

# Migrating and Creating Social Memories: On the Arrival and Adaptation of the Neolithic in Aegean Anatolia

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**Abstract:** Recent studies of the earliest known Neolithic settlements on the central coast of Aegean Anatolia (Ulucak, Çukuriçi) have revealed developed Neolithic societies from the founding of the settlements onwards. Multiple pathways into the area have been discussed broadly, and it has been suggested that early 7<sup>th</sup> millennium BC migrations via terrestrial, coastal and sea routes were most probable. Along with up-to-date innovations, the colonisers came with a package of traditional and well-established Neolithic concepts. Some of them appear to be evident for dozens of centuries in the core zone before their arrival and adaptation in newly occupied regions. They are visible in aspects of materiality and technology, and moreover in a whole set of memories including traditions, beliefs, practices and world-views. So far underestimated in this maritime colonisation model was the role of regional mobile populations, which will be discussed as potential *longue durée* impacts for the creation of the new local Neolithic identities. This paper focusses on the Çukuriçi case study in defining and discussing the complex set of memories of Neolithic farmers and Mesolithic seafarers and their roles in the trajectory of Neolithic social development. This includes a well-established maritime related lifestyle, as well as external innovations and technologies that were brought by the newcomers, presumably transferred together with narratives and social strategies. This dynamic process in the first half of the 7<sup>th</sup> millennium BC led to the establishment of an agricultural community on the central Aegean coast of Anatolia, and which a few generations later was already embedded in a regional network of Neolithic villages.

**Keywords:** social memory, neolithisation, Çukuriçi Höyük, Mesolithic seafarers, migration, identities, western Anatolia

## Introduction: The Early and Late Neolithic in Western Anatolia

In the context of the ‘farming frontier’ between central Anatolia and regions further west, as discussed in this volume and presented in detail by Jean Guilaine and Maxime Brame in their contributions,<sup>2</sup> western Anatolia functions as a potential key zone for our understanding of the postulated complex trajectories of the Neolithic way of life in Europe.<sup>3</sup> Thanks to intensive field investigations and analyses of the Neolithic in some regions of western Turkey in the last few decades, our knowledge of early farming communities has increased enormously.<sup>4</sup> Especially in the Marmara region, on the central Aegean coast, as well as in the Lakes Region, both old and new archaeological data are available, as summarised by Mehmet Özdoğan and Rana Özbek et al. in this volume.<sup>5</sup> Without a doubt, there are still many gaps in our understanding of the western Anatolian Neolithic in terms of ‘empty’ geographical regions and more detailed aspects like chronologies and their synchronisations. In addition, knowledge about material culture, technological as

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<sup>2</sup> Brame, this volume; Guilaine, this volume.

<sup>3</sup> Shennan 2018.

<sup>4</sup> Selected recent publications: Özdoğan – Başgelen 1999; Lichter 2005; Katsanis et al. 2008; Özdoğan 2010; Galik – Horejs 2011; Özdoğan 2011; Reingruber 2011; Çakırlar 2012; Çilingiroğlu et al. 2012; Duru 2012; Çilingiroğlu – Çakırlar 2013; Gerritsen et al. 2013; Özbek – Erdoğan 2014; Özdoğan 2014; Takaoğlu et al. 2014; Weninger et al. 2014; Horejs et al. 2015; Reingruber 2015; Gerritsen – Özbek 2016; Hofmanová et al. 2016; Horejs 2016; Milić – Horejs 2017; Reingruber et al. 2017.

<sup>5</sup> Özdoğan, this volume; Özbek et al., this volume.



Fig. 1 Excavated Neolithic sites in the east Aegean and western Anatolia dating to the 7<sup>th</sup> and 6<sup>th</sup> millennium BC. The sites of the Anatolian Aegean Coastal Group are marked with triangles (map: M. Börner/OREA 2019)

well as socio-cultural developments and many other elements are still lacking; nevertheless, the approximately 25 excavated sites dating to the 7<sup>th</sup> and early 6<sup>th</sup> millennia BC (Fig. 1) offer solid data about farming societies, mostly dating into the Late Neolithic period (6500–6000/5900 BC). During this Late Neolithic phase, it is possible to see the development of regional clusters of sites by means of geographical location as well as regional cultural commonalities.<sup>6</sup> Previous analyses of the connectivity in the Izmir region during the Late Neolithic by the author led to the definition of the ‘Anatolian Aegean Coastal Group’, in which currently six Late Neolithic communities are included. This intra-regional connectivity also suggests the rise of a particular regional identity between c. 6500 and 5900 calBC.<sup>7</sup>

<sup>6</sup> Overview of the Lakes Region and the Anatolian Aegean Coastal Group in Özdoğan et al. 2012 and the Marmara region in Özdoğan et al. 2013 and in Özbal et al., this volume.

<sup>7</sup> Horejs 2016.

There is no doubt about the fully established agricultural economy and permanent house-based way of life in villages of these Late Neolithic communities in western Anatolia (Fig 1). However, only a few of them date back to the so far earliest phase of the first farmers, as argued already by several scholars.<sup>8</sup> Based on the archaeological remains and the radiocarbon data, there are, up to now, about six sites in the entire Aegean and western Anatolian region to be defined as early Neolithic in their economic system and materiality; the sites are Paliambela, Franchthi, Knossos X, Çukuriçi XIII, Ulucak VI, Uğurlu VI and Barcın Höyük VIe (Fig. 2).<sup>9</sup> They are radiocarbon dated to the first half of the 7<sup>th</sup> millennium, mainly between 6700 and 6600 calBC,<sup>10</sup> and have been designated as belonging to the ‘initial’ (in Greece) or ‘early’ (in western Anatolia) Neolithic period.<sup>11</sup> They appear heterogeneous in aspects of ecological conditions (coastal/inland, cave/open-air site), settlement systems (pit complexes, houses), diet and hunting/herding strategies as well as in their raw material procurement management, and most probably in many more aspects when it comes to detailed comparison of single-site analyses.<sup>12</sup> However, they also show some crucial aspects in common, most of all the fact that they represent the first farming and herding communities in the entire region.<sup>13</sup>

As argued already elsewhere in detail, these early Neolithic pioneers based around the Aegean Sea were closely related to the long established maritime networks of the Mesolithic Aegean, and probably also to the eastern Mediterranean PPN networks.<sup>14</sup> Significantly, the absence of evidence for experimental phases in crucial Neolithic economic subsistence strategies (farming and herding) suggests the adoption of external knowledge and practices, coming together with new people seeking new land. This ‘maritime colonisation model’ points to the arrival of new and probably small groups from areas with an established Neolithic economy on the one hand, and on the other it highlights the impact of the *longue durée* maritime connectivity of Mesolithic seafarers, only indirectly detectable in the archaeological record. The scarcity of archaeological data from inland western Anatolia prevents any consistent hypothesis at the moment, but may add to the complexity of Neolithic trajectories if we consider the potential impact of local hunter-foragers as active players within this transformation process.<sup>15</sup> Now let us turn to a discussion of the situation in western Anatolia before agriculture became the main subsistence strategy, in order to address the main issue of this volume: farming frontiers between eastern, central and western Anatolia.

### The Early Holocene Frontiers of Western Anatolia

During the early Holocene, terrestrial western Anatolia was diverse in terms of its cultural, technological and economic background in comparison to the Pre-Pottery Neolithic zones further east (Fig. 2). Whilst the Mesolithic communities in the Aegean and its coastal zones provide a different set of archaeological data, it is only partially related to inland western Anatolia.<sup>16</sup> The lack of any early Holocene data from the southern Balkans – neither from the northern Aegean coast, nor

<sup>8</sup> Horejs et al. 2015; Çevik – Abay 2016; Gerritsen – Özbal 2016; Çilingiroğlu 2017.

<sup>9</sup> The site of Mavropigi in western Macedonia might be included in the future due to its potential early dating as well (Maniatis 2014; Karamitrou-Mentessidi et al. 2015).

<sup>10</sup> Summarised in Clare – Weninger 2014 and Weninger et al. 2014. New data modelling recently published by Guilbeau et al. 2019, lead to ‘older’ dates, but situated in the same plateau of the Calibration Curve.

<sup>11</sup> Krauß 2011, 3; Özdoğan et al. 2012, 237 (chronological table); Perlès et al. 2013; Munro – Stiner 2015.

<sup>12</sup> Cf. Kotsakis 2014 and Kotsakis, this volume, who points out the importance of detailed site studies.

<sup>13</sup> For the contextualisation in a broader development see Shennan 2018.

<sup>14</sup> Vigne et al. 2012; Vigne et al. 2014; Horejs et al. 2015; Douka et al. 2017.

<sup>15</sup> Takaoglu et al. 2014; Çilingiroğlu 2017.

<sup>16</sup> The few relations in the lithic sets of both areas have been discussed recently by Bogdana Milić (Milić 2018). For basic studies of the Aegean Mesolithic see: Perlès 1990; Perlès 2003b; Galanidou – Perlès 2003; Trantalidou 2003; Perlès 2005; Séfériadès 2007; Kaczanowska – Kozłowski 2008; Strasser et al. 2010; Sampson 2010; Sampson et al. 2010; Trantalidou 2010; Galanidou 2011; Trantalidou 2011; Carter et al. 2014; Kaczanowska – Kozłowski 2014; Özbek – Erdoğan 2014; Sampson 2014; Carter et al. 2016; Kozłowski 2016.



Fig. 2 The Aegean Mesolithic and western Anatolia Pre-Neolithic sites dating between 10000 and 7000 BC and the Neolithic pioneer sites starting around 6700 BC. Pre-Neolithic sites: 1. Ağaçlı; 2. Asarkaya; 3. Belbaşı; 4. Beldibi; 5. Çalca; 7. Domalı; 9. Girmeler; 10. Gümüşdere; 11. Kalkanlı; 12. Karain; 13. Keçiçayırı; 20. Musluçesme, 21. Öküzini; 26. Üçdutlar. Epipaleolithic/Mesolithic sites: 6. Cyclops Cave (Youra); 8. Gavdos; 14. Kerame; 15. Klissoura; 16. Koukou; 17. Livari; 18. Maroulas; 19. Mordoğan; 22. Ouriakos; 23. Plakias; 24. Sidari; 25. Theopetra; 27. Ulbrich; 28. Zaimis (after Horejs et al. 2015 with modification; map: M. Börner/OREA 2019)

further inland – prevents any analyses of potential cultural overlapping zones in that area at the moment.<sup>17</sup> Focussing on the region of our study in western Anatolia, about 15 Pre-Neolithic sites have been detected, with a small number that could be dated between 10000 and 6700 BC, mainly clustered in coastal zones (Fig. 2).<sup>18</sup> In addition to this, new important data for the early Holocene are coming from the southwest Anatolian littoral and hinterland, which is of special interest for our understanding of the Neolithic dispersal via maritime routes, in which the southern Anatolian coast is expected to play a crucial role with hopefully new dates in the future.

So far, the archaeological evidence suggests the presence of hunter-forager communities in the late 9<sup>th</sup> and 8<sup>th</sup> millennia BC (Girmeler Cave), with continuous (repetitive? seasonal? permanent?)

<sup>17</sup> For the geographical broader view including the Danube in the early Holocene see for example: Guilaine 2013; Gurova – Bonsall 2014, fig. 2; Krauß – Floss 2016.

<sup>18</sup> This spatial distribution of Pre-Neolithic sites in those areas might represent regions of intensive surveys and focussed investigations, for details in the northwestern part see: Karul 2017, fig. 1.1.

domestic activities including dwellings and plastered floors.<sup>19</sup> Çiler Çilingiroğlu has pointed to potential forager-farmer contacts between the mobile groups in southwest Anatolia (e.g. Öküzini Cave) and the farming pioneers of the Aegean.<sup>20</sup> Relations between the southwest Anatolian hunter-gatherers and Cappadocian PPN groups had also been suggested,<sup>21</sup> but this contact does not appear to have led to the adoption of cultivated crops and herding subsistence strategies before the 7<sup>th</sup> millennium BC, such as in Bademağacı and Höyücek, both of which are located further inland at the Burdur plateau.<sup>22</sup> However, the whole region is expected to provide substantial data in the future.

From the work of the experts in northwest Anatolia, a chronological or even techno-cultural definition of the lithic assemblages from surface collections seems difficult (e.g. ‘Ağaçlı Group’).<sup>23</sup> However, whilst the flake-based lithic industry of Üçdütlar does not appear comparable with the Aegean Mesolithic chipped stone industry based on our current state of knowledge as summarised by the excavators, they do provide new data for potential overlapping zones of maritime and terrestrial mobile groups in Pre-Neolithic times.<sup>24</sup> The recent work at the site of Mordoğan on the Karaburun Peninsula suggests strong links with the Aegean Mesolithic in terms of raw material and techno-typology.<sup>25</sup> These exciting new data not only provide the first evidence for hunter-foragers in the Izmir region, but additionally offer a local Pre-Neolithic population connected with Aegean mobile groups.

The current evidence for the early Holocene in western Anatolia highlights potential contacts between the southwestern local hunter-foragers and PPN zones further east, which on the one hand demonstrate the crucial diversities between central and western Anatolia, but on the other also indicate at least occasional contacts through the ‘farming frontier’. The terrestrial-marine contact zones along the littorals of Anatolia are an important focus for understanding the complex trajectories and transformation processes. Although we are currently lacking any traces of local pathways, adaptation or experimental phases during the neolithisation process of the region in our focus, it is important to consider failed expeditions by Neolithic people or simply not yet detected early farming sites. As such, the spatial patterning of Mesolithic or Pre-Neolithic and early Neolithic pioneers might be coincidental and only represents the present state of research. I have also argued for the alternative view that the micro-regions of the first pioneer sites might have been attractive to the newcomers seeking land specifically because they were ‘empty’ areas. The central Aegean coast of Anatolia may offer future potential to look more closely at this situation with data emerging from the two pioneer sites of Ulucak and Çukuriçi located close to the coast and the Mesolithic site of Mordoğan on the Karaburun peninsula in their neighbourhood. Following the preliminary results from these sites, it is only currently possible to state the differences in lithic technology and raw material procurement between the Mesolithic and early Neolithic communities.<sup>26</sup> The broad study of the lithic raw material procurement strategies of the Çukuriçi pioneer community by Michael Brandl and Bogdana Milić has shown that local, regional as well as supra-regional sources were known and used.<sup>27</sup> Although scientific analyses of the cherts are awaited for Aegean Mesolithic assemblages and the neighbouring Mordoğan in particular, there are no indicators for the Pre-Neolithic use of the local chert sources in Çukuriçi’s vicinity so far.<sup>28</sup>

<sup>19</sup> Takaoglu et al. 2014.

<sup>20</sup> Çilingiroğlu 2017.

<sup>21</sup> Takaoglu et al. 2014 based on sequences of plastered floors and plant processing with grinding stones in Girmeler Cave, which are both well-known practices since early PPN in central Anatolia.

<sup>22</sup> Duru 2012; Clare – Weninger 2014, 11.

<sup>23</sup> Gatsov – Özdoğan 1994; Özdoğan 2008; Özdoğan 2011; Efstratiou et al. 2014; Reingruber 2016; Özbal – Gerritsen, this volume.

<sup>24</sup> Özbek – Erdoğu 2014.

<sup>25</sup> Çilingiroğlu et al. 2016; Çilingiroğlu 2017.

<sup>26</sup> Çilingiroğlu et al. 2016; Milić 2018.

<sup>27</sup> Horejs et al. 2015; Milić 2018; Schwall et al. in press.

<sup>28</sup> Scientific definition of the chert sources used during the Neolithic at Çukuriçi Höyük is given in Schwall et al. in press; Brandl in preparation.

Category	Archaeological Data	Aegean Mesolithic/ Pre-Neolithic Western Anatolia 10000–7000 BC	Pre-Pottery Neolithic Core Zones	Pioneer Sites Ulucak VI & Çukuriçi XIII 6700 BC	Anatolian Aegean Coastal Group after 6500 BC
<b>Settlement and Architecture</b>	House-based Community		x	x	x
	Village Life		x		x
	Rectangular Buildings		x	x	x
	Special Cult Buildings		x		
	Painted Plaster		x	x	
<b>Subsistence</b>	Plastered Floors	x	x	x	x
	Domestic Animals		x	x	x
	Cultivated Plants		x	x	x
<b>Imported Raw Materials</b>	Fishing, Shell-fishing	x	x	x	x
	Obsidian	x	x	x	x
	Exotic Shells	x	x	x	x
	Malachite		x	x	
	Ocr/Hematite		x	x	
<b>Groundstones</b>	Native Copper		x		
	Celts, Chisels etc.	x	x	x	x
<b>Stone Status Objects</b>	Grinding Stones	x	x	x	x
	Stone Vessels	x	x	x	x
	Bracelets, Rings		x	x	
<b>Lithic Technology</b>	Fine Beads		x	x	x
	Pressure Technology		x	x	x
	Flake Industry	x	x	x	x
	Caches of Long Pressure Blades		x		x
<b>Special Crafts</b>	Seafaring	x	x	x	x
	Mat, Basketry		x		x
	Textile		x		x
	Pigmenting		x	x	
<b>Symbolic Representations</b>	Leopard Symbols/Bones		x		x
	Animal Figurines		x		x
	Steatopygic Figurines		x		x
	“M” Shaped Figures		x		
	Skull Cult, Modelled Skulls		x		
	Phallus Symbols		x		
	Bucrania		x		

Fig. 3 The archaeological evidence of main cultural categories differentiated in Mesolithic Aegean/Pre-Neolithic western Anatolia, PPN Core Zone, Neolithic Pioneers and the Anatolian Aegean Coastal Group (after Özdoğan 2010 with modifications and additions; table by F. Ostmann/OREA)

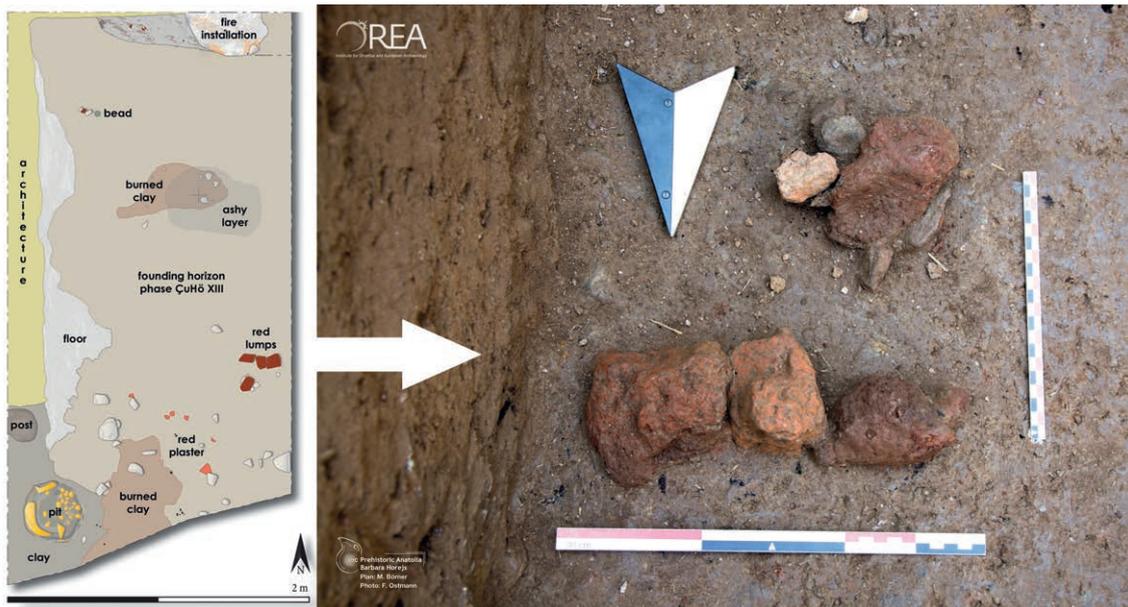


Fig. 4 Lumps for pigmentation recovered upon the founding horizon floor of the pioneer settlement phase ÇuHö XIII (photo: F. Ostmann/ERC Prehistoric Anatolia 2014, plan: M. Börner/OREA)

We might hypothesise that the Pre-Neolithic mobile seafarers explored the coastal zones around modern Izmir and were aware of its valleys, small basins, freshwater and raw material sources; however, whilst these environmental conditions were highly attractive for farming communities,<sup>29</sup> they probably did not fulfil the needs of Aegean fishermen and seafarers.

The evidence we have so far suggests that the arrival of the Neolithic way of life at the Anatolian Aegean central coast appeared abruptly, while the succeeding process of adaptation and transformation into regional Neolithic identities lasted several generations. The following discussion aims to differentiate the archaeological evidence of the ‘Anatolian Aegean Coastal Group’ chronologically to examine the potentially continued, adopted, transformed or transferred aspects of the Mesolithic-Neolithic change. Based on the case study of Çukuriçi Höyük in early and late Neolithic times, the discussion will address the important role of social memories in the complex pathway from a pioneer society into a regionally embedded Neolithic community with its particular local identity.

### Continuities, Innovations, Adaptations and Transformations

The abrupt arrival of the Neolithic to the central Aegean coast of Turkey is attested at the pioneer sites of Ulucak VI and Çukuriçi XIII around 6700 calBC, and has already been presented in detail elsewhere. This contribution now focusses on the aspects of social strategies and techno-cultural know-how, which came with the newcomers and were transformed and continued or were abandoned during the succeeding centuries. Additionally, this approach aims to consider the evidence for those aspects in the archaeological record that potentially did not come with early farmers, but instead indicate other inputs or influences within a *longue durée* perspective. To avoid long descriptions of each relevant/non-relevant element, the following table will illustrate the archaeological record within cultural categories as evident in Aegean Mesolithic/Pre-Neolithic western Anatolia, in the PPN core zones, in the pioneer sites of Ulucak VI and Çukuriçi XIII as well as in the succeeding Late Neolithic ‘Anatolian Aegean Coastal Group’ (Fig. 3). Although a simple list of archaeological categories will never be able to integrate the complexity of the neolithisation process, it summarises our current knowledge about the data in a clear manner.

The dominant relations between the pioneers and the PPN world have been discussed already and shall not be repeated here.<sup>30</sup> Instead this paper will examine aspects that are evident only in the pioneer phases and seem to disappear during the establishment of local and regional Neolithic identities and concepts. Although there is evidence for the early use of red pigment in the plastering of floors (and walls as for example in Ulucak VI), there seems to have been a shift by the Late Neolithic as the practice of plastering continued, but red colours were abandoned. For example, red pigment for architectural features is only known from the founding phase in Çukuriçi XIII (Fig. 4).

Significantly, the use of red colours for living spaces disappeared around the same time that red coloured pottery was introduced in the Late Neolithic period, suggesting that the colour may have continued to have cultural significance, but within a different material sphere. It requires more scientific analyses in the future to learn more about the production technologies of these red vessels (oxidising firing procedures, red-slipped as well as red-painted jars), but we can state the importance of red in producing domestic pottery, starting around 6500 BC. A shift between the Early and Late Neolithic can also be seen in personal adornments; the evidence of malachite at Çukuriçi XIII appears as a singular phenomenon (Fig. 5),<sup>31</sup> however, not accidentally as one

<sup>29</sup> For details of Çukuriçi’s environmental conditions see: Stock et al. 2015; Horejs 2017, 14.

<sup>30</sup> Çilingiroğlu – Çakırlar 2013; Arbuckle et al. 2014; Horejs et al. 2015; Douka et al. 2017.

<sup>31</sup> Horejs et al. 2015.

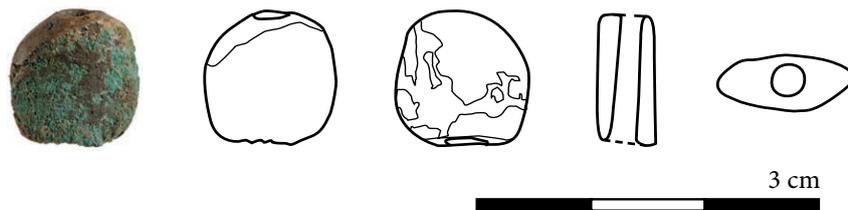


Fig. 5 Malachite bead from the pioneer settlement phase XIII at Çukuriçi Höyük, coming from a reddish clay layer located in complex 24 (inventory number: 14/2375/3/8) (M 1.5:1) (photo: N. Gail; ERC Prehistoric Anatolia, drawings: M. Röcklinger/OREA)

small mobile bead can be easily transported over long distances and kept or circulated over time.<sup>32</sup> The same can be stated for stone bracelets and rings, both evident during the first farming generations, but not continued in the Late Neolithic. Such evidence suggests the selective adoption and abandonment of different elements of Neolithic culture. Whilst the main components of the Neolithic way of life, such as permanent house-based living, four-tier husbandry, farming with cultivated plants and various practices and technologies (storage strategies, pottery production, pressure technique in chipped stone production) came with the newcomers and remained; other practices were not continued and therefore disappeared (stone bracelets, malachite beads) or were transformed within a local context over several generations.

#### Impact from Mesolithic Populations?

In addition to particular archaeological material features, relations between the pioneers and early Holocene mobile groups are primarily detected through indirect evidence of learnt practice, via the communication of know-how and the adoption of particular seafaring knowledge.<sup>33</sup> The ‘nautical package’ of Mesolithic seafarers included not only the knowledge of routes and raw materials sources (jadeit on Syros,<sup>34</sup> obsidian on Melos), but also a maritime affinity visible in marine nutrition and marine ornaments,<sup>35</sup> evident in Çukuriçi’s pioneer community. The individual character of ornaments made of seashells suggests a personal connection of the owner to the sea; these few personal items probably reflect the impact of and connection to marine ways of life for this pioneer society, which are symbolised in individual jewellery. The use of shellfish ornaments disappears after the founding phase, which indeed might highlight more direct contact of earlier generations with maritime populations. However, fishing and shell-fishing remained important aspects in the local diet and subsistence strategy. The suggested impact of Mesolithic Aegean foragers and fishermen on subsistence, mobility and even raw material procurement strategies appears to have had a long-term effect on the local Çukuriçi community and suggests *longue durée* connectivity before and after the establishment of the first farmers on-site.<sup>36</sup> It remains an open question of how long the Mesolithic tradition of mobile seafaring groups continued during the 7<sup>th</sup> and 6<sup>th</sup> millennia and the following periods as a parallel phenomenon to the farming communities around the coast. Unfortunately, with the absence of skeletal remains and analysis from the sites within our focus area, it will not be possible to fully examine the integration of Mesolithic people into the newly settled communities. As attested in other world regions,<sup>37</sup> the process of assimilation and adoption during the neolithisation

<sup>32</sup> Çilingiroğlu recently highlighted the common fragility, small size and mobility of the material culture in the founding phases of the pioneer sites (Çilingiroğlu 2017).

