary' settlements and suggests a common – or similar – practice across a wide range of sites. Differences pertained to the way in which these sites acquired their final shape. Early Neolithic communities in Thrace made much more use of party walls, suggesting a pooling of construction resources and techniques, as well as a coordinated effort in construction planning and execution. In addition, the rows of houses usually ran in a straight line. Such arrangements occurred at Karanovo, Azmak, Stara Zagora-Okruzhna Bolnitsa, Rakitovo and Sofia-Slatina (Mikov 1959, 92; Georgiev 1972; Kalchev 2010; Raduncheva *et al*. 2002, 202; Nikolov and Sirakova 2002, 165).

Azmak, for instance, yielded three contiguous buildings arranged in a straight line (Georgiev 1972, fig.4). The post-wall structures, which were provided with hearths, ovens and storage bins, had thin partition walls, as at Aşağı Pınar 6 (Georgiev 1972, 17). Two buildings sharing a party wall were excavated at Stara Zagora-Okruzhna Bolnitsa, but, in regard of the dimensions of the smaller structure, 16 m^2, it seems more likely that they belonged to a house and its annex (Kalchev 2010, 4;

personal observation at the site). In the earlier Karanovo excavations, Vasil Mikov observed that “the dwellings were all arranged in parallel rows, one after the other [in levels ascribed to Karanovo I]” (Mikov 1959, 92). This pattern continued after the first half of the 6th millennium BC cal. in Bulgaria and several examples are known from the Chalcolithic period (see, for instance, Todorova and Vajsov 1993, fig.20).

Both the introduction of mudbrick in the Eastern Marmara region and of an agglutinative form of architecture inherited from the Central Anatolian Plateau, point to Anatolia as a likely centre of origin of this settlement form. In particular, the practice of building an unbroken row of houses around the mound for defence or boundary-making recalls the earlier arrangement observed at Çatalhöyük and Aşıklı. The articulation of basic houses provided the formal blueprint for the settlement.

8.4 Summary

- Although buildings were tightly clumped together at Aşıklı and Çatalhöyük, each was conceived as a ‘freestanding’ unit with its own set of outer walls. This configuration provided the flexibility needed for a vertical expansion of each building. The advantage is that the site did not have to be re-thought of collectively during every rebuilding event (§8.1).

- The cellular house pattern was peculiar, in that it was expansive and entailed very specific modes of replacement and insertion of buildings (§8.1.2). In contrast, Western Anatolian sites were ‘finite’ from the start, and characterised by fixed boundaries, such as ditches, earthen banks, actual walls and palisades (§8.2.2; 8.3.1).

- The evidence suggests radical alterations to the Çatalhöyük layout after Level VI, c. 6,500 BC cal. The upper occupation of the East Mound was characterised by smaller compounds of buildings centred on large fenced-off courtyards, functionally similar to some of the building enclosures observed in the Southwest

Anatolian Lake District (§8.2). Unlike older midden areas, courtyards were used for communal activities such as bread- and ceramic-making (§8.2.1).

- The introduction of semi-circular rows of 'boundary' houses in Northwest Anatolia after c. 5,800 BC cal. was a further dramatic change. The evidence presented this far suggests remote connections with Central Anatolia (§8.3). This layout foreshadowed the radial layout of later Chalcolithic and Early Bronze Age settlements in Anatolia, such as Mersin-Yumuktepe XVI and Demircihöyük (Baird 2012b, 449; Düring 2011, fig.7.3).

9

Synthesis and Discussion

The Diffusion of Neolithic Practices from Anatolia to Europe

This chapter brings together evidence drawn from the reassessment of the absolute chronology undertaken in §1.2.2 and the results of the contextual study of house-related practices (Chapters 4 to 8) to make inferences about the content of the Neolithic pattern of existence that spread into Europe. Each of the preceding five chapters dealt with a particular area of practice, but no attempt was made to match them to see if, collectively, practices provided an insight into the norm or value which underpinned their production. In what follows, I propose to look at practices within habitus or networks of functionally-related practices.

The thrust of the argument is that the older set of residential and construction practices, evidenced for instance in the main sequence of Çatalhöyük East, Levels XII-VIB, did not spread, or only marginally, into Europe. Two explanations are offered to account for this discrepancy: (1) the westward spread of Neolithic economies into Europe did not start until the 7th millennium BC cal. (§9.1); (2) the nature of the older habitus itself, with its emphasis on being rooted in one place, impeded its ability to spread (§9.2). The introduction of a new set of practices in Çatalhöyük, after c. 6,500 BC cal., brought widespread changes in Neolithic habitation. The suggestion is that it was *this* second habitus of practices emphasising collective action, which spread westwards into Europe through Western Anatolia (§9.3).

9.1 Chronological trajectories

One of the most important conclusions that may be drawn from the reassessment of the absolute chronology is that there was a broad synchronicity at two standard deviations (95.4% probability) between the advent of Neolithic societies in Anatolia and in Europe, hence the absence of 'floating' intervals or dates in the diagrams and the shape of the intervals distribution, in the form of a sturdy backbone (Figure 27). Any new date inserted, for instance, in the ^{14}C Backbone, may not add to, but only refine this pattern. Chronological continuity is a necessary prerequisite for any comparative study. On the other hand, three emerging trends invite a closer inspection of Neolithic dynamics in this section: the Central Anatolian Neolithic appears to be significantly older than the Western Anatolian Neolithic, which can be dated to no earlier than c. 7,000 BC cal. at 2σ; the Western Anatolian and Greek Neolithics appear to be broadly concurrent; and the Neolithic in inland Thrace appears to be significantly younger in date, after c. 6,200 BC cal. at 2σ.

9.1.1 A Neolithic frontier between Central and Western Anatolia (8,300-6,500 BC cal.)

In light of the two-thousand year lag between the advent of Neolithic economies in Central and Western Anatolia identified in Chapter 1, it is now possible to outline a model of moving Neolithic frontier, in which Central Anatolia was neolithised first, after c. 8,300 BC cal. at 2σ, Western Anatolia second, in the period between c. 7,000-6,500 BC cal. The strength of this argument lies in the fact that the earliest Neolithic levels in Western Anatolia, dated to after c. 7,000 BC cal. at 2σ, were located directly upon virgin soil, as for instance at Ulucak and at Barcın. Despite a possible bias against recognition of Neolithic sites on the Aegean coast of Anatolia, due to their location in active alluvial/colluvial plains, which explains the submergence of larger tell-sites such as Yeşilova and Ulucak under metres of sediments (Çilingiroğlu 2009a, 51; Derin 2012b, 110), more excavations have been undertaken in Western Anatolia over the last 15-20 years than in Central Anatolia[48] (§2.1.3). The breadth of research in this region is reflected, for instance, in the overall number of Neolithic sites which have produced radiocarbon dates, 14 in total, compared to only 12 in Central Anatolia (Appendix F).

[48] On the other hand, there have been no systematic surveys of the type conducted by Douglas Baird and his team, targeting pre-6,500 BC cal. occupation in Western Anatolia (Baird 1996).

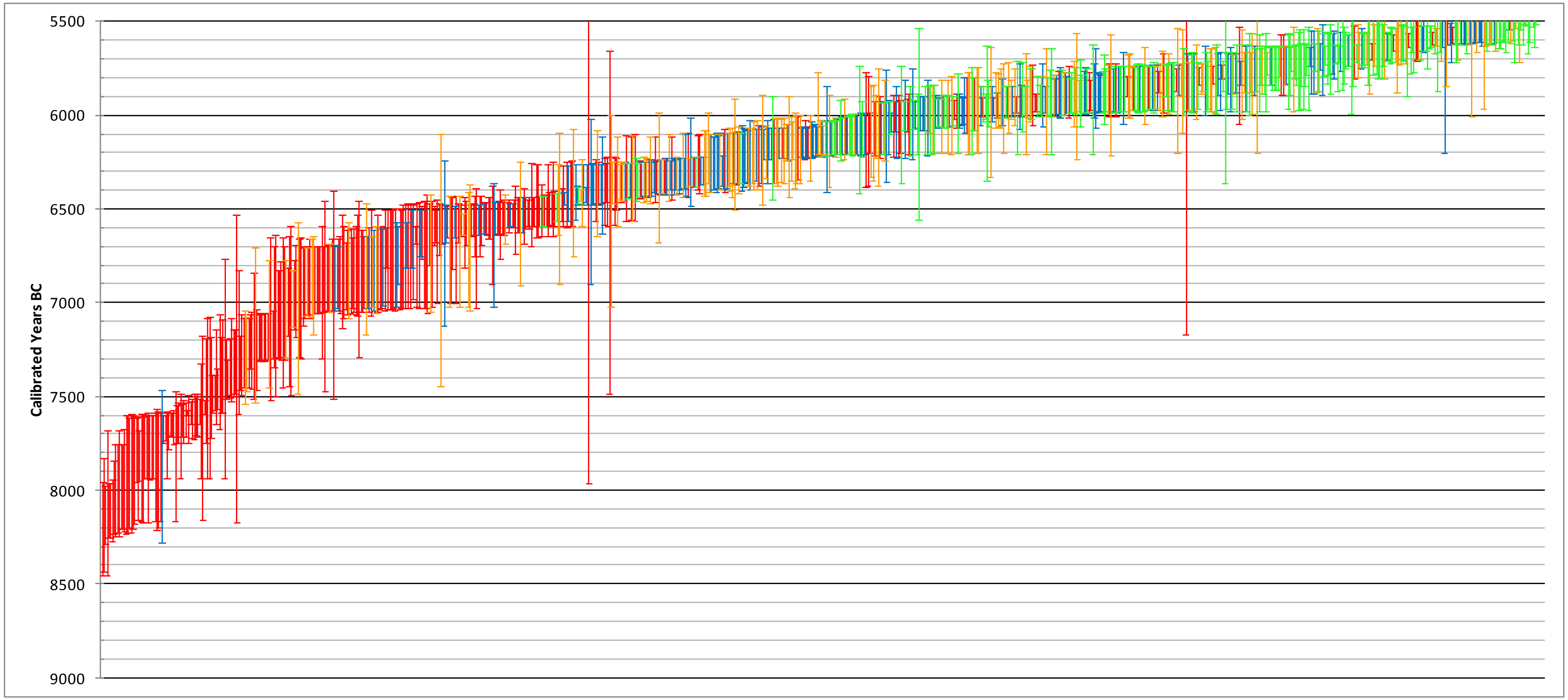

Figure 27. [14]C Backbone distribution of 848 calibrated radiocarbon intervals, at 2 standard deviations (95.4% probability), from 59 Neolithic and Early Chalcolithic sites in Central Anatolia (red), Western Anatolia (blue), Greece (orange) and Thrace (green) during the interval 9,000-5,500 BC cal. The dates were re-calibrated using the IntCal09 atmospheric curve (Reimer *et al*. 2009) in OxCal 4.2 (Bronk Ramsey 2013). The intervals are ranked in chronological order from the oldest to the youngest date BP.

The fact that so-called 'coastal' Fikirtepe sites in the Eastern Marmara region, including Fikirtepe itself, Pendik, Istanbul-Yenikapı and Aktopraklık C, displayed features alien to the Neolithic horizon in Anatolia, such as flat extended settlement, round, semi-subterranean 'huts' and cremation-burial, in addition to agriculture, may be assumed to indicate that the transition from 'Mesolithic' to 'Neolithic' societies in this region was still under way in the second half of the 7th millennium BC cal. Thus, with some reservations outlined below, I am inclined to suggest that Central Anatolia itself may have acted as a Neolithic frontier zone during the period between c. 8,300-6,500 BC cal. In other words, I am suggesting that the Neolithic experienced a progress 'halt' between the centre and the west of the Anatolian Peninsula, which may be ascribed to either a loss of momentum or encounter of resistance[49].

In a Neolithic frontier model, it is anticipated that the transition to farming be slow and gradual, with some form of convergence between Mesolithic and Neolithic lifeways. Repeated interactions and exchanges between foraging and farming groups operating as two independent units during a phase of availability lead to a rapid substitution of resources, followed by a phase of consolidation (Zvelebil 1998, 10–11; 2001, 6-11; Zvelebil and Lillie 2000, 64-67; Kotsakis 2003, 217). Such transitional phases are currently missing in Western Anatolia. Our understanding of Mesolithic or Epi-Palaeolithic occupation in this region is limited to scatters of lithics on the Black Sea shore, usually referred to as the 'Ağaclı Group[50]', while cave-sites, such as Yarımburgaz Cave in the outskirt of Istanbul, are marked by significant hiatuses between Upper Palaeolithic/Epipalaeolithic and Neolithic levels (Özdoğan and Koyunlu 1986, 12). On the other hand, surveys north of the Anatolian Plateau and around the Sea of Marmara have identified several prehistoric findspots[51], which

[49] A similar suggestion was brought forward by Ulf Schoop in an article termed 'the late escape of the Neolithic from the Central Anatolian Plain' and supported by assessment of ecological differences between Central and Western Anatolia (Schoop 2005a).

[50] Ağaclı sites, including Ağaçlı, Gümüşdere and Domali on both sides of the Bosphorus, document an industry, characterised by single-platform conical cores to extract blades and bladelets. End-scrapers, including some with microlithic dimensions, prevail among the retouched tools assemblage (Gatsov 2000, 19). Continuity with the Neolithic is perhaps indicated by the presence of pressure-flaked 'bullet cores' at both Ağaçlı and Fikirtepe sites (Gatsov 2003, 153-154; Karul 2011, 60).

[51] Sites include Keçiçayırı and Kalkanlı in the Eşkişehir region (Efe 2005, 109-112; Özdoğan 1999, 212), Asarkaya in the Kütahya region (Efe 2005, 112), Çalca, Anzavurtepe and

demonstrate remote connections with the Pre-Pottery Neolithic horizon in Southwest Asia, such as, for instance, opposed-platforms ‘naviform’ cores (Figure 28; Özdoğan and Gatsov 1998; Brami and Heyd 2011, 186; 190-193). Regrettably these surveys and recent excavations at Keçiçayırı in the Eşkişehir region lack a sound chronological basis and have not, for instance, produced any new radiocarbon dates (Efe *et al*. 2012, 229-230).

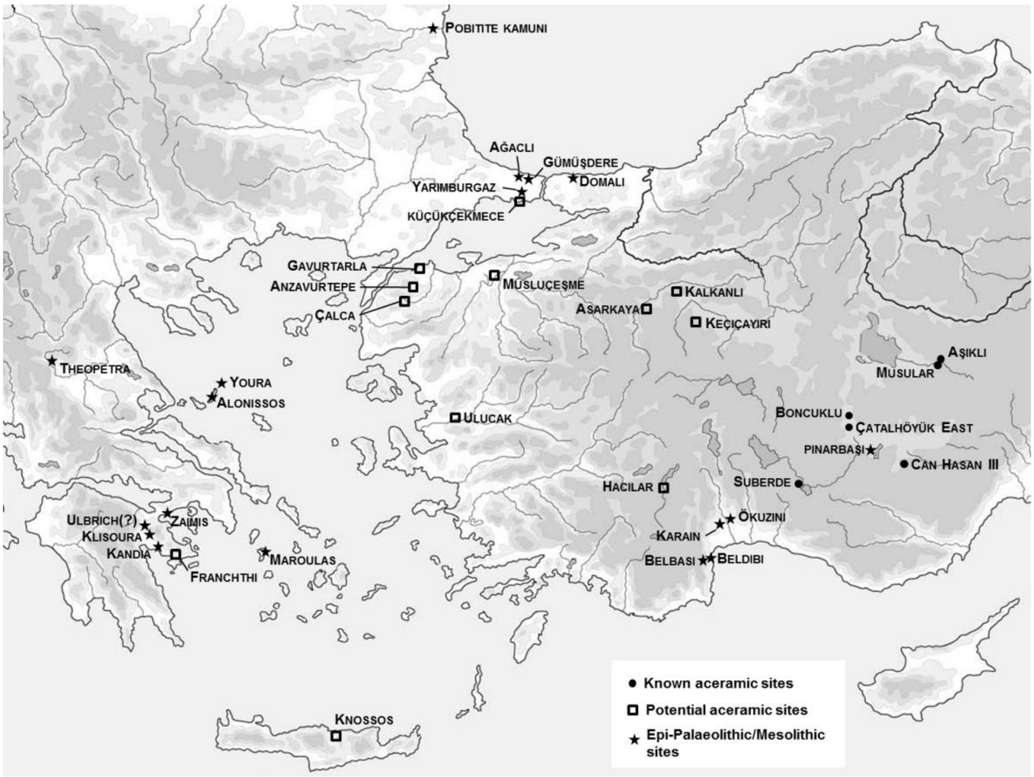

Figure 28. Geographical distribution of important Epi-Palaeolithic/Mesolithic sites, known and potential aceramic Neolithic sites, in Anatolia and Southeast Europe. Site location after Özdoğan and Gatsov 1998; Perlès 2001; Kartal 2003; Runnels 2009; Brami and Heyd 2011.

Another point of contention is whether the Southwest Anatolian Lake District, which is located at the western end of the Central Anatolian Plateau, belonged to this earlier horizon of Neolithic occupation. The evidence relies on one radiocarbon date from Aceramic Hacılar V, BM-127 (8,281-7,467 BC cal. at 2σ). Notwithstanding the

Gavutarla in the Çanakkale-Çan region (Özdoğan and Gatsov 1998; Thissen 2000, 107), Musluçesme in the Balıkesir region (Özdoğan and Gatsov 1998) and Küçükçekmece near Istanbul (Aydingün 2009).

size of the interval, the date derived – presumably – from a short-lived sample ('hearth throwout') and cannot be easily discounted. The level in which it was found was virtually without pottery[52] and contained features, such as red lime-plastered floors and curated skulls, which point to later Aceramic occupation on the Plateau (§9.3.1; Duru 2003, 589-591). Unless new excavations are carried out at Hacılar, it may not be possible to prove or disprove the existence of an aceramic phase at the site.

While admitting that there may have been earlier 'Neolithic' dispersals in Western Anatolia, as yet undefined, the balance of evidence suggests that these isolated and short-lived 'visits' did not contribute in any major way to the remarkable explosion of sites in this region after c. 7,000 BC at 2σ (see discussion of "failed attempts" in Brami and Heyd 2011, 193). With a possible exception at Hacılar, every other site was founded in a new location after c. 7,000 BC cal. Identification of Central Anatolia as a Neolithic frontier zone is warranted by the long-term internal dynamics of the Neolithic on the Central Anatolian Plateau, characterised by a succession of sites spanning the horizon from c. 8,300-5,500 BC cal.; that is, for comparison, a period comprised between the Early PPNB to the Halaf period in the Northern Levant. Çatalhöyük is of particular interest to this study, because it spanned the transition from the early frontier to the opening to the west.

