

BEYOND THE *OIKOS*: YARDS, KITCHEN AREAS, AND THE MANIPULATION OF OUTDOOR SPACE IN NEOLITHIC GREECE

Evita Kalogiropoulou¹

¹ Department of History & Archaeology, School of Philosophy,
University of Crete, Greece, ekalogiropoulou@uoc.gr

Abstract

This paper challenges the traditional focus on indoor spaces in Neolithic archaeology by examining the role of open-air areas in daily life. It approaches open-air spaces as active zones of Neolithic daily life in northern Greece and contributes to an updated narrative of community formation in the region. The study examines 37 excavated sites and explores how localized, socio-cultural assemblages exhibit significant diversity, pointing to varied forms of collective structures rather than unified community groups. The results of this study do not suggest marked contrasts in spatial expressions between the earlier and the later phases of the Neolithic, indicating that social coherence was achieved through various communal quotidian and special, individual and collective performances, in both the domestic–private and communal–public spheres. The study looks at the location of combustion features, such as hearths, ovens, fire pits and kilns in the settlements as a proxy to understand the dynamics of open-air spaces and their contribution to the formation of social life. The evidence discussed in this paper suggests that open-air spaces were actively manipulated by people and constituted significant social arenas for everyday routines, workshops, communal gatherings, and social interactions, all of which played a key role in the formation of community traditions, collective identities, and social cohesion.

Keywords: Neolithic – northern Greece – open-air spaces – daily life – public spheres – combustion features – communal dynamics – social coherence.

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Introduction

The last thirty years have seen increased archaeological research in Greece, mainly due to large-scale, development-led public works (Pappa & Bessios 1999; Chondroyianni-Metoki 2009; Toufexis 2016; Ziota 2014). The discovery of new sites and recent advances in archaeological methodology have transformed established perceptions in the discipline, changing our views on aspects as diverse as the various forms of material culture, social organization, labor division, production and specialization, networks and interactions, which have contributed to an overall re-assessment of Neolithic communities in southeast Europe (Bailey & Whittle 2008; Whittle 2011 and 2017; Sarris et al. 2017; Shennan 2018; Chapman 2020). In Greek Neolithic research, *oikos*, the house as a physical construction and the household as a concept and analytical unit, holds a key role in the study of social space, as an agent of traditions, social reproduction, and community coherence (Halstead 1999; Kotakis 1999 and 2014; Efstratiou 2007; Souvatzi 2008a; Nanoglou 2008; Kalogiropoulou & Ziota 2014). On the contrary, outdoor open-air spaces remain considerably underrepresented and undertheorized. The analytical scheme of ‘wild and untamed’ outdoor spaces as opposed to the indoor domesticated areas has dominated the research agenda and has created lasting interpretations in social archaeology (Hodder 1990). Current debate, however, approaches outdoor spaces as multi-task venues and recognizes their dynamic contribution to the formation of social production, daily life, and community (Byrd 1994 and 2000; Bickle & Kalogiropoulou 2017; Kalogiropoulou et al., in press). Research has identified a growing number of outdoor activities taking place in Neolithic settlements in the region, such as gardening and cultivation plots (Bogaard 2005; Jones 2005), herding (Koromila et al. 2017), pyrotechnological activities like cooking and pottery production (Kalogiropoulou et al. 2023; Kyparissi-Apostolika et al. 2022), trackways and fences (Giagkoulis 2020), burial grounds (Stratouli et al. 2020) and designated discard areas (Chondroyianni-Metoki 2009; Chrysostomou & Giagkoulis 2018).