<sup>33</sup> Kotsakis 2008; Broodbank 2013.

<sup>34</sup> Sørensen et al. 2017.

<sup>35</sup> Rose 1995; Galanidou 2011; Stiner – Munro 2011; Horejs et al. 2015, 304, fig. 6.

<sup>36</sup> Cf. Galanidou – Perlès 2003; Galanidou 2011; Sampson 2014.

<sup>37</sup> Bollongino et al. 2013; Beau et al. 2017; Mathieson et al. 2018.



Fig. 6 Two Neolithic pendants excavated at Çukuriçi Höyük (inventory numbers: 1: 14/2365/3/1, 2: 13/5244/3/4) (photos: F. Ostmann/OREA; drawings: M. Röcklinger/OREA)

dispersal might be imagined for the Aegean Mesolithic groups as well, even though the timespan of this transformation after the Neolithic arrival is still not fully understood.

#### Bridging the Farming Frontier?

A well understood aspect is the frontier between the PPN phenomenon of monumentalisation, special cult buildings and complex symbolism in the core zones, all of which were not transferred to the contemporaneous early Holocene communities in western Anatolia or the Aegean. However, some aspects of special practices in probable ritual contexts on the Anatolian Aegean coast do seem to have been transferred from east to west, bridging the gap in time and space. The cache of obsidian long-blades deposited inside a Late Neolithic house at Çukuriçi X (c. 6500 calBC) previously published, reflects older PPN practices of long-blade hoarding known from PPNB Upper Mesopotamia, the Levant and Cyprus.<sup>38</sup> As published elsewhere,<sup>39</sup> the evidence of a ritual deposition of a hunted leopard within the domestic area of the Late Neolithic Çukuriçi village (phase ÇuHö VIII) was most likely related to central Anatolian concepts of taboo animals and hunting rituals in agricultural domestic societies. The leopards' special social-ritual treatment and depiction, played a role within the 'Anatolian Aegean Coastal Group' during the Late Neolithic,<sup>40</sup> which might reflect new connectivities of the coastal communities with inner Anatolian ones<sup>41</sup> in the last centuries of the 7<sup>th</sup> millennium BC. This is also suggested through the introduction of Cappadocian obsidian artefacts found at western settlements. In addition to these transferred, adopted and transformed practices, we also see an increase in new symbolic representations after the pioneer phase, including figurines and amulets. Two Çukuriçi pendants shall be presented in more detail to demonstrate the new variety of Neolithic symbolism on the Anatolian Aegean coast (Fig. 6).

<sup>38</sup> Horejs et al. 2015; Milić in press.

<sup>39</sup> See our discussion of leopard hunting in Galik et al. 2013.

<sup>40</sup> Leopards are not only hunted at Çukuriçi and Ulucak (Çakırlar 2012, 22, tab. 3), but also depicted such as in Yeşilova (Derin 2013).

<sup>41</sup> Hodder – Meskell 2010.

Both pendants are made of hard black to black-greyish stone,<sup>42</sup> are small in size and light in weight, worked to be viewed from the front with grooved relief, a plain flat underside, and are highly polished on the complete surface.<sup>43</sup> Both are pierced in the upper part and most likely were used as pendants, at least secondarily. The meaning of the pendant from Fig. 6.1 remains vague and can be ascribed as probably an anthropomorphic figure with plain trapezoid 'head' and straight elongated slightly out-curved corpus without any obvious sexual characteristics. The break at the lower part prevents a definition of its base.<sup>44</sup> The preserved part with slightly symmetrical extremities (shoulder with arms or schematic arms and hips?) is reminiscent of other schematic pendants,<sup>45</sup> though exact parallels can hardly be expected within this exceptional kind of art and expression. Its scale of abstraction, also known from Anatolian Neolithic statuettes, makes it additionally difficult to definitely assign it as a human, animal or fantastic creature. The concept and shape of its head corresponds to the second, clearly anthropomorphic pendant, but is also known from Neolithic animal stone amulets, especially in Greece and in the Balkans, the latter primarily have a later date.<sup>46</sup>

The clearly anthropomorphic pendant (Fig. 6.2) represents a female figure with distinct accentuated sexual characteristics, specifically the emphasised pelvis and highlighted pubic triangle. The arms are in relief without visible hands or fingers and are bended underneath the invisible breasts. Short legs in a slightly outward direction end in oval side-facing feet. The short rectangular-shaped head does not show any internal facial grooving and remains plain with a fine polished surface. The figure is 2cm long and of high quality. It displays fine grooves and scratches, and was most likely manufactured using an obsidian blade, with the hardness of the stone material requiring such a tool.<sup>47</sup> This astonishing miniature female figure is reminiscent of the well-known female/divine figures from Hacilar and Çatalhöyük, for example, as well as other schematic depictions in Anatolia and the Aegean in the 7<sup>th</sup> millennium.<sup>48</sup> Recently Svend Hansen has argued that the distinct position of the hands under or upon the breasts is not only restricted to Anatolia and Greece, but also incorporates a different meaning than statuettes with other arm positions.<sup>49</sup> Comparable concepts are detectable in standing statuettes made of clay recovered in Late Neolithic western Anatolia, such as in Ulucak IV and Barcın Höyük VIa–b.<sup>50</sup> Although the interpretation for these kind of figures is a broad field of long-term discussion and not the focus of this contribution, I would suggest that the Çukuriçi pendant represents important aspects for the agricultural society, such as power and fertility, both embedded in a complex symbolic and mythic world.<sup>51</sup> Probably related with the broader cultural development of domestic village life, its local production as well as its presumable use as personal ornament suggests a specific world-view linked with local communal, as well as individual beliefs and identities.

<sup>42</sup> Both have been analysed by the geological expert Danilo Wolf with the result that Fig. 6.1 is made of Galena and Fig. 6.2 of a hard and tough amphibolite kind of stone.

<sup>43</sup> Fig. 6.1: object was found in a filling layer within complex 20 of phase ÇuHö XII (c. 6600 BC). Fig. 6.2: object was recovered within sediments of a filling layer in the Early Bronze Age settlement ÇuHö IV (room 41), most likely relocated within the tell by using Neolithic sediments for this low construction (see Schwall 2018, 118–163; Grasböck et al. in preparation).

<sup>44</sup> The measurements of the pendant from Fig. 6.1: 1.92cm long, 2.2cm wide, 0.64–0.47cm thick and 8.1g in weight.

<sup>45</sup> E.g. Hansen 2007, pl. 109, 10 (Achilleion).

<sup>46</sup> E.g. Perlès 2001, 268, fig. 12.5 (Greece); Nikolov 2006, 71 (Bulgaria).

<sup>47</sup> The measurements of pendant Fig. 6.2: 2.1cm long, 1.8cm wide, 0.3cm thick and 4.3g in weight.

<sup>48</sup> For new figurines from Çatalhöyük with a comparable concept of expression see: Meskell et al. 2016, fig. 1, 2, 5; for other sites see: Hansen 2007, pl. 65 (Hacilar); pl. 80, 1 (Orman Findanlığı); pl. 97, 9 (Ag. Georgios); pl. 99 (Sesklo); pl. 109, 8 (Malthi).

<sup>49</sup> Hansen 2014.

<sup>50</sup> Çilingiroğlu et al. 2012, fig. 8–9; Gerritsen et al. 2013, fig. 17.

<sup>51</sup> Hansen 2007; Hodder – Meskell 2010.

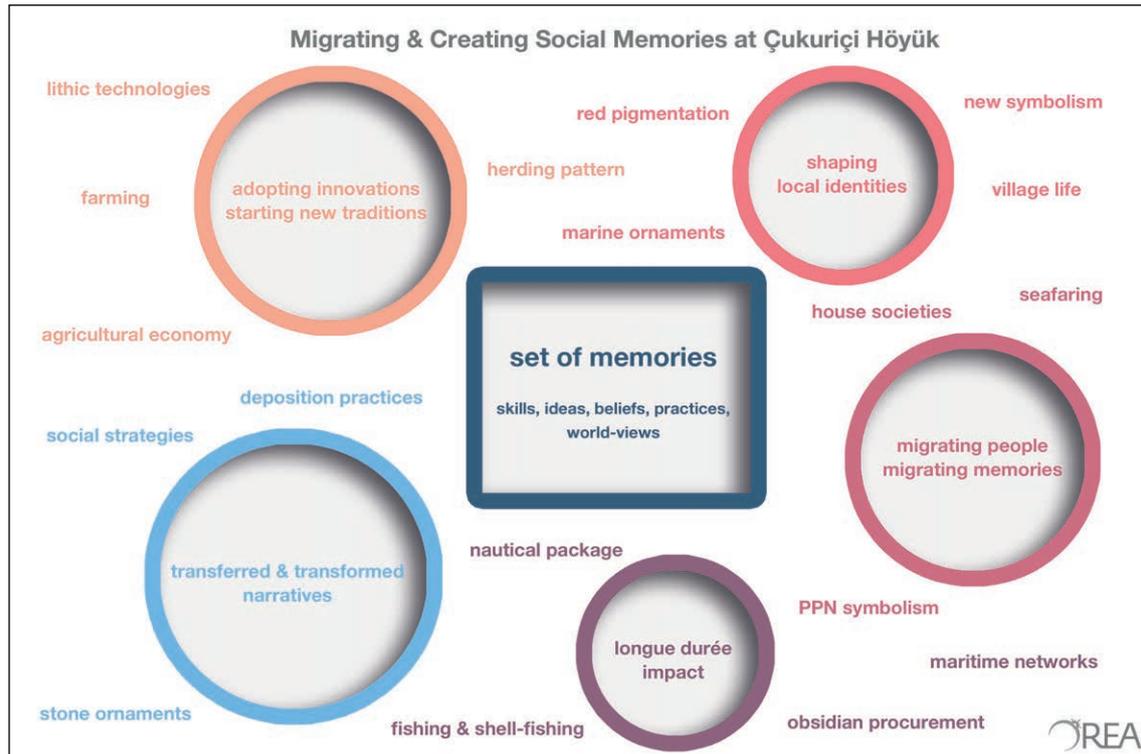


Fig. 7 Model for the complex pathways for migrating and creating social memories at Neolithic Çukuriçi Höyük (illustration: F. Ostmann/OREA 2018)

### Discussion of Social Memories for Establishing the Neolithic at Çukuriçi

The archaeological and material features that have been discussed from Çukuriçi Höyük highlight a complex set of different ideas, practices and world-views that created the site-specific developments we see during the Early and Late Neolithic periods (Fig. 7). These cultural expressions incorporate different narratives, some of which show a long-lasting impact on the local agricultural societies such as the specific techno-cultural skills that are linked with know-how, experience and knowledge, and can hardly be transferred via simple copy-paste mechanisms. For example, the ‘nautical package’ and maritime affinity of the Çukuriçi settlers incorporated the experience of seafarers and fishermen, attested from both the beginning and continuously practiced during the entire Neolithic period. This *longue durée* impact of the maritime-related lifestyle is not only reflected in personal items of the pioneers, but we might additionally assume a very specific system of beliefs, myths and nautical practices created by a partially maritime society. Since the first settlers brought these traceable skills with them, which could hardly have come via inland Anatolian farmers, the Mesolithic Aegean and/or PPN eastern Mediterranean traditions seem to have been embedded in Çukuriçi’s local habits. The additional domestic skills of farming and herding display a Levantine-Mesopotamian pattern<sup>52</sup> pointing to terrestrial agricultural traditions, again presumably related to specific social strategies, practices and beliefs. By facing the ‘Neolithic farming frontier’ between central and western Anatolia, I would like to argue for some shared social meanings and memories on both sides of this frontier, reflected in systems of beliefs, rituals and practices of the Neolithic house societies, both east and west of this frontier. Although the communities were undoubtedly embedded in a local context and continuously created and negotiated local identities, they were contextualised

<sup>52</sup> Galik – Horejs 2011; Arbuckle et al. 2014.

in time, experience and memory in a broader sense, too. By considering the evidence for the movement of people through the transfer of skills and knowledge, we can also consider the migration of memories that would have come with these people as they moved, being part of a particular set of social-cultural and technological traditions and practices.

### Creating Social Memories

The creation of social memory<sup>53</sup> and its impact on Neolithic communities and identities has been discussed in different aspects for the Levant and Anatolia by several scholars in recent decades. It has been argued by Ian Kuijt that for the PPNB Levant, we are probably facing a kind of ‘standardisation of social memory in communities’, not only in burial patterns.<sup>54</sup> Kuijt further argues for a long-term maintenance of similar practices within and between contemporaneous settlements throughout the Levant and Anatolia in the 8<sup>th</sup> millennium BC. A particularly important aspect of his model of similar practices in early Neolithic communities is the continuity in location of buildings. The practice of continuous rebuilding of houses one upon the other over centuries is not only a social pattern in the PPNB Levant, like in ‘Ain Ghazal, Beidha or Jericho. This particular practice is also observable in central Anatolia, like in Aşıklı and Çatalhöyük, where it has widely been discussed by Ian Hodder, Bleda Düring and others.<sup>55</sup> The commemorative aspect for creating social memories in an agricultural society argued by Ian Hodder and Craig Cessford<sup>56</sup> is also evident in the Çukuriçi Late Neolithic settlement. The case of house rebuilding and replacements within the settlement phase ÇuHö X has no practical reason,<sup>57</sup> but demonstrates a potential socio-functional meaning through potentially creating social memories for these house-based communities. The evidence for Çukuriçi house replacements additionally points to the shaping of a specific identity as well, again most likely related to its house-based entities over several generations.<sup>58</sup>

### Transferred Memories

The preservation of knowledge over generations is crucial in establishing and conserving traditions including distinct strategies (rituals, practices) embedded in the social memories of a group, family or community. The caching of long blades at Çukuriçi presumably represents such an expression of social memories transferred from PPNB Upper Mesopotamia and the Levant. This assemblage reflects external and former traditions, but also shows local adaptations in the production of these long blades through the use of the main local raw material, which is in our case Melian obsidian. Within the concept of memory, it is also possible to explain some other exotic elements related to non-local traditions. The stone bracelet of probable local production from Çukuriçi XIII finds its best parallels in PPN objects of Central Anatolia and Upper Mesopotamia and can be seen as a commemorative personal ornament, related with distinct values and meanings for its owner(s). These transferred and adopted memories illustrated in blade-caching and

<sup>53</sup> I understand social memory in terms of a social and cultural phenomenon in following for example Howard Williams, who analysed material culture in aspects of commemorative technologies and worked out incorporated and invoked narratives of archaeological objects (Williams 2013). There is a wide debate in anthropology about the misleading use and understanding of memory, which is suggested to be replaced by the terms ‘recollection’ or ‘evoking’ (e.g. Bloch 2012). I would still prefer ‘social memory’ as an established concept in archaeology (e.g. Chesson 2001; Van Dyke – Alcock 2003; Assmann 2008; Sommer 2014).

<sup>54</sup> Kuijt 2000; 2001.

<sup>55</sup> Hodder – Cessford 2004; Asouti 2006; Hodder 2007; Düring 2011; Düring 2014.

<sup>56</sup> Hodder – Cessford 2004.

<sup>57</sup> Brami et al. 2016.

<sup>58</sup> Souvatzi 2008; Hodder 2013, 351 argued for additional complex ties between groups and houses beyond the biological ones, such as co-eating and co-burying groups.

personal jewellery are related with the transfer of innovative technologies from the PPN zone, leading to a long-term impact on Neolithic societies. This is further attested through the lithic package, as defined by Milić, which incorporated not only distinct PPN tool types (or concepts of makings such tools) brought by the pioneers, but also, and more importantly, the knowledge and expertise of the new pressure technique for their production.<sup>59</sup> Finally, the established farming and herding subsistence economy practiced by the Çukuriçi pioneers represents agricultural skills, including the breeding of the domestic pig, brought in with the newcomers most likely via coastal and/or maritime dispersal. Indeed, one might imagine particular traditions, practices and beliefs as essential social strategies of this early agricultural community, which at present we have failed to fully consider in our interpretation of the archaeological data.

This complex set of memories presumably led to a contradictory accumulation of different skills, ideas, beliefs, practices, technologies and world-views in the pioneer societies of early 7<sup>th</sup> millennium BC Çukuriçi. Migrating and mobile people with particular memories were creating a society, shaping and negotiating its own local identity. This complex trajectory includes a regionally well-established maritime-related lifestyle as well as innovations and technologies that were brought by external communities and then adopted, presumably transferred together with narratives and social strategies. This dynamic process in the first half of the 7<sup>th</sup> millennium BC led to the establishment of an agricultural community on the central Aegean coast of Anatolia; a few generations later it was already embedded in a regional network of Neolithic villages. The phenomenon of migrating and creating social memories of a pioneer society might shed some light on the arrival and adaptation of the Neolithic on the Anatolian Aegean coast.

The evidence discussed from this case study not only indicates far-reaching shared meanings, it also importantly provides evidence for the transferral of social strategies and new cultural contexts in the Aegean, and their adoption for creating new local identities. These strategies were probably originally embedded in a complex system of beliefs, rituals and social patterns in the PPNB zones and are partially still detectable many generations later. We have argued for a maritime colonisation in the early 7<sup>th</sup> millennium via routes from the eastern Mediterranean to the eastern Aegean, probably based on Mesolithic sea networks. The model of migrating social memories within this Neolithic dispersal might bridge the gap between the PPN core zones and early Neolithic Aegean and western Anatolia, not in terms of chronology but certainly in terms of culture.

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# Farmer-Forager Interactions in the Neolithisation of Northwest Anatolia: Reassessing the Evidence

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**Abstract:** The Neolithisation of the Marmara Region has often been considered as having been shaped by a combination of farmer immigration and interaction between farmers and forager groups. This is based on archaeological evidence for the presence of Epipalaeolithic or Mesolithic groups in the region, and on particular aspects of Neolithic settlements in the greater Istanbul region that have been interpreted as forager cultural traits. The lack of an absolute dated chronological framework has made it difficult to corroborate the model. The recent Barcın Höyük excavations provide firm dates for the crucial middle and late 7<sup>th</sup> millennium BC period, during which pioneer farming groups settled down permanently in the region and the Fikirtepe Culture formed as a regional cultural entity. To assess the changes that took place, this article proposes a six-stage developmental model to review the archaeological evidence from surveys and excavations from the Epipalaeolithic to the Middle Chalcolithic Period.

**Keywords:** Marmara Region; cultural interaction; colonisation; Fikirtepe Culture; settlement; architecture; burial traditions

## Introduction

How indigenous foragers became incorporated into Neolithic farmer communities has been a long-standing topic of study among archaeologists who investigate Neolithisation in European prehistory.<sup>3</sup> Palaeogeneticists have recently shown that modern populations in Europe represent an amalgamation of indigenous groups and incoming peoples, confirming ideas of genetic merging.<sup>4</sup> The only region of Anatolia for which such a scenario of forager acculturation has been proposed is the Marmara Region in the 7<sup>th</sup> millennium BC.<sup>5</sup> Yet the processes involved in the suggested cultural contacts leading to the Fikirtepe Culture are little understood.

A central aim of this chapter is to assess farmer-forager interactions in Northwest Anatolia. To what extent did Epipalaeolithic or Mesolithic hunter-gatherer groups, known archaeologically from the so-called Ağaçlı sites and other flint scatters in the greater Istanbul region, play a role in the Neolithisation of Northwest Anatolia? What evidence is there for a merging between farmer and forager subsistence economies and what, if anything, can be said regarding the character of the inter-community exchange of ideas, customs and lifestyles? While these questions have been debated for some time,<sup>6</sup> recent data from the pre-Fikirtepe phase of the mid to late 7<sup>th</sup> millennium levels at the site of Barcın Höyük have yet to be incorporated in these discussions.

Our knowledge-basis for the prehistoric occupation of the Marmara Region has its roots in the discovery of the sites of Fikirtepe and Pendik during the building of the Baghdad Railroad.<sup>7</sup> Exca-

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<sup>3</sup> Zvelebil – Lillie 2000; Guilaine – Manen 2007.

<sup>4</sup> Richards 2005; Bramanti et al. 2009.

<sup>5</sup> Özdoğan 2013a; Karul 2017.

<sup>6</sup> Özdoğan – Gatsov 1998; Düring 2011; Karul 2011; Özdoğan 2013a; Karul 2017.

<sup>7</sup> Mordtmann 1907; Arne 1922; Janse 1925; Harmankaya et al. 1997.

vations took place at Fikirtepe during the 1950s.<sup>8</sup> Pendik was briefly re-investigated in 1961 and the first official rescue excavations took place in 1980.<sup>9</sup> The concept of the “Fikirtepe Culture” owes its origins to Mehmet Özdoğan, who identified common cultural elements.<sup>10</sup> The Ağaçalı discoveries, which comprise the main evidence for Mesolithic or Epipaleolithic habitation in the region known to date, were made in 1973. The dunes on which the finds are scattered were initially surveyed that year by Howe and Korfmann and members of the Department of Prehistory of Istanbul University.<sup>11</sup>

A deficiency in concentrated research regarding the Epipaleolithic/Mesolithic and Neolithic Periods is undeniable, but geological factors and the rise of the sea level too have significantly contributed to the lack of data.<sup>12</sup> Alluvial deposition over millennia likely remains as a prime detriment to the detection of such archaeological phases. Foundation levels at permanent 7<sup>th</sup> and 6<sup>th</sup> millennium settlements like Ulucak and Yeşilova in the Aegean Region, to list a few, were discovered over five meters beneath the modern level of the plain.<sup>13</sup> For the Istanbul region, Neolithic deposits appeared at Yenikapı over six meters below the current level of the Marmara Sea.<sup>14</sup>

Nevertheless, there has been a considerable amount of excavation and research. The picture to date reflects a more-or-less established narrative of a peaceful fusion between farmer and forager communities that manifests itself most visibly at sites in the greater Istanbul area, and less so at the inland sites in the southeastern Marmara region.<sup>15</sup> The former group of sites, especially Fikirtepe and Pendik, and potentially also other coastal settlements are considered settled communities displaying a blend of a sedentary agricultural and a forager lifestyle. In summary, the argument advocates: “...that sites along the southern Marmara represent immigrant farmers, bringing with them a new way of life, with those around Istanbul involving the merging of local Mesolithic communities with the newcomers, either by living together or possibly voluntarily adapting certain aspects of the Neolithic package, resulting in a mixed subsistence pattern but at the same time continuing their main mode of living.”<sup>16</sup>

This chapter addresses this question of the merging of farmers and foragers by bringing multifarious strands of data together in a systematic and chronological overview. The main approach used here is to describe a sequence of stages covering the transition from the Mesolithic to the Neolithic Periods. Chronological control has been problematic for Northwest Anatolia because there are few absolute dates and no systematic excavations have been carried out on any of the pre-Neolithic sites. We make use of stratified and absolutely dated deposits to attempt to refine the model suggested for interaction and contact into finer and more nuanced diachronic sub-units. Traditionally, two waves or phases of Neolithic expansion, one Aceramic and another dating to the Ceramic Neolithic, have been discussed in publications already. In an effort to contribute to the growing information on the Neolithisation of the region, this chapter subdivides the various phases to create a chronological overview covering a period from before the 7<sup>th</sup> millennium to about 5500 BC. Geographically, the focus is primarily on the Eastern Marmara Region and the Istanbul Area. The stages used in this chapter for a sequential overview of this nature are listed below:

**Stage 1** Epipalaeolithic/Mesolithic forager groups exist in greater Istanbul, and possibly beyond;

**Stage 2** Aceramic groups appear;

<sup>8</sup> Bittel 1960; Bittel 1969/70; Boessneck – Von den Driesch 1979.

<sup>9</sup> Kansu 1963; Harmankaya 1983; Özdoğan 1983b.

<sup>10</sup> Özdoğan 1983b.

<sup>11</sup> Özdoğan 1983a; Özdoğan 1985; Gatsov – Özdoğan 1994.

<sup>12</sup> Algan et al. 2011.

<sup>13</sup> Derin 2012; Çevik – Abay 2016.

<sup>14</sup> Algan et al. 2011.

<sup>15</sup> Özdoğan – Gatsov 1998; Karul 2011; Özdoğan 2013a; Karul 2017.

<sup>16</sup> Özdoğan 2011a, 664.

- Stage 3** Pre-Fikirtepe farming communities become established in the Eastern Marmara Region, at sites like at Barcın Höyük;
- Stage 4** Expansion of settlement in the Eastern Marmara Region; Fikirtepe Phase habitation starts in the Istanbul Area, at Fikirtepe and Pendik;
- Stage 5** Settlements with clear evidence for an early version of the Anatolian Settlement Plan emerge, at Ilıpınar and Aktopraklık B;
- Stage 6** Semi-subterranean round structures appear as the main architectural form at Aktopraklık B and Ilıpınar.

### Stage 1: Epipaleolithic and/or Mesolithic Groups in Northwest Anatolia

Our information on Epipaleolithic or Mesolithic forager groups in the Marmara Region comes primarily from surface-scatters, known under the umbrella term Ağaçlı. Many of these are located on sand dunes along the Black Sea coast of the Istanbul Region, but included within this are a wide assortment of locations spanning a long chronological range since the Middle Palaeolithic. The most notable sites along the Black Sea coast yielding material of the Epipaleolithic or Mesolithic are Ağaçlı, Gümüşdere-Kilyos and Paşaalanı on the European side and Domalı, Mürsellibaba, Tekmezar, Alaçalı, Kefken and Doğançalı on the Asian side.<sup>17</sup> In fact, given that the assemblage comes from a range of different sites, it is perhaps not surprising for it to show a composite of different periods. Gatsov and Özdoğan do not argue otherwise and recognise together with an Epipaleolithic assemblage, the presence of Middle and Upper Palaeolithic tools and even Neolithic pottery, in a hill overlooking the dunes.<sup>18</sup>

Bogdana Milić provides an excellent overview of Ağaçlı sites and addresses the chronological confusion surrounding the assemblages.<sup>19</sup> She makes it clear that the mixed nature of the assemblage has led to different interpretations of the chronological positioning of the assemblage. Some scholars, including Reingruber, wonder whether the entire assemblage may in fact be Neolithic,<sup>20</sup> based on the presence of ceramics noted by Hauptmann as well as by Gatsov and Özdoğan, even though the latter report that the ceramics come collectively from a separate part of the surveyed area.<sup>21</sup> Nonetheless, confusion remains even among the original researchers as to whether the bulk of the assemblage should be characterised as Epipaleolithic or Mesolithic. In a 1994 publication, for example, Gatsov and Özdoğan initially state that they prefer to call these Epipaleolithic rather than Mesolithic, given that they show continuity from the preceding Upper Palaeolithic.<sup>22</sup> However, in a later publication they describe the assemblage as belonging to the Mesolithic.<sup>23</sup> The latter suggests more immediate connections with subsequent Neolithic groups. Establishing a more secure date, either from the Ağaçlı finds or via subsequent research in the area (if any of the dunes remain intact) is critical. Most recently, Kartal returned to the assemblage and argued, based on the tool types, that they display Epipaleolithic elements.<sup>24</sup> This fits with Özdoğan and Gatsov's description that most of the discovered finds from Ağaçlı were microliths, geometric tools, and pressure flaked microblades with specific Gravettian elements.<sup>25</sup>

<sup>17</sup> Gatsov – Özdoğan 1994.