9.1.2 Two pathways of Neolithic expansion (7,000-5,500 BC cal.)

With regard to the main wave of Neolithic expansion in Western Anatolia and Southeast Europe, after c. 7,000 BC cal. at 2σ, one observes that neolithic sequences in Southwest Anatolia and Northwest Anatolia are not strictly synchronous. The onset of the Neolithic period started earlier in the south (Figure 29). In particular, the lowermost level at Ulucak, Level VI, which lies directly upon the bedrock, is securely dated to the first half of the 7th millennium BC cal. by a series of 12 internally

[52] In 1985-1986, Refik Duru excavated 28 soundings in a 100 m belt encircling the mound (Duru 1989; 1999; 2007; 2012). In several trenches, he identified floors made of small pebbles and lime, rubbed with yellow or red pigment and lightly burnished, which he ascribed to 'aceramic' Hacılar. The recovery of six fragments of pottery embedded in house floors led him to challenge Mellaart's interpretation of these early levels as aceramic (Duru 1989, 102). There is no stratigraphic evidence, however, to link Duru's soundings with Mellaart's trenches.

consistent dates ranging from 7,040 to 6,440 BC cal. at 2σ. This level is virtually ‘aceramic’ and is compounded of at least three superimposed red lime-plastered floors, which demonstrate a technique peculiar to the Aceramic Neolithic tradition in Southeast Anatolia and on the Central Anatolian Plateau (Çilingiroğlu *et al*. 2012). To this horizon, one may ascribe two early dates from Çukuriçi in the Gulf of Ephesus (Erl-14514: 7,042-6,609 BC cal.; UGAMS-6043: 6,591-6,467 BC cal. at 2σ) and a date from the bottom of the deep sounding in Bademağacı EN I/8[53] (Hd-22340: 7,030-6,697 BC cal. at 2σ).

Although there is no convincing evidence at present that Thessaly was neolithised before c. 6,450[54] BC cal. at 2σ, three absolute dates from Interphase 0/1 at Franchthi in Argolis (P-2094: 7,079-6,570 BC cal.; P-1527: 7,056-6,590 BC cal.; P-1392: 7,052-6,421 BC cal. at 2σ) and a single date on a short-lived sample from the base of the mound at Knossos[55] (OxA-9215: 7,049-6,687 BC cal. at 2σ) hint at a more or less simultaneous start of the Neolithic in different parts of the Aegean Basin. In addition, the radiometric data suggest that both Thessaly and Southwest Anatolia experienced widespread disruptions after c. 5,800 BC cal. at 2σ. In the Lake District and the Aegean coast of Anatolia, all the sites were abandoned c. 5,800/5,700 BC cal. These include Hacılar I, Kuruçay 7 and Ulucak IVA. A shorter hiatus may account for the transition from Early to Middle Neolithic societies at Sesklo and other sites in Thessaly. In particular, one observes a lag between a first series of 72 radiocarbon

[53] A single date from Hacılar VII, BM-125 (7,125-6,245 BC cal. at 2σ) can be excluded, because it stems from a long-lived tree sample (‘corner post’) and is inconsistent at one standard range with the dating of an older level at the site (P-314).

[54] Twelve radiocabon dates, which belong to Argissa, Elateia, Sesklo and Theopetra Cave, are statistically older than the horizon c. 6450 BC cal. at 2σ. They have traditionally been ascribed to a ‘preceramic’ phase, dated to between 7,000 and 6,500 BC cal., in which neolithic economy was already developed but pottery was absent (Theocharis 1973, 35). I have suggested elsewhere that all can be discounted on the basis of a thorough quality assessment, which needs not be repeated here (Brami and Heyd 2011, 173-175). In the article, we find that some of the dating methods that were used then, such as dating of bone before the introduction of AMS dating or of charcoal and sediment, assimilating carbon of unknown provenience with carbon from the charcoal, were highly problematic.

[55] Three earlier dates from Level X at Knossos may point to a similar direction. Two of the samples, BM-124 (7,487-6,572 BC cal. at 2σ) and BM-278 (7,172-6,470 BC cal. at 2σ) may be discounted, however, on the basis that they derive from carbonised oak stakes (Brami and Heyd 2011, 175). Oak is a long-lived tree species; thus these dates are prone to ‘old wood’ effect. A third date, BM-436 (7,044-6,372 BC cal. at 2σ) has a large standard deviation and may relate to a later horizon at the site.

dates, clustering in the interval c. 6,450-5,700 BC cal. at 2σ, and a second series of dates, which fall after c. 5,600 BC cal. at 2σ (Figure 30). Central Macedonia has not produced enough radiocarbon dates to draw similar inference about the development of Neolithic societies, but it is worth noting that the type site of Nea Nikomedeia was abandoned at, or shortly before, c. 5,700 BC cal. The implication is that both sides of the Aegean Basin were occupied broadly in concert during the second half of the 7th millennium BC cal.

The Eastern Marmara region in Northwest Anatolia has not demonstrated such a hiatus in occupation. Although two of the earlier sites, Barcın and Menteşe, were abandoned after c. 5,900 BC cal., they were immediately superseded by Ilıpınar, which spanned the gap in occupation observed in Southwest Anatolia (Figure 31). Ilıpınar VI has currently no equivalent in Southwest Anatolia and provides, as such, a unique record of the end of the Neolithic (also referred to as 'Early Chalcolithic') occupation in the western part of the Anatolian Peninsula. The dating of Ilıpınar fits, however, with the earlier horizon of Neolithic expansion in inland Thrace. Fifty-two radiocarbon dates from Neolithic sites in the Struma and Mesta river valleys cluster between c. 6,200-5,200 BC cal. at 2σ (Figure 32). A direct route across the Maritza valley, the Upper Thracian Plain and the Sofia Basin is equally plausible. Eastern Thrace has yielded a total of 94 dates, which fall between c. 6,100 and 5,050 BC cal. at 2σ, with no hiatus or interruption (Figure 33).

In conclusion, this section finds that the dynamics of neolithisation are broadly from east to southwest (pathway 1) and from east to northwest (pathway 2). Absolute chronology is used as the basis for a refined regional division and provides the resolution to link up: (1) Thessaly and Central Macedonia with Southwest Anatolia; and (2) inland Thrace with Northwest Anatolia. This division has important implications for our review of residential and construction practices. For instance, the absence of arcs or crescents of houses, of the types seen in Ilıpınar VI (§8.3.1), in the Lake District and the Aegean Coast of Anatolia, may be ascribed to the slight chronological discrepancy between Neolithic sequences in Northwest and Southwest Anatolia. Ilıpınar VI represents a stage of culture, c. 5,800-5,600 BC cal., which is as yet unparalleled in the south.

9.2 Sorting practices into habitus of practices

In what follows I want to demonstrate how practices can contribute useful insights into the dynamics of Neolithic expansion, by refocusing attention on the content of the Neolithic pattern of existence, understood now as a habitus or network of functionally-related practices. The previous section highlighted two broad trends of far-reaching significance: first, a chronological rift between Central and Western Anatolia in the period c. 8,300-6,500 BC cal.; second, the westward spread of Neolithic economies in Anatolia and Southeast Europe after c. 7,000 BC cal. Let us assume that the residential and construction practices under review in this thesis fall into two groups: an ‘older’ one coinciding with the first pattern of interaction and a ‘younger’ one arising precisely at the time of the westward spread of Neolithic societies. This section examines the implications of this assumption, which are that practices spread as part of a set or habitus of practices and that there was more than one habitus of practices, though one ultimately replaced another.

To assess the validity of this statement, we must first consider how practices related to each other chronologically, with reference to the approximate time-range in which each practice was expressed, then functionally, by examining specific associations of practices in the record. The argument relies on observation of a major change of practices at Çatalhöyük after c. 6,500 BC cal.

9.2.1 The older set of practices

The analysis in this thesis proceeded by selecting some of the more remarkable practices characterising later Aceramic Neolithic societies on the Central Anatolian Plateau to examine if they cropped up outside this horizon, in particular further west. Five practices were singled out as being central to the model of residence and building in Central Anatolia: the intentional infilling of houses at the end of their use-lives (§4.1); the vertical superimposition of houses (§5.2); burial beneath the floor of active households (§6.1); the division of the main room into two distinct flooring areas (§7.2); agglutination of houses in cellular house patterns without ground-level access or streets (§8.1).

Although the practices referred above did not spring up simultaneously in Central Anatolia – for example, the dead were buried beneath freestanding houses at the 9th millennium site of Boncuklu – all five were engaged at Aşıklı, in the upper levels, dated c. 8,000 BC cal. and after (Table 10). Analogous or closely related practices occurred at Çatalhöyük East, from the beginning of the sequence until Level VIB, c. 6,500 BC cal. Practices were not necessarily disused after this date, but they became more marginal and occurred alongside, or in conjunction with, other practices, which are reviewed in the following section. The suggestion is that the five residential and construction practices listed above operated in harness or as part of the same habitus of practices during the interval c. 8,000-6,500 BC cal. in Central Anatolia.

Practice	**Time-range**
House infilling	8,300-6,400 BC cal. then marginal
Vertical superimposition of houses	8,300-6,500 BC cal. then re-emergence (?) 6,000-5,500 BC cal.
Sub-floor burial	8,300-6,300 BC cal. then marginal
Division into two flooring areas	8,300-6,300 BC cal.
Cellular house pattern	8,000-6,500 BC cal. then re-emergence (?) 6,000-5,500 BC cal.

Table 10. Time-range of 'older' residential and construction practices in Central Anatolia.

There is a fairly consistent narrative to the early levels at Çatalhöyük, which brings together the older set of practices under review in this thesis. One observes that the act of building a house was driven by consideration of both extant and future built environment. Infilling took place as part of a sequence of activities that involved filling up the house and building a new one on top. The superimposed house retained not only some of the original character of the structure it replaced, but also the actual fabric and contents of the disused house, carefully buried under its foundations. The layout of the buildings also reflected a need for a large unrestricted space accommodating both the living and the dead in close proximity. Thus, in profile, Çatalhöyük appeared as a vertical assemblage of dead houses and dead ancestors, neatly stacked over many generations.

People were not necessarily buried in the house that they lived in. Some houses attracted burials from a larger community or clan (Düring 2006, 207; Hodder 2012, 151). Those houses that contained more burials were also more repeated. Three of the buildings with the greatest number of inhumations at Çatalhöyük, between 30 and 58, were reconstructed at least six times each (Düring 2006, 107). Other houses clustered around these historical foci. Houses were occasionally inserted in voids in the settlement fabric, such as pens or middens, in order to abut or come close to "dominant" buildings (Hodder 2006, 152-161). Although houses were tightly built against one another, each possessed its own set of outer walls and functioned as an independent unit, with its own facilities for cooking, storage and sleeping. The layout of the village was monotonous, consisting of only three elements: houses, pens and middens. One assumes that most activities took place at house level. Households were differentiated on the basis of lineage or place of origin – how many times houses were reconstructed in the same place – rather than size or elaboration. There were no big houses, sanctuaries or shrines, and ordinary domestic structures acted as a focus point for the entire community.

In sum, the first set of residential and construction practices encountered at Çatalhöyük seems to have developed from a concern for maintaining existing buildings and relations (Cauvin 1994, 274). Continuity was important in the habitus of domestic practices. In view of this, one is inclined to suggest – with due caution in the absence of any direct evidence – that the Çatalhöyük society relied on a system of symbolic capital, based on accumulation of extant resources. By accumulating more ancestors and more reconstructions under their feet, successful households were granted a legitimacy and status, which put them at a specific advantage over newcomers. But this in turn raises the issue of why people left, if they did, considering the implications of leaving behind one's symbolic capital, and in so doing decreasing one's social status. Unless assuming that only specific sections of the community, who were not tied to the habitus of building continuity for social or economic reasons, were involved in spreading the Neolithic pattern of existence, the two emphases were hardly reconcilable (Özdoğan 2002). Nor was this system of value easily transplanted elsewhere, since it was, in effect, a product of history and of long-term commitment to a place.

It follows that the older habitus of practices, which was involved in upholding a static repetition, house upon house, of the same pattern of existence, was too unwieldy to diffuse as such. A brief review of specific functional associations entailed by the first habitus of practices demonstrates that it did not diffuse as-is into Europe. One may consider, for instance, the functional relatedness established between death and building continuity in Çatalhöyük, which implied that the vertical expansion of the site was driven by the accumulation of burials under house-floors (Düring 2006, 107; Hodder 2012, 60). This was a result of biological processes – more deaths as more time spent – but also of deliberate social action, since the dead were preferentially buried under those households, which had the longest history at the site. A recent study based on factor analysis of the co-variance of "intramurial burial" and "house replacement" at Çatalhöyük found no statistical correlation between these two variables (Carleton *et al.* 2013). One potential issue is that this study lumped together data from Levels VIII-III at Çatalhöyük[56]. In any case, this association completely lost currency in Western Anatolia and Southeast Europe (Kotsakis 2008, 239). For example, although houses overlay each other at Sesklo, on the 'acropolis' (Sesklo A), without reusing or disturbing earlier stone sections, there was no burial in this part of the site. Conversely, in the Eastern Marmara region, where a case was made for a strong association between the dead and the architecture, the round structures of the 'coastal' Fikirtepe tradition only spanned one phase of construction and use (§6.1.3).

Another example of functional relation induced by the first habitus of practices was that established between deliberate infilling and vertical superimposition

[56] Carleton *et al.* themselves show that one of the variables used, the "spatial continuity index" (SCI), was much higher in Levels VIII-VIA (0.5-0.7) than in Level V, where it dropped to 0.3 (Carleton *et al.* 2013, tab.1). The "spatial continuity index", in the authors' own words is: "the ratio of the area of superimposed walls to the area of all walls in a pair of vertically adjacent levels […] an SCI of 1 indicates that the two levels have walls in exactly the same places, while an SCI of 0 indicates that there is no overlap between the walls of the two levels" (Carleton *et al.* 2013, 1818).

of houses, which was organic at Çatalhöyük. One observes that although buildings were repeated up to eight generations of houses at Ilıpınar and Menteşe in Northwest Anatolia, the sequence of reconstruction did not follow the standard of "incremental construction and closure" observed at Çatalhöyük (Farid, in press). It seems unlikely that infilling was practised at these sites, wherein houses were normally preserved as footprints. The implication is that vertical superimposition of houses, as it was practised at Ilıpınar or Menteşe, bore little in common with that evidenced in Central Anatolia; strict adherence to a regime of building plots could be explained by the nature of the land inheritance system at these sites (§5.2.3).

Two conclusions may be drawn from the preceding observations: (1) the older habitus of practices, which was inferred from the pattern of settlement at Aşıklı and Çatalhöyük East, did not spread as-is into Europe; either one is mistaken in assuming functional relatedness between burial, building continuity and building contiguity in Central Anatolia (Carleton *et al.* 2013), or this association lost significance along the way – practices spreading divorced or attenuated from each other as the Neolithic spread westward; (2) by the same token, one may also argue that some practices or elements of practices *did* spread to the west and that there was definite overlap in practices between Çatalhöyük and later Neolithic communities in Western Anatolia and Southeast Europe. This is surprising in regard of the chronological lag and the distances involved. The following section raises the possibility that some elements of the first habitus of practices, for instance the practice of building on tells, filtered into a second habitus, which was far more widespread.

9.2.2 The younger set of practices

In the second half of the 7th millennium BC cal., Çatalhöyük witnessed a series of changes, which call attention to the uptake of a new set of residential and construction practices. The changes can be summarised as follows: fire was inserted in the sequence of 'closure'-related activities; entire horizons of houses burned, perhaps in concert (§4.3); sections of the site were deserted and horizontal shifts occurred in the location of the buildings (§5.3); some of the deceased were buried away from active households in inter-dwelling spaces and 'charnel rooms' (§6.2); the hearth shifted location from the south wall to the centre of the main room (§7.3); the cellular layout of the earlier settlement gave way to a series of smaller building compounds, centred on large courtyards, fenced on all sides by either houses or walls; huge ovens were located in these courts; actual streets and doorways appeared in the final levels of the site (§8.2).

The first observation to be drawn from the changes described above is that new practices cropped up in an existing landscape of practices, without initially replacing old ones (Table 11). The example of house-burning at Çatalhöyük demonstrates that fire was inserted in a sequence of 'closure'-related activities, which involved, among other things, infilling houses at the end of their use-lives (§4.2). Other practices implied more of a continuum of practice, for instance a gradual shift to burial away from the house in the upper levels of Çatalhöyük East, resulting in a near-absence of burials in Çatalhöyük West. Yet a third category of practices hinted at a momentary disruption in the system, for instance an interruption in the sequence of vertical repetition of houses, followed by reversal back into the old pattern of behaviour at the very end of the Çatalhöyük East sequence.

Practice	**Time-range**
House burning	6,500-5,500 BC cal.
Horizontal displacement of houses	6,500-6,300(?) BC cal.
In-fill and inter-dwelling burials	6,500-5,500 BC cal.
Axial orientation of the oven and the main doorway	6,400-5,500 BC cal.
Courtyard-house complexes	6,500-6,000 BC cal. then marginal

Table 11. Time-range of 'younger' residential and construction practices in Central Anatolia.

If the second habitus of practices is to be defined as more than a model-by-contrast, it is necessary to take a step away from Çatalhöyük and consider Neolithic occupation elsewhewere in Anatolia and Southeast Europe. Sites from this period share some characteristics, which call attention to a different way of conceptualising the house, as part of a whole, rather than on its own. New houses were often built upon a pre-existing site without referencing individual plots or parcels, as though land was not owned by any individual household but the community as a whole. Presumably parcels of land were reallocated among the inhabitants in each building-phase. Houses were interlocked with each other through party walls and were built in a single phase of construction, or to conform to a specified project.

The sites were small and ‘finite’ in size, often displaying a clear boundary with the exterior world, in the form of a ditch, a bank of earth, a palisade or a wall (Appendix A). Thus, this model of settlement was as much about enforcing cohesion as about exclusion or defence. Some of the sites, such as Hacılar and Sesklo, consisted of small clusters of houses, comprising no more than about five to twelve houses each, pooling resources and sharing mutual access to internal yards. Other sites, such as Ilıpınar VI and Aktopraklık B, encompassed a larger community, housed in a continuous row of houses, running in a semi-circle around the village.

In general, the organisation of the settlements was more collective. The construction and maintenance of large earthworks, such as ditches and embankments, required substantial manpower and resources. Within a same horizon of houses, there was a remarkable homogeneity in orientation and layout of houses, which all abided to a standard template. Although each house retained its own facilities for cooking and storage, the inhabitants were also involved in communal activities, such as bread- or ceramic-production in large outdoor ovens. Herds were perhaps kept together in the large outdoor courtyards; in any case, domesticates were never stalled inside the houses. The basic unit of the village remained the one-room family house with a large open floor plan. Although there was a tendency to scale up the size of the main room over time, this trend did not coincide with an increase or specialisation of the side chambers (§7.1.3). Two-storied buildings were more frequent and usually displayed the same basic combination of features in the ground and upper floors, suggesting that they served to accommodate two families, living one above the other under the same roof.

The dead, on the other hand, were no longer buried under active households. In fact, they were usually buried at some distance from the space of habitation, in disused sections of the village, such as the fill of abandoned structures or inter-dwelling spaces, after the settlement shifted location over time. Exceptions were made for very young children, who were sometimes buried within the village close to their parents' (?) home. The final episode of occupation consisted in coordinated destruction and abandonment of the entire village or parts thereof. Grain bins were emptied, possessions were recovered and ceramic objects such as female figurines deliberately deposited on the last floor surfaces. Fire was lit by the inhabitants themselves. The entire village was razed in this manner. Then, the cycle of habitation could start all over again in the same place.

This reconstruction of how the second habitus of practices may have operated remains conjectural. In particular, this model pays little attention to regional differences, which were important in this period. Rather than one, there may have been several habitus of practices coexisting after c. 6,500 BC cal. However all emphasised collective rather than individual or private action; or, to put it in another way, the second set of practices was developed to enhance the cohesion of the group rather than to promote specific households. People were still tied to a specific location or tell, but the system of settlement was more dynamic and flexible, allowing for relocations at intervals, either elsewhere on the mound, or in another place. The fact that settlements from this period were bound to a certain limit, which was established in advance, supports the hypothesis that sites from this period were formed by fission-fusion (Perlès 2001, 145). Part of the village split off as soon as it reached a threshold of population or the maximum number of houses.

9.3 Step by step

The aim of this section is to examine how one or both habitus of practices spread into each chronologically-defined regional entity. The Çatalhöyük East sequence of occupation, which spans both horizons of practices, is compared with sites from two regions of Western Anatolia: Southwest Anatolia, including the Lake District and the Aegean coast of Anatolia, and Northwest Anatolia, which encompasses the Eastern Marmara region. Neolithic communities in each of two regions apparently experienced the same influx of eastern practices, though at different dates and rates. Consequently, while these communities *did* similar things at any given time, they also followed independent lines of action, which are worth retracing briefly. In turn, the chronological division outlined previously compels us to compare the Lake District and Aegean coast of Anatolia with Greece (§9.3.1), and the Eastern Marmara region with Thrace (§9.3.2). A step by step approach allows us to probe the regional diversity and to produce a detailed cross-section, region after region, of the distribution of practices.

9.3.1 From Central Anatolia to the Aegean Basin

From c. 7,000 BC cal. onward, the sequence of Neolithic occupation in Southwest Anatolia mirrored with remarkable accuracy that outlined earlier for Çatalhöyük. Functionally similar sets of practices could be observed in the Lake District and the Aegean coast of Anatolia during three phases, which coincided, broadly speaking, with the three periods of occupation identified at Çatalhöyük: a) 7,000-6,500 BC cal. (Çatalhöyük East XII?-VIB); b) 6,500-6,000 BC cal. (Çatalhöyük East VIA-0); c) 6,000-5,700 BC cal. (Çatalhöyük West). The suggestion is that residential and construction practices did not diffuse on a one-off basis, alongside the initial wave of Neolithic expansion for instance, but rather as part of a multi-tiered continuum of practices extending from Central Anatolia to the Aegean Basin.

7,000?-6,500 BC cal. On account of the evidence from Aceramic Hacılar, it is not clear when exactly Neolithic occupation started in Southwest Anatolia and whether the interval 7,000-6,500 BC cal. provided a definite threshold for the uptake of Neolithic practices, as indicated by the radiometric measurements of Bademağacı, Ulucak and Çukuriçi (§9.1.2). Moreover, in view of the size of the exposures at these sites, only general comparisons could be drawn with Çatalhöyük. Some overlap in practices is noteworthy. The ‘aceramic’ phase at Hacılar was compounded of at least seven superimposed floors, reaching down 1.5 m in depth. The floors were remarkably "clean", as though they had been swept clean at 'closure' (Mellaart 1970a, 4). There is no evidence of fire-related destruction in these levels. If the buildings were horizontally truncated, this was done at significantly lower elevation than was customary at Çatalhöyük and Aşıklı: no wall exceeded the height of two bricks. It seems that neither walls nor features, such as rectangular hearths, were repeated to any significant extent from one building horizon to another. These levels yielded no burials, but four stray crania, including one lacking the mandible, apparently deposited on outdoor floors. Mellaart does not rule out that the buildings were agglutinated and entered through the roof by means of a ladder as at Çatalhöyük (Mellaart 1970a, 4).

The 'aceramic' phase at Ulucak, Level VI, conformed to the same general description. The deposit consisted of at least three superimposed floors interspersed with sterile deposits. These might be assumed to represent deliberately-introduced infill deposits. Although successive structures were not set in exact vertical alignment, grinding stones were placed time after time in the same location (Ç. Çilingiroğlu, personal communication). Each structure was cut at or near the surface of the floor, except the uppermost one in the sequence, which was sealed by a layer of collapse with finely laminated plaster surfaces. Two of the structures were provided with a rectangular hearth paved with pebbles, which was offset in a corner of the room. There is no indication at present that the dead were buried beneath the floors of the structures, as was customary at Çatalhöyük, although this may be due to the size of the excavated area. It is worth pointing out, however, that the only Neolithic burials ever encountered at Ulucak, that of a 38-week old and of a 40-week old babies, stemmed from Level VI (Ö. Çevik, personal communication). Both apparently clustered in an external space close to fire-places.

6,500-6,000 BC cal. Later Neolithic communities in Southwest Anatolia witnessed a transition in residential and construction practices analogous to that evidenced at Çatalhöyük. First of all, fire was introduced in the sequence of 'closure'-related activities. After c. 6,500 BC cal., nearly every single building level has burned at Hacılar, Bademağacı, Höyücek, Kuruçay and Ulucak (§4.3.2). Entire villages were deliberately set on fire with anomalously large concentrations of ceramic and figurine objects scattered on the last floor surfaces or in managed fills. Hence, for instance, the remarkable collection of 45 female figurines neatly distributed around the ovens of three of the houses in Hacılar VI and the consistent preservation to roof level (1.8 m in height) of the buildings in the settlement. The effort that must have gone into these collective destructions is tremendous and calls attention to a degree of communal interaction as yet unmatched in this part of Anatolia.

Succeeding inhabitants reused older mounds without acknowledging earlier plot divisions. They did not normally build one house exactly on top of the previous one (§5.3.2). As settlements shifted location over time, disused sections of the mounds, such as abandoned houses, were occasionally turned into burial grounds. Few individuals were buried in this manner. The number of inhumations in the excavated areas totalled 37 at Bademağacı, 22 at Hacılar, 7 at Kuruçay and 1 at Höyücek (Appendix C). The further west one went, the lesser the number of people buried within the confines of the village. Considering the paucity of the burial record on the Aegean coast of Anatolia and the absence of even the tiniest fragments of human bones at Ulucak, from Level V onward, there is ground to suppose a self-conscious avoidance of the dead, who were spatially segregated from the living.

Houses were often built in a single phase of construction according to a pre-established plan, hence the provision of party walls between adjoining structures, which shared mutual access to internal yards (§8.2.2). Some of these compounds at Hacılar II, Kuruçay 11 and Ege Gübre were enclosed in a stone or mudbrick wall, provided with gateways and projecting towers. In Hacılar II, the outside wall was constructed prior to the insertion of the buildings. As at Çatalhöyük, the basic unit of the village remained, however, the single-roomed rectangular house, in which the oven, set in line with, and opposite the main doorway in the middle of the long wall, provided a focal point. This template was evidenced at Hacılar VI, Höyücek ShP and Bademağacı EN 3 in the Lake District, and occurred perhaps as late as Ulucak IVb in Central-West Anatolia.

6,000-5,700 BC cal. Parallel to the transition from Çatalhöyük East to West, sites in the Lake District and on the Aegean coast of Anatolia experienced further changes in practices after c. 6,000 BC cal. (Çilingiroğlu 2009a, 29-30). One of the most dramatic changes in this regard was the construction of the so-called "fortress" in Hacılar I, which involved a radical truncation in vertical direction of the sides of the mound. Although this act may have held symbolic significance, perhaps to encircle the earlier tell, it was curious in regard of earlier practices at the site, which rarely involved cutting or disturbing older building levels (§5.3.2). The 'fortress' consisted of a circuit of tightly agglutinated rooms, each supported by four internal projecting buttresses, entered through the roof or via an upper storey. Typologically similar buttressed houses were discovered at Kuruçay 7, resembling, albeit in general sense, contemporary structures at Can Hasan I and Çatalhöyük West in the Konya Plain. As in Central Anatolia, the tight clustering of the buildings in a cellular pattern marked an apparent reversal to the old standard of construction and access evidenced at Aşıklı and Çatalhöyük East (Düring 2006).

Diffusion into Greece? A general assessment of the range of residential and construction practices evidenced in Early and Middle Neolithic Greece highlights both strong similarities and differences with Southwest Anatolia. The remarkable succession of site-wide fire-destructions, at sites such as Sesklo, Tsangli and Elateia in Thessaly, or Servia in Central Macedonia, which in several instances did not cause a hiatus or break in occupation, may alert us to a wider adoption of the practice of intentionally burning houses at the end of their use-lives, particularly in the Middle Neolithic period (§4.3.3). In earlier sites, such as Nea Nikomedeia and Knossos IX, individual houses were repeatedly set on fire. Contrarily to the pattern observed in Çatalhöyük (Hodder and Pels 2011, 169), these fires did not end the sequence of vertical repetition of houses.

From the Early Neolithic horizon onwards, houses were consistently rebuilt on the same building plots in Greece, often by taking advantage of the stability of earlier walls, which were thereafter buried under subsequent wall sections (§5.2.4). The continuation of the practice of vertically superimposing houses in Thessaly well into the Middle Neolithic period, after c. 5,800 BC cal., is surprising, considering that Western Anatolian communities had already surrendered this practice at the time. The discrepancy between the two sides of the Aegean Basin may be explained by either an earlier neolithisation of Thessaly than currently assumed on the basis of radiometric data, before c. 6,500 BC cal., or by bypass of Western Anatolia, as suggested by Catherine Perlès (2001). With regard to the formal disposal of the dead, there was more overlap in practice between Thessaly and the Aegean coast of Anatolia, where the dead were rarely brought into the settlement. Primary inhumation in contracted position in a small rounded pit was evidenced on both sides of the Aegean Sea (§6.2.4).

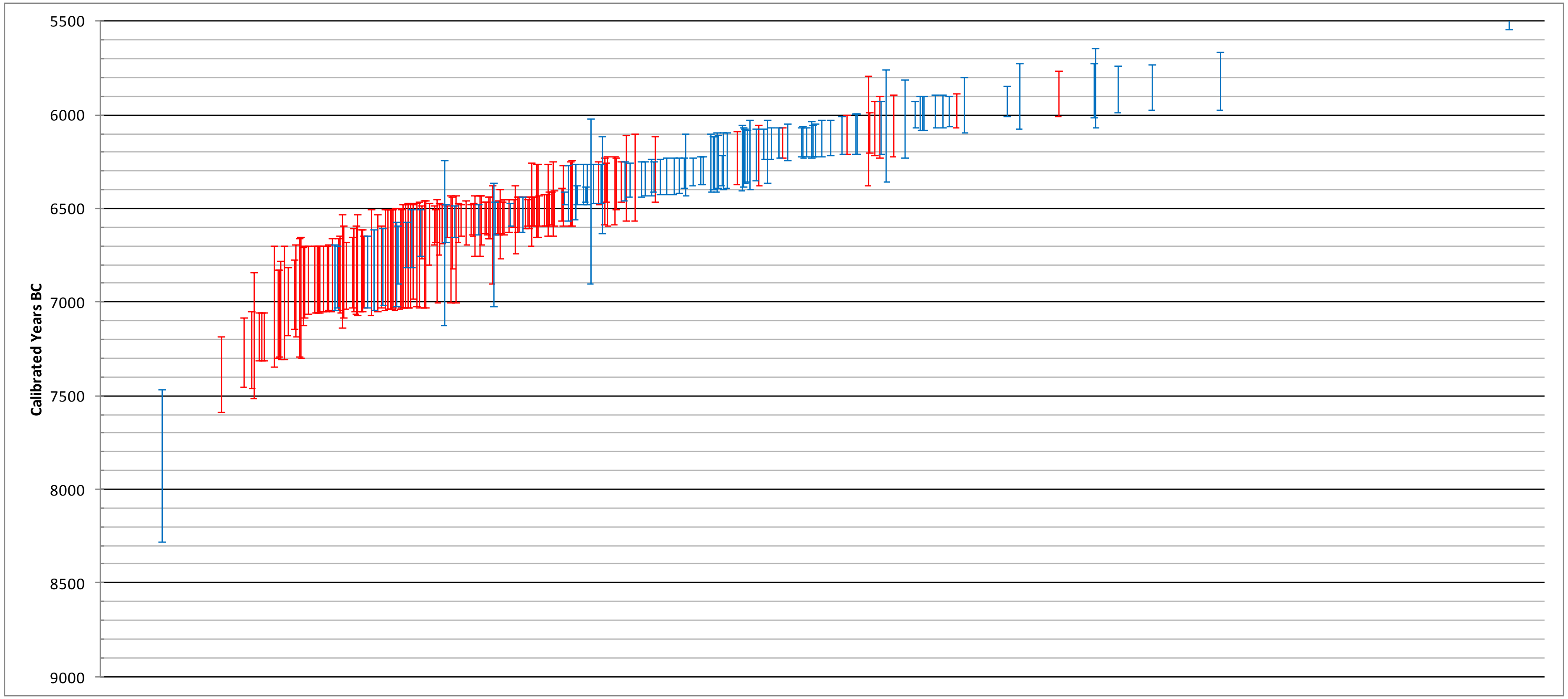

Figure 29. [14]C Backbone distribution of 230 calibrated radiocarbon intervals, at 2 standard deviations (95.4% probability), from Çatalhöyük East (red) and 9 Southwest Anatolian sites (blue): Bademağacı, Çukuriçi, Ege Gübre, Hacılar, Höyücek, Karain B, Kuruçay, Ulucak and Yeşilova, during the interval 9,000-5,500 BC cal. The dates were re-calibrated using the IntCal09 atmospheric curve (Reimer *et al*. 2009) in OxCal 4.2 (Bronk Ramsey 2013). The intervals are ranked in chronological order from the oldest to the youngest date BP.

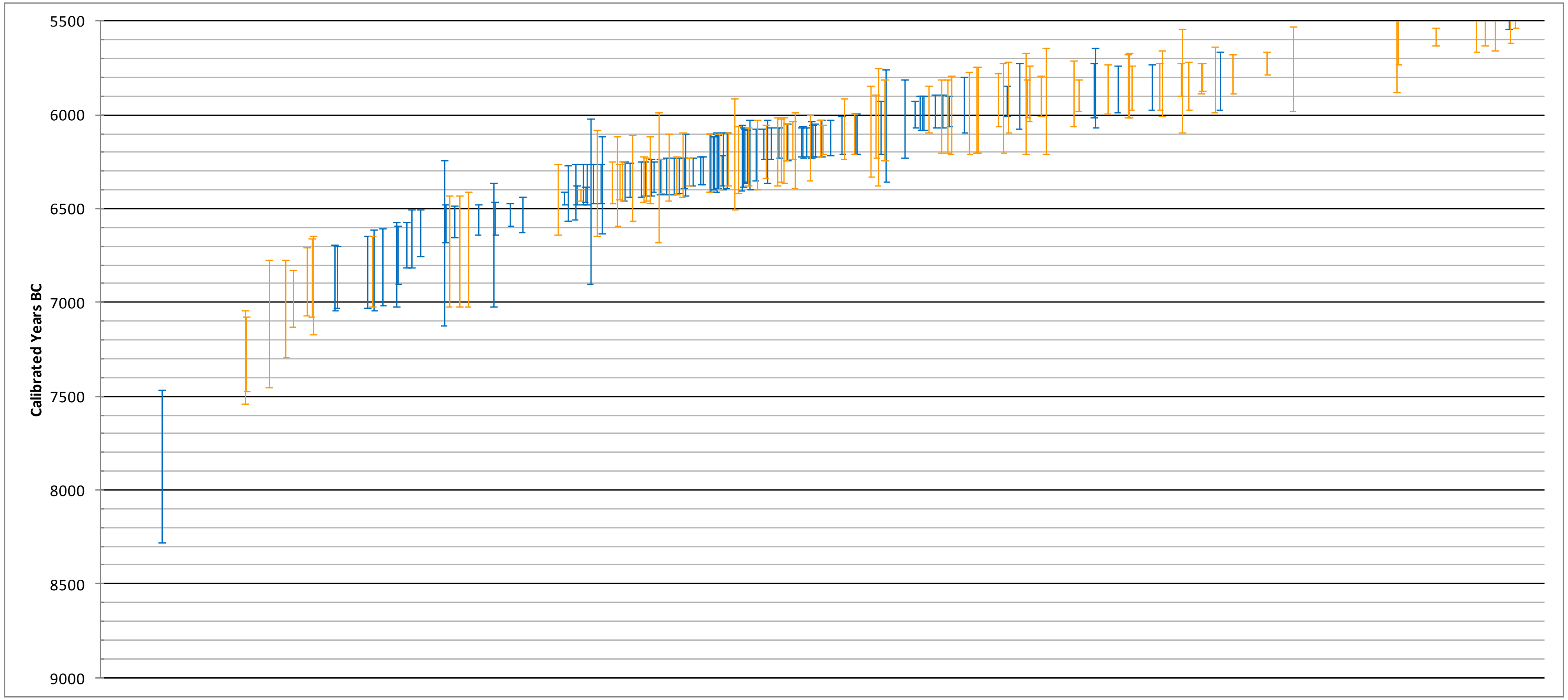

Figure 30. [14]C Backbone distribution of 188 calibrated radiocarbon intervals, at 2 standard deviations (95.4% probability), from 9 Southwest Anatolian sites (blue) and 7 Thessalian sites (orange): Achilleion, Argissa, Elateia, Otzaki, Platia Magoula Zarkou, Sesklo and Theopetra Cave, during the interval 9,000-5,500 BC cal. The dates were re-calibrated using the IntCal09 atmospheric curve (Reimer *et al*. 2009) in OxCal 4.2 (Bronk Ramsey 2013). The intervals are ranked in chronological order from the oldest to the youngest date BP.

9.3.2 From Central Anatolia to Thrace

The sequence of Neolithic development in the Eastern Marmara region, Northwest Anatolia, appears more disjointed, due to: a) the marked regional contrast between 'inland' and 'coastal' sites in the earlier phase of occupation, which shared a similar material culture referred to as Fikirtepe (c. 6,400-5,800 BC cal.); and, b) a sweeping change or replacement of residential and construction practices after c. 5,800 BC cal.

6,600/6,400-5,800 BC cal. The earlier occupation of the Eastern Marmara region was characterised in inland areas, close to the Iznik Lake and Yenişehir, by a rigid adherence to a system of building plots, which were constructed upon up to eight times in a row at Ilıpınar X-IX and Menteşe, without the sort of repetition of walls and features characterising Aceramic occupation on the Central Anatolian plateau (Roodenberg *et al*. 2003, 21). Houses were not regularly set on fire at the end of their use-lives, although each of three sites, Menteşe, Barcın and Ilıpınar X, yielded one burnt house, which was afforded special treatment. Other buildings were left to collapse by themselves or were deliberately pulled apart at the end of their use-lives. This reinforces the impression that buildings were individually repeated, according to the needs and wishes of each household (§4.3.3).

Houses were freestanding and built at a distance from each other. An unbuilt space in between houses in Ilıpınar was used as a collective burial ground for 48 individuals, including a majority of juveniles and adult females (Appendix C). Two burials at the earlier site of Menteşe occurred beneath house floors, although it is unclear if the houses were in use when the burials took place. The retention of dead bodies within or in close proximity to houses may suggest the persistence of a continuity-related habitus of domestic practices in this region well after the c. 6,500 BC cal. mark (§6.1.3). Regardless of differences in the choice of building materials, mud-coated posts and mud-slabs as opposed to mudbricks in Central Anatolia, one observed that 'inland' Fikirtepe sites generally conformed to the 'Anatolian' template of the one-room rectangular house with an open floor plan and a standard set of domestic features and facilities integrated in the fabric of the building. The oven occupied one corner of the room and was set at exact opposite of the grain bins.