<sup>18</sup> Gatsov – Özdoğan 1994, 102.

<sup>19</sup> Milić 2018.

<sup>20</sup> Reingruber 2016, 97–98.

<sup>21</sup> Gatsov – Özdoğan 1994, 102.

<sup>22</sup> Gatsov – Özdoğan 1994, 110.

<sup>23</sup> Özdoğan – Gatsov 1998.

<sup>24</sup> Kartal 2011.

<sup>25</sup> Özdoğan – Gatsov 1998, 213.

Significantly, a small percentage of collected artefacts from each location is of obsidian.<sup>26</sup> Research by Ercan and colleagues discovered that one of the obsidians discovered at Domalı derives from a Central Anatolian source.<sup>27</sup> It cannot be ruled out that this piece dates to a later re-occupation of Domalı. However, if it is indeed Epipaleolithic or Mesolithic in date, it suggests that the hunter-gatherers were in contact with groups from Central Anatolia prior to the arrival of settled agricultural farmers. Hunting and gathering groups of the Epipaleolithic are known to have travelled great distances for raw materials including marine shells.<sup>28</sup> Baysal in fact writes that “the general increase in the movement of materials during the Epipaleolithic may be a result of the wide-ranging transhumance of the populations at this time”.<sup>29</sup> Indeed, traveling long distances must have been far from unusual for hunting and gathering groups. From this, it follows that networks of interaction between Central Anatolia and Northwest Anatolia may have long predated the spread of agriculture.

Sites with potential Epipaleolithic components were discovered in both the Küçük and Büyükçekmece regions during surveys conducted in 1983, including most notably Haramidere and Sultançiftliği.<sup>30</sup> Ören Mevkii, found in 1982 in Çanakkale province, also yielded Epipaleolithic tools.<sup>31</sup> Other sites such as İbo'nun Rampası and Göztepe, located in Yalova, yielded Epipaleolithic finds including a few obsidian blades.<sup>32</sup> The presence of obsidian suggests, as in the Domalı example above, that these Epipaleolithic groups were part of inter-regional contact networks.

It is unfortunate that our knowledge is restricted to surface scatters as none of the above-mentioned sites have yet been excavated. A real breakthrough for the Marmara Region towards understanding the nature of the interaction will probably only ensue following future Epipaleolithic or Mesolithic Period excavations yielding clues for pre-agricultural lifestyles. The only absolute dates from the Mesolithic/Epipaleolithic of the Marmara Region comes from Yarımburgaz. The earliest, mid-ninth millennium date derives from a peat-like fill (Yarımburgaz Level 7b, 8550–8290 calBC, 1 sigma). Two other dates come from alternating black lenses and date to between the end of the eighth millennium (Yarımburgaz Level 7a, 7460–6690 calBC, 1 sigma) and the middle of the 7<sup>th</sup> millennium BC (Yarımburgaz Level 6, 6590–6430 calBC, 1 sigma).<sup>33</sup>

## Stage 2: Aceramic Neolithic Sites in Northwest Anatolia

The Aceramic Neolithic in Northwest Anatolia is represented at Keçiçayırı in Eskişehir province. While excavations here and at adjacent Cıbirada yielded small amounts of pottery resembling wares from Demircihöyük,<sup>34</sup> some excavated sectors like Trench b88 lacked ceramics altogether. Here, excavations uncovered two round depressions, which appear as distinctive cuts into a pebbly layer.<sup>35</sup> One of these circular cuts has a diameter of approximately 2.5 meters, large enough to be a small pit-house. However, the fill has not been removed and no clues identifying these as buildings exist. Keçiçayırı yielded a chipped stone industry that differs from that known from the Marmara Region save a single bullet core suggesting contacts with

<sup>26</sup> Ercan et al. 1990; Gatsov – Özdoğan 1994, 101.

<sup>27</sup> Ercan et al. 1990, 28.

<sup>28</sup> Baysal 2013.

<sup>29</sup> Baysal 2013, 271.

<sup>30</sup> Özdoğan 1985.

<sup>31</sup> Özdoğan 1984.

<sup>32</sup> Esin 1992; Harmankaya et al. 1997.

<sup>33</sup> Özdoğan et al. 1991, 82; Thissen – Reingruber 2017, 128.

<sup>34</sup> Ware A & B; Seeher 1987.

<sup>35</sup> Efe et al. 2011, 13.

the West. Instead, tabular flint chipped stone disks with steep/semi-steep irregular retouch and leaf points with retouch seem to be characteristic.<sup>36</sup> A single core with two opposite platforms was also discovered but this differs in the way it was struck from a typical naviform core and is difficult to categorise.<sup>37</sup> With a technology that according to J. Kozłowski resembles that of the Near Eastern PPN, the Keçiçayırı assemblage has been called the earliest evidence for Neolithic artefacts in Northwest Anatolia by Gatsov and Nedelcheva.<sup>38</sup> Efe reports similar lithics from the sites of Kalkanlı and Asarkaya, also located in Eskişehir province, both of which yielded large scrapers (some with retouch) which Efe compares to scrapers from Aşıklı Höyük and Göbeklitepe.<sup>39</sup>

Sites dated to the Aceramic Neolithic, based on their lithic repertoires, have also been identified during surveys at Çalça Mevkii in Çanakkale province, Musluçeşme in Bandırma as well as at Küçükçekmece on the European side of Istanbul. Future systematic excavations will hopefully help determine whether permanent settlements existed in the Marmara Region in this time and what the nature of their subsistence economy was.

Özdoğan reports that Çalça Mevkii yielded several flint scatters in an area of 300 × 200m. The knapped flint collected includes small and medium sized blades, scrapers and single platform cores as well as obsidian blades and flakes.<sup>40</sup> While the survey at Çalça yielded three pieces of prehistoric pottery that belong, according to Özdoğan, to a “local version” of the Fikirtepe tradition, parts of the site, he suggests, may still pre-date this time-period and show a complete absence of pottery altogether.<sup>41</sup> Further investigations here could focus on this noted disproportion in the distribution of ceramics across the site to determine whether the lithic scatters are remnants of specialised lithic workshops or do indeed represent an Aceramic phase. Today, flint mining from the Çan valley yields raw material for both domestic and international markets, attesting to the quality of the stone.<sup>42</sup> Future investigations could determine whether this may have been an incentive for groups frequenting the site even during the Ceramic Neolithic and check both hypotheses with stratigraphically sound absolute dates. Perhaps as important as establishing a chronological framework would be to address the question of seasonality to understand whether habitation here was permanent or periodic. The presence of ceramics may suggest that at least parts of the site represent a (semi-)permanent Neolithic occupation. Obsidian, brought here from a distance, suggests that the inhabitants of the site, whether they were hunter gatherers or Neolithic farmers, were part of larger networks.

A similar lithic scatter was discovered at Musluçeşme in Bandırma. It, likewise, extends across an area of 300 × 300m. No pottery was found at the site during Mehmet Özdoğan’s survey although a recent re-survey by Eylem Özdoğan in 2017 did yield small quantities of non-diagnostic prehistoric pottery.<sup>43</sup> The lithics discovered at Musluçeşme appear to display different characteristics than those known in the Black Sea littoral and the Ağaçlı tradition. While blades dominate the assemblage in the latter, at Musluçeşme they comprised only 3.5%.<sup>44</sup> Instead, flakes, chips, cores and a small percentage retouched tools were discovered. Musluçeşme, like Çalça Mevkii, extends over such a large area that assuming the entire area was a permanent habitation site is difficult. The questions to ask concerning the seasonality of the habitation and the exact chronology of the

<sup>36</sup> Gatsov – Nedelcheva 2016.

<sup>37</sup> Gatsov – Nedelcheva 2011, 93.

<sup>38</sup> Kozłowski 2005; Gatsov – Nedelcheva 2011.

<sup>39</sup> Efe 2005, 111–112.

<sup>40</sup> Özdoğan 1990.

<sup>41</sup> Özdoğan 1990, 448; Özdoğan 1991, 347; Özdoğan – Gatsov 1998, 214.

<sup>42</sup> Hökelek – Kayacı 2000.

<sup>43</sup> Özdoğan – Gatsov 1998, 214; E. Özdoğan forthcoming.

<sup>44</sup> Özdoğan – Gatsov 1998, 215.

site should be akin to those described above for Çalça. Though in small quantities, obsidian too was discovered at Musluçeşme.<sup>45</sup>

The investigations in Küçükçekmece on the Thracian side of Istanbul yielded three cores which show bi-directional naviform knapping,<sup>46</sup> a technology foreign to this region and typical of the Levantine PPNB and the Central Anatolian Neolithic.<sup>47</sup> These discoveries contribute to the emerging picture that at least intermittent, if not more regular, contact and communication existed with Central Anatolia in Aceramic times, if not earlier. Discoveries in Küçükçekmece also include some obsidian finds and a stone bowl base fragment.<sup>48</sup>

The collective implications of these finds are wide-ranging because they suggest that small groups from Neolithic core zones made intermittent forays into or even took up residence in Northwest Anatolia long before larger-scale migrations took place. They may have made use of networks of interaction that had their roots in Stage 1 as described above. Interestingly though, much of Turkish Thrace lacks such evidence for interaction altogether and clearly fell beyond the zone of immediate contact. Özdoğan has called attention to this cultural and perhaps environmental boundary.<sup>49</sup> Istanbul's coast on the European side falls on the southern/eastern side of the boundary, and unlike the rest of Turkish Thrace, was clearly explored by inhabitants from the core regions of the Neolithic. What prevented those who came to the European side of Istanbul from going further north? The lack of interaction despite the proximity of these adjacent regions, is surprising.

### Stage 3: Pioneering Pre-Fikirtepe Neolithic Communities

The earliest certain evidence for sedentary communities in Northwest Anatolia is found along the so-called Anatolian Corridor extending northwest from the Central Anatolian Konya Plain. This evidence comes from Keçiçayırı, Cıbrada<sup>50</sup> and Demircihöyük<sup>51</sup> in Eskişehir and Barcın Höyük in the Yenişehir Plain in Bursa.<sup>52</sup> Unexcavated sites like Gövem Mevkii in Afyon may belong to this stage, too.<sup>53</sup> A few of these sites were discussed above in Stage 2 because of the presence of sectors that lack pottery. There may be little time difference or even chronological overlap between Stage 2 and the start of Stage 3. Regardless, absolute dates from Barcın offer for the first time a chronological anchor to the narrative. A series of over 30 radiocarbon dates place the earliest levels at Barcın Höyük (VIe and VIId1) starting at around 6600 calBC.<sup>54</sup> If we assume that expansion through the Anatolian Corridor was not a single event but took place over a certain amount of time, foundation dates for Neolithic sites closer to Central Anatolia may be somewhat earlier.

By the end of the first half of the 7<sup>th</sup> millennium BC, following initial explorations in the abovementioned Stage 2, we witness the first steps towards settling down in Northwest Anatolia. Keçiçayırı was located near the Akdere flint outcrop that had been exploited by the inhabitants of Çatalhöyük as early as Level G, one of the oldest levels reached there.<sup>55</sup> This reiterates that intra-regional contact takes place before any settling and suggests that the locations where

<sup>45</sup> Özdoğan – Gatsov 1998.

<sup>46</sup> Aydıngün 2009.

<sup>47</sup> Quintero – Wilke 1995; Binder – Atlı 2001.

<sup>48</sup> Brama – Heyd 2011.

<sup>49</sup> Özdoğan 2017.

<sup>50</sup> Efe et al. 2011.

<sup>51</sup> Seeher 1987.

<sup>52</sup> Gerritsen et al. 2013a; Gerritsen et al. 2013b; Gerritsen – Özbal 2016.

<sup>53</sup> Koçak 2004, 39.

<sup>54</sup> Gerritsen – Özbal 2016, 200; Weninger et al. 2014.

<sup>55</sup> Nazarov et al. 2013.

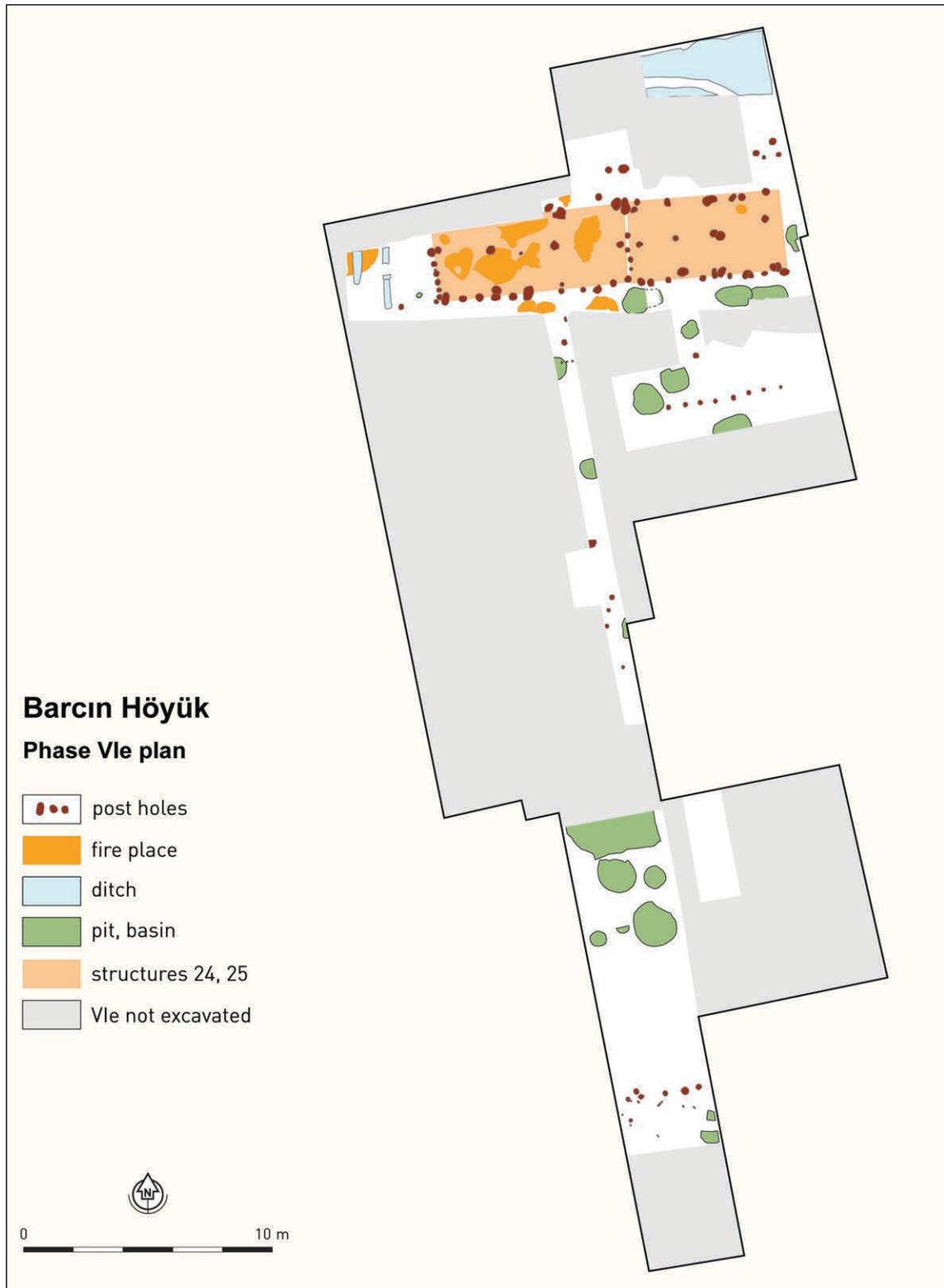


Fig. 1 Barcın Höyük; generalised settlement plan of Phase VIe (c. 6600–6500 calBC)

these initial pioneers settled down must have been known and visited by Central Anatolian Neolithic agriculturalists already for some period of time before any step towards permanent settlement was taken.

Both Keçiçayırı and Cıbirada yielded pre-Fikirtepe pottery assemblages resembling Barcın's VIe assemblage and Demircihöyük Ware A. This includes closed holemouth jars, some with antisplash rims or lug handles.<sup>56</sup> Like at Demircihöyük, where Ware A is also called '*Schieferware*', the Keçiçayırı wares are tempered with crushed schist, precisely the dominant additive found among the ceramics from Barcın Höyük Level VIe.<sup>57</sup> Overall, this suggests some sort of contact between the Eskişehir Plain and the Yenişehir valley in the mid-7<sup>th</sup> millennium BC. Ceramics found at Gövem Mevkii, North of Bolvadin in Afyon Province, are also described as 'pre-Fikirtepe wares' because of their close affinity to Keçiçayırı assemblages.<sup>58</sup>

While pottery may be an adequate indicator of a Neolithic lifestyle, botanical and zooarchaeological data are needed to assess the nature of the food economy in the process of Neolithisation. Ecofact-based data dating to prior to 6400 BC are currently only known from Barcın Höyük. Evidence suggests that the inhabitants at Barcın Höyük relied fully on domesticated crops and animals from the earliest levels onwards.<sup>59</sup> The economic plants from levels VIe and VIId1 include pulses like lentils and chick peas, nuts like hazelnuts and cereals including emmer and einkorn wheat, hulled and naked barley, bread wheat as well as durum wheat.<sup>60</sup> Likewise, zooarchaeological remains indicate that the inhabitants of Barcın Höyük bred domesticated cattle and sheep, while goat was present but less abundant.<sup>61</sup> Domesticated pigs were largely absent from this region until much later.<sup>62</sup> Cattle and sheep could have been selected also for their secondary products, especially milk. Even in the lowest levels investigations of the pottery yielded a predominance of milk residues.<sup>63</sup> Fish, molluscs as well as wild animals are present only in very small quantities in the assemblage.<sup>64</sup> All these data indicate that the earliest inhabitants of Barcın Höyük were bringing a package of domesticated plants and animals to colonise the Yenişehir valley.

Architecturally, Barcın VIe displays a construction technique that is, to our knowledge, hitherto unknown from other locations. Two adjacent rectangular buildings erected by the placement of heavy timber posts dug 40–60cm into virgin soil and placed in individual postholes were discovered (Fig. 1). In VIId1, the subsequent phase, this technique was modified; instead, buildings were constructed with smaller timber posts set into foundation ditches. Four such structures aligned agglutinatively along their short walls were discovered in Barcın VIId1 (Fig. 2).<sup>65</sup> At Basal Menteşe, buildings of similar construction were also uncovered.<sup>66</sup> In fact, the technique of placing smaller posts within ditches is one that continues throughout the region at Ilıpınar and Aktopraklık and forms the foundations of the Körös, Criş, Starčevo and LBK house-building traditions.<sup>67</sup> In both the VIe and VIId1 phases at Barcın house posts placed along the central axis, spaced widely were discovered.<sup>68</sup> This suggests the presence of a pitched roof. Centrally located roof-supporting posts are also known from later traditions in the Balkans and Europe.<sup>69</sup>

<sup>56</sup> Efe et al. 2013, 24.

<sup>57</sup> Seeher 1987, 18; Efe 2005, 109; Gerritsen et al. 2013a.

<sup>58</sup> Koçak 2004, 39.

<sup>59</sup> Galik 2013; Balcı 2018; Galik 2018.

<sup>60</sup> Balcı 2018.

<sup>61</sup> Galik 2013; Galik 2018.

<sup>62</sup> Buitenhuis 1995; Arbuckle 2013.

<sup>63</sup> Thissen et al. 2010; Özbal et al. 2011; Özbal et al 2012; Özbal et al 2013.

<sup>64</sup> Galik 2013; Galik 2018.

<sup>65</sup> Özbal – Gerritsen 2015.

<sup>66</sup> Roodenberg – Alpaslan-Roodenberg 2008.

<sup>67</sup> Bánffy 2013.

<sup>68</sup> Gerritsen – Özbal 2016.

<sup>69</sup> Bánffy 2013.

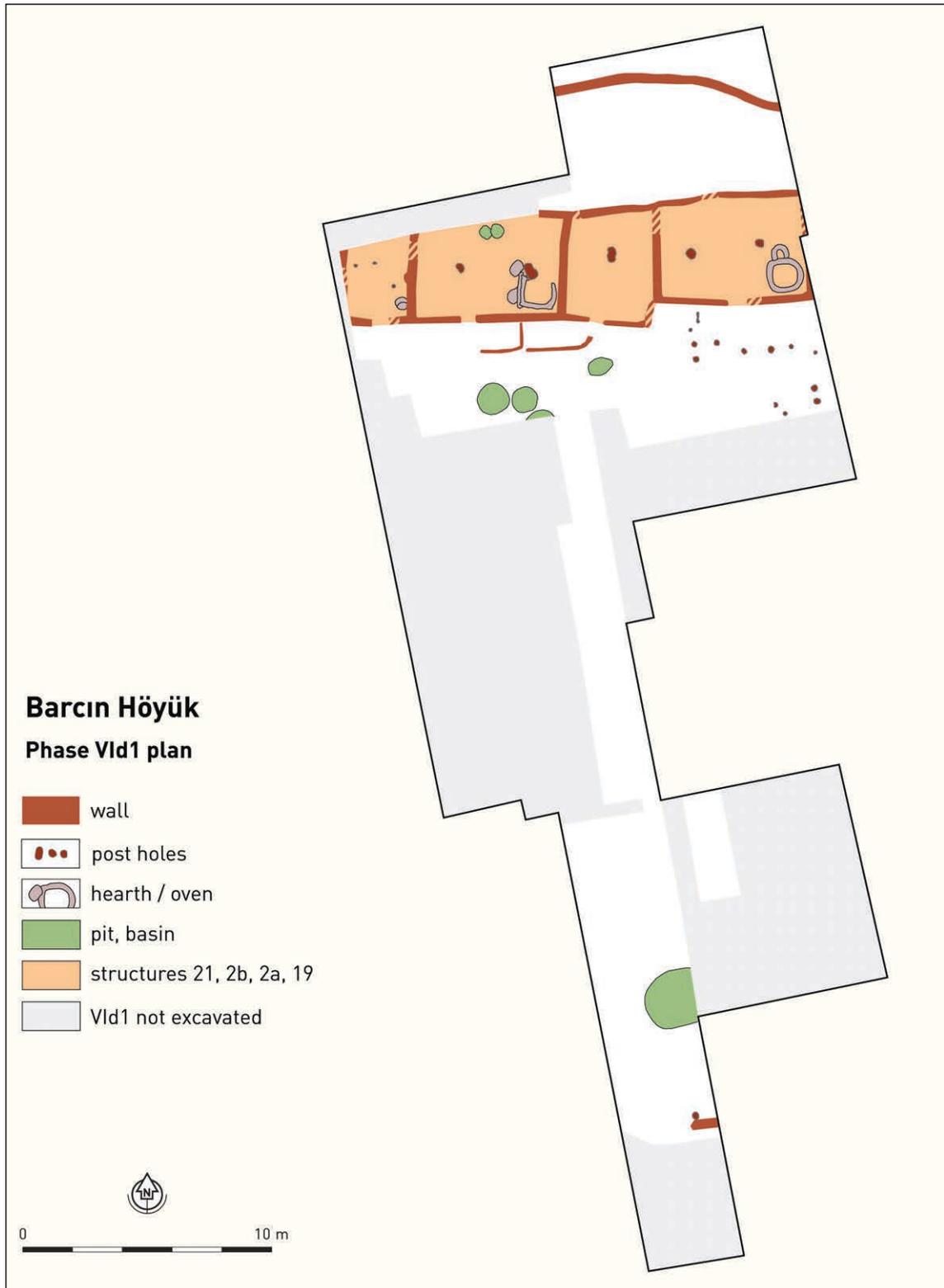


Fig. 2 Barcın Höyük; generalised settlement plan of Phase VI d1 (c. 6500–6400 calBC)

#### Stage 4: Established Neolithic Communities in Northwest Anatolia: The Fikirtepe Phase

This stage covers the period when the question of the relationship between Neolithic farmers and foraging groups in Northwest Anatolia can be addressed with archaeological evidence.<sup>70</sup> As mentioned in the introduction, the interpretation of the Fikirtepe Culture as a merging of farmer and forager communities is largely based on excavated Neolithic materials from sites in the greater Istanbul area, also identified as coastal sites. This section discusses the evidence under three sub-headings that focus on architecture and settlement organisation, subsistence patterns and burial practices of sites dating to the Fikirtepe Phase, primarily in and around Istanbul but also across Northwest Anatolia in general.

Except for a radiocarbon date from the Neolithic levels of Yenikapı (6000–5920 calBC, 1 sigma),<sup>71</sup> no absolute dates have been published for sites in the Istanbul Region. Based on ceramic comparisons with Barcın and Ilıpınar, we estimate that the earliest known Neolithic occupation in the Istanbul region likely dates to after 6300 calBC and that it continues into the 6<sup>th</sup> millennium as confirmed by Yenikapı. Hence, the assumption often made and cited in publications,<sup>72</sup> that the Neolithic occupation for the Istanbul Region extends as far back as 6500 BC, is not based on concrete evidence. Chronologically, instead, a mid-7<sup>th</sup> millennium date may reflect a picture more representative of “Stage 3” or the “pre-Fikirtepe” phases further inland at sites like Barcın Höyük VIe–VIId and Basal Menteşe and may not apply to the Fikirtepe culture of Istanbul. Hence, by approximately 6300 calBC Barcın and Menteşe begun to acquire new neighbours to the north at Fikirtepe and Pendik. This is the start of the Fikirtepe Culture in its traditional sense. Aktopraklık C<sup>73</sup> in Bursa province was likely founded in the 64<sup>th</sup> Century calBC.