The pattern of habitation on the coast of the Sea of Marmara was very different and demonstrated the existence of another habitus of residential and construction practices, unrelated, or only remotely related, to that which was prevalent elsewhere in Anatolia at that time. In contrast with ‘inland’ Fikirtepe sites, which were 4 to 10 m-high tells, ‘coastal’ Fikirtepe sites were flat, due to an absence of vertical stratification. New buildings were either constructed at some distance from the previous ones or in a new location. Despite its inland situation, Aktopraklık C probably belonged to the latter cultural horizon. At Fikirtepe, a layer of fire-related destruction apparently sealed the latest occupation deposits (Bittel 1971). Houses in the ‘coastal’ Fikirtepe horizon were circular in shape and semi-sunken in the ground. These houses or ‘huts’ were flimsy in comparison to more substantial houses in ‘inland’ Northwest Anatolia. The dead, adults and children alike, were buried in contracted position beneath the floors of the structures; at present, the context of deposition of the bodies remains unclear (§6.1.3). Cremation-burials at three of the sites from this region highlighted a tradition alien to the Neolithic horizon in Anatolia. The case for a continuation of ‘Mesolithic’ practices, alongside and in conjunction with ‘Neolithic’ practices, is compelling, but difficult to establish with certainty in the absence of comparative information about Mesolithic occupation in this region.

5,800-5,500 BC cal. After c. 5,800 BC cal., both ‘inland’ and ‘coastal’ Fikirtepe sites experienced a major overhaul of practices. The adoption of standard mudbrick architecture at Ilıpınar, Level VI, and Aktopraklık B, coincided with the foundation of arcs or crescents of houses (§8.3.1). The introduction of row houses at Ilıpınar was as disruptive as the shift to rectangular architecture in Aktopraklık. One observed, for instance, that houses in Ilıpınar VI were no longer built with reference to a system of fixed building plots. Instead, the ground of the village was reappropriated by the entire community, which exercised a degree of control over the size and location of individual structures. Buildings played a specific role in the life of the settlement. In the absence of a wall in the strict sense, the outer row of buildings, which curved around the centre of the settlement, provided a more or less unbroken wall and a boundary with the exterior world. Each row of houses was horizontally offset vis-à-vis the previous one. Henceforth there was little spatial overlap from one building horizon to the next.

The construction and maintenance of substantial earthworks, such as a raised embankment in Ilıpınar VI and a ring-fenced ditch in Aktopraklık B, emphasised a shift from household-based to collective action. The enclosed area at the centre of the village consisted of additional rows of houses and large open courtyards, which were used for communal activities, such as bread- or ceramic-production in large ovens and animal penning. Ilıpınar VI has provided unambiguous evidence of controlled fire-destruction affecting an entire row of houses. Mudbricks were baked red and vitrified under the effect of the fire, which was consistently over a 1000°C – suggesting a continuous input of fuel and multiple ignition points (Claasz Coockson 2010, 153; see also Stevanović 1997, 365-374). Houses were not in a state to live in when they were abandoned.

Another contrast with the earlier phase of occupation in the Eastern Marmara region was the treatment of the deceased, who were formally buried outside the village, in the fill of the ditch, or some distance away in a collective burial ground, as for instance in Aktopraklık C. Those people who were buried in the centre of the semi-circular row of houses, such as the 17 individuals found in Aktopraklık B, displayed unusual burial positions, such as kneeling or sitting positions, with the head turned upwards (N. Karul, personal communication). Primary inhumation in a flexed position was the norm elsewhere on the site, but uneven and occasionally rich assemblages of grave goods, including stone, clay and bone objects, called attention to embryonic forms of status and gender differentiations expressed through burial (§6.2.3).

Diffusion into Thrace. Although arcs or crescents of houses have as yet no equivalent elsewhere in Anatolia, the peculiar way of agglutinating houses as though each was 'freestanding', as well as the use of mudbrick and projecting buttresses, point to a common origin in Anatolia (§8.3.2). Remarkably, one could trace this form of settlement and associated residential and construction practices into inland Thrace and the Balkans. The settlement of Aşağı Pınar 6 near Kırklarelı, on the current border with Bulgaria, yielded another semi-circular row of 'boundary' houses, similar in form and arrangement to that recorded at Ilıpınar. Like Ilıpınar VI, Aşağı Pınar 6 perished in a huge conflagration, whose deliberate origin is warranted by the seemingly homogeneous fire spread, which was not consistent with wind-blown burning (Özdoğan E. 2011, 220). In this case, houses were interlocked through party walls. The construction of the village, like its abandonment, involved a concerted effort by all or sections of the community. There were no burials in the excavated area (Schwarzberg, personal communication).

Moving further north in the Upper Thracian Plain and the Sofia Basin, one observed that idiosyncratic sites such as Karanovo, Azmak and Stara Zagora-Okruzhna Bolnitsa frequently displayed rows of burnt houses, substantially aligned along the same direction. At present, it is not clear if these were part of larger circuits of houses enclosing the sites. Like Aşağı Pınar, these sites displayed a marked tendency for horizontally drifting house reconstruction (Tringham 1991, 120). Within a same horizon of houses, buildings were broadly similar in shape and conformed to a standard model, typified by the 'big house' at Sofia-Slatina, whose layout and furnishing recalled, albeit in a general sense, that observed at Hacılar and other Western Anatolian sites (§7.3.3).

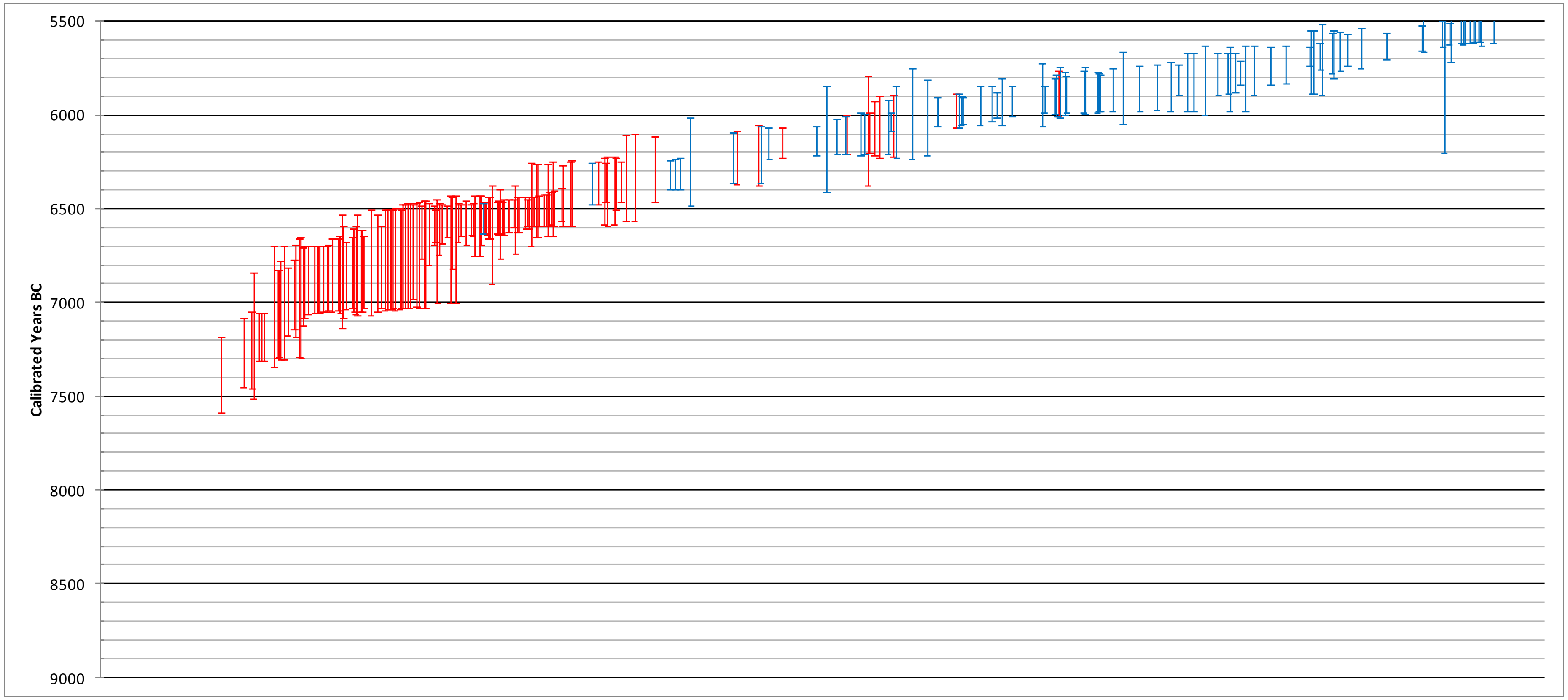

Figure 31. [14]C Backbone distribution of 222 calibrated radiocarbon intervals, at 2 standard deviations (95.4% probability), from Çatalhöyük East (red) and 5 Northwest Anatolian sites (blue): Aktopraklık, Barcın, Ilıpınar, Menteşe and Yarimburgaz Cave, during the interval 9,000-5,500 BC cal. The dates were re-calibrated using the IntCal09 atmospheric curve (Reimer *et al*. 2009) in OxCal 4.2 (Bronk Ramsey 2013). The intervals are ranked in chronological order from the oldest to the youngest date BP.

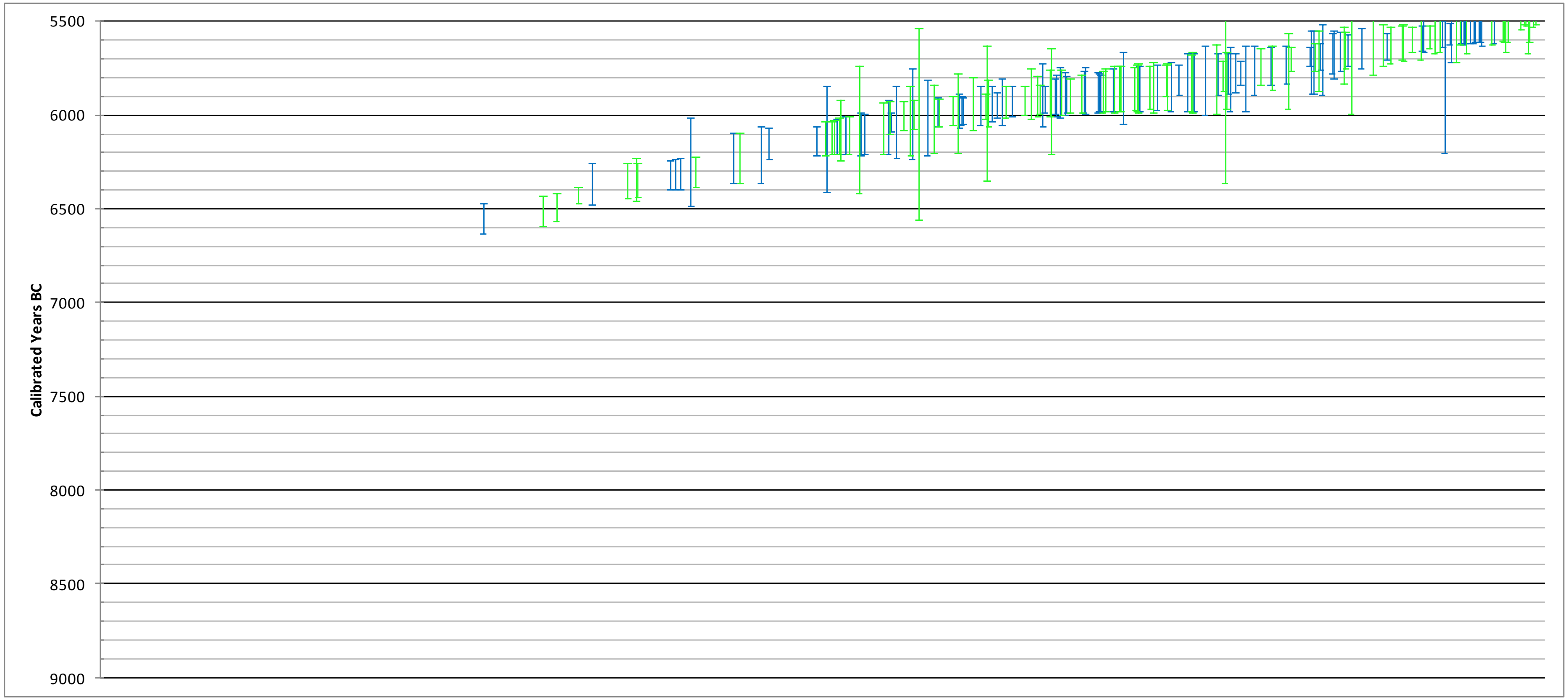

Figure 32. ^{14}C Backbone distribution of 178 calibrated radiocarbon intervals, at 2 standard deviations (95.4% probability), from 5 Northwest Anatolian sites (blue) and 9 North Aegean and West Bulgarian sites (green): Dikili Tash, Dobrinište, Elešnica, Gălăbnik, Hoca Çeşme, Kovačevo, Kremenik, Makri, Uğurlu, during the interval 9,000-5,500 BC cal. The dates were re-calibrated using the IntCal09 atmospheric curve (Reimer *et al.* 2009) in OxCal 4.2 (Bronk Ramsey 2013). The intervals are ranked in chronological order from the oldest to the youngest date BP.

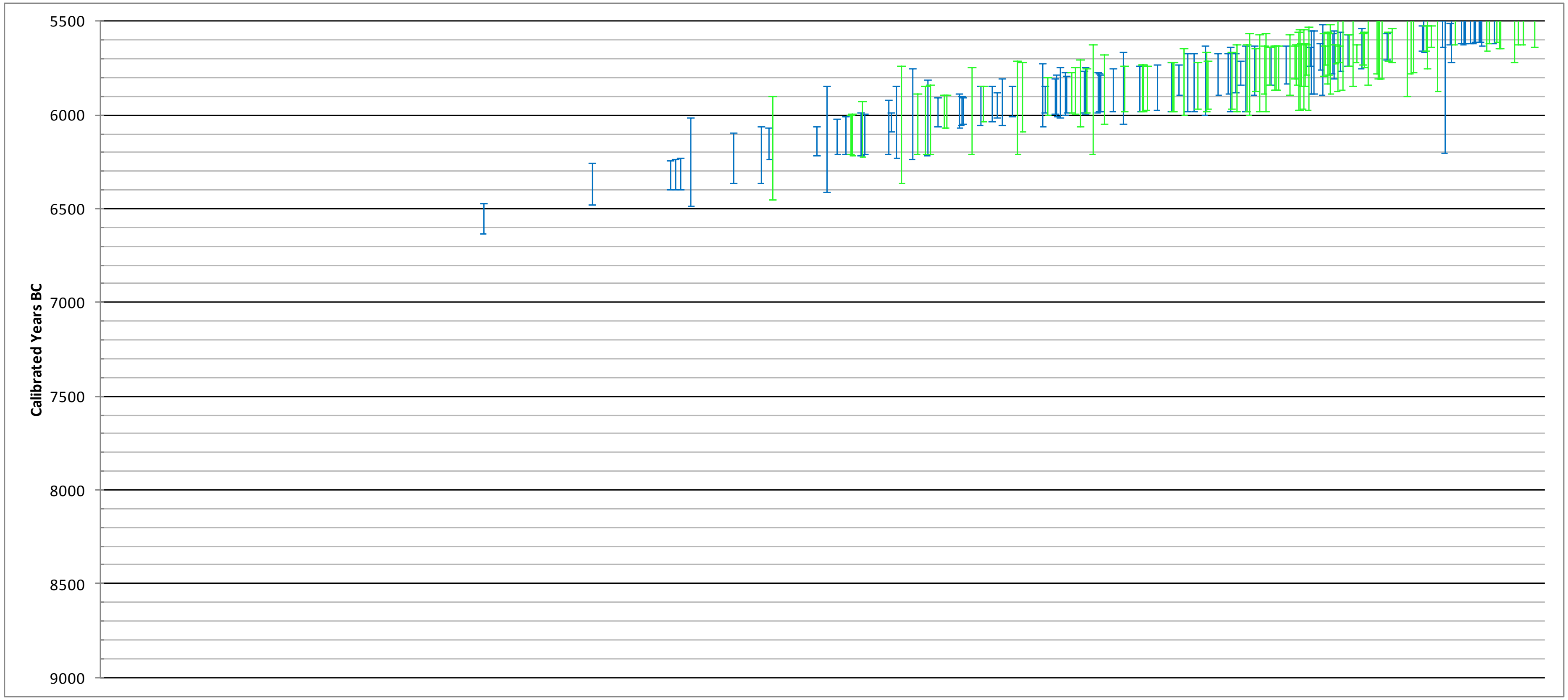

Figure 33. [14]C Backbone distribution of 180 calibrated radiocarbon intervals, at 2 standard deviations (95.4% probability), from 5 Northwest Anatolian sites (blue) and 7 Upper Thracian and Sofia Plain sites (green): Aşağı Pınar, Azmak, Čavdar, Karanovo, Sofia-Slatina, Stara Zagora – Okražna Bolnica, during the interval 9,000-5,500 BC cal. The dates were re-calibrated using the IntCal09 atmospheric curve (Reimer *et al*. 2009) in OxCal 4.2 (Bronk Ramsey 2013). The intervals are ranked in chronological order from the oldest to the youngest date BP.

9.4 Implications of the work for other aspects of the Neolithic

The onset of the Neolithic in Europe, after c. 6,500 BC cal., brought widespread changes in the way people acted, not only on a day-to-day basis, to deal with the conditions of existence, but also cumulatively, to build something as stable as a household, a village or a tell. Unlike plants, animals and material components of the Neolithic 'package', which were transported to and transplanted in a foreign environment, houses, villages and tells were constructed locally by people who were familiar with the practices of settled farmers in Southwest Asia, suggesting that they were either one and the same or sufficiently well acquainted for such a diffusion to occur (Chapman 1997). In this case, new material forms, such as rectangular houses, were generated through the adoption of foreign practices. The opposite is true only to the extent that the introduction of exchanged goods, for instance an exogenous crop 'package', initiated new dependencies between humans and their environment; but this fact alone bears no relation to why different communities chose to live in similarly-built environments or to bury their dead in the same position. In sum, the passing of practices as a mental template implies almost mechanically that people were moving alongside their domesticates. Some were perhaps specialist craftsmen, hence the regularities in construction, but the bulk were ordinary farmers, who reproduced the environment that they were brought up in, only in a different setting (Özdoğan 2002).

The question arises as to why the two millennia long standoff between communities in Central and Western Anatolia eventually ended, with the success described above, that is, an explosion of sites after c. 6,500 BC cal. in Western Anatolia and Southeast Europe. Without speculating on the possible trigger, or triggers, for the push of Neolithic economies, it is worth noting that the shift happened at a time when a fully-formed Neolithic 'package' was available, which included both plant and animal resources, various stone, clay and bone implements, and (in its latest format) pottery. The existence of a more or less complete 'package', while not a trigger *per se*, made spatial re-location possible, inasfar as it removed the reliance on local resources by creating an artificial ecosystem in which food was produced for the first time (Watkins 2010, 624). Houses were an important part of this ecosystem; however, as suggested above, they were unlike other elements of the Neolithic ‘package’, in that they were not portable and had to be re-invented locally. Another difference concerns the way in which these elements were assimilated. Chapter 1 opposed a ‘developmental’ Neolithic in Central Anatolia, in which constituent components of the Neolithic ‘package’ emerged one after the other over a period of 2,000 years, to a fully-fledged, albeit later, Neolithic in Western Anatolia. The assumption was that one process had led to the other, and that it was the same ‘package’ that was passed on from one region to the other. Residential and construction practices highlighted a different pattern, in which new practices arose at the turn of the mid- to late-7th millennium BC cal. – revolutionising both Central and Western Anatolian communities.

This may be taken to suggest that Central Anatolia was but a stepping-stone on the way to Europe and that the first farmers came from further away in the Near East. In this model, 6,500 BC cal. coincided with a broad horizon of change, felt across the whole of the Anatolian Peninsula, up to Europe. This idea is propped up by an interesting detail regarding the economy of the first farmers in Western Anatolia. While domestic pigs were present from the start of the sequence at Mersin-Yumuktepe and on the Aegean coast of Turkey, recent studies have found that they were never adopted on the Central Anatolian plateau, and that they arrived late in the Eastern Marmara region (Arbuckle 2013; Çakırlar 2013). There is no assumption that a new wave of farmers, practising four-tiered husbandry, bypassed the Central Anatolian Plateau, though a direct sea-route from Cilicia cannot be excluded, but the difference in the distribution of pigs challenges the role of Central Anatolia (Çatalhöyük) as an ‘ancestor’ region for European farmers. There is a risk in equating people with their economy and material productions. The repeated occurrence, and equally puzzling absence, of iconic plant and animal species in Neolithic assemblages from the study region (Table 12) may either suggest a variety of routes and processes of diffusion, or the existence of a standard ‘package’, from which communities drew in different manners (see Thomas 2003). The absence of domestic pigs in a region where boars were traditionally hunted (e.g. at Boncuklu) hints at cultural differences and taboos.

A similar pattern has been observed in the material culture, where objects traditionally associated with the Neolithic 'package', including the steatopygeous figurines, the pintaderas, the ear studs, the polypod vessels, the sling missiles and the bone spoons (to name but a few), have been described as both remarkably widespread and varied in distribution, with marked regional contrasts (Perlès 2005; Özdoğan 2011). This diversity has been explained in Greece by the "amalgamation" of people from different origins, some coming from as far as the Levant (Perlès 2005). Likewise, in Anatolia, Mehmet Özdoğan has drawn attention to the existence of two or more Neolithic 'packages', associated with distinct migrations (Figure 34). Yet, regardless of where the settlers came from, there can be no doubt that Neolithic communities from the Near East to the Balkans were familiar with the entire repertoire of forms, which they saw in other contexts, while exchanging, for instance, obsidian. This example highlights the sort of 'pick-and-choose' approach, which appears to have characterised the Neolithic 'package'. Significantly, the distribution of residential and construction practices did not follow the regional boundaries set by material culture. For instance, in the Eastern Marmara region, where Neolithic communities shared the same material culture and substantial economic links (Çakırlar 2013), houses were markedly different, both in form and in use, on the coast and in the hinterland, suggesting the co-existence of two communities living side by side, one indigenous to the area, the other made up of Neolithic farmers from the Anatolian Plateau.

Package 1:	Package 2:
- *Dark-faced Burnished Ware*	- *Red-slipped Burnished Ware*
- *Wattle-and-daub*	- *Mudbrick*
- *Few figurines*	- *Alluvial plain*
- *Pressure-flaking technology*	- *Steatopygious figurines*
- *Large blades*	- *Sling missiles*
- *Arrow points*	- *Pintaderas*
- *Bone hooks/spoons*	- *Ear studs*
- *Celts*	

Figure 34. Contents of two cultural 'packages' (adapted from Özdoğan 2005; 2006a).

	Crop Plants	Einkorn wheat (*T. monococcum*)	Emmer wheat (*T. dicoccum*)	Free-threshing wheat (*T. aestivum* /*T. durum*)	Hulled barley (*H. vulgare* /*H. distichum*)	naked barley (*H. vulgare* var. *nudum*)	Pulses	Lentil (*L. culinaris*)	Bitter vetch (*V. ervilia*)	Pea (*P. sativum*)	Chickpea (*C. arietinum*)	Grasspea (*L. sativus* /*L. cicera*)	Animals	Sheep (*O. aries*)	Goat (*C. hircus*)	Cattle (*B. taurus*)	pig (*S. domestica*)
Cilicia																	
Mersin-Yumuktepe		x	x	x	x	x		x	x	x		x		x	x	x	x
Cappadocia																	
Aşıklı Höyük		x	x	x	?	x		x	x	?	?			?	?		
Köşk Höyük								x		x				x	x	x	
Musular			x	x		x		x			x			?	?		
Konya Plain																	
Boncuklu Höyük		?	x	x	x												
Can Hasan I			x	x	x	x				x				x	x	?	
Can Hasan III		x	x	x	x	x		x	x					?	?	?	
Çatalhöyük East		x	x	x	x	x		x	x	x	x	?		x	x	x	
Çatalhöyük West		x	x	x	x	x		x		x				x	x	x	
Erbaba		x	x	x	x	x		x	x	x	x	?		x	x	?	
Suberde		-------------------------						---------------------------						x	x		
Lake District																	
Bademağacı		-------------------------						---------------------------						x	x	x	x
Hacılar		x	x	x	x	x		x	x	?				?	?		
Höyücek			x	x	x	x		x	x	x	x	?		x	x	x	x
Kuruçay		x	x	x	x			x		x	x	x		?	?	?	
Aegean Turkey																	
Çukuriçi Höyük		-------------------------						---------------------------						x	x	x	x
Ulucak Höyük		x	x	x	x			x	x	x				x	x	x	x
Eastern Marmara																	
Ilıpınar		x	x	?	x	x		x	x	x	x	x		x	x	x	x
Istanbul-Yenikapı		-------------------------						---------------------------						x	x	x	x
Menteşe Höyük		-------------------------						---------------------------						x	x	x	?
Crete																	
Knossos		x	x	x	x	x		x		?				x	x	x	x
Thessaly																	
Achilleion		x	x		x			x						x	x	x	?
Argissa		x	x		x			x	x	x				x	x	x	x
Gediki		x	x		x	x		x	x					---------------------			
Otzaki Magoula		x	x	x	x			x	x	x	x			x	x	x	x
Prodromos		x	x		x			x		x		x		x	x	x	x
Sesklo		x	x	x	x			x	x	x				x	x	x	x
Soufli Magoula		x	x		x			x		x				---------------------			
Peloponnese																	
Franchthi		x	x					x	x					x	x	x	x
Lerna		-------------------------						---------------------------						x	x	x	x
Greek Macedonia																	
Giannitsa B		x	x	x				x						---------------------			
Nea Nikomedeia		x	x		x	x		x	x	x				x	x	x	x
Servia				x										x	x	x	x
Thracian Plain and Sofia Basin																	
Azmak		x	x	x	x	x		x		x		x		---------------------			
Čavdar		x	x	x				x		x				x	x	x	
Kapitan Dimitrijevo		x	x	x	x	x		x	x	x	x	x		x	x	x	x
Karanovo		x	x	x	x			x	x	x		x		x	x	x	x
Rakitovo		x	x	?	x	x								x	x	x	x
Sofia-Slatina		x	x	x				x	x	x		x		x	x	x	x
Stara Zagora OB		x	x			x								---------------------			
Struma and Mesta Valleys																	
Bălgarčevo		x	x		x			x	x	x	x			---------------------			
Elešnica		x	x	x	x	x		x	x	x		x		x	x	x	x
Gălăbnik		x	x	x				x		x	x	x		---------------------			
Kovačevo		x	x	x	x	x		x		x	x	x		x	x	x	x
Kremenik		x	x			x								x	x	x	x

Table 12. Presence of the major cereal, pulse and animal domesticates in selected Neolithic assemblages of Anatolia and Southeast Europe. Table based on: Helbaek 1964; 1970; Renfrew 1968; 1969; Hansen 1988; French et al. 1972; Hillman 1978; Van Zeist and de Roller 1995; Buitenhuis and Caneva 1998; Perlès 2001; Asouti and Fairbairn 2002; Fairbairn et al. 2002; Duru and De Cupere 2003; Martinoli and Nesbit 2003; Buitenhuis 2004; 2008; Russell and Martin 2005; Benecke 2006; Marinova 2006; Arbuckle 2008a; 2008b; 2013; Cappers 2008; De Cupere et al. 2008; Gourichon and Helmer 2008; Marinova and Popova 2008; Arbuckle et al. 2009; Bogaard and Charles 2010; Orton 2010; Galik and Horejs 2011; Baird et al. 2012; Çilingiroğlu et al. 2012; Çakırlar 2013; Pérez Ripoll 2013; Peters et al. 2013; Sarpaki 2013; Fiorentino et al. 2014.

The main findings of this chapter may be summarised as follows:

- The two-thousand year lag identified in Chapter 1 between the advent of Neolithic economies in Central and Western Anatolia highlighted the existence of a moving frontier between 'Southwest Asian' and 'European' Neolithic societies. The Western Anatolian Neolithic, which was dated to no earlier than c. 7,000 BC cal. at 2σ, probably belonged to the latter chronological horizon (§9.1.1).

- We currently lack knowledge regarding the reasons for why the westward spread of the Neolithic was "bottlenecked" on the Central Anatolian Plateau (Schoop 2005a, 53). Due to its emphasis on being rooted in one place, the older habitus of domestic practices evidenced at Çatalhöyük East was too unwieldy to diffuse and too specific to be replicated (§9.2.1).

- The remarkable explosion of Neolithic sites in Western Anatolia and Southeast Europe after c. 6,500 BC cal. may be explained by the spread of a second habitus of practices, far more entrepreneurial in nature, involving the action of a corporate group of households coordinating construction, defence, abandonment, and so forth. of an entire settlement or sections thereof (§9.2.2).

- A step by step review of the distribution of residential and construction practices from Anatolia to Europe suggested that practices diffused in successive horizons of interaction, both alongside the first farming communities and later on, within networks of moderately similar sites (§9.3).

- As a rule of thumb, the Southwest Anatolian Neolithic was more in keeping with the Central Anatolian model, with parallel developments in habitation patterns during the interval c. 6,500-5,700 BC cal., while the Northwest Anatolian Neolithic initially displayed more internal diversity, between inland and coastal sites, and more radical transformations after c. 5,800 BC cal. (§9.3).

Conclusion

The question raised at the outset of this thesis was, ‘how did Neolithic farming spread to Europe, from its origins in the Near East?’ Owing to its generic nature, this question has traditionally invited a variety of approaches and interpretations (Chapter 2). I have argued that this question cannot be answered conclusively without an understanding of precisely what has spread, because different contents entailed different mechanisms of spread (Chapter 1). Although Vere Gordon Childe’s agricultural ‘revolution’ still provides an appealing and widely accepted framework for understanding the Neolithic (Zeder 2009), it is far from certain that agriculture itself provided a sufficient impetus for the Neolithic to spread, as it did, across most of Eurasia – given the intensity of early crop and animal husbandry practices, which involved a strong commitment to place and a significant lack of residential mobility (Halstead 1987; 1996a; 1996b; Halstead and Isaakidou 2013, 133; Bogaard 2004a; 2004b; Fairbairn 2005, 198). This contradiction to some extent underlies that which is central to our discipline; the grand sweep of the Neolithic ‘revolution’ took place despite ever-more sedentary patterns of existence (Cauvin 1994, 211-213).

The contribution of this thesis has been to suggest that the spread of farming involved diffusion of, not only farming, but also residential and construction practices, in line with the adoption of sedentism. Practices were defined in Chapter 3, by reference to the theories of social action, as normative acts or ways of doing. As such, practices are immaterial – inferred rather than instantiated from distinct material patterning left in the record – and may not be added to the existing ‘package’ or ‘packages’ of Neolithic innovations that spread into Europe, in the way that more neutral categories can, such as, for instance, plant and animal domesticates or artefacts (e.g. Colledge *et al.* 2004; Coward *et al.* 2008; Conolly *et al.* 2012; Fuller *et al.* 2012; Çilingiroğlu 2005; Özdoğan M. 2006a; 2007a; 2007b; 2008; 2010a; 2011a). On the other hand, Chapter 9 has argued that practices also spread together as an integrated whole, which has been referred to as a habitus of practices. The successful spread of the Neolithic across Europe may be attributable to its particular structure, as a network of functionally-related traits, where none could exist separately. The Neolithic, as it has been conceptualised in this thesis, fits the description advanced by Trevor Watkins of a “portable and artificial ecosystem”, which included both the material resources themselves and the practices through which they were produced and maintained, perhaps at the expense of the resources and practices available locally (reply by Watkins in Kabo *et al.* 1985, 613; Watkins 2010, 624; Coward *et al.* 2008, 55).

This thesis has been able to identify two sets of Neolithic practices: those which diffused and those which did not, at least not as a coherent body of social practices. The contextual analysis of residential and construction practices undertaken in Chapters 5-8 and the groupings of practices proposed in Chapter 9 highlighted that Aceramic and Early Pottery Neolithic practices associated with the house, occurring for instance at Aşıklı and in the main sequence of Çatalhöyük East, Levels XII-VIB, did not diffuse into Europe. Hence the absence, or limited distribution, of 9th to 7th millennia BC cal. practices – such as deliberate infilling of houses at ‘closure’, vertical superimposition of houses, burial beneath the floors of active households, division of the main room into two distinct flooring areas and agglutination of houses in cellular house patterns – in Western Anatolia, Greece and the Balkans. I provided two reasons to account for this regional discrepancy in practices: one was the two-thousand year lag between the uptake of Neolithic economies in Central and Western Anatolia, which implied that the westward spread of Neolithic economies into Europe did not start until the first set of practices went out of use. The other was the nature of the older habitus itself which, by its emphasis on being rooted in one place, did not lend itself to diffusion. The argument could be raised that the habitus of building continuity evidenced at Aşıklı and in the main sequence of Çatalhöyük East was a major obstacle to the westward spread of the Neolithic ‘revolution’ (Asouti 2006, 109-110). It was not until this obstacle was removed – i.e. when the older habitus of domestic practices went out of use – that farming spread into Europe.

Çatalhöyük served as a backdrop for the emergence of a new set of residential and construction practices after c. 6,500 BC cal. This is borne out by subtle changes in the pattern of habitation in the upper part of the sequence which, taken collectively, marked the threshold of a major transition observable at both this and other sites in the region. I have argued that house plans and house use patterns underwent a series of changes in Central Anatolia and in the Northern Levant and that the form in existence there, c. 6,500 BC cal., is that which diffused with agriculture to Greece and the Balkans. The changes in question included, from Level VIA onwards at Çatalhöyük, the insertion of fire in the sequence of 'closure'-related activities, desertion of sections of the site and horizontal shifts in the location of the buildings, reorganisation of the site into smaller building compounds centred on large communal yards, burial away from active households in inter-dwelling spaces and separate 'charnel rooms' and relocation of the hearth to the centre of the main room. The traditional view of Çatalhöyük as a static society lagging behind the pace of change in Anatolia can no longer be sustained in regard of the aforementioned transformations. On the contrary, the example of the adoption of the practice of deliberate house-burning at Çatalhöyük demonstrated that the changes in evidence there actually foreshadowed similar trends of cultural development in Southwest Anatolia in the second half of the 7^{th} millennium BC cal.

Insofar as it may be possible to refer to the changes after c. 6,500 BC cal. as a coherent habitus of practices, I observed that it was different from the one outlined before in that the focus was on collective or multiple households' action rather than individual household's action. Instead of promoting specific households, the new practices safeguarded the cohesion of a small group of households, who coordinated the construction, use and destruction of a neighbourhood or village. Hence for instance the concerted destruction by fire of entire blocks of houses and the contiguous interlocking of buildings through party walls in late 7^{th} and early 6^{th} millennia BC cal. sites. The new habitus of practices was also more dynamic and flexible, allowing for occasional shifts in human habitation. It was evidently more 'portable' than the model of repeated or continuous household evidenced in the main sequence of Çatalhöyük East, Levels XII-VIB. I am inclined to suggest that the shift from individual household to multiple households action identified in this thesis was decisive in reconciling permanent settlement in one place and the spread of Neolithic communities, since greater levels of social control and conformity went hand in hand with a reduction in size and scope of a community's membership, as evidenced by the creation of fixed settlement boundaries in the Late Neolithic and Early Chalcolithic periods in Western Anatolia.

The adoption of the new set of residential and construction practices was not strictly synchronous across Western Anatolia and Southeast Europe. While Neolithic communities in Central and Southwest Anatolia were involved in analogous or closely related practices at any given time during the interval c. 6,500-5,700 BC cal., communities in Northwest Anatolia initially demonstrated more diversity, in particular through the contrast between 'inland' and 'coastal' Fikirtepe sites – the latter being alien to the practices of any of the Anatolian Neolithic societies at the time. After c. 5,800 BC cal., a major discontinuity occurred both in Southwest Anatolia, where the sites were abandoned, and in Northwest Anatolia, where a new type of site – arcs or crescents of houses – was introduced, alongside new residential and construction practices, such as horizontal relocation of the entire arc of houses at intervals. The fact that parallel changes in the mode of construction, use and replacement of houses could be observed in several sites in the study region raises the prospect that house-related practices diffused both alongside the main wave of Neolithic expansion in Europe and afterwards, within networks of moderately similar sites. Absolute chronology and the distribution of practices indicate that Greece was more in keeping with the Southwest Anatolian Neolithic, whereas Thrace followed, to a certain extent, the pattern of habitation in Northwest Anatolia.

On a methodological note, this thesis has demonstrated the value of a practice-based approach, coupled with a solid chronological framework, to shed new light on the spread of the Neolithic 'revolution'. House-related practices make an important contribution to the debate, because they were involved in the generation of a social environment, the house, which was not part of the material 'package' that spread into Europe. A diffusion of house-related practices at the onset of the Neolithic is a strong hint that actual farmers, as opposed to their domesticates alone, moved around in the landscape. Re-enacting practices, such as burning or superimposing houses, helped Europe's first farmers to recreate a familiar setting, similar to that in which they were brought up.