During the last few centuries of the 7<sup>th</sup> millennium BC, differences are visibly present in terms of architectural styles, burial practices, and subsistence economies between sites around Istanbul and those to the east in the Yenişehir valley. At the same time, pottery, small finds and lithic traditions display parallelism across the Eastern Marmara. This interesting juxtaposition raises questions concerning lifestyles and ancestral roots which are addressed below under the abovementioned sub-headings. An assessment of inland vs. coastal differences needs to take into account the potential chronological separation between archaeological evidence for a forager presence and the possible remnants of forager lifestyles among Fikirtepe groups.

#### Architecture and Settlement Organisation

The diversity in the Marmara Region regarding architectural styles is among the main arguments in support of hunter-gatherer hybridity in coastal sites. As described above for Stage 3, rectangular post-mould architecture describes the main house layout in the Yenişehir valley in the mid 7<sup>th</sup> millennium BC. This same architectural form continues in Stage 4 in Barcın and Menteşe and, after 6000 calBC, at Ilıpınar level X.<sup>74</sup> On the other hand, round or oval hut-like structures, typically semi-subterranean, are known from deposits in the Istanbul environs.<sup>75</sup> However, by no means, should these be considered the only form of architecture among these coastal sites. In fact,

<sup>70</sup> Özdoğan – Gatsov 1998; Karul 2011; Özdoğan 2013a; Karul 2017.

<sup>71</sup> The date comes from the level with footprints found –8.15m below the current sea level in the excavation (Kızıltan – Polat 2013, 129; Thissen – Reingruber 2017, 123).

<sup>72</sup> For example, Evershed et al. 2008, Dönmez 2017, 95.

<sup>73</sup> For Aktopraklık the earliest absolute date at present is 6380–6350 calBC, 1 sigma but further dates are necessary to corroborate whether the start of the settlement here could be earlier (Karul – Avcı 2011, 6; Thissen – Reingruber 2017, 124).

<sup>74</sup> Roodenberg 1999b; Roodenberg – Alpaslan-Roodenberg 2008; Gerritsen et al. 2013a; Gerritsen et al. 2013b; Özbal – Gerritsen 2015; Gerritsen – Özbal 2016.

<sup>75</sup> Bittel 1960; Bittel 1969/70; Harmankaya 1983; Özdoğan 1983b; Pasinli et al. 1994; Özdoğan 2013.

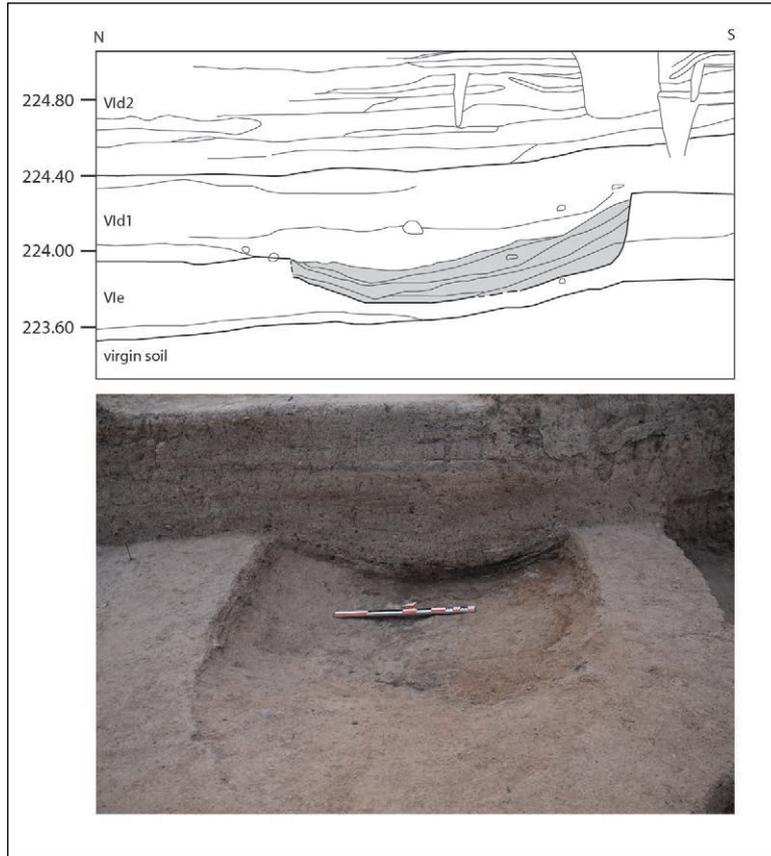


Fig. 3 Barcın Höyük; profile of the semi-subterranean feature (above), photo of the feature looking east (below)

rectangular houses were the norm among the Yenikapı Neolithic architectural remains, though Kızıltan and Polat do report that “a small number were round or oval”.<sup>76</sup> In the Marmaray sector of the Yenikapı excavations, for example, rectangular or almost square structures with stone foundations appear agglutinatively constructed in a rough linear arrangement parallel to an old water channel.<sup>77</sup> Likewise, as mentioned above, recent excavations at Pendik yielded at least one rectangular structure reported to be of *kerpiç* (i.e. mudbrick or mudslab) and to have small rectangular bins.<sup>78</sup> Whether this is a residential structure, or a type of storage facility awaits confirmation. The presence of centrally positioned large postholes, presumably holding load-bearing wooden support posts,<sup>79</sup> resembles the structures at Barcın although *kerpiç* is not an architectural component of sites in the Yenişehir valley.

In addition to Pendik and Fikirtepe, round structures are also known from the southern Marmara Region: five circular semi-subterranean structures with diameters ranging from three to six meters were discovered at Aktopraklık C in the Bursa Region.<sup>80</sup> Two of the structures contained

<sup>76</sup> Kızıltan – Polat 2013, 116.

<sup>77</sup> No radiocarbon date is available for this settlement phase but the ceramics are reported to be of “Archaic Fikirtepe” style. The architecture has not been divided into specific sublevels which makes it difficult to assess its phasing but the publication suggests an elevation ca. a half meter lower in depth than the footprints, currently absolute dated to the very beginning of the 6<sup>th</sup> millennium BC (Kızıltan – Polat 2013, 128, fig. 8–10).

<sup>78</sup> Özdoğan 2013b, 42.

<sup>79</sup> Kızıltan 2013, 35.

<sup>80</sup> Karul – Avcı 2011.

hearths and one yielded a pair of burials, likely subfloor.<sup>81</sup> At present, evidence for round structures east of Aktopraklık is ambiguous. At Barcın Höyük in Trench L13 excavations of VID1 yielded what may have been a semi-subterranean 50cm deep round structure with a diameter of 2.5m (Fig. 3).<sup>82</sup> However, excavations could not ascertain if this was in fact architectural. With no clear postholes or roof supporting beams, the possibility remains that this was a large circular feature without a superstructure. Whether postholes can determine if a feature is an architectural structure is debatable as they were also not discovered at Pendik, Fikirtepe, or Aktopraklık C.<sup>83</sup> Regardless, at all three sites wood traces were noted in the materials filling these round depressions. What makes these huts convincing as structures is the presence of hearths and other domestic features as well as the occasional presence of subfloor burials, all of which were lacking from the Barcın case.<sup>84</sup> For the Barcın case a conclusive answer concerning the nature of the feature awaits micromorphological analyses.

Rounded structures at Fikirtepe sites have been interpreted as a remnant of older forager lifestyles among communities that in most or all other respects had adopted a Neolithic lifestyle.<sup>85</sup> It should be kept in mind, however, that we have no information on the Epipalaeolithic/Mesolithic architecture in this region in pre-Neolithic Northwest Anatolia. Our closest parallels to semi-subterranean round and oval structures come from Mesolithic sites in the northwestern stretches of the Black Sea. They could hypothetically represent the architectural archetype for the Mesolithic of the Istanbul Region.<sup>86</sup> Rounded buildings are considered architecturally more straightforward, lacking constructional techniques like joints and corners which are integral to rectangular timber frame structures.<sup>87</sup> Yet the difference between round and rectangular dwellings cannot be reduced to methods of construction alone. This fundamental disparity in the organisation of the built environment may, in fact, reflect variability in the underlying household structure.<sup>88</sup>

Brami considers the rectangular house among the defining traits of Neolithisation.<sup>89</sup> In effect, this concept indirectly challenges the idea that all inhabitants of 7<sup>th</sup> millennium sites in Istanbul province were immigrant farmers. It is difficult to imagine that immigrant Neolithic farmers would have abandoned their established techniques of rectangular architecture to switch to semi-subterranean round structures. This point alone is, in fact, perhaps the best piece of evidence in support of Mesolithic continuity in these coastal areas.

Overall, these data necessitate a keen awareness of architectural differences between round and rectangular houses at the end of the 7<sup>th</sup> millennium in the Marmara Region and to understand that this may point to important clues regarding the potentially divergent lifestyles of the inhabitants. Nonetheless, interpretation of the round houses as a residual Mesolithic convention may require further support, hopefully in the form of new excavations exposing pre-Neolithic ways of residing. For the immediate future, a detailed analysis and publication of Pendik would be highly desirable to evaluate this question because, with the exception of Barcın with its ambiguous evidence for a round structure, Pendik remains the only site with definitive proof for the existence of both types of structures. It would be important to assess the relationship between round and rectangular buildings excavated here. What was their stratigraphic relationship and sequence? At what elevations were the round vs. rectangular structures excavated? What chronological clues does the associated pottery for each phase provide us? Were they contemporaneous or was one earlier? Were they discovered in the same part of the site or found in distant segments? Such

<sup>81</sup> Kaycı 2013, 69, 72.

<sup>82</sup> Özbal et al. 2015.

<sup>83</sup> Bittel 1960; Bittel 1969/70; Harmankaya 1983; Karul 2017, 90.

<sup>84</sup> Özbal et al. 2015.

<sup>85</sup> Karul 2009; Özdoğan 2011a, 664; Düring 2011, 180–181; Düring 2016.

<sup>86</sup> Zvelebil – Lillie 2000; Bánffy et al. 2007; E. Özdoğan 2015.

<sup>87</sup> Lynn 1978.

<sup>88</sup> Flannery 1972.

<sup>89</sup> Brami 2017.

details would supply us with much needed insights when trying to assess the relationship and perhaps even the nature and origin of round structures.

### Subsistence

Although animal husbandry was prominent across Northwest Anatolia in the Late Neolithic, sites in the Istanbul environs have been classified as relying heavily on hunted animals and fishing.<sup>90</sup> However, in 2013, Çakırlar championed a compelling argument against this seemingly divergent picture regarding the subsistence economies of coastal and inland sites.<sup>91</sup> After assessing the zooarchaeological data from both regions, she contested “the notion that foraging among early farmers in northwestern Anatolia was a persisting Mesolithic tradition, a relic of a broad-spectrum diet”.<sup>92</sup> Instead, she argued that most scholars of Anatolian prehistory have tended to emphasise the importance of hunting for coastal sites in the Istanbul region while downplaying the significance of herding of domestic animals. In other words, her comparative analyses indicate that faunal data do not unambiguously support a model suggesting the merger of foragers and agriculturalists at coastal sites. Naturally, fish remains are more abundant at sites with close access to water resources and Çakırlar shows that this is even the case for coastal settlements of the Bronze Age.<sup>93</sup>

Here, Çakırlar’s data compiled in 2013 and the faunal results for a several additional sites are considered together. When a straightforward ratio of hunting versus herding, excluding mollusc and fish, whose availability is geographically predicated, is considered, all 7<sup>th</sup> millennium sites, both coastal and inland, in fact, show considerable overlap in their subsistence economies. The percentage of domesticates (based on %NISP values) at sites with levels dating to the second half of the 7<sup>th</sup> millennium such as Barcın,<sup>94</sup> Basal Menteşe,<sup>95</sup> Aktopraklık C,<sup>96</sup> Fikirtepe,<sup>97</sup> and Pendik<sup>98</sup> consistently exceeds 85% and at some sites even approaches 95%. This means, that hunting comprised only a very small percent of the subsistence economy for both coastal and inland sites in the Fikirtepe Neolithic sequence. Only at the end of Stage 4, at the very end of the 7<sup>th</sup> or even in the early 6<sup>th</sup> millennium BC, some sites such as Menteşe Upper Levels,<sup>99</sup> Ilıpınar X<sup>100</sup> and Yenikapı<sup>101</sup> show an increase in hunted animals. At Ilıpınar this value approaches 20%.<sup>102</sup>

In addition to hunting, the emerging picture on gathering demonstrates that shellfish exploitation and hence mollusc consumption is by far the highest at inland Ilıpınar Level X,<sup>103</sup> far exceeding values from coastal sites like Fikirtepe and Pendik.<sup>104</sup> While screening and other factors likely contribute to this picture, the current template suggests, as Çakırlar argues, that the evidence for using “aquatic foraging” as “a proxy for Mesolithic influence on Neolithic modes

<sup>90</sup> Özdoğan 1999; Çilingiroğlu 2005; Thissen et al. 2010; Düring 2011, 181; Çilingiroğlu et al. 2016, 2; Gölbaş 2016.

<sup>91</sup> Çakırlar 2013.

<sup>92</sup> Çakırlar 2015, 123.

<sup>93</sup> Çakırlar 2013, 70–71.

<sup>94</sup> Würtenberger 2012; Galik 2018.

<sup>95</sup> Gourichon – Helmer 2008.

<sup>96</sup> İzdal Çaydan 2018.

<sup>97</sup> Boessneck – Von den Driesch 1979.

<sup>98</sup> Çakırlar 2013, fig. 3.

<sup>99</sup> Gourichon – Helmer 2008.

<sup>100</sup> Buitenhuis 2008.

<sup>101</sup> Çakırlar 2013, fig. 3.

<sup>102</sup> Buitenhuis 2008, 217.

<sup>103</sup> Buitenhuis 2008.

<sup>104</sup> Çakırlar 2013, 66; Karul 2017, 11.

of food acquisition ... cannot be corroborated".<sup>105</sup> This emerging picture has recently been substantiated with isotopic evidence from human skeletons at Aktopraklık. Aktopraklık is relatively far inland but overlooks Late Uluabat and has potential fresh-water foraging at its disposal. Moreover, the Neolithic settlement at Aktopraklık C yielded semi-subterranean round huts considered, as described above, less representative for immigrant farmers and have instead been interpreted as the remaining vestiges of a Mesolithic lifestyle.<sup>106</sup> Nonetheless, C and N isotopic data indicates an under-utilisation of aquatic resources both in the Neolithic and Chalcolithic Periods.<sup>107</sup> This lack of use of non-domesticated resources at Aktopraklık is noteworthy and indicates that food procurement was based on livestock.<sup>108</sup> Together, faunal and isotopic data, as well as the reluctance to exploit natural resources may suggest a need for a more nuanced picture in terms of subsistence economies for the Neolithic of the eastern Marmara Region in the 7<sup>th</sup> millennium.

### Burial Patterns

Burial practices and the associated symbolism reflect an idealised manifestation of culturally specific attitudes to death.<sup>109</sup> Therefore, local idiosyncrasies towards disposing of the dead may be indicative of influences from indigenous forager or immigrant farmer ways of life. Unfortunately, at least for Anatolia, we have very few Mesolithic burial examples. The single example from Girmeler Cave<sup>110</sup> differs little from the following Neolithic, with an inhumation in flexed position, making it difficult to identify chronologically distinct trends in terms of burial style.<sup>111</sup>

Yenikapı is the only prehistoric site in northwestern Anatolia to date that has yielded several cremation burials. Kızıltan and Polat report that "the cremated burials must be contemporary with Yarımburgaz Layer IV".<sup>112</sup> Certainly, this is clear from the ceramic urns associated with them.<sup>113</sup> Given their date (ca. 5500 BC), over a half millennium later than the Fikirtepe Phase, there is no reason to assume that they represent the persistence of pre-Neolithic burial practices in the region.

Since all 7<sup>th</sup> millennium burials in the Marmara Region are, hence, simple inhumations in flexed position, this section considers specific aspects of internment such as their location within the settlement and the use of wooden boards instead of the manner/position in which burials were interred.<sup>114</sup> In terms of settlement layout and the contexts of the Neolithic burials of Northwest Anatolia, the general trend, at least for adult burials in the İznik-Yenişehir Region, is that they tend to be placed in courtyard areas outside the houses.<sup>115</sup> At some sites, children were placed either between houses like at Menteşe<sup>116</sup> or in the annex area just adjacent to the outer wall of the structures like at Barcın.<sup>117</sup> Infants, on the other hand, tend to be placed beneath house floors or in abandoned houses.<sup>118</sup> Exceptions to the rule exist: some adults burials were placed beneath house

<sup>105</sup> Çakırlar 2013, 74.

<sup>106</sup> Karul 2009, 4.

<sup>107</sup> Budd et al. 2013; Budd et al. 2017.

<sup>108</sup> İzdal Çaydan 2018.

<sup>109</sup> Hodder 1982.

<sup>110</sup> Takaoğlu et al. 2014.

<sup>111</sup> Lichter 2017.

<sup>112</sup> Kızıltan – Polat 2013, 125; see also Özdoğan 2011b, 423.

<sup>113</sup> Yılmaz 2011, 302; Kızıltan – Polat 2013, 160–163; Yılmaz 2014, 269–270.

<sup>114</sup> See also Brami 2014, 2017.

<sup>115</sup> Alpaslan-Roodenberg et al. 2013; Roodenberg – Alpaslan-Roodenberg 2013, 88.

<sup>116</sup> Alpaslan-Roodenberg 2001.

<sup>117</sup> Alpaslan-Roodenberg et al. 2013.

<sup>118</sup> Alpaslan-Roodenberg 2008; Alpaslan-Roodenberg et al. 2013; Lichter 2017, 115.

floors,<sup>119</sup> in ditches and others even in the midden dump.<sup>120</sup> Likewise, some infants were located in the outskirts of the settlement.<sup>121</sup>

Sites with round subterranean huts such as Pendik and Fikirtepe, however, have evidence for burials placed intramurally beneath house floors. Herein may lie another suggested difference between coastal and inland settlements, or in other words between communities with and without forager influence.<sup>122</sup> Intramural burials occur at Fikirtepe where one of the four intact burials were placed in a courtyard area away from the houses (Burial 2), but the remaining three were near houses or beneath house floors. An isolated skull was also discovered at some distance from the huts, perhaps from a disturbed grave.<sup>123</sup>

Excavations so far at Pendik (in 1981, 1994 and 2012–13 combined) yielded at least 73 burials, only two of which were intramural.<sup>124</sup> Both of these sub-floor burials were discovered in the 1981 season beneath two different huts.<sup>125</sup> Pasinli and co-authors distinctly report that none of the 30 skeletons excavated in the 1992 was associated with any architecture. Unlike sites in the Yenışehir valley, there seems to be no allocated spaces for particular age-classes; adults, children and foetuses were placed together irrespective of age.<sup>126</sup> Two animal skeletons were also discovered although the report does not specify what kind of animals they could be. Renewed rescue excavations at Pendik in 2012–13 yielded an additional 41 burials. Kızıltan describes one specific location where burials were placed so densely together that new graves sometimes led to the (un)intended discovery of older inhumations and the consequent placement of earlier bones into secondary burial “piles”.<sup>127</sup> As in the 1994 excavations, adults and children were found buried together.<sup>128</sup> Also, although the precise number has not been specified, the latest phase of excavations at Pendik yielded more round structures but no burials were found in association with them.<sup>129</sup>

Aktopraklık C, a non-coastal site with round semi subterranean huts, displays a settlement pattern that parallels Fikirtepe and Pendik. One of the five round structures discovered yielded two adult burials. Karul and Özeren suggest that these burials are potentially subfloor burials but admit no clear floors were recovered. They also report that the area in and around these circular huts was used as a Chalcolithic cemetery.<sup>130</sup> Indeed, over 50 burial pits have cut either the architectural remains or the surrounding courtyard spaces.<sup>131</sup> A few of these burial pits belong to extramural Neolithic graves including one instance where the burial was cut directly into the bedrock.<sup>132</sup>

The burials at Yenikapı represent both single and multiple burials. Yılmaz in her analyses provides little contextual information regarding their provenience, but Kızıltan and Polat briefly report that burials were found in the “southern end of buildings”.<sup>133</sup> This suggest that intramural burial practices may be at play at this site, at least for the inhumations. Wooden boards were used in some of the burials but this in no way represents a standard procedure; the way in which wood

<sup>119</sup> At Menteşe and Ilıpınar: Alpaslan-Roodenberg 2006, 51; Roodenberg et al. 2003, 18–19; Roodenberg – Alpaslan-Roodenberg 2013, 89.

<sup>120</sup> At Barcın: Gerritsen – Özbal 2012, 158; Gerritsen et al. 2013a, 95, fig. 5; Özbal et al. 2015, 620.

<sup>121</sup> At Ilıpınar X and IX: Roodenberg – Alpaslan-Roodenberg 2013, 75, 88.

<sup>122</sup> Özdoğan 2011b, 423; Özdoğan 2013a, 194–195.

<sup>123</sup> Bittel 1969/70.

<sup>124</sup> Harmankaya 1983; Pasinli et al. 1994; Kızıltan 2013.

<sup>125</sup> Harmankaya 1983.

<sup>126</sup> Pasinli et al. 1994, 150–151.

<sup>127</sup> Kızıltan 2013, 34.

<sup>128</sup> Kızıltan 2013, 33.

<sup>129</sup> Kızıltan 2013, 36.

<sup>130</sup> Karul – Özeren 2007, 19.

<sup>131</sup> Kaycı 2013, 69, fig. 26.

<sup>132</sup> Avcı 2013, 123.

<sup>133</sup> Yılmaz 2011; Kızıltan – Polat 2013, 125.

was used varies from burial to burial.<sup>134</sup> In some burials the boards were placed atop the burial,<sup>135</sup> others had wood positioned beneath the body.<sup>136</sup>

The use of wooden boards in graves was also discovered at Ilıpınar X–VIII,<sup>137</sup> at Menteşe's Neolithic levels<sup>138</sup> and at Barcın.<sup>139</sup> Older examples of the practice come from the early levels of Çatalhöyük<sup>140</sup> and is known from the later BACH trenches as well.<sup>141</sup> In essence, if burial practices reflect local traditions of disposing the dead, the presence of evidence for the use of wooden boards in Çatalhöyük may be meaningful. It may signify the continuation in Northwest Anatolia of a practice with a legacy extending back to Central Anatolia. The tradition of using such wooden planks in burials is peculiar to Northwest and Central Anatolia.<sup>142</sup> Unless factors of preservation are preventing the conservation and subsequent discovery of wooden boards elsewhere in Anatolia or beyond, their appearance in Central and then Northwest Anatolia may be indicative of the westward spread of a distinct cultural tradition.

### Stage 5: Continuity and Change in the Early Chalcolithic Period

This section on Stage 5 does not intend to provide a detailed overview into the 6<sup>th</sup> millennium levels in Northwest Anatolia. The turn of the 6<sup>th</sup> millennium, however, does bring with it some changes worth mentioning: both coastal sites like Pendik and Fikirtepe and inland sites like Barcın and Aktopraklık C disappear. In the case of Menteşe stratum 3, an abandonment is followed by a long hiatus.<sup>143</sup> For the Eastern Marmara region residence resumes with the foundation of Ilıpınar by 6000 BC. Weninger et al. suggest that this shift may be in line with the end of the Rapid Climate Change.<sup>144</sup> They report that the date of 6050 calBC marks a new exodus and overall relocation of settlements.<sup>145</sup>

Following Weninger's line of argumentation, and the supra-regional trends in the establishment of new settlements around 6050 calBC, this date may also mark the establishment of habitation at Yenikapı.<sup>146</sup> Ceramic comparisons corroborate this proposal: excavations of the lowest level yielded, for example, a well-burnished black-coloured and near-complete incised Fikirtepe Box with a combined checkerboard and meander design.<sup>147</sup> Such incised rectangular vessels, the profiles of the pots, the shapes of the lugs, the presence of pierced lids and the "S" curvatures of the bowls,<sup>148</sup> all closely resemble those published for Ilıpınar Level X.<sup>149</sup>

Indeed, the subsistence pattern reflected by Yenikapı parallels, to some extent, the model known from Ilıpınar. In contrast to the situation at 7<sup>th</sup> millennium Fikirtepe and Pendik where

<sup>134</sup> Yılmaz 2011, 293.

<sup>135</sup> Kızıltan – Polat 2013, 156–157.

<sup>136</sup> Yılmaz 2011, 293.

<sup>137</sup> Roodenberg 1999a; Roodenberg – Alpaslan-Roodenberg 2013, 89.

<sup>138</sup> Alpaslan-Roodenberg 2001, 3; Roodenberg 1999b.

<sup>139</sup> Özbal et al. 2015, 621.

<sup>140</sup> Building 6, Burial F. 492; Farid 2007, 274.

<sup>141</sup> Building 3, Burial F. 631; Boz – Hager 2013. We would like to thank Scott Haddow for his insights on burial boards at Çatalhöyük.

<sup>142</sup> Lichter 2017.

<sup>143</sup> Roodenberg 1999b, 25.

<sup>144</sup> Weninger et al. 2014.

<sup>145</sup> At present no settlements in northwest Anatolia seem to bridge the 7<sup>th</sup> to 6<sup>th</sup> millennium transition although some sites along the Aegean coast do appear to show continuity (e.g. Çilingiroğlu et al. 2012).

<sup>146</sup> Although making claims on a single date is less than desirable, an absolute date from close to the bottom levels of Yenikapı places the habitation at 5979–5924 calBC, 1 sigma (Kızıltan – Polat 2013), which means a date of around 6050 calBC, could be in line with cross-regional trends of site-establishment.

<sup>147</sup> Kızıltan – Polat 2013, 120, fig. 20, 24.

<sup>148</sup> Kızıltan – Polat 2013, fig. 23–24.