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APPENDIX A. Attributes of Neolithic Sites

Information about site contexts, including the layout and organisation of the sites, the articulation of the buildings in the agglutinated plan

	Settlement type•	Site size (ha)	Deposit depth (m)	No Excavated Rooms (min)	Layout (A: agglutinated; FS: freestanding)	Party walls	Cellular house pattern	Courtyard-house complex	Row houses	Site boundary	
Aşıklı	Tell	4.5	16	400	FS/A		x				Todd 1966; Esin and Harmankaya 1999; Düring 2006; Özbaşaran 2011; 2012
Boncuklu	Tell	1	2		FS						Baird and Baysal 2011; Baird *et al*. 2012
Can Hasan I	Tell	8	5	28	A		x				French 1962; 1963; 1998; Düring 2006; Thissen 2007
Can Hasan III	Tell	<1	6	28	A		x				French 1970; French *et al.* 1972; Düring 2006
Çatalhöyük East	Tell	13.5	21	480	A	x	x	x			Mellaart 1967; Hodder 2006; Düring 2006
Çatalhöyük West	Tell	8	7.5		A		x				Mellaart 1965c; Biehl *et al.* 2012
Erbaba	Tell	<1	4	36	A	?	x				Bordaz 1973; Bordaz and Alpers Bordaz 1976; 1982; Düring 2006
Köşk	Tell	<1	18		A						Öztan 2012
Mersin-Yumuktepe	Tell	5	25		FS						Garstang 1953; Breniquet 1995; Caneva 1999; 2004a; 2004b
Musular	Flat		<1		FS						Özbaşaran 1999; 2000; Duru and Özbaşaran 2005; Özbaşaran *et al.* 2007; 2012
Pınarbaşı A	Flat	<1	<1		FS						Baird 2012a
Pinarbasi-Bor	Tell	<1	8		A?						Harmankaya *et al*. 1998
Suberde	Tell	<1	4								Bordaz 1969; 1973
Tepecik-Çiftlik	Tell	6	9.5		FS						Bıçakçı *et al*. 2008; 2012

	Settlement type•	Site size (ha)	Deposit depth (m)	No Excavated Rooms (min)	Layout (A: agglutinated; FS: freestanding)	Party walls	Cellular house pattern	Courtyard-house complex	Row houses	Site boundary	
Aktopraklık	Flat	<1	1.5		FS/A				x	Ditch	Karul and Avci 2011; Karul 2011
Bademağacı	Tell	1.5	9	12	A	x					Duru 1999; 2001; 2003; 2008; 2012; Umurtak 2000
Barcın	Tell	1	4		FS						Roodenberg *et al.* 2008; Gerritsen 2009
Cukuriçi	Tell	<1	8		FS			x			Horejs 2012
Ege Gübre	Flat	<1	<1	12	A	x		x		Wall	Sağlamtimur 2012; Sağlamtimur and Oztan 2012
Fikirtepe	Flat	<1	1.5	5	FS						Bittel 1971; Özdoğan 1983; 2013
Hacılar	Tell	1.5	5		A	x	?	x		Wall	Mellaart 1970a; 1970b
Hoça Çeşme	Tell	<1	2		FS					Wall	Özdoğan 2013
Höyücek	Tell	1	7.5	5	A						Umurtak 2000; Martinoli and Nesbitt 2003; Duru and Umurtak 2005; Duru 2008; 2012
Ilıpınar	Tell	2	5		A				x	Ditch	Roodenberg and Alpaslan Roodenberg 2007; Claasz-Coockson 2008; Roodenberg 2008a
Istanbul-Yenikapı	Flat		2		A	x				Ditch?	Kızıltan 2010; Kızıltan and Polat 2013a; 2013b
Kuruçay	Tell	<1	8		A		x	x		Wall	Duru 1994; 2008; 2012
Menteşe	Tell	<1	4		FS						Roodenberg 1999; Roodenberg *et al.* 2003
Pendik	Flat	3.5	2	4	FS					Ditch	Özdoğan 1983; 2013; Harmankaya *et al.* 1998
Ulucak	Tell	3	10	27	A	x		x			Çilingiroğlu *et al.* 2004; 2012; Çilingiroğlu and Abay 2005; Çilingiroğlu 2009a; 2012; Derin 2005
Yeşilova	Tell	4	>3		A				?		Derin 2012a
Achilleion	Tell	4	4		FS						Gimbutas 1974; 1989; Winn and Shimabuku 1989
Argissa	Tell	3	8	1	FS						Milojčić 1962; Reingruber 2008

	Settlement type•	Site size (ha)	Deposit depth (m)	No Excavated Rooms (min)	Layout (A: agglutinated; FS: freestanding)	Party walls	Cellular house pattern	Courtyard-house complex	Row houses	Site boundary	
Elateia	Tell	3	4								Weinberg 1962; Perlès 2001
Halai					A		?				Coleman *et al*. 1992; O'Neill *et al.* 1999; Furuya 2003
Knossos	Tell		8		A						Evans 1971; Efstratiou 2013; Efstratiou *et al.* 2013b
Lerna	Tell	2.5	5.5								Caskey 1954; 1956; 1957; 1958
Maroulas	Flat			31	FS						Sampson 2010
Nea Makri	Flat		3		FS						Pantelidou Gofa 1991; 1996
Nea Nikomedeia	Tell	2.5	2.5	24	FS					Ditch	Rodden 1962; Rodden and Rodden 1964a; Pyke 1996
Otzaki	Tell	4	7	9	A					Ditch?	Milojčić-v. Zumbusch and Milojčić 1971; Gallis 1996; Perlès 2001
Prodromos II			4								Gallis 1996; Perlès 2001
Servia	Tell	2	5		FS					Ditch?	Demoule and Perlès 1993; Ridley *et al*. 2000; Mould and Wardle 2000b
Sesklo A	Tell	<1	8.5	18	FS			x		Wall	Theocharis 1973; Wijnen 1982; Treuil 1983; Pyrgaki 1987; Andreou *et al.* 1996; Kotsakis 1996; 1999; 2006a; Souvatzi 2008
Sesklo B	Flat	13	4	21	A	x		x			Kotsakis 1996; 1999; 2006a
Tsangli	Tell	3	10		FS						Wace and Thompson 1912
Aşağı Pınar	Tell	3	3		A	x			x	Ditch	Karul *et al.* 2003; Karul 2003; Özdoğan E. 2011
Azmak	Tell	<1	8	23	A	x			x	Ditch	Georgiev 1965; 1972; Nikolov 2007
Balgarchevo	Flat	<1	2	11	FS						Pernicheva-Perets *et al*. 2011
Cavdar			4	12						Ditch	Nikolov 2007

	Settlement type•	Site size (ha)	Deposit depth (m)	No Excavated Rooms (min)	Layout (A: agglutinated; FS: freestanding)	Party walls	Cellular house pattern	Courtyard-house complex	Row houses	Site boundary	
Elesnica				2							Nikolov 2007
Gălăbnik			4								
Kapitan Dimitrijevo	Tell	1.5	13								Nikolov 2000; 2004b
Karanovo	Tell	3.5	12.5	25	A				x		Mikov 1959; Lichter 1993; Hiller 1997; Hiller and Nikolov 1997; Nikolov 2007
Kazanlâk	Tell	<1	5								Nikolov and Karastoyanova 2003
Kovacevo	Flat	7	2	15	FS					Ditch	Brochier 1994; Demoule and Lichardus-Itten 1994; Lichardus-Itten *et al*. 2002; Lichardus-Itten 2010; Demoule 2011
Rakitovo	Flat	<1	1.5	18	A	x			x		Raduncheva *et al.* 2002
Sofia-Slatina	Tell		4		A				x		Nikolov 1989; 2004b; 2007; Nikolov *et al.* 1992; Nikolov and Sirakova 2002
Stara Zagora OB	Tell	<1	8.5	2	A	x			x		Georgiev 1972; Nikolov 2007; Kalchev 2010
Uğurlu	Tell	6	4		FS						Erdoğu 2013

NB:
• As reported in the literature

APPENDIX B. Attributes of Neolithic Buildings

Information about building contexts, including the form, architecture and spatial organisation of the buildings, the methods of building 'closure' and replacement

	Building form (C: curvilinear; R: rectilinear)	Building type (An: Annex; LR: Large Room; PH: Pit House; SB: Special Building)	No Rooms in building	Foundations	Wall frame	Buttressed	Two-storied	Access	Fire installation	Infilled houses	Burned houses (x: fire-related house destruction; xxx: burned horizon)	Vertically superimposed houses (x: repeated house; xxx: 3 generations or more)	
Aşıklı	C/R	PH/LR/SB	1-10	Sunken/ Stone	Mud			Roof	Hearth	x	?	xxx	Todd 1966; Esin and Harmankaya 1999; Düring 2006; Özbaşaran 2011; 2012
Boncuklu	C	PH	1	Sunken	Mud			Ground	Hearth	x		xxx	Baird and Baysal 2011; Baird *et al*. 2012
Can Hasan I	R	LR	1-6		Mud	x	x	Roof		?	xxx	x	French 1962; 1963; 1998; Düring 2006; Thissen 2007
Can Hasan III	R	LR	1-2		Mud			Roof	Hearth(?)/ Oven			x	French 1970; French *et al.* 1972; Düring 2006
Çatalhöyük East	R	LR	1-5		Mud		?	Roof	Hearth/ Oven	x	xxx	xxx	Mellaart 1967; Hodder 2006; Düring 2006
Çatalhöyük West	R	LR	1-2		Mud	x	x	Ground?	Hearth		x		Mellaart 1965c; Biehl *et al.* 2012
Erbaba	R				Stone		?	Roof	Oven		?		Bordaz 1973; Bordaz and Alpers Bordaz 1976; 1982; Düring 2006
Köşk	R	LR	2-4	Stone	Mud			Ground	Hearth/ Oven				Öztan 2012
Mersin-Yumuktepe	R	LR	1-3	Stone	Timber/ Mud			Ground	Hearth		x	x	Garstang 1953; Breniquet 1995; Caneva 1999; 2004a; 2004b

	Building form (C: curvilinear; R: rectilinear)	Building type (An: Annex; LR: Large Room; PH: Pit House; SB: Special Building)	No Rooms in building	Foundations	Wall frame	Buttressed	Two-storied	Access	Fire installation	Infilled houses	Burned houses (x: fire-related house destruction; xxx: burned horizon)	Vertically superimposed houses (x: repeated house; xxx: 3 generations or more)	
Musular	R	SB		Sunken/ Stone	Mud				Hearth				Özbaşaran 1999; 2000; Duru and Özbaşaran 2005; Özbaşaran *et al.* 2007; 2012
Pınarbaşı A	C	PH		Sunken	Timber				Hearth				Baird 2012a
Pinarbasi-Bor	R			Stone	Mud				Hearth/ Oven				Harmankaya *et al*. 1998
Suberde	R			Stone	Mud						x	x	Bordaz 1969; 1973
Tepecik-Çiftlik	R	LR	1-4	Stone	Mud			Ground	Oven		xxx		Bıçakçı *et al*. 2008; 2012
Aktopraklık	C/R	PH/LR	1	Sunken	Mud	x		Ground	Oven		-		Karul and Avci 2011; Karul 2011
Bademağacı	R	LR	1-2	Stone	Mud			Ground	Hearth/ Oven		x	?	Duru 1999; 2001; 2003; 2008; 2012; Umurtak 2000
Barcın	R	LR	1	Wall ditch	Timber			Ground			x		Roodenberg *et al.* 2008; Gerritsen 2009
Cukuriçi	R	LR	1-2	Stone	Mud			Ground				x	Horejs 2012
Ege Gübre	R	LR	1-3	Stone	Mud			Ground	Hearth			x	Sağlamtimur 2012; Sağlamtimur and Oztan 2012
Fikirtepe	C	PH	1	Sunken	Timber			Ground			xxx		Bittel 1971; Özdoğan 1983; 2013
Hacılar	R	LR	1-2	Stone	Mud	x	x	Ground/R oof?	Hearth/ Oven	?	xxx		Mellaart 1970a; 1970b
Hoça Çeşme	C/R	PH/LR		Sunken	Timber			Ground	Oven				Özdoğan 2013
Höyücek	R	LR	1-2		Mud			Ground	Hearth/ Oven	?	xxx		Umurtak 2000; Martinoli and Nesbitt 2003; Duru and Umurtak 2005; Duru 2008; 2012

	Building form (C: curvilinear; R: rectilinear)	Building type (An: Annex; LR: Large Room; PH: Pit House; SB: Special Building)	No Rooms in building	Foundations	Wall frame	Buttressed	Two-storied	Access	Fire installation	Infilled houses	Burned houses (x: fire-related house destruction; xxx: burned horizon)	Vertically superimposed houses (x: repeated house; xxx: 3 generations or more)	
Ilıpınar	R	LR	1	Wall ditch	Timber/ Mud		x	Ground	Hearth/ Oven		xxx	xxx	Roodenberg and Alpaslan Roodenberg 2007; Claasz-Coockson 2008; Roodenberg 2008a
Istanbul-Yenikapı	C/R			Stone	Timber								Kızıltan 2010; Kızıltan and Polat 2013a; 2013b
Kuruçay	R	LR	1	Stone	Mud	x		Ground	Hearth		xxx		Duru 1994; 2008; 2012
Menteşe	R	LR	1		Timber/ Mud			Ground			x	xxx	Roodenberg 1999; Roodenberg *et al.* 2003
Pendik	C	PH	1	Sunken	Timber			Ground	Hearth				Özdoğan 1983; 2013; Harmankaya *et al.* 1998
Ulucak	R	LR	1-2	Stone	Timber/ Mud			Ground	Hearth/ Oven	?	xxx		Çilingiroğlu *et al.* 2004; 2012; Çilingiroğlu and Abay 2005; Çilingiroğlu 2009a; 2012; Derin 2005
Yeşilova	R	LR	1	Stone	Timber/ Mud			Ground	Hearth/ Oven		xxx		Derin 2012a
Achilleion	C/R	PH/LR	1-2	Sunken/ Stone	Timber/ Mud			Ground	Hearth			x	Gimbutas 1974; 1989; Winn and Shimabuku 1989
Argissa	R	LR	1	Sunken	Timber/ Mud			Ground	Hearth/ Oven		x		Milojčić 1962; Reingruber 2008
Elateia	R			Stone	Timber/ Mud				Hearth		xxx	x	Weinberg 1962; Perlès 2001
Giannitsa B	C			Wall ditch	Timber/ Mud							x	Perlès 2001; Nanoglou 2008
Halai	R	LR	1-2	Stone	Mud	x	?		Hearth		x	x	Coleman *et al.* 1992; O'Neill *et al.* 1999; Furuya 2003

	Building form (C: curvilinear; R: rectilinear)	Building type (An: Annex; LR: Large Room; PH: Pit House; SB: Special Building)	No Rooms in building	Foundations	Wall frame	Buttressed	Two-storied	Access	Fire installation	Infilled houses	Burned houses (x: fire-related house destruction; xxx: burned horizon)	Vertically superimposed houses (x: repeated house; xxx: 3 generations or more)	
Knossos	R			Stone	Mud						x	x	Evans 1971; Efstratiou 2013; Efstratiou *et al.* 2013b
Lerna	R	LR	1-2	Stone	Mud	x			Hearth			xxx	Caskey 1954; 1956; 1957; 1958
Maroulas	C?	PH	1	Sunken	Timber?								Sampson 2010
Nea Makri	C/R	PH/LR	1-2	Sunken/ Stone	Timber/ Mud			Ground/Roof?	Hearth				Pantelidou Gofa 1991; 1996
Nea Nikomedeia	R	LR	1-2	Wall ditch	Timber			Ground	Hearth/ Oven?		x	x	Rodden 1962; Rodden and Rodden 1964a; Pyke 1996
Otzaki	R	LR			Timber/ Mud	x						x	Milojčić-v. Zumbusch and Milojčić; Gallis 1996; Perlès 2001
Prodromos II			2+		Timber							x	Gallis 1996; Perles 2001
Servia	R	LR	1-2	Sunken/ Stone	Timber		x	Ground	Hearth		xxx	xxx	Demoule and Perlès 1993; Ridley *et al*. 2000; Mould and Wardle 2000b
Sesklo A	C?/ R	PH/LR	1-3	Sunken/ Stone	Timber/ Mud		?	Ground	Hearth/ Oven		xxx	xxx	Theocharis 1973; Wijnen 1982; Treuil 1983; Pyrgaki 1987; Andreou *et al.* 1996; Kotsakis 1996; 1999; 2006a; Souvatzi 2008
Sesklo B	R	LR	1-2	Stone	Mud			Ground			xxx		Kotsakis 1996; 1999; 2006a
Tsangli	R	LR	1	Stone	Mud	x	?	Ground			xxx	xxx	Wace and Thompson 1912
Aşağı Pınar	C?/ R	PH/LR	1-3	Sunken	Timber		x	Ground	Oven		xxx		Karul *et al.* 2003; Karul 2003; Özdoğan E. 2011
Azmak	R	LR	1-3		Timber			Ground	Hearth/ Oven		xxx		Georgiev 1965; 1972; Nikolov 2007

	Building form (C: curvilinear; R: rectilinear)	Building type (An: Annex; LR: Large Room; PH: Pit House; SB: Special Building)	No Rooms in building	Foundations	Wall frame	Buttressed	Two-storied	Access	Fire installation	Infilled houses	Burned houses (x: fire-related house destruction; xxx: burned horizon)	Vertically superimposed houses (x: repeated house; xxx: 3 generations or more)	
Balgarchevo	R	LR			Timber		x	Ground	Hearth/ Oven		x		Pernicheva-Perets *et al*. 2011
Cavdar	R	LR						Ground	Oven				Nikolov 2007
Elesnica	R	LR	1-2		Timber			Ground	Hearth				Nikolov 2007
Kapitan Dimitrijevo	R	LR	1-3		Timber		x	Ground	Hearth/ Oven		x		Nikolov 2000; 2004b
Karanovo	R	LR	1-3		Timber			Ground	Hearth/ Oven				Mikov 1959; Lichter 1993; Hiller 1997; Hiller and Nikolov 1997; Nikolov 2007
Kazanlâk	R				Timber			Ground	Oven				Nikolov and Karastoyanova 2003
Kovacevo	R	LR			Mud			Ground	Hearth/ Oven		x	xxx	Brochier 1994; Demoule and Lichardus-Itten 1994; Lichardus-Itten *et al*. 2002; Lichardus-Itten 2010; Demoule 2011
Rakitovo	R	LR	1	Stone	Timber			Ground	Hearth/ Oven		xxx		Raduncheva *et al.* 2002
Sofia-Slatina	R	LR			Timber		x	Ground	Hearth/ Oven		x		Nikolov 1989; 2004b; 2007; Nikolov *et al.* 1992; Nikolov and Sirakova 2002
Stara Zagora OB	R	LR	1-2		Timber			Ground	Oven		xxx		Georgiev 1972; Nikolov 2007; Kalchev 2010
Uğurlu	R	LR	1	Stone					Hearth				Erdoğu 2013

APPENDIX C. Quantitative Distribution of Neolithic Burials

Information about burial contexts, including the number, distribution and mode of inhumation

	Min. burial* count	Min. adult	Min. female†	Min. male†	Min. juveniles†	Primary‡	Secondary‡	Sub-floor	In-fill	Inter-dwelling	
Aşıklı	70	27	18	9	20	x	x	x	?	x	Özbek 1998a; Esin and Harmankaya 1999; Düring 2011
Boncuklu	8	2	1	1	1	x	x	x		x	Baird et al. 2012; Baird and Baysal 2011, 267; 268
Can Hasan I	1					x	12		?	?	French 1963; 1966; 1967b; 1968; Düring 2006, 276
Çatalhöyük East	685	344	173	133	194	x	x	x	X	x	Düring 2006, 206; 2011; Czerniak and Marciniak 2005; Marciniak and Czerniak 2007; 2008; Farid 2008; Boz and Hager, in press
Çatalhöyük West	2				2	x			2		Mellaart 1965c; Biehl et al. 2012
Köşk	66					x	x	x	?	x	Düring 2003; Özbek 2009; Öztan 2012
Mersin-Yumuktepe	8	1	1		1	3		x		x	Garstang 1953; Caneva 2010; 2012
Musular	8		4	3	1	x	x				Özbaşaran 1997; 1999; 2000
Pınarbaşı A	7	3	1	1	3	x	x			x	Baird 2012a
Pınarbaşı-Bor	1										Harmankaya et al. 1998
Tepecik-Çiftlik	30	43	23	14	28	x	60	x		25	Bıçakcı 2011; Bıçakcı *et al*. 2008; 2012; Büyükkarakaya et al. 2009; M. Godon, personal communication
Aktopraklık	60	37	15	15	7	x		?	?	x	Alpaslan Roodenberg 2011; Karul and Avcı 2011; Lillie *et al.* 2012; Budd et al. 2013
Bademağacı	37					x		?	x	x	Duru 2008
Barcin	35	16			19	x	x	?	x	x	Roodenberg *et al.* 2008; F. Gerritsen, personal communication
Ege Gübre	4	2		1		3		?		2	Sağlamtimur 2007; 2012; Sağlamtimur and Ozan 2012
Fikirtepe	4					x		?		x	Bittel 1971; Özdoğan M. 2011a
Hacılar	22					22	x	?	11	?	Mellaart 1970a
Hoça Çeşme	1										Özdoğan 1999