<sup>149</sup> Thissen 2001, fig. 4–14.

domesticated pigs are very rare or completely absent,<sup>150</sup> at Ilıpınar in the layers post-dating Level X, pigs consistently comprise between 14–19% of the faunal assemblage based on NISP values (including molluscs).<sup>151</sup> At Yenikapı too, domestic pig comprises a notable portion of the diet, as indicated from the faunal record<sup>152</sup> and the lipid residue analyses. H. Özbal and collaborators identified porcine lipids in nine of the twelve or 75% of the potsherds analysed.<sup>153</sup>

By around 5800 BC the settlements of Ilıpınar VI and Aktopraklık B in the Eastern Marmara Region and Aşağıpınar 7 and 6 in Turkish Thrace show evidence for an early form of what Korfmann called an “Anatolian Settlement Plan” where houses with relatively standard features are aligned to form a large circular enclosure.<sup>154</sup> At least at Aktopraklık, a cemetery located at some distance from the settlement was found.<sup>155</sup> Likewise, at Ilıpınar, Roodenberg reports that “from Phase VIII onwards ... the dead had shifted to the periphery”.<sup>156</sup>

### Stage 6: Middle Chalcolithic Period and Beyond

By the middle of the 6<sup>th</sup> millennium BC, semi-subterranean rounded structures re-appear in the region in the Middle Chalcolithic at sites such as Ilıpınar Level VB and Aktopraklık B.<sup>157</sup> They now represent the only known architectural form in the region. The return to semi-subterranean structures at this time has been interpreted as evidence for seasonal occupation.<sup>158</sup> Regardless, as is clear from the faunal assemblages a great majority of the animal foods eaten were from domesticated herds.<sup>159</sup> In terms of the percentage of domesticated animals and the ground plans of the structures, the data closely resembles the huts excavated at Fikirtepe and Pendik nearly a millennium before.

Yenikapı continues into the Middle Chalcolithic and the cremations discovered are reported to be contemporary with the Yarımburgaz IV Phase of the mid-6<sup>th</sup> millennium, as mentioned above. The pottery is incised and decorated and has been likened by Özdoğan to resemble textile patterns.<sup>160</sup> At Yenikapı, such decorated pottery comprised only 1.1% of the assemblage while “impresso” sherds were prolific at nearly 30%.<sup>161</sup> No architectural remains specifically reported to date to the Yarımburgaz IV Phase have been described at Yenikapı. This is also the case for Yarımburgaz Cave, although a clear hiatus was noted between cave levels 3 and 4.<sup>162</sup> A radiocarbon date for Yarımburgaz 4 dates the deposits to 5870–5310 calBC, 1 sigma.<sup>163</sup>

Occupation at Yenikapı appears to continue without a hiatus into the subsequent Toptepe Culture horizon.<sup>164</sup> Kızıltan and Polat report that Toptepe-like ceramics were discovered at an elevation of above –6.3m below sea level especially in the Western part of Zone 1 of the Marmaray area.<sup>165</sup> Indeed, a radiocarbon sample from this transition (at –6.4m) from this area (Trench K-30) yielded a date of 5050–4980, which fits with the Toptepe culture and marks the terminal end of

<sup>150</sup> Arbuckle 2013.

<sup>151</sup> Buitenhuis 2008, 214–215.

<sup>152</sup> Çakırlar 2014, 80.

<sup>153</sup> Özbal et al. 2014, 85–86.

<sup>154</sup> Korfmann 1983.

<sup>155</sup> Karul 2017, 107.

<sup>156</sup> Roodenberg 2008, 73.

<sup>157</sup> Roodenberg – Alpaslan-Roodenberg 2013, 86; Karul 2017, 112–113.

<sup>158</sup> Roodenberg 2001, 231–235; Karul 2017.

<sup>159</sup> Buitenhuis 2008, 214.

<sup>160</sup> Özdoğan 2013a, 177.

<sup>161</sup> Kızıltan – Polat 2013, 120.

<sup>162</sup> Özdoğan et al. 1991.

<sup>163</sup> Özdoğan 2007; Thissen – Reingruber 2017, 128.

<sup>164</sup> Kızıltan – Polat 2013.

<sup>165</sup> Kızıltan – Polat 2013, 115.

the prehistoric occupation at Yenikapı.<sup>166</sup> No architecture is reported to have been associated with the Toptepe Culture from Yenikapı.<sup>167</sup> Late 6<sup>th</sup> millennium deposits are found primarily at Toptepe in Tekirdağ<sup>168</sup> and Levels 3 and 4 of Aşağı Pınar in Kırklareli where they are found together with Karanovo IV material.<sup>169</sup>

### Discussion and Conclusion

The main intention of this paper has been to assess forager-farmer interactions of the mid-late 7<sup>th</sup> millennium BC, and to evaluate existing hypotheses on the impact of these interactions on the Neolithisation of Northwest Anatolia. This was done by a systematic presentation of various strands of fragmentary evidence from the Marmara Region in six consecutive stages.

Drawing a conclusive answer regarding the nature of the relationship between farmers and foragers based only on archaeological data is difficult at present, but several inferences can be made. Summarising, the following sequence can be proposed. Forager groups were present in the Marmara Region during the Epipalaeolithic or Mesolithic (Stage 1). Aceramic Neolithic groups, presumably with links with Central Anatolian communities, settled down in small numbers in the Eskişehir Region and the Marmara Region, at least intermittently (Stage 2). Shortly before the middle of the 7<sup>th</sup> millennium, a new influx of pioneer farmers appears in the Eskişehir Region and in the southeastern extent of the Marmara Region (Stage 3). There is no evidence from sites in this stage that farmer-forager interactions had any effect on the lifestyles of their inhabitants. The available faunal (and botanical) data indicate that the subsistence economy during this stage, and during much of Stage 4, relied to a very high degree on domesticated resources. During the last quarter of the 7<sup>th</sup> millennium, there is an increase in the number of Neolithic settlements, and they now occur in inland as well as in coastal locations (Stage 4). Together they represent the Fikirtepe Culture, and it is mainly during this stage that models of farmer-forager interaction find possible support in the archaeological evidence. By the start of the 6<sup>th</sup> millennium, in the Early Chalcolithic, there is an abandonment or shift in location of many settlements, as well as new foundations, both in coastal and in inland areas (Stage 5). By the middle of the 6<sup>th</sup> millennium, the settlement evidence becomes scarcer and shows different architectural traditions and settlement layout (Stage 6).

For the European Neolithic, John Robb has evaluated various models for the interaction of foraging groups and Neolithic farmers and provides several potential scenarios of contact.<sup>170</sup> His six-item list of the choices that foraging populations may be confronted with includes on the one extreme a total rejection and on another a full adoption of Neolithic lifestyles.<sup>171</sup> The intermediary scenarios represent situations where selective Neolithic elements are incorporated into foraging economies or some local Neolithic habits and technological knowhow are adopted by hunting and gathering groups. The early Neolithisation of Northwest Anatolia (as well as that of the Aegean Coast) may also have proceeded along one or more of these scenarios.

Robb suggests that Neolithic colonisation involved small groups and kinship units which moved opportunistically to empty enclaves to settle the landscape. This may have been the case

<sup>166</sup> Kızıltan – Polat 2013, 128.

<sup>167</sup> However, the architecture at this transition at -6.3m from Trenches G-H-I-J 17/25 is reported to have yielded “a high number of pottery fragments ... closely similar to those of the Fikirtepe Culture” (Kızıltan – Polat 2013, 116). Since the authors tend to use the appellation “Advanced Fikirtepe” when discussing Yarımburgaz IV, this may in fact refer to a terminological difference. If so, this level would indeed provide an architectural correspondent for the Yarımburgaz IV phase of Istanbul province (see Stage 5 above).

<sup>168</sup> Özdoğan et al. 1991.

<sup>169</sup> Özdoğan 2013a, 179.

<sup>170</sup> Robb 2013.

<sup>171</sup> Robb 2013, 662.

in Northwest Anatolia in Stages 2 and 3. For Stages 3 and after, when the evidence points overwhelmingly to a subsistence economy based on crop cultivation and animal husbandry, the question is to what extent colonising farmers ignored or incorporated indigenous foragers into their communities and rejected or adopted forager habits and technological knowhow.

Robb argues that pioneers preferably selected ecological niches that resemble those from their homelands.<sup>172</sup> Indeed, Barcın Höyük, for example, founded on the edge of a swampy wetland environment, may parallel the environmental situation known from Çatalhöyük in the 7<sup>th</sup> millennium BC.<sup>173</sup> New environmental zones may attract incoming groups and new resources or raw materials may foster a range of unique adaptations. However, some environmental zones may be so different that colonisation may not occur. Robb explains: migrating groups “tend to halt when they encounter either very different environments or dense forager settlements... resulting frontier zones can last a long time”.<sup>174</sup> This may partially explain the long-standing boundary between the Istanbul Region and the territories to the west in Turkish Thrace, which seem to be in place until at least Stage 5.<sup>175</sup> This potentially environmentally predicated divide may extend as far back as the Middle or even Lower Palaeolithic.<sup>176</sup> For the Marmara Region itself, it is interesting to ponder the possibility of a period (esp. Stage 3) during which immigrant farmers had colonised the southeastern Marmara Region, while forager groups, descendants from the Epipalaeolithic or Mesolithic groups of Stage 1, were occupying the greater Istanbul area. For the latter, there is admittedly no evidence at present, unless some of the material from the Ağaçalı sites represents 7<sup>th</sup> millennium forager groups.

Visible or not in the archaeological data, any model that supposes that Fikirtepe sites (Stage 4) in the greater Istanbul area represent a merger of farmer and forager groups must assume that there remained foragers present in the region during Stages 2 and 3. Viewed in this light, if the rectangular house represents a way of life deeply entrenched with Neolithic habits,<sup>177</sup> then the round/oval semi-subterranean architecture known from the late 7<sup>th</sup> millennium settlements of Fikirtepe, Pendik and Aktopraklık raises questions. Were they used according to different, non-Neolithic, habitation practices? If so, then this must be viewed as a remnant of the practices of hunting and gathering groups, as has been argued above. This theory is indeed attractive and cannot be overlooked. Nevertheless, we should keep in mind the important caveats that 1) actual information on the habitation practices and associated architecture of Epipalaeolithic/Mesolithic foragers is still missing; 2) this supposed forager influence does not appear until the last few centuries of the 7<sup>th</sup> millennium BC, i.e. well after the appearance of farming communities; and 3) rounded semi-subterranean structures are also a feature of the architecture among later groups (in Stage 6).

Other elements that have been proposed as demonstrations of farmer-forager interaction, such as the suggested differences in subsistence and burials, on further evaluation appear to be less convincing. Following Çakırlar, for example, sites such as Fikirtepe and Pendik, with 85–90% of its mammals coming from domesticated stock, must be viewed as settlements of herders or foragers who had already adopted herding.<sup>178</sup> Likewise, burials seem to show variability beyond the typical coastal-inland divisions that have been proposed. The number of subfloor burials from sites with round architecture do indeed exceed those from those with rectangular structures, suggesting that there are culturally distinct ways of burying the dead. However, at the coastal site of Pendik, only a small percentage of the currently known inhumations were found beneath residential floors and other exceptions govern sites in inland settlements as well.

<sup>172</sup> Robb 2013, 658.

<sup>173</sup> Roberts – Rosen 2009; Groenhuijzen et al. 2015.

<sup>174</sup> Robb 2013, 659.

<sup>175</sup> Özdoğan 2017.

<sup>176</sup> Runnels 2003.

<sup>177</sup> Brami 2017.

<sup>178</sup> Çakırlar 2013, fig. 4.

A hopeful note for this largely archaeological-material based paper is that in the future, ancient DNA analysis, with its potential to show patterns of migration and genetic admixture, will offer new avenues for research. For the European Neolithic such analyses of foragers and farmers have recently been yielding convincing results.<sup>179</sup> The potential that skeletal data from the Istanbul region possesses has already been observed by Özdoğan, who enthusiastically recognised the importance of both the “biogenetic” and the “isotopic” promise that the recently excavated burials from Pendik carry.<sup>180</sup>

We can conclude that the evidence for the contemporaneous usage of diverse architectural traditions in the last quarter of the 7<sup>th</sup> millennium (Stage 4) offers the strongest indication that Neolithic communities in Northwest Anatolia had incorporated forager groups and some of their habitation practices. But it also needs to be noted that in Stage 4 we see the aftermath of processes of farmer-foragers contact, interaction and merging. As discussed, by this stage foraging activities themselves were no longer of significance in the subsistence economy. Earlier stages of interaction that must have taken place when foragers and farmers existed as more or less distinct groups are, archaeologically, largely invisible. Their occurrence can only be gleaned from the finds of non-local obsidian during Stage 1 at surface scatters like Domalı and Gümüşdere and in the peat levels of Yarımburgaz Cave.

The rather predictable but unavoidable conclusion of this reassessment of the evidence for forager-farmer interaction in the Neolithisation of Northwest Anatolia, therefore has to be that there is an urgent need to increase our datasets for Stages 1 and 2. Following the excavations of Barcın Höyük that has given us detailed insights into a pioneering farming community of Stage 3, real progress in understanding the local, forager, component in the Neolithisation of the region can only come from excavations at one of the Epipalaeolithic/Mesolithic and of the Aceramic Neolithic sites that we know are present.

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# Circular, Oval and Rectilinear: A Note on Building Plan Variability at Neolithic Sites in Central-West Anatolia

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**Abstract:** This paper aims to test the possibility of ‘foreign’ influence in central-west Anatolia during the late 7<sup>th</sup> and early 6<sup>th</sup> millennium BC by focussing on curvilinear building plans at several sites, especially at Ege Gübre. The presence of impressed pottery and the unique nature of Ege Gübre’s circular architecture have resulted in different interpretations as to the possible ‘origins’ of this form. Scholars variously suggested that this type of architecture may be related to a distinct ‘Mediterranean coastal Neolithic’ or a result of an interaction sphere that reached as far as Cyprus, where circular buildings were the norm during the Neolithic period. By comparing and contrasting architectural forms and settlement layouts from Cyprus, the Levant, Turkish Thrace, central and northwestern Anatolia, I aim to demonstrate that there are only vague and superficial resemblances of central-west Anatolian round buildings with these areas. In fact, the general settlement layout, plan of rectangular houses, material cultural elements and quantity of impressed pottery at Ege Gübre are very much in accordance with other contemporary sites in the region. This contribution concludes that (1) circular and oval plans are not exclusively found at Ege Gübre, (2) use of circular plans is not necessarily an indication of foreign influence and (3) the variability in the architectural techniques and plans in the region are presumably a function of local needs, choices and practices.

**Keywords:** west Anatolia, Neolithic architecture, circular plans, Ege Gübre, Cyprus

## Introduction

One of the main aims of the Central/Western Anatolian Farming Frontier workshop in Vienna in April 2016 was to explore the connectivity and bonds among Neolithic groups in central and western Turkey. Although the purpose was to discover connections between farmer-herder groups, it was also the goal to define local cultural practices, idiosyncrasies and diversity of material culture and technologies. This paper tries to underline one of the local elements of Neolithic culture in western Anatolia.

Recently, Barbara Horejs<sup>2</sup> has discussed variability in architectural materials, techniques and plans at 7<sup>th</sup> millennium BC sites in central-west Anatolia. I aim to contribute to this discussion by testing the possibility of ‘foreign’ influence in the region by focussing on curvilinear building plans at sites, especially at Ege Gübre. The unique nature of Ege Gübre’s circular architecture has resulted in different interpretations as to the possible ‘origins’ of this form. There is a tendency to associate Ege Gübre’s circular architecture with external forces.<sup>3</sup> Haluk Sağlamtimur<sup>4</sup> indicated that ‘the notable presence of impresso pottery as well as the round-plan structures are indicators of a maritime interaction sphere from Cyprus to further west in the Mediterranean and Aegean’. Likewise, Mehmet Özdoğan has implied in several publications that there is connection between Ege Gübre and Cypriot Neolithic groups based on the presence of round architectural plans and impressed pottery.<sup>5</sup>

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<sup>2</sup> Horejs 2016.

<sup>3</sup> Sağlamtimur – Ozan 2012, 110.

<sup>4</sup> Sağlamtimur 2012, 201.

<sup>5</sup> Özdoğan 2007, 445; Özdoğan 2011; Özdoğan 2014, 1520.

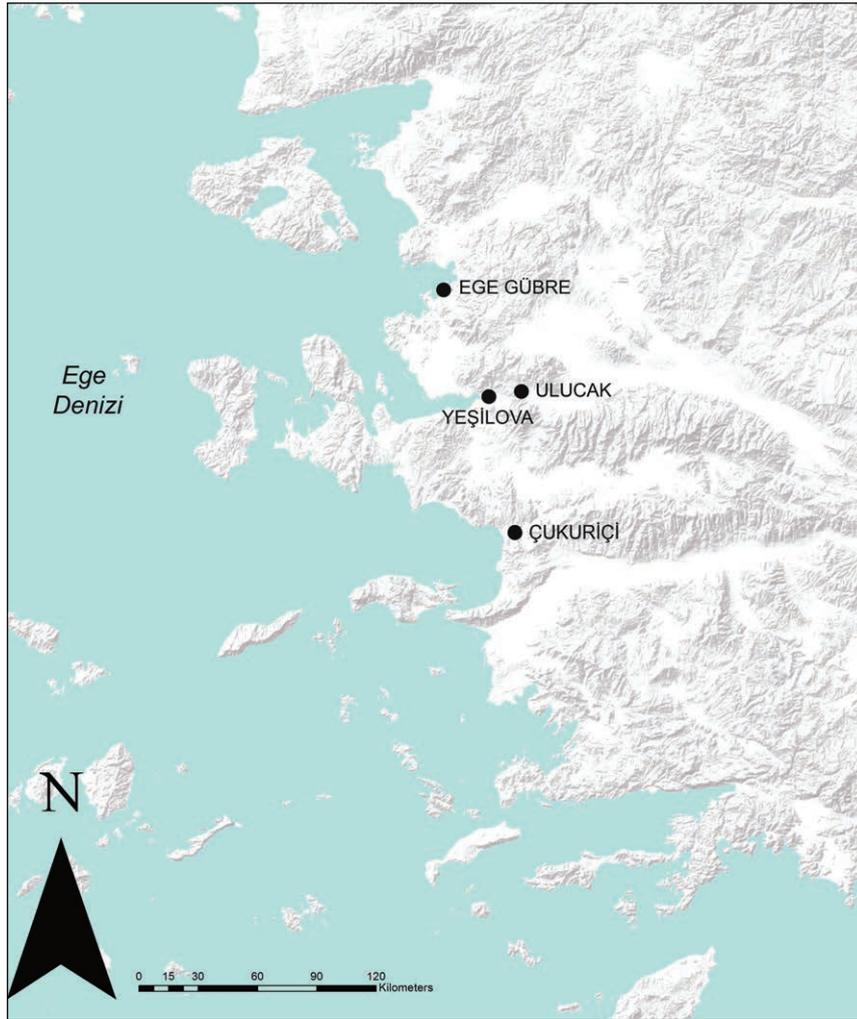


Fig. 1 Sites mentioned in the text (map: Ç. Çilingiroğlu)

The purpose of this short paper is to show that (1) circular and oval plans are found at other sites in the region, (2) the use of circular plans is not necessarily an indication of a Cypriot connection and (3) the variability in the architectural techniques and plans in the region is presumably a function of local needs, choices and practices.

### **Central-West Anatolia in the Late 7<sup>th</sup> Millennium BC: Pronounced Homogeneity**

Recent archaeological fieldwork at late 7<sup>th</sup> millennium BC sites in central-west Anatolia shows a picture of high patterning with respect to mobile material culture (Fig. 1). Pottery fabrics and morphology are one of the most homogeneous aspects of material culture in the whole region. Both technological and typological similarities are observed in ceramic repertoires. A dominance of fine-medium red slipped and burnished wares along with cream and brown burnished plain pottery is a characteristic of each site. Vessel morphology also repeats itself at every site with a predominance of hole-mouth jars, 'S' profiled bowls and globular jars with short necks.<sup>6</sup> Vertical

<sup>6</sup> Çilingiroğlu 2012.

tubular lugs, single knobs or pierced knobs and disc bases are common morphological features. Impressed pottery appeared around 6000 BC and is found at each site in small quantities.<sup>7</sup> In fact, in contrast to initial speculations,<sup>8</sup> it does not constitute more than 1% of ceramic assemblages at both coastal and inland sites, including Ege Gübre.<sup>9</sup>

Published chipped stones from the region show identical techno-typological elements like single-platform prismatic cores and blade-based products accompanied by end-scrapers on flakes.<sup>10</sup> Both various local cherts and extra-local obsidian were used to produce chipped stones. Melian obsidian has been recovered from each and every site excavated, albeit with differing proportions. The Çukuriçi lithic assemblage is composed mainly of Melian obsidian (80%), while at other sites the percentage fluctuates between 10–20%, which may be indicating differential access and contact mechanisms of each western Anatolian community with Aegean groups.<sup>11</sup>

Clay and bone objects as well as ground stone industries display strong affinities as well. Bone spoons, awls, clay stamps, biconical sling missiles, clay figurines, stone beads and polished axes constitute the typical portable items discovered at these sites.<sup>12</sup> In terms of symbolic items, female, male and animal figurines are predominant. Female and bull symbolism are found in various media across the region. There are even identical objects at some of these sites. Two clay stamps with the same intricate decoration are known from Ulucak and Yeşilova.<sup>13</sup> Two stamp-like objects made out of *Bolinus brandaris* shells are known from Ulucak and Ege Gübre.<sup>14</sup> Biconical sling missiles and their mass deposition in houses are attested both at Çukuriçi and Ulucak.<sup>15</sup>

Despite different environmental settings, available zooarchaeological and archaeobotanical evidence from the region also indicates common subsistence strategies. Consumption of all four herd animals (ovicaprids, pigs and cattle) along with an occasional input of game meat, especially cervids and hare, is the general pattern obtained from regional zooarchaeological studies.<sup>16</sup> There are indications of dairy production in the area based on the mortality profiles of herd animals after 6000 calBC.<sup>17</sup> The location of a given site, whether it enjoys a coastal location or not, plays a role in the contribution of marine resources to the diet. Çukuriçi, for instance, shows remarkable input from marine resources, especially marine fish and shells.<sup>18</sup> The Ulucak community, on the other hand, consumed lesser amounts of marine fish and shellfish throughout the sequence.<sup>19</sup> High densities of marine bivalves and gastropods are also mentioned at Yeşilova and Ege Gübre, but there are no reports with actual counts from these sites yet.<sup>20</sup> There are no detailed reports of archaeobotany from the area, but there are identified botanical species that at least imply cultivation of common sets of cereals and pulses. Einkorn wheat, emmer wheat, free-threshing wheat, six-rowed barley, lentil, pea and bitter vetch have so far been identified as cultivated species at Ulucak and Çukuriçi.<sup>21</sup>

<sup>7</sup> Çilingiroğlu 2016.

<sup>8</sup> Sağlamtimur 2007, 375.

<sup>9</sup> Çilingiroğlu 2012; Sağlamtimur 2012, 200.

<sup>10</sup> Çilingiroğlu et al. 2012; Derin 2012; Horejs 2012; Sağlamtimur 2012.

<sup>11</sup> Milić 2014; Horejs et al. 2015.

<sup>12</sup> Çilingiroğlu et al. 2012; Derin 2012; Horejs 2012; Sağlamtimur 2012.

<sup>13</sup> Çilingiroğlu et al. 2012, fig. 31; Derin 2012, fig. 22.

<sup>14</sup> Çakırlar 2015.

<sup>15</sup> Çilingiroğlu 2011; Horejs 2016, 149–150.

<sup>16</sup> Derin 2007; Sağlamtimur 2007, 375, 382; Çakırlar 2012a; Horejs et al. 2015.

<sup>17</sup> Çakırlar 2012b.

<sup>18</sup> Horejs 2016, 157.

<sup>19</sup> Çakırlar 2009; Çakırlar 2012a.

<sup>20</sup> Derin 2012; Sağlamtimur 2012.

<sup>21</sup> Megaloudi 2005; Horejs 2008, 102, 150; Çilingiroğlu et al. 2012.

Central-West Anatolian Sites	Building Materials	Building Techniques	Building Plans
Çukuriçi VIII	Adobe, stone	Stone foundations, adobe superstructure	Rectilinear?
Çukuriçi IX–X	Adobe, stone, wood	Stamped loam over stone foundations, free-standing	Rectilinear
Ulucak Vb	Adobe, wood, stone	Wattle-and-daub, puddled adobe (cob), free-standing	Rectilinear, oval
Ulucak Va	Adobe, wood, stone	Wattle-and-daub, attached	Rectilinear
Ulucak IV Early	Mudbrick, wood, stone	Mudbrick on stone foundation, free-standing?	Rectilinear, rounded corners
Ulucak IV Late	Mudbrick, wood, stone	Mudbrick on stone foundation, attached with separate walls, puddled adobe (cob)	Rectilinear
Ege Gübre III	Stone	Wattle-and-daub on stone foundation?	Round, rectilinear
Ege Gübre IV	Stone	Wattle-and-daub on stone foundation?	Round only?
Yeşilova III.1–2	Adobe, stone	Puddled adobe (cob) over stone foundations, post-holes in stone foundations	Rectilinear, oval/round
Yeşilova III.8–3	Stone	Stone foundations	Rectilinear?

Table 1 A comparison of building materials, techniques and plans at central-west Anatolian Neolithic sites

### Variability in Architecture

In the region, the most eye-catching variability is observed in the architecture. Post 6500 BC sites in central-west Anatolia all present evidence of different building techniques using the same building materials (Table 1). Adobe-based architecture producing rectilinear forms is a common feature in this region. Basically, stone foundations and mud-based superstructures are attested at every excavated site so far. Timber is commonly used, either in walls or as supports for the roof and for building roofs. However, as Horejs<sup>22</sup> emphasises, beyond these general conceptual similarities, there are manifold differences in building materials, building plans and techniques.

In Ulucak V, rectilinear houses were built using a wattle-and-daub technique.<sup>23</sup> Even in different building layers at Ulucak V, there are substantial differences in building techniques.<sup>24</sup> Between two building layers (Va and Vb), there are similarities in terms of building materials, but houses share common walls in Va, while in Vb they are free-standing.<sup>25</sup> An interesting recent discovery from Ulucak is a single small-sized building with an oval plan from Level Vb, which was built of puddled adobe.<sup>26</sup> At Ulucak IVb, there was a major change in the building materials, which also affected the building size and plans. In this level, mould made and sun-dried mudbricks were used to build rectangular, mostly single-room houses having entrances either in the long or in the short walls. Typically the houses contain an open or lightly covered courtyard in front of them, have flat-topped ovens and mud platforms for food preparation.<sup>27</sup> At this stage, mudbricks have almost two standard sizes (big sized mudbrick: 55 × 35 × 8cm and small sized mudbrick: 50 × 18 × 8cm).<sup>28</sup>

<sup>22</sup> Horejs 2016.

<sup>23</sup> Çilingiroğlu – Abay 2005.

<sup>24</sup> Çilingiroğlu 2012.

<sup>25</sup> Çilingiroğlu – Çilingiroğlu 2007.

<sup>26</sup> Çevik – Vuruşkan 2015, 591.

<sup>27</sup> Çilingiroğlu et al. 2004.

<sup>28</sup> Derin 2005, 88.

At Çukuriçi, stone foundations, mud superstructures and stamped clay floors were discovered in Level VIII.<sup>29</sup> Walls with stone socles and stamped clay are also found in the succeeding Level IX.<sup>30</sup> Level IX and X show building continuity and building of successive dwellings at the same spot over time.<sup>31</sup> Similar construction techniques and plans produced rectilinear house complexes with free-standing arrangements in levels IX and X at Çukuriçi.<sup>32</sup> Two parallel rows of stones form the foundations. A five to six course high stone socle and stamped loam created the superstructure of these buildings. Maxime Brame and colleagues indicate that post holes have been identified both inside and outside of the houses, which indicate that a timber frame was used.<sup>33</sup>

Yeşilova III was likewise built of rectilinear buildings with stone foundations. However, the upper structure was built with big mud-blocks instead of mudbricks.<sup>34</sup> Similar to Ulucak, recent excavations revealed that besides rectilinear structures, oval or rounded buildings are also present at Yeşilova's final building phases of Level III.<sup>35</sup>

At Ege Gübre, the buildings show both rectilinear and circular plans with thick stone foundations, however, as to the upper structures, no remains were preserved. Sağlamtimur suggests that superstructures must have been built with wattle-and-daub technique.<sup>36</sup> Rectangular plans are dominant at Ege Gübre with entrances on their long sides and with openings facing a large central courtyard. The houses usually have single rooms, but occasionally smaller rooms have been identified. The rectilinear structures measure 9 × 6m or are slightly bigger.<sup>37</sup> Rectilinear buildings typically contain fire installations. The rectilinear house plan at Ege Gübre, with central openings on the long side, is very similar to Ulucak IVb houses; strong resemblances can also be identified with Hacilar VI, Bademağacı, Höyücek and Kuruçay Neolithic architecture.<sup>38</sup>

### Round Plans at Ege Gübre: 'Foreign' Connections Possible?

The circular forms in architecture at Ege Gübre are one of the most striking elements that contrast with the mostly rectilinear mud-based architecture of Neolithic central-west Anatolia. The tholos-like structures and the combination of rectangular and circular architectural elements have, so far, no parallels inside the region. Their function, i.e. whether they were storage buildings or normal dwellings, is debated. However, the fact that no hearths, ovens or burials have been discovered inside these circular structures may indicate that they were not domestic dwellings.<sup>39</sup> At Ege Gübre, eight circular and twelve rectilinear buildings have been excavated; the round structures have a c. 4m inner diameter with entrances facing the central courtyard.<sup>40</sup>

As mentioned above, Özdoğan and Sağlamtimur have suggested that the round buildings at Ege Gübre are indicative of interactions with Cyprus, and that active maritime routes in the eastern Mediterranean created this specific interaction sphere between Cyprus and coastal west Turkey.<sup>41</sup> Aside from circular buildings, the tendency to associate the Cypriot Neolithic with Ege Gübre is based on the so-called 'notable' presence of impressed pottery. Here I try to test this specific interpretation by showing that Cypriot Neolithic settlement plans are highly different from

<sup>29</sup> Horejs 2012, 118.

<sup>30</sup> Horejs 2012, 120.

<sup>31</sup> Brame et al. 2016, 5–6.

<sup>32</sup> Horejs 2016, 152–153.

<sup>33</sup> Brame et al. 2016, 5.

<sup>34</sup> Derin 2012.

<sup>35</sup> Derin 2010.

<sup>36</sup> Sağlamtimur 2012.

<sup>37</sup> Sağlamtimur 2012, 198.

<sup>38</sup> Umurtak 2005.

<sup>39</sup> Sağlamtimur 2007, 374.

<sup>40</sup> Sağlamtimur 2012, 198.

<sup>41</sup> Özdoğan 2007, 445; Özdoğan 2011; Sağlamtimur 2012, 201.

Ege Gübre. Secondly, I would like to highlight the fact that pottery did not arrive to Cyprus before 5200 calBC<sup>42</sup> and connections based on pottery styles cannot be established between Cyprus and western Turkey during the 7<sup>th</sup> and early 6<sup>th</sup> millennium BC.

First we can focus on Cypriot Neolithic sites that are contemporary with Ege Gübre to infer whether any connection can be found between these areas. According to Cypriot chronology, the late 7<sup>th</sup> and early 6<sup>th</sup> millennium BC corresponds to the ‘Late Aceramic Neolithic’ that lasted from c. 7000/6800–5200 calBC.<sup>43</sup> The Ege Gübre settlement coincides roughly with the later stages of ‘Khirokitia Culture’. This cultural horizon is characterised by densely packed settlements with curvilinear and round structures and boundary walls, disappearance of cattle from faunal assemblages, production of elaborate stone vessels and low-density contacts with the Levant and Anatolia.<sup>44</sup> There are no unequivocal areas devoted to public gatherings and events in the settlements. The houses typically contain 0.5m wide entrances, paved thresholds, plastered floors, hearths, basins, windows, niches, platforms or benches as inner architectural features.<sup>45</sup> Some houses contain free-standing pillars. Following the Late Aceramic Neolithic Period in Cyprus, archaeologists maintain that there was either a cultural gap or some sort of a demographic collapse (as implied by high rates of infant mortality) or abandonment of sites and relocation of the local population on the island. In any case, around 5200 calBC the first pottery was introduced to the island, most probably as a result of contacts with Levantine-Anatolian groups. These pottery types include monochrome, red monochrome painted, red-on-white and combed wares.<sup>46</sup>

This brief survey of contemporary Cyprus shows that there are little, if any, similarities with Ege Gübre’s settlement plan, architecture, material culture and subsistence patterns. Most notably, in contrast to Cypriot sites, Ege Gübre shows the co-existence of round and rectangular buildings and the presence of a wide open-area in the centre of the settlement.<sup>47</sup> In other words, despite the superficial resemblance of circular features, the settlement plans and organisation show no commonalities. Moreover, the absence of pottery at this stage in Cyprus makes any attempt to relate these groups and their practices in terms of ceramic production and types impossible. Cypriot communities do not produce pottery in the 7<sup>th</sup> millennium BC and when they do, they do not produce impressed pottery. In fact, impressed pottery never occurs during the Cypriot Neolithic.<sup>48</sup>

Round architecture combined with rectangular architecture is known from pre-Halaf and Early Halaf sites (c. 6100–5950 calBC) in northern Mesopotamia. Multiple Halaf sites have circular and rectilinear features together, best exemplified in the Burnt Village at Tell Sabi Abyad in northern Syria. Here, it is suggested that large multi-roomed buildings may have functioned as communal storehouses.<sup>49</sup> Regardless of whether Halafian groups had a pastoral and semi-nomadic lifestyle or whether they were socially egalitarian or hierarchical, all current debates for Halafian societies as described by Rana Özbal,<sup>50</sup> the correspondence between Halafian settlement organisation and architectural plans (not to mention its distinct material culture) with western Anatolia proves to be likewise very low.

Much closer to coastal western Anatolia, circular or oval architectural plans are known from Hoca Çeşme in coastal western Turkey as well as at Aktopraklık C, Fikirtepe and Pendik in north-west Anatolia.<sup>51</sup> It is common knowledge that basal Hoca Çeşme houses show curvilinear plans with their foundations carved into the bedrock. These dwellings are described as ‘round huts’

<sup>42</sup> Knapp 2013, 160.

<sup>43</sup> Knapp 2013, tab. 3.

<sup>44</sup> Knapp 2013, 120–122.

<sup>45</sup> Steel 2004, 50–51; Knapp 2013, 122.

<sup>46</sup> Knapp 2013, 160–161.

<sup>47</sup> Sağlamtimur 2012.

<sup>48</sup> Çilingiroğlu 2016.

<sup>49</sup> Nieuwenhuyse – Cruells 2004, 51.

<sup>50</sup> Özbal 2010.

<sup>51</sup> Karul – Avcı 2013; Özdoğan 2013.

that usually have c. 5m diameters.<sup>52</sup> The basal building phase at Hoca Çeşme shows multiple remains of such round houses and no rectilinear plans were uncovered in this phase. In fact, the earliest known rectangular plans at Hoca Çeşme appear in Level II, which is contemporary with the Karanovo I phase.<sup>53</sup> Circular planned wattle and daub huts with sunken floors are also known from basal Aktopraklık C. These structures are free-standing and have 4m diameters. One of the features of these dwellings is that they contain sub-floor burials.<sup>54</sup> Fikirtepe and Pendik are other sites in northwest Anatolia that show curvilinear construction of houses. At Fikirtepe, curvilinear plans with again c. 5m diameters and sunken floors are known. Similar to the Aktopraklık C site, at Fikirtepe too, these houses contained sub-floor burials.<sup>55</sup> The Pendik excavations revealed almost identical building plans and inner arrangement of houses with Aktopraklık C and Fikirtepe. The Pendik houses are also round or oval with semi-sunken floors and sub-floor burials.<sup>56</sup> Finally, in Turkish Thrace, Aşağı Pınar 8 showed traces of ‘pit-like dwellings,’ but these are not very well defined and the general character of the settlement at this early phase is unclear.<sup>57</sup> It is apparent from this brief survey that curvilinear plans are not peculiar to the Ege GÜBRE settlement, but in my opinion, the more important issue here is that there is little correlation between settlement plans and inner arrangement of houses between Ege GÜBRE and other northern Turkish sites. For instance, the co-appearance of circular and rectangular buildings is not known from Hoca Çeşme or Fikirtepe sites. In contrast to Ege GÜBRE, in northwest Anatolia and Hoca Çeşme there are clear indications that these round buildings were used as dwellings. The fact that they mostly have sub-floor burials and other features like ovens or hearths indicates their domestic functions. Another difference with Ege GÜBRE buildings can be recognised in their floor constructions. In northwest Anatolia and at Hoca Çeşme, the floors of round/oval houses are semi-sunken or sunken, while at Ege GÜBRE there is no indication they had sunken floors.<sup>58</sup> This also speaks to the difference in building techniques. This leaves us with vague similarities in geometric shape and size of the buildings. Otherwise, the context and function of these round features seem to differ at these sites from Ege GÜBRE.

Curvilinear plans are not foreign to Anatolia at least since the Epipalaeolithic period.<sup>59</sup> Final Epipalaeolithic sites in the Tigris basin such as Körtik Tepe or PPNA sites both in the Euphrates and Tigris basins have circular dwellings as a rule until at least the 8<sup>th</sup> millennium BC.<sup>60</sup> Similarly, central Anatolian PPN settlements are very much characterised by curvilinear buildings with sunken floors and sub-floor burials in the 9<sup>th</sup> millennium BC.<sup>61</sup> By the early 8<sup>th</sup> millennium BC, however, round plans were completely replaced by rectilinear plans as is very well evident at Aşıklı Phase II with this specific tradition continuing well into 7<sup>th</sup> millennium BC Çatalhöyük where round/oval plans are simply absent.<sup>62</sup> This reflects a total change of settlement layout, organisation and plan that prefers agglutinative rectangular dwellings with flat roofs to maintain the social and economic organisation of these communities.<sup>63</sup> Because of this difference in time and space, as well as apparent differences in settlement organisation, I do not see any direct connection between central and western Anatolian settlement plans, let alone between round buildings of central Anatolian PPN sites and Ege GÜBRE. This apparent difference in settlement organisation

<sup>52</sup> Özdoğan 2013, 180.

<sup>53</sup> Özdoğan 2013, 181.

<sup>54</sup> Karul – Avcı 2013, 46–47.

<sup>55</sup> Özdoğan 2013, 173.

<sup>56</sup> Özdoğan 2013, 175.

<sup>57</sup> Özdoğan 2013, 186.

<sup>58</sup> See Sağlamlı 2012, 198.

<sup>59</sup> Benz et al. 2015, 17–19.

<sup>60</sup> Karul 2011; Schmidt 2011; Miyake et al. 2012.

<sup>61</sup> Baird et al. 2012, 224–225; Özbaşaran 2012, 138.

<sup>62</sup> Hodder 2012, fig. 3; Özbaşaran 2012, 139.

<sup>63</sup> Düring 2002; Düring 2011, 98.

(and hence social organisation) between central and western Anatolia already has been very well highlighted by Ulf-Dietrich Schoop and for this reason will not be discussed here again.<sup>64</sup>

A final remark can be made on this topic. Circular structures and dwellings are known from the Mesolithic Aegean, contemporary with southwest Asian PPNA. The excavations at Maroulas on Kythnos revealed at least 31 remains of stone-built curvilinear structures, some with sub-floor burials.<sup>65</sup> These are semi-subterranean round ‘huts’ with stone-paved floors and possible timber superstructures.<sup>66</sup> These findings from the Aegean Mesolithic indicate that Initial Holocene architectural techniques and plans show certain similarities with the other contemporary sites in the Eastern Mediterranean. Also, it shows that circular plans are not unknown in the Aegean before the Neolithic period. However, it is difficult to grasp a continuity of this cultural practice in the Aegean, as no sites of the Initial Neolithic era (c. 7000-6600 calBC) display use of curvilinear plans. Instead, all the known sites of the early 7<sup>th</sup> millennium BC in the Aegean such as Knossos, Çukuriçi or Ulucak contain rectilinear building plans.<sup>67</sup> Also one observes that architectural tradition prefers mud-based building materials starting with the Neolithic period in the Aegean and western Anatolia. In effect, with the current evidence it is not possible to relate Aegean Mesolithic round buildings with the 6<sup>th</sup> millennium BC round structures from western Anatolia. On the other hand, there are claims of round pit-houses during the Greek EN1 from sites like Nea Makri, Achilleion and Argissa. Catherine Perlès argues that these ‘pit-houses’ are actually clay digging pits to collect building materials during the establishment of the settlements and that there is no indication that these pits were used as dwellings.<sup>68</sup> In any case, as mentioned above, there is no unequivocal continuation of round plans from the Mesolithic into the Initial Neolithic period in Greece.

As a result, Ege Gübre’s circular structures may be an idiosyncratic feature of central-west Turkey, without any direct predecessors or parallels in other regions of the Eastern Mediterranean. It is true that both the plans and functions of these enigmatic buildings remain as isolated examples. Despite its ‘strangeness’, for now it seems appropriate to hold an autochthonous position as to the question of origins for this form. As Sağlamtimur has proposed, given that these buildings did not include any hearths or ovens, these round buildings may have been storage facilities for certain kinds of food,<sup>69</sup> developed by the community at Ege Gübre, whose material culture is very much in accordance with the other contemporary sites from the Izmir area and therefore did not necessarily originate from another region. Also, the rectilinear buildings at the site show strong resemblances to other contemporary settlements in the region and western Anatolia in terms of size, plan and arrangement.<sup>70</sup> In other words, there is nothing foreign about the way rectilinear buildings were built. Besides, as mentioned already, new excavations have revealed rounded, circular and oval buildings at contemporary sites in the region (such as at Ulucak and Yeşilova), which indicates that non-rectilinear buildings were built whenever a need arose and that communities did not hold strict rules to geometric shapes of the built structures. The basal layer at Ege Gübre, which is dated to c. 6200 calBC, may have been founded as a result of a budding-off of local villages and that circular plans are an innovation peculiar to this site.

<sup>64</sup> Schoop 2005.

<sup>65</sup> Sampson 2014, 194.

<sup>66</sup> Sampson 2014, fig. 7.

<sup>67</sup> Çilingiroğlu 2017.

<sup>68</sup> Perlès 2001, 184–185.

<sup>69</sup> Sağlamtimur 2007, 374.

<sup>70</sup> See Umurtak 2005.

## Conclusions

In this contribution, I challenged the idea that round buildings at sites in the Izmir region, especially at Ege Gübre, may reflect connections with Cypriot or other neighbouring communities. There are unequivocal differences among contemporary farmer-herders in the region in terms of settlement plans and building techniques as well as building plans, which may reflect divergent understandings of space use, creation of built environments and social practices among these groups. However, there is no compelling evidence to suggest that these practices resulted from non-local factors (especially Cypriot or Levantine in origin). Judging by the multiple common aspects in terms of subsistence strategies, technological know-how and symbolic items, these communities show locally developed characters maintained through strong social-cultural bonds with each other as equal polities and with other Aegean and Anatolian groups during the 7<sup>th</sup> and 6<sup>th</sup> millennia BC. Round and oval plans are known from other sites in the region and are not necessarily a function of extra-local influences.

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# Neolithic Goes West: Concepts and Models on the Neolithisation of the Aegean

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**Abstract:** Recent excavations in both coasts of the Aegean offer new evidence for the expansion of the Neolithic in the region. At first sight, the new evidence seems to support the mainstream model of the overall westward movement of agriculturalists. On closer inspection, however, significant incompatibilities indicate that the dominant paradigm requires now some fine-tuning. It is argued that two distinct aspects, the Neolithic expansion as a culture-historical event, and the neolithisation as a sociocultural process, had been confounded by the mainstream model. By giving more emphasis to the former at the expense of the latter, research has failed to accommodate some essential components within the dominant model. Expectably, the two aspects represent two profoundly different phenomena that cannot be reduced to each other. Consequently, untangling the complex process of neolithisation as distinct from the Neolithic expansion requires its own, well-grounded, methodology. It is proposed here that an approach inspired by philosophical phenomenology can help considerably in tackling the overly contextual character of the sociocultural process of becoming neolithic.

**Keywords:** Neolithisation, Aegean, westward expansion, meshworks and movement, early Neolithic architecture, agency, embodiment, phenomenology

## Introduction

It is not often that an archaeologist starts a paper on the Neolithic with Plato. Despite claims to the contrary, archaeology is not unaware of philosophy; the successive shifts in archaeological paradigms invariably relied on readings of philosophical postulates.<sup>2</sup> In the context of this paper, however, the recourse to philosophy stems from a certain disappointment with the explanatory models of the Neolithic transformation in the Aegean and with their failure to incorporate some vital concepts introduced to archaeological discourse in the meantime.<sup>3</sup> So persistent is this absence in favour of a pragmatic, exclusively factual discourse that one suspects a more deep-seated set of premises, even biases, at play. The examination of these premises becomes urgent, as there is a marked danger to equate uncritically and hastily a predominately socio-economic event with the mobility of people, for which modern biomolecular analyses are rapidly producing new data.<sup>4</sup> The need, therefore, to examine fundamental concepts and accommodate new data in an informed conceptual space is now more vital than ever.

The American philosopher Hubert Dreyfus, in his book *Being-in-the-World*, starts his commentary on Heidegger's *Being and Time*, by unravelling Plato's fascination with theory.<sup>5</sup> Plato's powerful idea was that we understand things in a detached way, that we can understand something in depth only when we abstract from it all its particular details. Only then we form an abstract idea in our mind about what really is a thing.

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<sup>2</sup> Cf. Salmon 1982; Wylie 1989; Johnsen – Olsen 1992; Holtorf – Karlsson 2000.

<sup>3</sup> Cf. e.g. Ammerman – Biagi 2003; Özdoğan 2011.

<sup>4</sup> Hofmanová et al. 2016; Mathieson et al. 2018.

<sup>5</sup> Dreyfus 1991.

As Dreyfus explains, western philosophy was captivated by this discovery. Descartes accepted it totally and moved one step further by assuming that the mind is the conscious subject that stands apart from the world and grasps reality as a thinking thing. This assumption that reality can only be grasped when we are disengaged from the world, in an abstract, detached mode, is an incredible idea. It is an idea that recognises as our only concern the application of an appropriate method, a method through which we discover the principles of phenomena.

It is common knowledge that this Plato – Descartes tradition informs all scientific research. In fact, as Stephen Toulmin asserts, it is behind the explosion of sciences that characterises Western modernity. Although truth for Plato was an ethical and political idea, for Descartes it was primarily epistemological. He was himself particularly interested in sciences and was fascinated by the concept of disengaged knowledge, which stems solely from our thinking mind, irrespective of our body and the senses, other humans, traditions, or society. In the ideologically and politically confused times in which Descartes was living, disengagement appeared as a much safer alternative.<sup>6</sup>

No wonder sciences were immediately fascinated by the prospect of seeking elements that remain constant and lie outside any form of context. The assumed superiority of the detached theoretical viewpoint complies well with a generalising tendency and supports directly the ambition of western science to become the ultimate authority on understanding the world. From such a viewpoint, the specific phenomenon of the Neolithic transformation in the Aegean can only be explained by correlating it with formal models and context-free elements that are related through covering laws, rules or universal regularities. Concepts like population densities and demography, climatic conditions, environmental factors, or recently biomolecular evidence, are often evoked to this end. It is highly significant that DNA is increasingly believed to reveal the deep text of human history and of our sense of being in this world, a task that until only a few decades ago was held by philosophy.

### The Westward Movement

The concept of westward movement of the Neolithic was given a systematic form in Gordon Childe's work and has been constructed within the cultural-historical paradigm of his time. The stated aim was to reconstruct a historical event, accomplished by a particular people, having a particular culture. Arguably, Childe was thinking inside the Platonic-Cartesian legacy as his well-known definition of archaeology in *Piecing Together the Past* reveals:

'The archaeological record is constituted of the fossilized results of human behaviour, and it is the archaeologist's business to reconstitute that behaviour as far as he can and so to recapture the thoughts that behaviour expressed'.<sup>7</sup>

This separation of thoughts and behaviour and the primacy ascribed to thoughts betrays, as Carl Knappett aptly points out,<sup>8</sup> the Cartesian dualism inherent in Childe's archaeology. But, if all behaviour expresses thoughts of people, then every action must be represented in the actor's mind. Therefore, for Childe, fossilised behaviour, i.e. the characteristic artefactual expressions of material culture, was a series of specialised mental representations and symbols, and by consequence, archaeology could only be capable of dealing with intentional aspects of human practice, with elements, attributes and rules that can be unambiguously recognised. In this predominantly representational framework, reconstructing historical phenomena as an array of fixed traits became possible. In fact, the actual concept of culture was based on stability and fixedness.

Many of the contemporary narratives of the expansion of the Neolithic preserve a similar approach, based on recognisable, fixed attributes. The wave of advance model, is a typical and

<sup>6</sup> Toulmin 1990, 45–87.

<sup>7</sup> Childe 1956.

<sup>8</sup> Knappett 2005, 3.

well-known example, as it assumes that the Neolithic is directly identifiable, even coterminous with agriculture and that it always exhibits constant attributes and traits, so that its presence can be unambiguous, and thus offers a measurement of the rate of colonisation. In any model of this type, be it biological or demographical, the entity observed has to be ontologically constant, for the model to function. Similarly, the concept of the Neolithic package<sup>9</sup> rests on comparable assumptions of essential referents.<sup>10</sup> This essentialism may be tolerated, even opted, in a formal representation in natural sciences, but, it poses insurmountable difficulties in describing culture, as I am going to explain now.

I am not here concerned in the least with the model of the wave of advance or of the westbound package as such, but rather with the entity that they supposedly measure. Besides, I do not see much difference from this respect to the alternative models of cultural diffusion, which suffer from the same predicament. What exactly is moving? Culture is not like a virus; diffusion does not work like a contagious disease; it does not spread like an epidemic. How do we know that what we measure in any particular case is still the same one entity? Are things meaningful in one dimension only, or do they acquire different meanings in differing contexts? And what is the agency of the people? Are they just the passive carriers of traits, rules and features or are they are creators, through their being-in-the-world. Why do we need the meaning of things in the first place?

Phenomenological approaches question the assumption that human activity can be adequately explained from a rational theoretical standpoint and reject the conscious, Cartesian subject, which creates mental images of the world around us.<sup>11</sup> For phenomenology, this mind/body duality is flawed; it is the social context that forms the basis of intelligibility, not representations of things in consciousness. In a phenomenological view, things remain withdrawn and invisible, and they do not present themselves to our examination.<sup>12</sup> Things ‘disappear’ from awareness, when everyday skills function normally; they return to awareness when they become dysfunctional.<sup>13</sup> Drew Leder, on the same phenomenological track, extends the critique of the mind/body duality to the body itself, which disappears from awareness, to come back in disease or distress.<sup>14</sup> Consequently, and unlikely to the rational Cartesian subject, everyday practices, into which we are socialised, are not necessarily represented in our mind, they simply are, or felt. ‘Mindless’, everyday skills and practices, form the primary way that we make sense of the world, of our, as it is called, being-in-the-world. As Thomas Csordas very aptly pointed out, the introduction of the ‘lived experience and the projection of the experiencing body as a conditional existence and not as a rational representation is a critical step in understanding, in his own words, the difference of culture as an ‘existential immediacy’ from culture as an ‘objectified abstraction’.<sup>15</sup> The last distinction bears a lot of significance for the validity of explanatory models.

‘Lived experience’ here does not refer solely to the sensorial aspects of experience, towards which some versions of archaeological readings of phenomenology seem more inclined.<sup>16</sup> For one thing, in a purely phenomenological approach, such a restriction would not be possible, as things, as we have seen, do not appear in our conscience, except only contextually. James Gibson, in his ecological approach to visual perception, has argued that perception is the result of the movement of an organism as a whole in its environment.<sup>17</sup> Tim Ingold calls this the ‘dwelling perspective’, and its main quality is ‘the active engagement with the constituents of his or her surroundings...

<sup>9</sup> Çilingiroğlu 2005; Marshall 2006.

<sup>10</sup> Kotsakis 2006.

<sup>11</sup> Merleau-Ponty 1962.

<sup>12</sup> Dreyfus 1991, 1–9; Olsen 2010.

<sup>13</sup> Harman 2002, 44–49.

<sup>14</sup> Leder 1990.

<sup>15</sup> Csordas 1994, 10.

<sup>16</sup> E.g. Tilley 1994; Hamilakis et al. 2002.

<sup>17</sup> Gibson 1979.

within a world that is inhabited by beings of manifold kinds, both human and non-human'.<sup>18</sup> Donna Haraway uses location to describe a standpoint of a similar situatedness.<sup>19</sup> The conclusion is that people are engaged in the world through their social and cultural faculties, as parts of their social networks entangled with things, as Ian Hodder would say.<sup>20</sup> This entanglement makes social networks, or meshworks resembling containers of humans and things together with their interconnections.