	Min. burial* count	Min. adult	Min. female†	Min. male†	Min. juveniles†	Primary‡	Secondary‡	Sub-floor	In-fill	Inter-dwelling	
Ilıpınar	48	17	12	5	31	47	1			48	Alpaslan Roodenberg 2006; 2008; Roodenberg 1999
Istanbul-Yenikapı	13					6					Kızıltan 2010
Kuruçay	7					x		?		6	Duru 1994; 2008
Menteşe	20	11	3	2	9	x		?	2	x	Alpaslan Roodenberg 2001; 2006; Alpaslan Roodenberg and Maat 1999; Roodenberg *et al*. 2003
Öküzini	5										Reingruber 2008
Pendik	30	19			11	30		?		x	Pasinli *et al.* 1994; Harmankaya *et al.* 1998
Ulucak	2				2	x					Ö. Çevik, personal communication
Agios Petros	2				2	?	x				Efstratiou 1985
Argissa	1				1	1					Reingruber 2008
Axos	1					1					Perlès 2003b
Chaeronea	2	2		2	?						Reingruber 2008; Treuil 1983
Franchthi Cave	17				5	x	90				Jacobsen 1969; 1973a; 1973b; Cullen 1995; 1999; Cavanagh and Mee 1998; Perlès 2001; 2003b; Fowler 2004
Franchthi Paralia	5	1	1		4	x	x				Cullen 1999; Perlès 2001; Fowler 2004
Giannitsa	1					1					Perlès 2003b
Halai	1				1	?					O'Neill *et al.* 1999
Kephalovrysso	1	1				1		?			Hourmouziadis 1973; Perlès 2001; 2003b; Treuil 1983
Knossos	7				7	7					Cavanagh and Mee 1998; Treuil 1983
Lerna	5				4	x	x		1		Caskey 1957; 1958; Cavanagh and Mee 1998; Perlès 2001; 2003b; Reingruber 2008
Nea Nikomedeia	29	13			22	35	x	?	x	x	Rodden 1962; Rodden and Rodden 1964b; Angel 1973; Cavanagh and Mee 1998; Perlès 2003b
Prodromos							11	?			Hourmouziadis 1973; Treuil 1983; Perlès 2003b
Prosymna	6						x				Treuil 1983; Fowler 2004; Perlès 2001
Sesklo	1	1		1		1					Perlès 2001; 2003b; Reingruber 2008

	Min. burial* count	Min. adult	Min. female†	Min. male†	Min. juveniles†	Primary‡	Secondary‡	Sub-floor	In-fill	Inter-dwelling	
Soufli	16	1			1	2	2				Perlès 2001; 2003b; Fowler 2004
Tsoungiza Cave	1						x				Caskey and Blegen 1975; Wright 1982; Treuil 1983; Perlès 2003b; Reingruber 2008
Azmak	3					x	x	?		x	Georgiev 1965; Băčvarov 2002a; 2002b; 2003; 2006; Nikolova 2006
Bălgarčevo	3		1			1					Băčvarov 2002a; 2002b; Nikolova 2006
Čavdar	1			1						x	Băčvarov 2002a; 2002b; Nikolova 2006
Dositeevo-Tsiganova	6		1			1					Băčvarov 2002a; 2002b; 2003; Nikolova 2006
Karanovo	15		1	1	7	x	x	?		11	Băčvarov 2002a; 2002b; 2006; Nikolova 2006; Nikolov 2007
Kărdžali	5	3	2		2	5		?		x	Băčvarov 2002a; 2002b; Nikolova 2006
Kazanlăk	6				3	6	x			x	Băčvarov 2002a; 2002b; Nikolova 2006
Kovačevo	7				7	x	x		?	7	Demoule and Lichardus-Itten 1994; Lichardus-Itten et al. 2002; Lichardus-Itten 2010
Kremikovtsi	1										Băčvarov 2003
Rakitovo	1				1			?			Băčvarov 2002a; 2002b; 2003; 2006
Sofia-Slatina	7		2	3	2	6	x			6	Băčvarov 2002a; 2002b; 2003; Nikolova 2006
Vaksevo	1			1		?	x	?			Băčvarov 2002a; 2002b; Nikolova 2006

NB:
* Burial refers to discrete burial deposit which may contain multiple individuals.
† As reported in the literature; age and sex boundaries depend on skeletal methods of ageing and sexing.
‡ Minimum number of individuals (where available).

APPENDIX D. Supporting Material: Plans and Drawings

I. Central Anatolia

This text box is where the unabridged thesis included the following third party copyrighted material:

Esin U. and Harmankaya S. (1999), ‘Aşıklı’. In: Özdoğan M. and Başgelen N. (eds.), *Neolithic in Turkey. The Cradle of Civilization* (Istanbul: Arkeoloji ve Sanat Yayınları) 114-132.

Aşıklı Höyük (9). Plan of the settlement (Esin and Harmankaya 1999, fig.3)

This text box is where the unabridged thesis included the following third party copyrighted material:

French D.H., Hillman G.C., Payne S. and Payne R.J. (1972), 'Excavations at Can Hasan III 1969-1970'. In: Higgs E.S. (ed.), *Papers in Economic Prehistory*. *Studies by Members and Associates of the British Academy Major Research Project in the Early History of Agriculture* (Cambridge: Cambridge University Press) 181-190.

Can Hasan III (18). Plan of the structures (French *et al*. 1972, fig.4)

This text box is where the unabridged thesis included the following third party copyrighted material:

French D.H. (1998), *Canhasan I: Stratigraphy and Structures* (Ankara: The British Institute of Archaeology at Ankara).

Can Hasan I (18). Plan of Building-levels 2B, left; and 2A, right (French 1998, figs.12; 23)

This text box is where the unabridged thesis included the following third party copyrighted material:

Mellaart, J. (1967). *Çatal Höyük. A Neolithic Town in Anatolia* (New York: McGraw-Hill).

Çatalhöyük East (19). Plans of building-levels II, top left; III, top right; IV, middle; and V, bottom (Mellaart 1967, figs. 4-7)

This text box is where the unabridged thesis included the following third party copyrighted material:

Mellaart, J. (1967). *Çatal Höyük. A Neolithic Town in Anatolia* (New York: McGraw-Hill).

Çatalhöyük East (19). Plans of building-levels IVb, top; VII, bottom (Mellaart 1967, figs. 9-10)

This text box is where the unabridged thesis included the following third party copyrighted material:

Hodder I. (2006), *Çatalhöyük. The Leopard's Tale. Revealing the mysteries of Turkey's ancient 'town'.* (London: Thames & Hudson).

Çatalhöyük East (19). Plan of houses on the north hill of the East Mound. The 4040 Area is indicated by a dashed line in the south of the area (Hodder 2006, fig.40)

This text box is where the unabridged thesis included the following third party copyrighted material:

Biehl P.F., Franz I., Ostaptchouk S., Orton D., Rogasch J. and Rosenstock E. (2012), 'One Community and Two Tells: The Phenomenon of Relocating Tell Settlements at the Turn of the 7th and the 6th Millennia in Central Anatolia'. In: Hofmann R., Moetz F.-K. and Müller J. (eds.), *Tells: Social and Environmental Space*. Proceedings of the International Workshop 'Socio-Environmental Dynamics over the Last 12,000 Years: The Creation of Landscapes II, 14th-18th March 2011', Kiel (Bonn: Dr. Rudolf Habelt) 53-65.

Çatalhöyük West (19). Trench 5 (Biehl *et al.* 2012, fig.2)

This text box is where the unabridged thesis included the following third party copyrighted material:

Öztan A. (2012), 'Köşk Höyük. A Neolithic Settlement in Niğde-Bor Plateau'. In: Özdoğan M., Başgelen N. and Kuniholm P. (eds.), *The Neolithic in Turkey. New Excavations & New Research. Volume 3. Central Turkey* (Istanbul: Archaeology & Arts Publications) 31-70.

Köşk Höyük (55). Level II house, left; Level III house, right (Öztan 2012, figs.5-6)

This text box is where the unabridged thesis included the following third party copyrighted material:

Bıçakçı E., Godon M. and Çakan Y. (2012), 'Tepecik-Çiftlik'. In: Özdoğan M., Başgelen N. and Kuniholm P. (eds.), *The Neolithic in Turkey. New Excavations & New Research. Volume 3. Central Turkey* (Istanbul: Archaeology & Arts Publications) 89-134.

Tepecik-Çiftlik (87). Plan of building-level 3 and the succession of architectural remains (Bıçakçı *et al.* 2012, fig.5)

II. Western Anatolia

This text box is where the unabridged thesis included the following third party copyrighted material:

Karul N. (2013), 'İlk Kalkolitik Çağ'da Konut ve Yerleşme: Aktopraklık Höyük'. *Arkeoloji ve Sanat* 143: 41-50.

Aktopraklık (6). Boundary houses in Area B (Karul 2013, fig.7)

This text box is where the unabridged thesis included the following third party copyrighted material:

Duru R. (2008), *From 8000 BC to 2000 BC. Six Thousand Years of the Burdur-Antalya Region* (Antalya: Suna-İnan Kıraç Research Institute on Mediterranean Civilizations).

Bademağacı (12). Building-levels EN II/3-2 (Duru 2008, fig.45)

This text box is where the unabridged thesis included the following third party copyrighted material:

Duru R. (2012), 'The Neolithic of the Lakes Region. Hacılar – Kuruçay Höyük – Höyücek – Bademağacı Höyük'. In: Özdoğan M., Başgelen N. and Kuniholm P. (eds.), *The Neolithic in Turkey. New Excavations & New Research. Volume 4. Western Turkey* (Istanbul: Archaeology & Arts Publications) 1-65.

Bademağacı (12). Building-levels EN II/4B, 4A and 4 (Duru 2012, fig.53)

This text box is where the unabridged thesis included the following third party copyrighted material:

Sağlamtimur H. (2012), ‘The Neolithic Settlement of Ege Gübre’. In: Özdoğan M., Başgelen N. and Kuniholm P. (eds.), *The Neolithic in Turkey. New Excavations & New Research. Volume 4. Western Turkey* (Istanbul: Archaeology & Arts Publications) 197-225.

Ege Gübre (31). Building-levels IV-III (Sağlamtimur 2012, fig.2)

This text box is where the unabridged thesis included the following third party copyrighted material:

Mellaart J. (1970a), *Excavations at Hacılar*. Volume 1. Text. Occasional Publications of the British Institute of Archaeology at Ankara Number 9 (Edinburgh: Edinburgh University Press).

Hacılar (40). Building-level VI (Mellaart 1970a, fig.7)

This text box is where the unabridged thesis included the following third party copyrighted material:

Mellaart J. (1970a), *Excavations at Hacılar*. Volume 1. Text. Occasional Publications of the British Institute of Archaeology at Ankara Number 9 (Edinburgh: Edinburgh University Press).

Hacılar (40). Building-level IIA (Mellaart 1970a, fig.20)

This text box is where the unabridged thesis included the following third party copyrighted material:

Mellaart J. (1970a), *Excavations at Hacılar*. Volume 1. Text. Occasional Publications of the British Institute of Archaeology at Ankara Number 9 (Edinburgh: Edinburgh University Press).

Hacılar (40). Building-level IIB (Mellaart 1970a, fig.25)

This text box is where the unabridged thesis included the following third party copyrighted material:

Mellaart J. (1970a), *Excavations at Hacılar*. Volume 1. Text. Occasional Publications of the British Institute of Archaeology at Ankara Number 9 (Edinburgh: Edinburgh University Press).

Hacılar (40). Building-levels IA-B (Mellaart 1970a, fig.29)

This text box is where the unabridged thesis included the following third party copyrighted material:

Duru R. and Umurtak G. (2005), *Höyücek. 1989-1992 Yılları Arasında Yapılan Kazıların Sonuçları/Results of the Excavations 1989-1992* (Ankara: Türk Tarih Kurumu).

Höyücek (44). Shrine Phase (Duru and Umurtak 2005, pl.7)

This text box is where the unabridged thesis included the following third party copyrighted material:

Roodenberg J.J. and Alpaslan Roodenberg S. (2013), 'Ilıpınar and Menteşe. Early Farming Communities in the Eastern Marmara'. In: Özdoğan M., Başgelen N. and Kuniholm P. (eds.), *The Neolithic in Turkey. New Excavations & New Research. Volume 5. Northwest Turkey* (Istanbul: Archaeology & Arts Publications) 69-91.

Ilıpınar (46). Plan of successive building-levels (Roodenberg and Alpaslan Roodenberg 2013, fig.2)

This text box is where the unabridged thesis included the following third party copyrighted material:

Roodenberg J.J. and Alpaslan Roodenberg S. (2013), 'Ilıpınar and Menteşe. Early Farming Communities in the Eastern Marmara'. In: Özdoğan M., Başgelen N. and Kuniholm P. (eds.), *The Neolithic in Turkey. New Excavations & New Research. Volume 5. Northwest Turkey* (Istanbul: Archaeology & Arts Publications) 69-91.

Ilıpınar (46). Reconstruction of a Level VI house
(Roodenberg and Alpaslan Roodenberg 2013, fig.7)

This text box is where the unabridged thesis included the following third party copyrighted material:

Duru R. (1994), *Kuruçay Höyük I. 1978-1988 Kazılarının Sonuçları Neolitik ve Erken Kalkolitik Çağ Yerleşmeleri/Results of the Excavations 1978-1988. The Neolithic and Early Chalcolithic Periods* (Ankara: Türk Tarih Kurumu Basımevi).

Kuruçay (60). Building-level 11 (Duru 1994, pl.15)

This text box is where the unabridged thesis included the following third party copyrighted material:

Duru R. (2012), 'The Neolithic of the Lakes Region. Hacılar – Kuruçay Höyük – Höyücek – Bademağacı Höyük'. In: Özdoğan M., Başgelen N. and Kuniholm P. (eds.), *The Neolithic in Turkey. New Excavations & New Research*. *Volume 4. Western Turkey* (Istanbul: Archaeology & Arts Publications) 1-65.

Kuruçay (60). Tentative reconstruction of the enclosure wall, Level 11 (Duru 2012, fig.17)

This text box is where the unabridged thesis included the following third party copyrighted material:

Duru R. (1994), *Kuruçay Höyük I. 1978-1988 Kazılarının Sonuçları Neolitik ve Erken Kalkolitik Çağ Yerleşmeleri/Results of the Excavations 1978-1988. The Neolithic and Early Chalcolithic Periods* (Ankara: Türk Tarih Kurumu Basımevi).

Kuruçay (60). Building-level 8 (Duru 1994, pl.22)

This text box is where the unabridged thesis included the following third party copyrighted material:

Duru R. (1994), *Kuruçay Höyük I. 1978-1988 Kazılarının Sonuçları Neolitik ve Erken Kalkolitik Çağ Yerleşmeleri/Results of the Excavations 1978-1988. The Neolithic and Early Chalcolithic Periods* (Ankara: Türk Tarih Kurumu Basımevi).

Kuruçay (60). Building-level 7 (Duru 1994, pl.24)

This text box is where the unabridged thesis included the following third party copyrighted material:

Çilingiroğlu A., Derin Z., Abay E., Sağlamtimur H. and Kayan I. eds. (2004), *Ulucak Höyük. Excavations conducted between 1995 and 2002. Ancient Near Eastern Studies. Supplement 15* (Louvain: Peeters).

Ulucak Höyük (92). Building-levels IVa-c (Çilingiroğlu *et al.* 2004)

This text box is where the unabridged thesis included the following third party copyrighted material:

Derin Z. (2005), 'The Neolithic Architecture of Ulucak Höyük'. In: Lichter C. (ed.), *BYZAS 2. How Did Farming Reach Europe? Anatolian-European Relations from the Second Half of the 7th through the First Half of the 6th Millennium Cal BC.* Proceedings of the International Workshop, Istanbul, 20-22 May 2004 (Istanbul: Ege Yayınları) 85-94.

Ulucak Höyük (92). Level IV, Building 13 (Derin 2005, fig.4)

This text box is where the unabridged thesis included the following third party copyrighted material:

Çilingiroğlu A., Çevik Ö. and Çilingiroğlu Ç. (2012), 'Ulucak Höyük. Towards Understanding the Early Farming Communities of Middle West Anatolia: The Contribution of Ulucak'. In: Özdoğan M., Başgelen N. and Kuniholm P. (eds.), *The Neolithic in Turkey. New Excavations & New Research*. *Volume 4. Western Turkey* (Istanbul: Archaeology & Arts Publications) 139-175.

Ulucak Höyük (92). Building-level Va in Grid L13 (Çilingiroğlu *et al.* 2012, fig.25)

This text box is where the unabridged thesis included the following third party copyrighted material:

Çilingiroğlu A., Çevik Ö. and Çilingiroğlu Ç. (2012), 'Ulucak Höyük. Towards Understanding the Early Farming Communities of Middle West Anatolia: The Contribution of Ulucak'. In: Özdoğan M., Başgelen N. and Kuniholm P. (eds.), *The Neolithic in Turkey. New Excavations & New Research*. *Volume 4. Western Turkey* (Istanbul: Archaeology & Arts Publications) 139-175.

Ulucak Höyük (92). Level Vb, Buildings 30, 31 and 33 in Grid L13 (Çilingiroğlu *et al.* 2012, fig.25)

III. Greece

This text box is where the unabridged thesis included the following third party copyrighted material:

Winn S. and Shimabuku D. (1989), 'Architecture and sequence of building remains'. In: Gimbutas M., Winn S. and Shimabuku D. (eds.), *Achilleion. A Neolithic Settlement in Thessaly, Greece, 6400-5600 BC,* Monumenta Archaeologica 14 (Los Angeles: University of California Press) 32-68.

Achilleion (2). Phase late Ib tentative reconstruction (Winn and Shimabuku 1989, fig.4.5)

This text box is where the unabridged thesis included the following third party copyrighted material:

Winn S. and Shimabuku D. (1989), 'Architecture and sequence of building remains'. In: Gimbutas M., Winn S. and Shimabuku D. (eds.), *Achilleion. A Neolithic Settlement in Thessaly, Greece, 6400-5600 BC,* Monumenta Archaeologica 14 (Los Angeles: University of California Press) 32-68.