Formal models on neolithisation, however, perceive the past inhabited exclusively by Cartesian subjects that offer an immovable biological constant. The fatal blow to these models comes from the lack of contextualisation of the archaeological evidence, and from the agency of participants. It is not a question of empirical validity of their components, but of their actual relevance. Proxies such as assumed speed of spread, time and climate clines, pottery types, the location of sites, wild progenitors, Y chromosomes etc. are entirely verifiable. Are these proxies, however, really addressing the question? In some ways archaeologists are already familiar with this issue, from the former experience of dealing with ethnographic evidence; once a holy grail of archaeological interpretation, ethnoarchaeological 'facts' proved revealing in documenting natural processes implicated in human behaviour, but very misleading in dealing with the flux of culture and its transformations. The main issue lies in the objective meaning habitually ascribed to non-equivalent cultural manifestations, which may appear externally similar despite their contextual divergence. Even Neolithic bodies see their assumed universalised objectivity shaken by contextualisation. Anthropology, as a result of the influence of phenomenological ideas, cautions against understanding bodies as precultural and unambiguous biological entities existing prior to any cultural mutability. In Haraway's words, a body must be understood 'as an actor and agent, not as a screen, a ground, or a resource, never finally as slave to the master that closes off the dialectic in his unique agency and authorship of 'objective' knowledge'.<sup>21</sup> Agency, like contextualisation, challenges the relevance of formal objectivity by bringing to the fore the non-equivalence of actions.

The theoretical points presented in brief here, help us to draw a line between those instances where things are observed as context-free, fixed and recognisable attributes, and those when things (possibly also the same) are context-dependent. Heidegger himself, in *Being and Time*, discussing his famous distinction between 'presence-at-hand' (*Vorhandenheit*) and 'readiness-at-hand' (*Zuhandenheit*) says that things never show themselves as they are in themselves 'so as to add up as a sum of realia and fill up a room... What we encounter as closest to us... is the room; and we encounter it not... in a geometrical spatial sense, but as equipment for residing'.<sup>22</sup> It is obvious that situatedness and context in this sense, is not merely a technicality, but a basic block of our understanding. Context is the locus of everyday life, the constituents of its surroundings in which variable meanings are created and things made different through our embodied engagement with the world. We will now discuss how this can affect our reconstruction of the neolithisation of the Aegean.

### The Neolithisation of the Aegean

During the last two decades, new excavations in western Turkey have drastically changed the picture of the earliest Neolithic in the Aegean.<sup>23</sup> Some new sites excavated on the Aegean coast closed the large temporal, spatial and cultural gap that existed between the settlements of central Anatolia and Greece (Fig. 1). Moreover, common features of material culture seem to support

<sup>18</sup> Ingold 2000, 5.

<sup>19</sup> Haraway 1991, 194.

<sup>20</sup> Hodder 2012.

<sup>21</sup> Haraway 1991, 198.

<sup>22</sup> Heidegger 1962, 97–98.

<sup>23</sup> Özdoğan et al. 2012.



Fig. 1 Map of the circum-Aegean area, with sites mentioned (map design by N. Valasiadis)

the old idea of an east-west transfer of the Neolithic.<sup>24</sup> Among the many typical characteristics of those earliest Neolithic settlements rectangular architecture is notable, apparently following the ancient tradition of the central and eastern Anatolian settlements. Ulucak<sup>25</sup> and Çukuriçi Höyük<sup>26</sup> as well as slightly later sites, such as Ege Gübre<sup>27</sup> and Yeşilova,<sup>28</sup> exhibit rectangular architecture, occasionally with plastered floors and traces of wall-paintings. Given the chronological distance

<sup>24</sup> E.g. van Andel – Runnels 1995; Perlès 2005.

<sup>25</sup> Çilingiroğlu et al. 2012, fig. 37.

<sup>26</sup> Horejs 2012; Horejs et al. 2015, 297–298, fig. 3.

<sup>27</sup> Sağlantimur 2012.

<sup>28</sup> Derin 2012.

between central and eastern Anatolian settlements and those of the Greek coasts, it became far more comfortable to think in terms of a gradual expansion westwards, although one that lasted several centuries.<sup>29</sup>

The initial neolithic settlements in Greece were established around the mid 7<sup>th</sup> millennium on the Aegean coast.<sup>30</sup> One of the distinctive characteristics of these early sites is the absence of rectangular houses. The deepest deposits of Sesklo, Argissa Magoula and Achilleion, three well-known early sites excavated in the 1960s and 1970s, produced only pits and ditches cut in the bedrock.<sup>31</sup> Turning further north, new systematic excavations of Early Neolithic sites have yielded additional evidence for the domination of pits in the initial stage of the Neolithic, making the picture infinitely clearer. In Revenia, located near Mount Olympus, in central Macedonia, northern Greece, pit-dwellings represent the only existing architecture.<sup>32</sup> Recently, Paliambela Kolindros, a site near Revenia, produced a whole complex of successive pit dwellings organised around open areas of communal food processing (Figs. 2–3). They date to 6600 BC, among the earliest dates we have from Greek Neolithic sites.<sup>33</sup> Micromorphological analysis proves that the pits of Paliambela Kolindros were, beyond any doubt, dwellings.<sup>34</sup> Only much later, around the end of the 7<sup>th</sup> millennium, rectangular, above-ground houses replaced pit dwellings in Paliambela.<sup>35</sup> The initial phase of Mavropigi Fylotsairi is dominated by a large central pit-dwelling, surrounded by smaller pits.<sup>36</sup> In all the sites mentioned here, several of the pits represent dwellings, with various degrees of certainty. Although in some of the early Greek sites, rectangular houses appeared already during the final centuries of the 7<sup>th</sup> millennium (ENII) – Mavropigi is such a case – we have no examples, so far, of that type of architecture signalling the beginning of the period. The initial Neolithic is marked, all over continental Greece, with pits and pit-dwellings.

The effort to define precisely the origins of the Greek Neolithic, a favourite exercise of archaeologists with a strong culture-historical orientation, is not only beyond the scope of this paper, but also against the core of the argument presented here. Still, it is strange, to the point of being inexplicable, why the two coasts of the Aegean, east and west have such a diverging attitude to the form and architecture of their dwellings. Whether migrant farmers in Greece migrated from the east coast or as Perlès argues from further east via a maritime route,<sup>37</sup> they came from societies where rectangular built houses were the rule and had a long ancestry. It is hard to believe that the ‘package’ did not contain such a prominent and necessary feature, or that this feature was dropped or forgotten on the way to a new installation. On the face of it, the very model of expansion from the east coast to the west is severely challenged. This is not enough, however, because it does not tell us much about what this absence might mean.

Peter Wilson in his book ‘The Domestication of the Human Species’ has underlined the significance of the manipulation of space for the building of political structures.<sup>38</sup> The house, as a particular form of manipulating space in sedentary communities, defines a distinct segment of the social group, creates memory and builds identity. It is very different from the ‘open’ societies of hunters and gatherers who live in unbounded groups of communal sharing, in the context of an immediate returns based economy.<sup>39</sup> What we have in the initial Neolithic of Greece are settlements that adopted some of the features of hunters and gatherers, whatever this might mean for the expansion

<sup>29</sup> Özdoğan 2011, 427.

<sup>30</sup> Reingruber – Thissen 2009; Perlès et al. 2013; Kotsakis 2014.

<sup>31</sup> Milojević et al. 1962, 6–13, Plan III; Wijnen 1982, 17, fig. 9; Gimbutas et al. 1989, 32–34, figs. 4.2, 4.3.

<sup>32</sup> Bessios – Adaktylou 2006.

<sup>33</sup> Maniatis et al. 2012; Kotsakis – Halstead 2017; Kotsakis in press.

<sup>34</sup> Koromila 2015; Kotsakis 2018.

<sup>35</sup> Siamidou et al. in press.

<sup>36</sup> Karamitrou-Mentessidi et al. 2015.

<sup>37</sup> Perlès 2005; Perlès et al. 2013.

<sup>38</sup> Wilson 1988, 62.

<sup>39</sup> Wilson 1988, 36–41.



Fig. 2 Pits of Paliambela Kolindros c. 6600 BC (© Neolithic Paliambela Excavation Project)

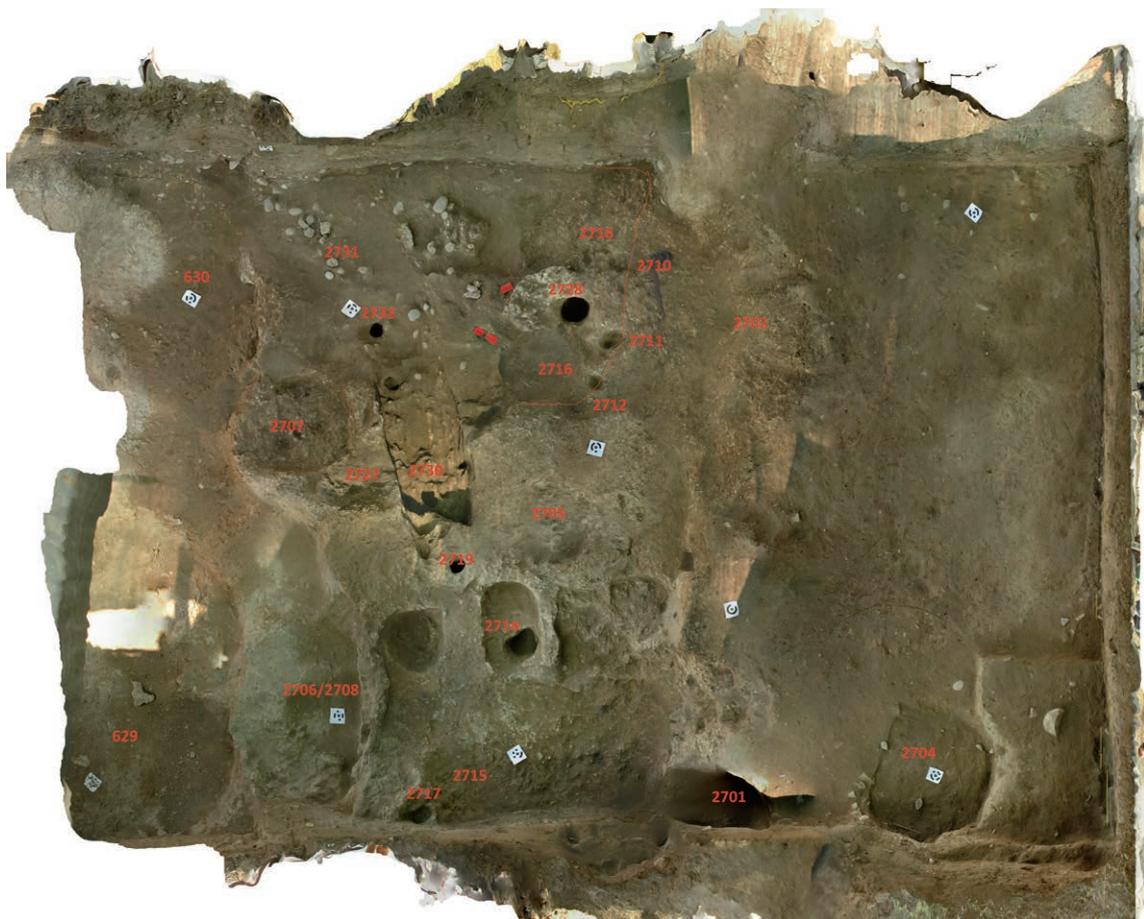


Fig. 3 Paliambela Kolindros. The communal area with evidence for food preparation and consumption (© Paliambela Excavation Project)

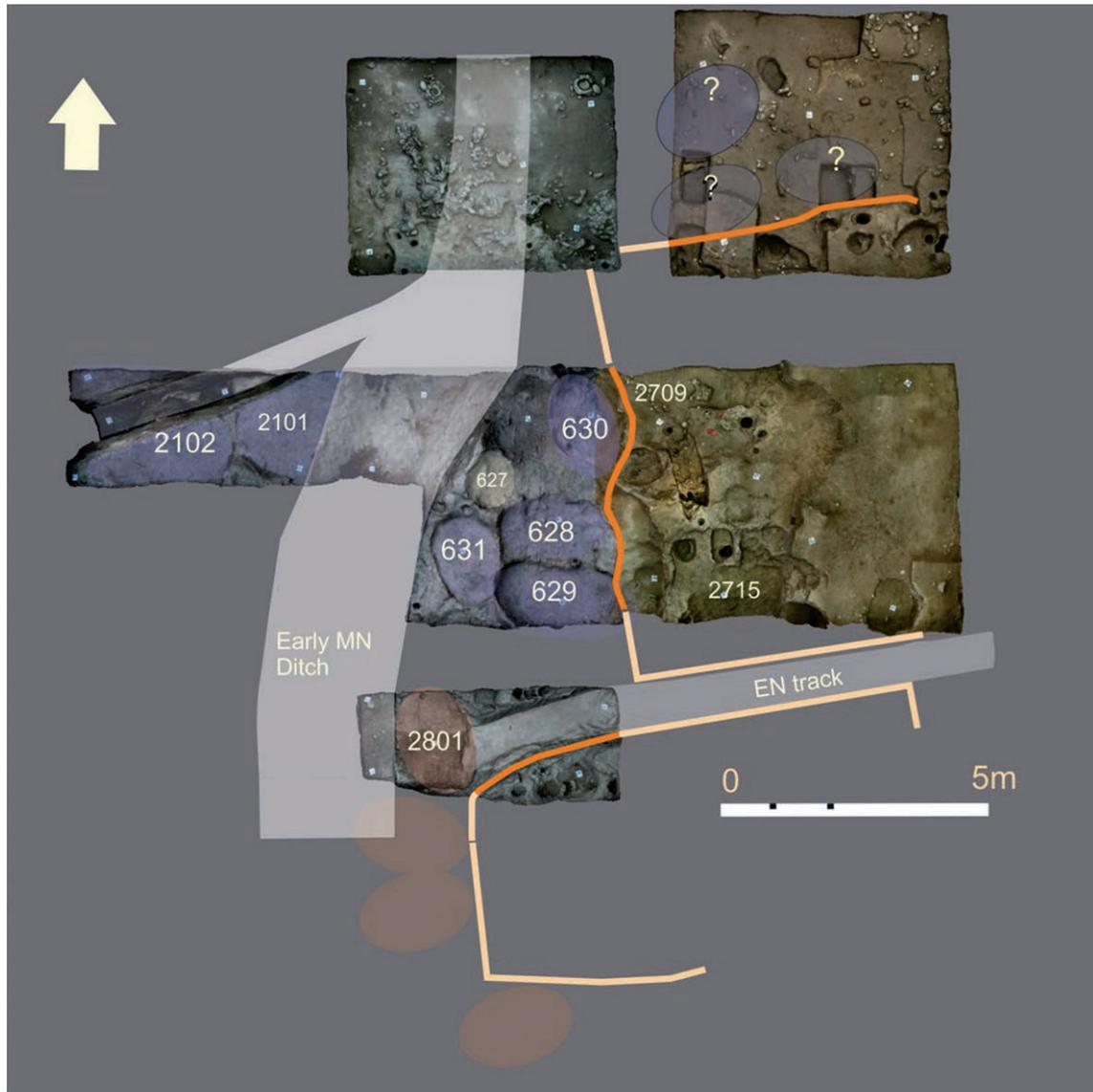


Fig. 4 Paliambela Kolindros. The communal area surrounded by pit-dwellings and pits in the lower level (© Paliambela Excavation Project and K. Kotsakis)

or migration model of the Neolithic. If we accept a migration from the east, then the abandonment of just an architectural typology common in the donor population is not enough. We have to accept as well something infinitely more difficult, namely the rejection of a whole form of social life, touching on most sensitive, even intimate aspects of personal identity, like kinship, marriage and progeny. Gaston Bachelard famously said ‘a house is our first universe, a real cosmos in every sense of the world’.<sup>40</sup> The description fits well with contemporary, urban populations, but even for the first farmers, the role of houses must have been so obviously central that it is unlikely that it was discarded smoothly, without causing or expressing a drastic social rearrangement. This is why the lack of houses in the initial phases of the Neolithic in Greece deserves our attention on both substantive and methodological grounds. For one thing, it most likely signifies deep social change, but, at the same time, proves that explanatory models cannot merely rely on formal cat-

<sup>40</sup> Bachelard 1969.



Fig. 5 Paliambela Kolindros. Rectangular, above-ground houses c. 5900 BC (© Paliambela Excavation Project)

egories alone, with context-free, fixed and recognisable attributes, devoid of agency. It requires us to face the complexity of the lived experience of those early farmers squarely. In contrast, the quest for origins, as applied in formal models, is compelled to decontextualise all evidence and to deny any agency to actors and things, in order to rescue the connection argument.

Deep social change is reasonably presumed on the opposite phenomenon too, namely, the shift to the built house, which appears several centuries later in the Early Neolithic communities of Greece. Some of these buildings show a remarkable physical continuity, and it has been suggested that this is a material statement of ancestry and lineage of its residents.<sup>41</sup> Houses became, in Peter Wilson's expression 'time anchored in space'<sup>42</sup>, a token of continuity, permanence and social role of its occupants<sup>43</sup>. In this sense, the house groups put forward an argument for their individuality, which would be in opposition to the primordial communal spirit that promotes solidarity in the community as a whole.

We have some evidence for the emphasis to communality in the early settlements of the initial Neolithic from Paliambela Kolindros. Careful excavation of the pit-dwellings in the lower deposits revealed the elaborate landscaping that was carried out in the settlement. The early farmers of Paliambela had shaped their settlement space with a very strong concept of order. They first exposed the surface of the natural rock and then shaped it into a high upper terrace and one lower (Fig. 4). No signs of food preparing facilities were found in the dwelling pits, while significant quantities of food remains and evidence of food preparation were found on the upper terrace, in permanent installations cut in the rock (Fig. 5). The whole arrangement shows a sense of strict order and permanence, which is unlike the 'open' settlements of hunter-gatherers, where boundaries, order and permanence are not paramount. But, on the other hand, the preparation and

<sup>41</sup> Nanoglou 2008; Kotsakis 2014; Kotsakis 2018.

<sup>42</sup> Wilson 1988, 60–61.

<sup>43</sup> Wilson 1998, 70–71.

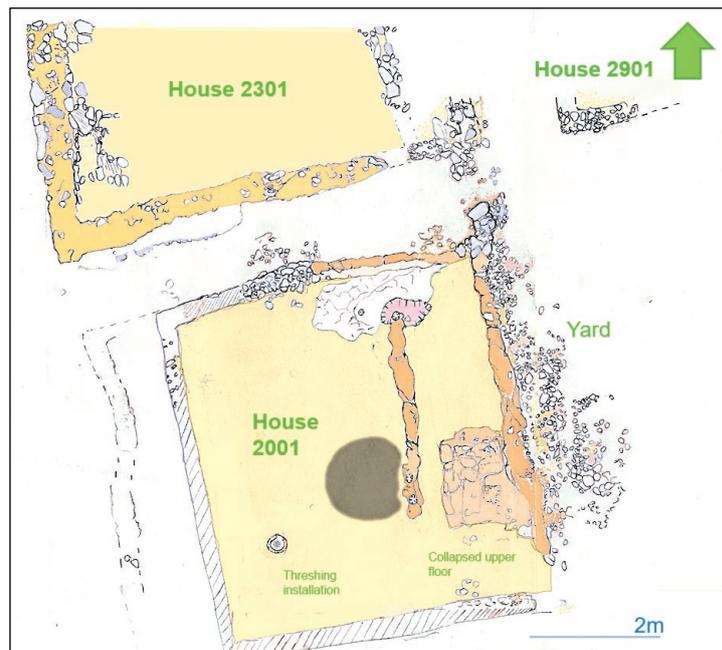


Fig. 6 Houses of Paliambela with internal food processing installations, c. 5900 BC  
(© Paliambela Excavation Project and K. Kotsakis)

consumption of food does take place in the open, in the public sphere, under the surveillance of the community. This particular pattern preserves the communality that characterises the ‘open’ settlements or camps of the hunter-gatherers.

As mentioned above, a significant change is noted at Paliambela Kolindros during the end of the 7<sup>th</sup> millennium. In that period, pit dwellings were abandoned and replaced by rectangular houses in organised clusters (Fig. 5). These houses preserve now ample evidence of food preparation and cooking, such as a big central installation, possibly an oven, a mortar permanently fixed on the floor, querns, grinders, and pottery for cooking, serving and consuming food (Fig. 6). Along with the appearance of individual houses, cooking and eating became less communal, and took place in the enclosed space of the house, hidden from the inspection of the neighbours.

The social trajectory described above on the evidence offered by Paliambela Kolindros and other Early Neolithic excavations, gives an excellent example of the ideological structures that condition the lived experience of the earliest agropastoralists in the Aegean. This is the kind of evidence that we are missing in our archaeological modelling, as we usually are focussing on the similarities of material culture at the expense of the variability of meaning that they may contain. Although apparent similarities may seem to fit comfortably with a model of east-west migration, they may also hide deep-seated differences that make the assumption problematic, even superfluous. In any case, the evidence is not always incompatible with those alternative interpretations, which may shed more light on the contribution of migration, colonisation and local adoption and recognise nuances and details that bring us closer to understanding the living experience of the early farmers in the Aegean.

Comparing the two coasts of the Aegean, we notice that there are similarities. Pottery, for instance, seems typologically close. Not necessarily, however, on a more in-depth analysis; detailed laboratory analysis of early ceramics, especially from northern Greek contexts, has revealed significant differences in technology and use on a site to site basis, which, as a rule, is masked by typological uniformity.<sup>44</sup> Comparable work from the east coast has not been published yet. Lithics

<sup>44</sup> Urem-Kotsou – Kotsakis 2007; Dimoula 2014; Saridaki et al. 2014; Kozatsas et al. 2018.

are another case of an uneven level of analysis; the detailed chronotechnological analysis existing for Anatolian sites is not available in northern Greece. In fact, broader comparisons between the two areas are difficult, given the uneven level of analysis carried out, and the previous lack of close communication between scholars of the two regions. Still, closer examination, reaching down to the level of what we have called here ‘lived experience’ finds additional notable differences – the ‘package’ of staple plants has divergences between east and west.<sup>45</sup> Dairy consumption is very common in the east, rarer in the west and varying considerably between sites.<sup>46</sup> We still do not understand clearly what specific treatment the west had in store for the dead.<sup>47</sup> Cooking may have varied significantly, farming regimes are not yet securely identified<sup>48</sup> and diets are only now starting to be assessed in Greece.<sup>49</sup> We know there can be wide differences in managing livestock in terms of mobility and grazing regime.<sup>50</sup> There are common features too: obsidian comes invariably from Melos, a maritime element seems central, not only for the south of Greece, but also for the north. Early sites are located in the plains near the coasts; at Paliambela Kolindros there is a strong preference for the consumption of seafood, mainly cockles, and strong indications for their sophisticated management, indicating long experience with marine resources.<sup>51</sup>

These last remarks bring to mind sites like Ulucak and Çukuruçi Höyük, the latter with a strong maritime orientation, according to the excavator.<sup>52</sup> A maritime network of Early Neolithic sites active in the Aegean has been proposed since the 1990s by Curtis Runnels and Tjeerd van Andel,<sup>53</sup> and there is ample evidence that it was active from the Mesolithic times exploiting and transferring Melian obsidian.<sup>54</sup> But it is usually conceived as an east-west drift, carrying with it the traits and characteristics of the Neolithic. In contrast, what I am proposing here is more like a Deleuzian rhizome of migrations, active within the Aegean and possibly beyond, to all directions.<sup>55</sup> The maritime network and its sailors would have been instrumental in carrying people across the Aegean as the evidence of Çukuruçi Höyük shows, but also the almost simultaneous appearance of Early Neolithic communities even in the more remote northern corners of the Aegean. Although the scale of the Aegean is small, compared to the whole of the Mediterranean, leapfrog migration from the sea is more easily supported than expansion over land. This last seems much more probable during the Late Neolithic, when there is a gradual ‘infilling’ of the landscape, probably the result of population growth.

It is beyond any doubt that this maritime mobility with the mixture of places, peoples and traditions would have produced a significant variability and hybridity of forms that make any quest for more precise origins meaningless. At the frontier, the hybridity of identities and their material expression is what one surely expects in periods of cultural flux, when significant transformations happen, and new social worlds emerge. The ‘family resemblance’ of material culture in the Aegean could well be the cumulative result of multidirectional movement over this maritime network.

## Conclusions

In the recent overview of the archaeological evidence for the westward expansion of the Neolithic, mentioned in the introduction of this chapter, Mehmet Özdoğan, one of the keenest pro-

<sup>45</sup> Valamoti – Kotsakis 2007.

<sup>46</sup> Evershed et al. 2008.

<sup>47</sup> Triantaphyllou 2001; Triantaphyllou 2008; Stratouli et al. 2010.

<sup>48</sup> Bogaard 2005; Halstead 2012.

<sup>49</sup> Valamoti 2007.

<sup>50</sup> Halstead 2006.

<sup>51</sup> Veropoulidou 2011.

<sup>52</sup> Horejs et al. 2015.

<sup>53</sup> Runnels – van Andel 1988.

<sup>54</sup> Kotsakis 2008.

<sup>55</sup> Deleuze – Guattari 1987.

ponents of the movement from Anatolia to the Aegean and the Balkans reluctantly admits in conclusion: 'I could have written this article using same evidence in another way by defining the distinct compositions of different Neolithic packages. Then the picture would have been slightly different. [...] After an overview of previous discussions on the nature of this expansion, it now seems clear that all arguments, no matter how contradictory, were correct. There was endemic movement, migration, and colonisation by both land and sea; there were 'frontiers' merging with local communities, expansion by exchange of knowledge and/or commodities, and to a degree, local development.'<sup>56</sup>

Although overly succinct, this is a view not fundamentally incompatible with the case made here, at least in its broad lines. Nevertheless, it sounds like an astonishing admission, especially coming from a scholar who has in the past actively supported models of a one-way migration. In my opinion, the reason for this seeming inconsistency lies in two discrete aspects being conflated: on the one hand the expansion of the Neolithic as a culture-historical event and on the other neolithisation as an embodied sociocultural process. This is an important distinction that has not received proper research attention, and it has become the cause of much unnecessary dispute and disagreement. Expansion and neolithisation represent two entirely disparate phenomena; although parallel, none can substitute for the other. While the expansion is expressed as a representation of objectified bodies in movement together with their gear, neolithisation involves embodied subjects in their being-in-the-world, i.e. their situated/located lived experience. I will borrow again Csordas' words: 'Representation is fundamentally nominal, and hence we can speak of 'a representation'. Being-in-the-world is conditional, and hence we must speak of 'existence' and 'lived experience'.<sup>57</sup> Indeed, expansion is a take-it-or-leave-it account of an event. It is the broad, uniformitarian picture. You accept it as a whole; there are no significant digressions; it is Cartesian. Neolithisation has many aspects and faces; it involves all the embodied practices of daily life. It engages with different contexts, worlds and intersecting agencies; it is fundamentally phenomenological.