Achilleion (2). Phase II tentative reconstruction (Winn and Shimabuku 1989, fig.4.2)

This text box is where the unabridged thesis included the following third party copyrighted material:

Pyke G. (1996), 'Structures and Architecture'. In: Wardle K.A. (ed.), *Nea Nikomedeia I: The Excavation of an Early Neolithic Village in Northern Greece 1961-1964. The Excavation and the Ceramic Assemblage* (London: The British School at Athens) 39-53.

Nea Nikomedeia (69). Early Neolithic levels (Pyke 1996, fig.2.1)

This text box is where the unabridged thesis included the following third party copyrighted material:

Pyke G. (1996), 'Structures and Architecture'. In: Wardle K.A. (ed.), *Nea Nikomedeia I: The Excavation of an Early Neolithic Village in Northern Greece 1961-1964. The Excavation and the Ceramic Assemblage* (London: The British School at Athens) 39-53.

Nea Nikomedeia (69). Reconstruction of a Neolithic house (Pyke 1996, fig.3.1)

This text box is where the unabridged thesis included the following third party copyrighted material:

Theocharis D. (1973), 'Development and Diversification: The Middle Neolithic of Thessaly and the Southern Regions'. In: Theocharis D.R. (ed.), *Neolithic* Greece (Athens: National Banks of Greece) 59-88.

Sesklo (82). Acropolis and surrounding areas (Theocharis 1973, fig.176)

This text box is where the unabridged thesis included the following third party copyrighted material:

Theocharis D. (1973), 'Development and Diversification: The Middle Neolithic of Thessaly and the Southern Regions'. In: Theocharis D.R. (ed.), *Neolithic* Greece (Athens: National Banks of Greece) 59-88.

Sesklo (82). Area A, plan of House 11-12 "pottery workshop" (Theocharis 1973, fig.183)

This text box is where the unabridged thesis included the following third party copyrighted material:

Theocharis D. (1973), 'Development and Diversification: The Middle Neolithic of Thessaly and the Southern Regions'. In: Theocharis D.R. (ed.), *Neolithic* Greece (Athens: National Banks of Greece) 59-88.

Sesklo (82). Area A, reconstruction of House 11-12 (Theocharis 1973, fig.184)

This text box is where the unabridged thesis included the following third party copyrighted material:

Pyrgaki M. (1987), *L'habitat au cours de la Préhistoire (de la période Précéramique à l'Âge du Bronze) d'après les trouvailles effectuées à Sesklo et à Dimini, en Thessalie* (Athènes: Bibliothèque 'Sophie N. Saripolou').

Sesklo (82). Area B (Pyrgaki 1987, pl.26)

This text box is where the unabridged thesis included the following third party copyrighted material:

Wace A.J.B. and Thompson M.S. (1912), *Prehistoric Thessaly. Being Some Account of Recent Excavations and Explorations in North-Eastern Greece from Lake Kopais to the Borders of Macedonia* (Cambridge: University Press).

Tsangli (89). Plan of House *T* (Wace and Thompson 1912, fig.64)

This text box is where the unabridged thesis included the following third party copyrighted material:

Wace A.J.B. and Thompson M.S. (1912), *Prehistoric Thessaly. Being Some Account of Recent Excavations and Explorations in North-Eastern Greece from Lake Kopais to the Borders of Macedonia* (Cambridge: University Press).

Tsangli (89). Plan of Houses *P*, *Q*, *R* (Wace and Thompson 1912, fig.65)

IV. Thrace

This text box is where the unabridged thesis included the following third party copyrighted material:

Özdoğan M. (2013), 'Neolithic Sites in the Marmara Region. Fikirtepe, Pendik, Yarımburgaz, Toptepe, Hoca Çeşme, and Aşağı Pınar'. In: Özdoğan M., Başgelen N. and Kuniholm P. (eds.), *The Neolithic in Turkey. New Excavations & New Research*. *Volume 5. Northwest Turkey* (Istanbul: Archaeology & Arts Publications) 167-269.

Aşağı Pınar (8). Plan of successive building-levels (Özdoğan 2013, fig.103)

This text box is where the unabridged thesis included the following third party copyrighted material:

Özdoğan M. (2007c), 'Marmara Bölgesi Neolitik çağ Kültürleri'. In: Özdoğan M. and Başgelen N. (eds.), *Anadolu'da Uygarlığın Doğuşu ve Avrupa'ya Yayılımı. Türkiye'de Neolitik Dönem. Yeni kazılar-yeni bulgular* (Istanbul: Arkeoloji ve Sanat Yayinları) 401-426.

Aşağı Pınar (8). Level VI boundary houses, detail (Özdoğan 2007c, fig.29)

This text box is where the unabridged thesis included the following third party copyrighted material:

Georgiev G. (1972), 'Das Neolithikum und Chalkolithikum in der Thrakischen Tiefebene (Südbulgarien). Probleme des heutigen Forschungsstandes'. In: Georgiev V.I., Tăpkova-Zaimova V., Velkov V. (eds.), *Thracia. Primus Congressus Studiorum Thracicorum.* (Sofia: Academia Litterarum Bulgaria) 5-27.

Azmak (11). Houses from the Karanovo I period (Georgiev 1972, fig.4)

This text box is where the unabridged thesis included the following third party copyrighted material:

Pernicheva-Perets L., Grębska-Kulow M. and Kulov I. (2011), *Balgarchevo. The Prehistoric Settlement. Volume 1* (Sofia: Craft House Bulgaria).

Bălgarčevo (13). Dwelling 1, second phase (Pernicheva Perets *et al.* 2011, fig. 3.4)

This text box is where the unabridged thesis included the following third party copyrighted material:

Lichter C. (1993), *Untersuchungen zu den Bauten des südosteuropäischen Neolithikums and Chalcolithikums* (Rahden: Verlag Marie Leidorf).

Karanovo (51). Buildings NH III, left; NOH V, right (Lichter 1993, pls.41; 43)

This text box is where the unabridged thesis included the following third party copyrighted material:

Lichter C. (1993), *Untersuchungen zu den Bauten des südosteuropäischen Neolithikums and Chalcolithikums* (Rahden: Verlag Marie Leidorf).

Karanovo (51). Buildings WH I, left; OH IV, right (Lichter 1993, pl.46)

This text box is where the unabridged thesis included the following third party copyrighted material:

Lichter C. (1993), *Untersuchungen zu den Bauten des südosteuropäischen Neolithikums and Chalcolithikums* (Rahden: Verlag Marie Leidorf).

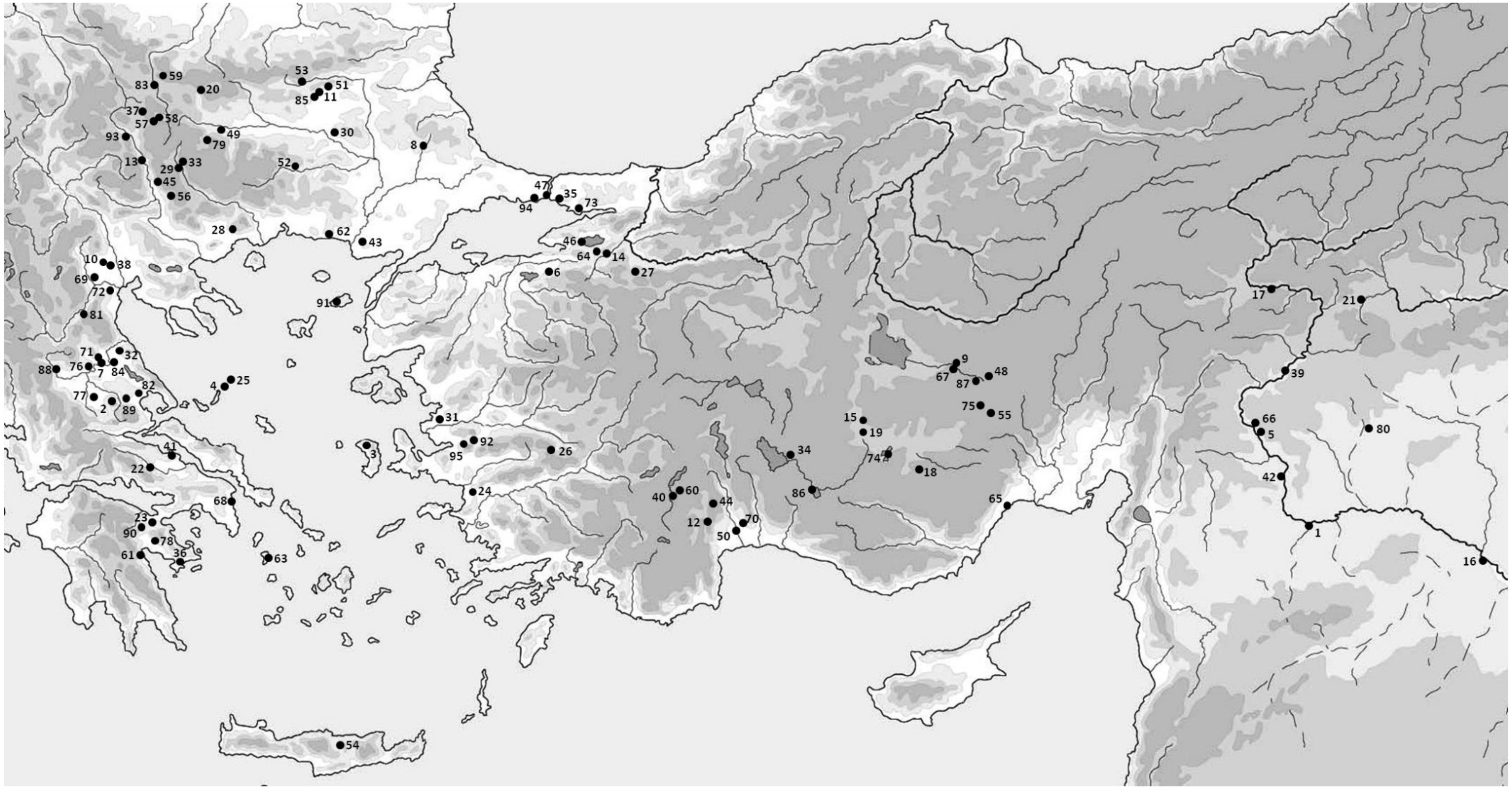
Karanovo (51). Buildings OH II/III, left; WH III, right (Lichter 1993, pls.45; 47)

This text box is where the unabridged thesis included the following third party copyrighted material:

Nikolov V. (1989), 'Das frühneolithische Haus von Sofia-Slatina. Eine Untersuchung zur vorgeschichtlichen Bautechnik'. *Germania* 67(1): 1-96.

Sofia-Slatina (83). 'Big House' (Nikolov 1989, fig.1)

APPENDIX E. Geographic Distribution of Southwest Asian And European Sites



List of sites

1. Abu Hureyra
2. Achilleion
3. Agio Gala
4. Agios Petros
5. Akarçay Tepe
6. Aktopraklık
7. Argissa
8. Aşağı Pınar
9. Aşıklı Höyük
10. Axos
11. Azmak
12. Bademağacı
13. Bălgarčevo
14. Barcın Höyük
15. Boncuklu Höyük
16. Bouqras
17. Cafer Höyük
18. Can Hasan
19. Çatalhöyük
20. Čavdar
21. Çayönü
22. Chaeronea
23. Corinth
24. Çukuriçi Höyük
25. Cyclops Cave
26. Dedecik-Heybelitepe
27. Demircihöyük
28. Dikili Tash
29. Dobrinište
30. Dositeevo-Tsiganova
31. Ege Gübre
32. Elateia
33. Elešnica
34. Erbaba
35. Fikirtepe
36. Franchthi
37. Gălăbnik
38. Giannitsa
39. Gritille
40. Hacılar
41. Halai
42. Halula
43. Hoca Çeşme
44. Höyücek
45. Ilindenci
46. Ilıpınar
47. Istanbul-Yenikapı
48. Kaletepe
49. Kapitan Dimitrijevo
50. Karain Cave
51. Karanovo
52. Kărdžali
53. Kazanlăk
54. Knossos
55. Köşk Höyük
56. Kovačevo
57. Kraïnici
58. Kremenik
59. Kremikovtsi
60. Kuruçay
61. Lerna
62. Makri
63. Maroulas
64. Menteşe Höyük
65. Mersin-Yumuktepe
66. Mezraa-Teleilat
67. Musular
68. Nea Makri
69. Nea Nikomedeia
70. Öküzini Cave
71. Otzaki Magoula
72. Paliambela
73. Pendik
74. Pınarbaşı
75. Pınarbaşı-Bor
76. Platia Magoula Zarkou
77. Prodromos
78. Prosymna
79. Rakitovo
80. Sabi Abyad
81. Servia
82. Sesklo
83. Sofia-Slatina
84. Soufli Magoula
85. Stara Zagora – Okražna Bolnica
86. Suberde
87. Tepecik-Çiftlik
88. Theopetra Cave
89. Tsangli
90. Tsoungiza (Nemea)
91. Uğurlu
92. Ulucak Höyük
93. Vaksevo
94. Yarimburgaz Cave
95. Yeşilova Höyük

APPENDIX F. Content of the CD-Rom: 14C Backbone

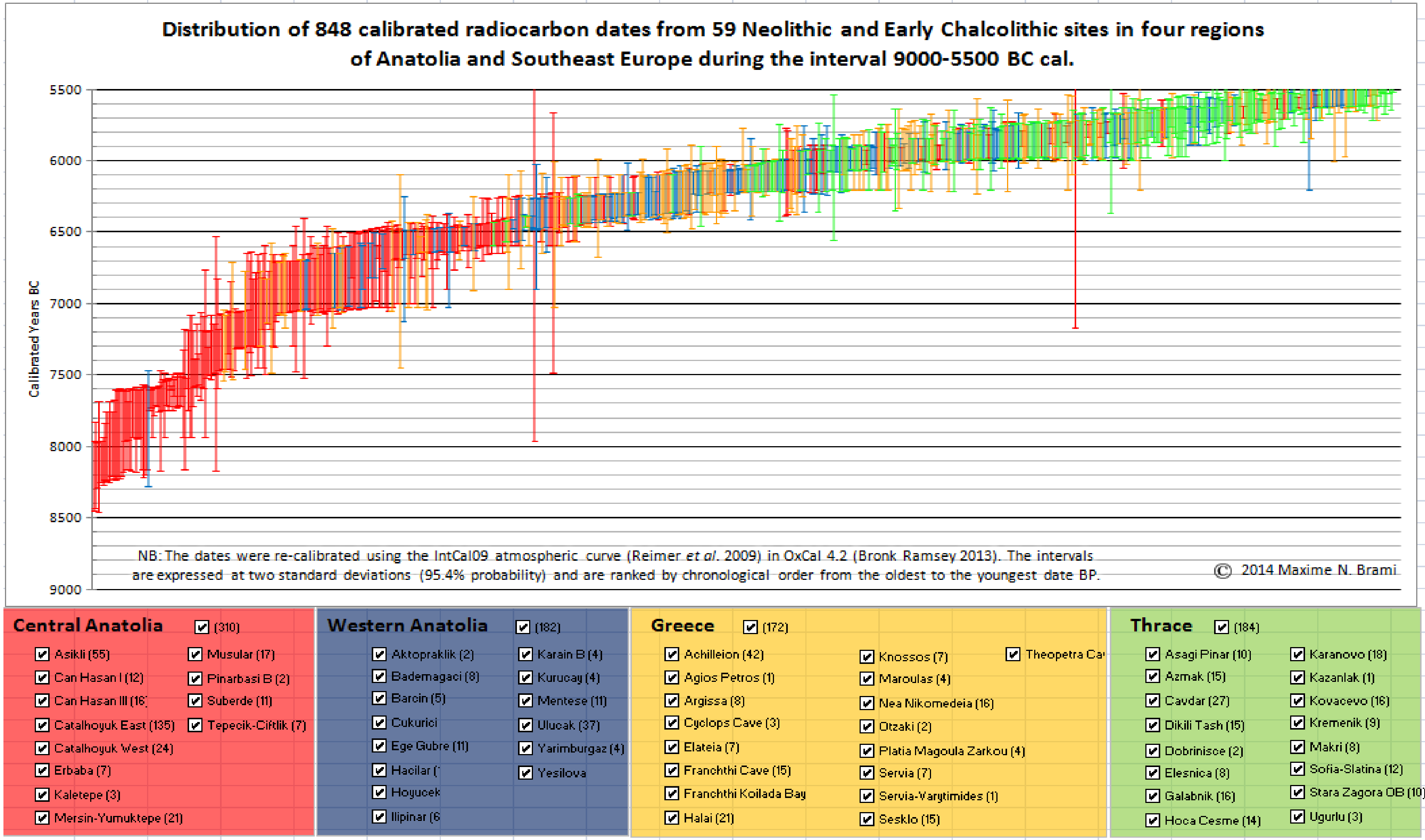
The CD-ROM contains the following files:

14C Backbone.xlsx

The user can check and uncheck radiocarbon intervals of selected sites or region in the excel interface.

14C Database.xlsx

This file contains the database of radiocarbon dates. Column J1 lists dates which have been included in the 14C Backbone. Dates which have been ascribed to Epipalaeolithic/Mesolithic occupation by the excavators or which fall outside the interval 9,000-5,500 BC cal. at 2σ are excluded from the Backbone. In case of duplicates, the earlier reference is preferred.



Distribution of 848 calibrated radiocarbon dates from 59 Neolithic and Early Chalcolithic sites in four regions of Anatolia and Southeast Europe during the interval 9000-5500 BC cal.
Calibrated Years BC
5500
6000
6500
7000
7500
8000
8500
9000
NB: The dates were re-calibrated using the IntCal09 atmospheric curve (Reimer et al. 2009) in OxCal 4.2 (Bronk Ramsey 2013). The intervals are expressed at two standard deviations (95.4% probability) and are ranked by chronological order from the oldest to the youngest date BP.
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Central Anatolia (310)
Asikli (55)
Can Hasan I (12)
Can Hasan III (16)
Catalhoyuk East (135)
Catalhoyuk West (24)
Erbaba (7)
Kaletepe (3)
Mersin-Yumuktepe (21)
Musular (17)
Pinarbasi B (2)
Suberde (11)
Tepecik-Ciftlik (7)
Western Anatolia (182)
Aktopraklik (2)
Bademagaci (8)
Barcin (5)
Cukurici
Ege Gubre (11)
Hacilar
Hoyucek
Ilipinar
Karain B (4)
Kurucay (4)
Mentese (11)
Ulucak (37)
Yarimburgaz (4)
Yesilova
Greece (172)
Achilleion (42)
Agios Petros (1)
Argissa (8)
Cyclops Cave (3)
Elateia (7)
Franchthi Cave (15)
Franchthi Koilada Bay
Halai (21)
Knossos (7)
Maroulas (4)
Nea Nikomedeia (16)
Otzaki (2)
Platia Magoula Zarkou (4)
Servia (7)
Servia-Varytimides (1)
Sesklo (15)
Theopetra Ca
Thrace (184)
Asagi Pinar (10)
Azmak (15)
Cavdar (27)
Dikili Tash (15)
Dobrinisce (2)
Elesnica (8)
Galabnik (16)
Hoca Cesme (14)
Karanovo (18)
Kazanlak (1)
Kovacevo (16)
Kremenik (9)
Makri (8)
Sofia-Slatina (12)
Stara Zagora OB (10)
Ugurlu (3)