The phenomenological tradition and related recent theoretical advances prioritise context as the place of engagement with the world. The question of neolithisation cannot be satisfactorily answered, without prior recognition of the multiplicity and dimensionality of the phenomenon. Models that are trying to provide answers with indirect proxy measures, either natural or cultural, often assume a fixed significance and meaning, even though they are frequently fraught with the considerable ambiguity of interpretation. But it will be helpful to all to clarify which of the two phenomena these models are addressing. Archaeological science has an enormous contribution in recent years in increasing our capacity to understand the Neolithic. In a way, however, it is still following what Gordon Childe advocated more than sixty years ago, to rely on proxy measures (infinitely more sophisticated, of course) and reconstruct a representation of the cultural history of the Neolithic. It is a waste, I feel, trying to build these elaborate models only to fit preconceived assumptions of directional expansion or colonisation.

Following the phenomenological way, I propose here instead to focus on the small scale of engagement with daily practices, contextualising material culture. Detailed contextual analysis of material culture together with theoretically informed archaeological science can reveal the complexity of early farming societies vividly. In this 'thick description' of the Neolithic life, the lives of the people are not considered as an instance of a universal 'package' or a 'blueprint' of something prior and already accomplished, but as a dynamic set of contexts producing variability. Local elaborations of the Neolithic, such as painted floors, special architecture or elaborate rituals, different landscapes and climatic regimes, variable relations to resources and differing strategies, result in totally different 'lived experiences' and create new variable ecological niches and social worlds where agency thrives. In this sense, neolithisation represents a new start line

<sup>56</sup> Özdoğan 2011, 427.

<sup>57</sup> Csordas 1994, 10.

every time. More than that, it ascribes to material culture different meanings, a fact that renders comparisons a far more problematic task than what arrows on archaeological maps connecting features that appear to be similar, seem to imply.

I see no reason, why mobility, a crucial component of Neolithic life, which we are only recently beginning to understand more clearly in its many dimensions, should be directed only from east to west. On the contrary, a meshwork of movements in the Aegean frontier, active since the Mesolithic, would have contributed significantly in producing variability by bringing in contact various groups, with different practices embedded in their social skills.<sup>58</sup> From this respect, uniformitarian explanations, although convenient and comforting, are not suitable to describe the neolithisation process. A leapfrog migration of mixed groups of people is much more consistent with the available evidence than colonisation waves from centre to periphery. These groups should also include Mesolithic populations, which, I believe, had a much more significant presence in Greece than their sparse traces indicate.<sup>59</sup>

It is promising that this theoretical discussion leads to a proposal that blends archaeological theory with analytical work and archaeological science. No critic can say that the theoretical argument is not in contact with archaeological facts, or that empirical analysis is not theoretically informed. To this, the already noticeable diffusion of phenomenological concepts into contemporary archaeological thought and practice plays a significant role. The study of the neolithisation of the Aegean, an area where culture history is still active, can only benefit from following this lead and explore how regional populations and local communities interpret the new conditions of their life at the advent of the Neolithic.

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# The Neolithisation of Europe: An Arrhythmic Process

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**Abstract:** The diffusion of the Neolithic system across the European continent is neither regular in time nor culturally homogeneous. For the author, this propagation takes place according to an “arrhythmic model” punctuated by rapid diffusion followed by “pauses” during which cultural reconfigurations take place. After outlining some of the possible factors that may have led to these periodic “breaks”, he evokes some of these temporary barriers where this dual process of stopping and emergence of new cultures takes place, these followed by a resumption of the spread: Egyptian Delta, Central Anatolia, West Greece, Middle Danube, great plain of Northern Europe. Within the geographical areas considered, contrasting diffusion tempos can be observed. In the western Mediterranean, neolithisation takes place in successive sequences: dispersed pioneer maritime settlements (Impressa), coastal geographical unification and expansion in the hinterland (Cardial), continuation and reinforcement of agricultural colonisation (Epicardial).

**Keywords:** Neolithisation, Arrhythmia, Egypt, Anatolia, Europe, Danube, Mediterranean

## Introduction

This chapter aims to highlight several geo-cultural frontiers, through which the spread of the Neolithic across Europe experienced ‘pauses’, followed by rapid advances. It draws on and develops earlier papers on this topic.<sup>2</sup> The article was written at the invitation of Maxime Brami and Barbara Horejs for ‘The Central/Western Anatolian Farming Frontier’ workshop organised in Vienna; it will, for this reason, remain fairly general in scope.

## Retrospective Overview

The spread of the Neolithic, and of its technical and ideological components, to the European continent, from its origins in the Near East, has given rise to many debates. The idea of an initial impulse caused by the arrival of migrants from the Eastern Mediterranean has been mooted since the 19<sup>th</sup> century, among scientists such as Oscar Montelius and Gabriel de Mortillet, and was subsequently disseminated by Joseph Déchelette in the first half of the 20<sup>th</sup> century. Vere Gordon Childe, however, was the first to elaborate a formal model for the spread of agriculture, according to an east-west gradient and alongside two main axes: the Mediterranean and the Danube basin.<sup>3</sup> In the absence of absolute dates, the chronological compression of Childe’s system gave rise to multiple anachronisms. From the end of the 1950s onward, the development of radiocarbon dating changed this perspective completely by highlighting both the unexpectedly old date of the European Neolithic and its remarkable span over several millennia. Hence, as early as 1965, Grahame Clark was able to confirm, based on the distribution of <sup>14</sup>C dates available at the time,

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<sup>2</sup> Guilaine 1997; Guilaine 2001; Guilaine 2013.

<sup>3</sup> Childe 1925.

the leading role of the Near East in the emergence of the Neolithic and a more and more recent pattern of expansion, as one looked away from the epicentre.<sup>4</sup>

Among the <sup>14</sup>C dates, some very old and thus erroneous ones have, for a while, contaminated the debate by giving rise to hypotheses regarding local domestication in Europe. The advancement of research has shattered these speculations, but the controversies triggered have at least had the positive effect of encouraging the development of indigenist perspectives, placing autochthonous hunter-gatherer societies at the forefront of research into the dynamics of neolithisation of Europe.<sup>5</sup> It is incidentally during the ‘indigenist period’ that Albert Ammerman and Luigi Cavalli-Sforza<sup>6</sup> proposed a model combining demographic growth, migration and expansion speed. Using Jericho as a potential origin point for the process, they suggested a southeast/northwest expansion at an average speed of 1km/year, involving, as distance from the core increased, admixture between migrant and autochthonous populations; accordingly, the resulting pattern was a genetic gradient still observable in modern populations, as indicated by specific blood markers. Since these pioneering studies, new approaches based on the analysis of mitochondrial DNA and the Y-chromosome have led to re-evaluations and discussions among the geneticists regarding the importance of the Neolithic expansion in the genome of modern Europeans. Aside from these debates, it is the question of the tempos of the agricultural expansion that will retain our attention here.

The ‘wave of advance’ model has been criticised for its mechanistic character, despite the fact that the authors themselves identified variations in the pace of expansion. Taking into account cultural variability in this approach holds, one may argue, the best key to explaining the phenomenon. Indeed, agriculture was not carried by a single culture, but by various entities, which branched out into regional facies and spanned successive temporal sequences. It is worth stressing that the number of <sup>14</sup>C dates has been steadily increasing over time, and that archaeological excavations are now being conducted everywhere, particularly in regions that were previously neglected; these developments have led to the gradual filling of spatial gaps and significant improvements of the chronology. What was the sequence of cultures, in time and space, from the oldest European Neolithic onward?

### **‘Lags’ and Cultural Frontiers**

A central observation is that the expansion of the Neolithic was non-linear. Drawing its source from the Near Eastern epicentre, the Neolithic spread was punctuated by halts or chronological breaks, immediately conjugated with cultural breaks. I have termed this process of transmission an ‘arrhythmic model’, characterised by an alternation of rapid phases of expansion and phases of stasis, or of loss of momentum.<sup>7</sup> During these lags, more or less profound cultural restructurations happened. Hence, every new culture arising after the lag, fully invested with well-tested capabilities, gave rise to a very dynamic conquest of space. The expansion could thus be rapid and lead to colonisation, selectively or more indiscriminately, of territories previously occupied only by hunter-gatherers. With regard to the explanation of these periodic halts, various theoretical factors should be mentioned, each in turn arising from multiple causes:

A. Demography: loss of momentum in the colonising culture linked to a reduction of the reproduction rate of its population; hence a diminution of fission events and a corresponding slump in territorial expansion.

<sup>4</sup> Clark 1965.

<sup>5</sup> Zvelebil 1986.

<sup>6</sup> Ammerman – Cavalli-Sforza 1971; Ammerman – Cavalli-Sforza 1984.

<sup>7</sup> Guilaine 2001; Guilaine 2013.

- B. Procurement networks: decline in the exchange of materials maintaining, through interregional transfers, a cultural superstructure; hence a loss of cohesion and identity, and process of disintegration (cf. PPNB decline).
- C. Native resistance: opposition of local Mesolithic cultures – both dynamic and environmentally self-sufficient – to any interference that may affect their economic system; refusal of cultural innovations. Resistance may have given way to conflicts between natives and immigrants.
- D. Environment: change in environmental conditions compelling farmers to halt their migration and readapt their technical system to new biotopes (land, landscapes, fauna).<sup>8</sup>
- E. Climatic conditions: climatic crises or mini-crisis disturbing the process of colonisation (cf. 6200 BC event) and the appropriation of high altitude lands.
- F. Identity: deliberate choice by the migrants to break with ancestral practices to ‘build’ a new cultural entity.
- G. Ideology: gradual loss in historical ‘memory’ of migrant groups and independent re-formation of a dominant ideology.<sup>9</sup>
- H. Society: settlement dislocation linked to intra- and inter-community crises – challenge of the existing social order.

This list is not exhaustive and other motives are equally plausible. The ‘lags’ were most likely not due to a single factor, but instead to a combination of them. A single cause may have acted as a trigger – other factors coming into play and cumulatively accelerating the destabilisation – eventually bringing the expansion to a stop.

### Geography of Discontinuities

Two ‘halts’ were located in the immediate margin of the Near Eastern core area: central Anatolia and the Nile Delta. The others were more distant from the epicentre (Fig. 1).

#### Central Anatolia

The expansion of the PPNB to the central Anatolian plateau in the 9<sup>th</sup> millennium BC (cf. Aşıklı) rapidly lost its vitality in this region. During a halt in central Anatolia, a ‘conversion’ took place from Pre-ceramic to ceramic cultures (Çatalhöyük). Various factors may have contributed to this transformation, in particular a local Mesolithic substratum.<sup>10</sup> The culture emerging from these interactions towards the end of the 8<sup>th</sup> millennium BC seems to have inherited from the PPNB a number of traits (the idea of an ‘agglutinated’ village plan, big points with invasive retouch, figurines, intramural burials), whereas other innovations may be considered new (pottery, pintaderas, etc.). The initial central Anatolian ceramic Neolithic appears to have been a locus for the westward dispersal of the Neolithic to Greece and the Balkans (‘monochrome’ ceramic horizon, painted pottery). The end of the PPNB expansion in Anatolia still needs to be explained. Multiple factors may be considered: A (demographic lag?), B (decline in the export of Cappadocian obsidian towards the Levant and Cyprus?), C (local Mesolithic resistance? Necessary adaptation period for the hunter-gatherers to be integrated into the new system?), F (local emphasis on innovation: invention of pottery?), other? All of these factors would need clarification.

<sup>8</sup> Sherratt 1980.

<sup>9</sup> Cauvin 1994.

<sup>10</sup> Binder 2005.

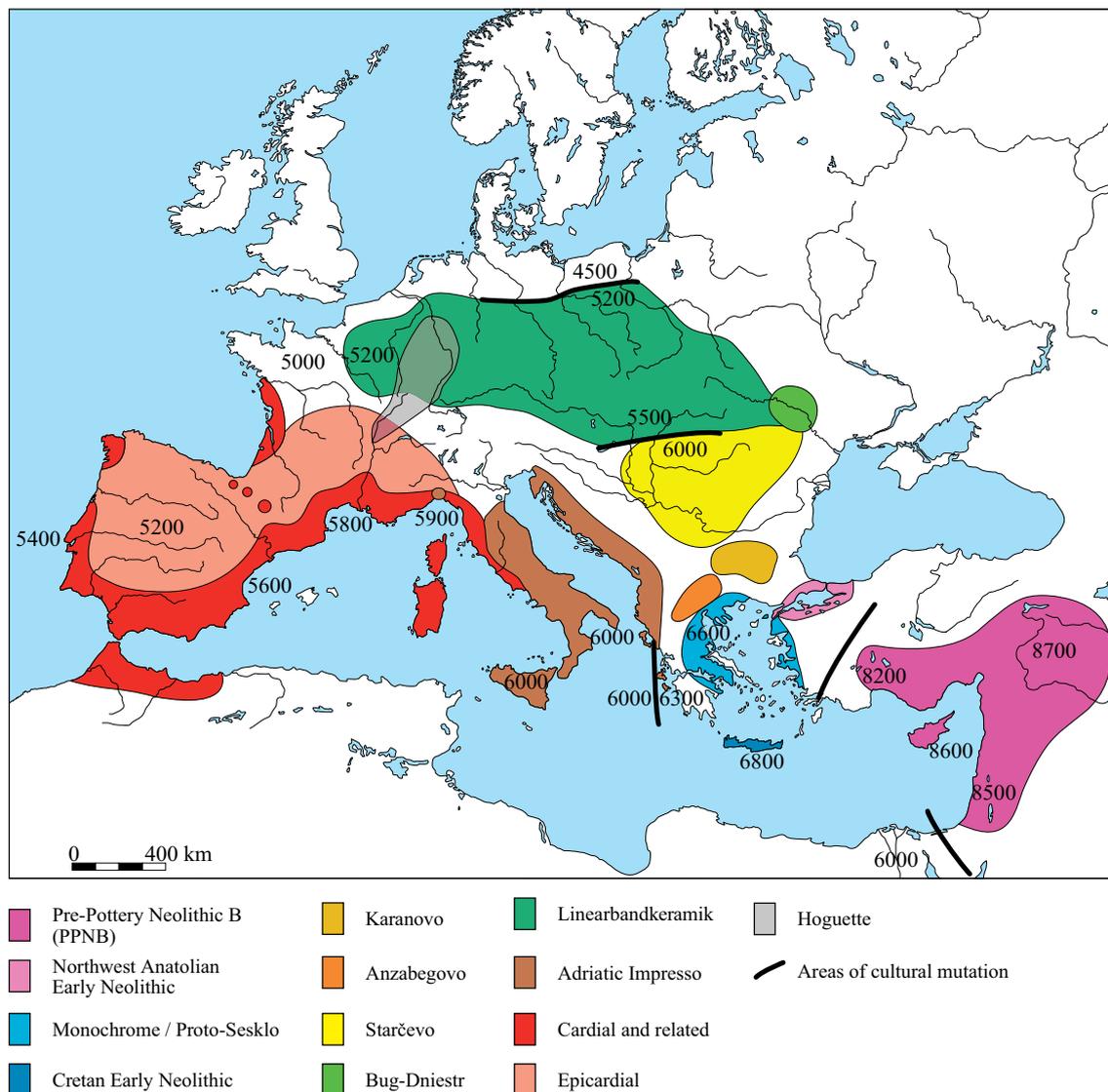


Fig. 1 Map of the “Geography of Discontinuities” (illustration: J. Guilaine)

After a lag, and once the ceramic Neolithic was fully formed, the process of expansion resumed to reach western Anatolia and Greece c. 6500 BC.<sup>11</sup> In Asia Minor, it was preceded by the foundation of several sites in the final PPNB, c. 6700 BC (Çukuriçi XIII, Ulucak VI).<sup>12</sup> These sites appear to have been coastal colonies of Levantine origin linked to maritime movements, already very active in the Eastern Mediterranean since the PPNA (colonisation of Cyprus). In the Aegean, similar networks enabled the distribution of Melian obsidian up to the western Anatolian coast. These maritime contacts potentially account for the neolithisation of Crete as early as the aceramic Neolithic. Indeed, Knossos X displayed both Near Eastern features (wheat and pea cultivation, cattle, pig and ovicaprine herding) and an industry (mainly based on Melian obsidian) of indigenous Mesolithic type, without Levantine character<sup>13</sup> (perhaps neolithisation of an indigenous population by technical borrowing from the outside?).

<sup>11</sup> Brami 2015.

<sup>12</sup> Horejs et al. 2015.

<sup>13</sup> Kaczanowska – Kozłowski 2011.

### The Delta, the Nile Valley and the Maghreb

In the 8<sup>th</sup> millennium BC, the PPNB had reached the borders of Egypt. However, over a thousand years were necessary for the Neolithic economy to gain a foothold along the Nile axis. The Delta was not, however, an impassable barrier during the preceramic Neolithic, since Helwan points, discovered in the region of Cairo, demonstrate that Levantine populations had the capacity to organise hunting expeditions or short-lived incursions in Lower Egypt in the 9<sup>th</sup> millennium BC.<sup>14</sup> The adoption in this region of a western Asiatic food production system did not take place until the 6<sup>th</sup> millennium BC,<sup>15</sup> as evidenced by the dates of Merimde and Fayum A.

Why did the PPNB stop at the gates of Egypt? Factor C may have been involved – the ‘Nilotic adaptation’ of the Epipalaeolithic substratum forming a particular ecosystem, well adapted to the Nile flooding cycle and its capacity to feed people, particularly through hunting and fishing. Hypothesis D should also be mentioned: difficulty for the first farmers to adapt to this special environment. Let us not forget the decline of the PPNB itself, given that the Neolithic was introduced in the Nile Delta at a time when this cultural complex had already more or less vanished, whereas the Yarmoukian, which replaced the PPNB in the southern Levant, had not shown any particular expansion capacity outside this region.

The transition into the Delta appears, in parallel, to have been accompanied by the diffusion of Neolithic techniques along the southern coasts of the Mediterranean. Starch wheat and domestic sheep are attested in Morocco c. 5300–5200 BC.<sup>16</sup> Unless we assume that their introduction was made via the Cardial Neolithic of the Iberian Peninsula, which remains possible, a southern maritime colonisation appears likely, although sites are missing along the route. It would be worth clarifying the location of the frontier, to the south of which cereals of oriental origin were no longer cultivated, giving way instead to the pastoral Neolithic, as it developed in the Sahara (bovine phase in art). This ecological demarcation may have taken place at a relatively high latitude, as Algerian excavations in the Atlas appear to indicate (Gueldaman Cave in the Babor of Akbou, Khanguet si Mohamet Tahar Cave in the Aures Mountains).<sup>17</sup>

### Western Greece and the Neolithisation of the Western Mediterranean

There was another cultural border in the western part of Greece, coinciding with a lag in the Neolithic expansion. It was namely the frontier between the first Aegean Neolithic and the oldest early Neolithic with impressed pottery from the Italo-Adriatic area. The recently reassessed stratigraphy of the site of Sidari in Corfu is clear in this respect.<sup>18</sup> A first Neolithic is evidenced c. 6300 BC, characterised by monochrome pottery, *ouillage sur éclat* from small flint pebbles in the local Mesolithic tradition and ovicaprine herding.

In a second phase, c. 6000 BC, the site was reoccupied by populations *a ceramica impressa*, which is the oldest dated anywhere in the Adriatic area. Sidari provides thus another example of ‘delay’ in the transmission of the Neolithic – a few centuries separating the establishment of the ‘initial’ Neolithic from the *impresso* horizon, which transferred the Neolithic economy to southern Italy, Sicily and beyond. How can we explain this halt? Factor A is possible (the ‘Monochrome’ of Sidari did not use the yellow flint industry of continental Greek sites).<sup>19</sup> One may also mention factor D: environment and maritime resources provided a basis in the local Mesolithic tradition. The factors at play in the emergence of the early Neolithic *a impressa* after the lag are also worth investigating: local invention? Balkanic influence?

<sup>14</sup> Aurenche – Kozłowski 2005.

<sup>15</sup> Midant-Reynes 2003.

<sup>16</sup> Ballouche – Marival 2003; Morales et al. 2013.

<sup>17</sup> Roubet 1979; Kherbouche 2014.

<sup>18</sup> Berger et al. 2014.

<sup>19</sup> Perlès 2001.

### The Middle Danube Basin and the Neolithisation of Temperate Europe

Another ‘halt’ is evidenced in the Middle Danube basin – coinciding with the transition from the first Balkanic Neolithic horizons (Starčevo-Körös) to the Linear Pottery Culture. This lag is thought to have lasted three-to-four centuries and to have happened between the Starčevo-Körös colonisation c. 6000–5900 BC and the start of the oldest *Bandkeramik* in the west, c. 5600–5500 BC. During this period of stasis, the ‘construction’ of the LBK witnessed the interaction of various groups: Starčevo, Proto-Linear, Vinča and possibly local Mesolithic populations.<sup>20</sup>

Various factors are usually mentioned to explain this lag. Factor D is often cited: readjustment of a Mediterranean climate-adapted system to a temperate forested environment.<sup>21</sup> It may also be worth investigating the loss of momentum in the Starčevo culture (factor A?) and the profound cultural shift (houses, pottery) animating the ‘founders’ of the *Bandkeramik* (factor F). Once formed, the LBK witnessed a rapid diffusion to reach the Paris Basin and close to the Rhine river mouth area.

### The Great Plain of Northern Europe

The expansion of the *Bandkeramik* was in turn halted in its spread toward the north of the continent. Aside from a few enclaves along the Vistula River and the Lower Oder River, in Lower-Saxony, the farmers apparently let hunter communities – often with ceramics – flourish along the northern fringe of the continent and in Scandinavia. Exchanges between hunters and farmers are attested on both sides of the cultural barrier that separated them – agriculture experiencing here one more halt. With regard to the explanation of this phenomenon, several hypotheses can be formulated. Factor C (resistance of native cultures) is plausible. Environmental causes (factor D) are sometimes mentioned: difficult adaptation of cereals to glacial soils – the agricultural expansion happening late due to environmental changes in the final phase of the Atlantic episode.<sup>22</sup> As with previous lags, there are not enough arguments to test social factors (F, G, H). The Neolithic transition in the northern European margin happened after a lag of several centuries, c. 4500–4000 BC, with the constitution of the TRB (*Trichterbecherkultur*). The British Isles were not colonised until after 4000 BC.

### Contrasted Tempos

These great fits and starts, which coincided with the Neolithic expansion and stimulated the identity renewal, through the periodic elaboration of dynamic cultures, could go hand in hand with ‘mini-lags’ during the propagation of these new entities. Indeed, the agricultural expansion was neither uniform nor linear, but involved additional innovations, as well as more or less stable installation in new territories and their development, followed by halts of one or two generations before the process of expansion resumed.

Alongside accelerations, decelerations could be observed. For instance, the spread of impressed ceramic sites along the Italian Adriatic coast; whereas their establishment in the southeast of the peninsula is attested c. 6000–5900 BC, their spread towards the north appears to have been delayed in Romagna.<sup>23</sup> Moreover, the advance of the first cultivators must have been selective: choice of fertile soil (cf. loess in the LBK), or of areas with the lowest populations of foragers. The western Mediterranean is a good illustration of the tempos of this propagation. They can be described as follows:

<sup>20</sup> E.g. Bánffy 2004; Bánffy 2008.

<sup>21</sup> Sümegi 2003.

<sup>22</sup> Price 2003.

<sup>23</sup> Biagi et al. 2005.

- 6000–5600 BC: pioneer settlements established via maritime routes, distant from one another and characterised by a near-exclusive agro-pastoral economy (ceramic horizon with ‘impressed grooves’ attested from western Greece to Spain).
- 5500–5000 BC: Franco-Iberian ‘Cardial’. First agricultural expansion towards the hinterland in Provence, Catalonia and Valencia in particular; re-introduction of hunting in the economic spectrum of specific biotopes (acculturation of the last hunter populations?).
- 5200–4500 BC: ‘Epicardial’. Renewed expansion of cultivated lands (France: towards the Alps, the Massif Central, Aquitaine; Spain: along the Ebro axis and the Meseta). Final agricultural expansion.

### Discussion

It is quite obvious that the ‘arrhythmic’ model can only be conceived in term of macro-analysis. It should be refined in detail. The example of rapid expansions along the river axes<sup>24</sup> and, occasionally, of decelerations along the maritime fringes, demonstrates the complexity of the process.<sup>25</sup>

In order to improve our understanding of space-time correlations, Michel Rasse has suggested replacing the frontiers in my model, which he deems too schematic, by isochrone lines based on the distribution of <sup>14</sup>C dates. Yet the maps that he has produced do not challenge my propositions; they highlight periodic decelerations in the rhythm of expansion in the same regions where I placed the ‘lags’. Besides that, this scholar is reluctant to consider climatic or environmental models during the slumps<sup>26</sup> or subsequent accelerations, challenging the conclusions of the climatologists on this particular issue.<sup>27</sup>

Mathematical models have also been proposed. Jean-Pierre Bocquet-Appel et al.<sup>28</sup> have attempted to refine our characterisation of the spread by defining ten enclave centres, based on the distribution of 3000 radiocarbon dates from 940 sites, diffusing towards a periphery and acting as relays in the expansion of the Neolithic. Carsten Lemmen et al. have tried more recently to refine the speed of expansion of the first farmers in a correlation combining the space-time distribution of <sup>14</sup>C dates with a demographic variable, by taking into consideration socio-cultural development in each bio-geographical context. Their aim was to explain why the Neolithic proceeded in stages; they sought a solution in the involvement of indigenous populations in the process of acquisition and exploitation of foreign technologies.<sup>29</sup>

The accumulation of <sup>14</sup>C dates will necessarily improve our understanding of the timing of the lags and the expansions. Statistical precision, however, is only one aspect of the problem; it is necessary to explain the ‘lags’. It is not certain that they were due to a single factor (cf. the environment), but they were certainly linked to a systemic process. Too many unknowns remain, particularly regarding the socio-cultural processes at play.

<sup>24</sup> Davidson et al. 2006.

<sup>25</sup> Gkiasta et al. 2003; Biagi et al. 2005.

<sup>26</sup> Rasse 2014; Rasse 2015.

<sup>27</sup> Weninger et al. 2006; Weninger et al. 2014.

<sup>28</sup> Bocquet-Appel et al. 2009.

<sup>29</sup> Lemmen et al. 2011.

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