The aim of this paper is to produce an overview of the various combustion practices identified outside building contexts, in the open-air settlement spaces during the Neolithic. I focus on northern Greece,¹ including Macedonia and Western Thrace, where a dense concentration of Neolithic sites provides a rich data set for examination. My research has concentrated on diverse pyrotechnological activity areas, projected at varied scales, working interchangeably between intra- and inter-site analysis, and looking at both the local and the regional contexts. In this study, I consider outdoor spaces as arenas of different daily routines, workshop production, communal gathering and interactions that played a key role in the formation of community traditions, collective identities, and cohesion. Combustion features, such as hearths, ovens, fire pits and kilns, constitute the main analytical tool that controls outdoor arrangements, creating focal points of domestic and

¹ Throughout the paper I use the names of the three administrative regions in northern Greece – eastern, central, and western Macedonia – to show the location of the Neolithic sites as distributed in this broad area.

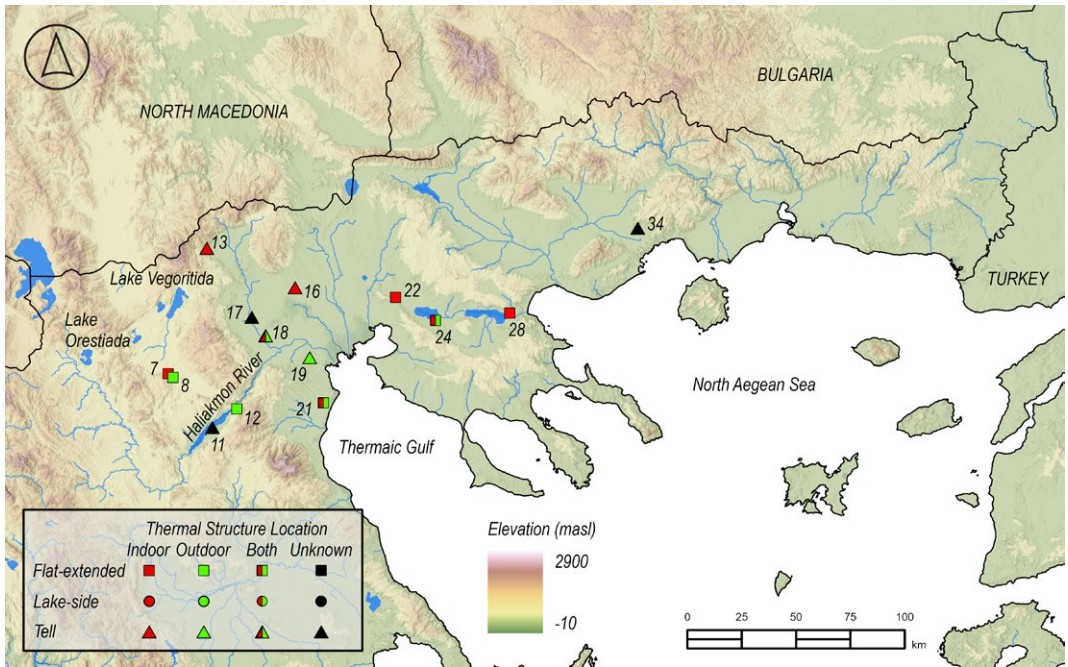


Figure 1. Map of Northern Greece showing the selection of Early Neolithic sites. For the sites listed, see also Table 1: (7) Mavropigi-Filotsairi, (11) Servi, (12) Paliambela Roditi, (13) Sossandra, (17) Plyplatanos, (18) Nea Nikomedeia, (19) Paliambela Kolindros, (21) Revenia, (22) Lete I & III, (24) Koroneia, and (28) Mikri Volvi. Image Credit: J. Donati.

workshop routines that tackle questions of daily performativity, commensality, interaction, and social reproduction. Approaching outdoor settlement arrangements contributes to grasping variability in the study of social space, unfolds the complexity and diversity of Neolithic lifeways and produces an updated and inclusive narrative for the dynamics of the communities in the region. The study examines 37 excavated sites from northern Greece and explores how localized, socio-cultural assemblages exhibit significant diversity, pointing to varied forms of collective structures rather than unified community groups (figs. 1 & 2; table 1). The results of this study do not suggest marked contrasts in spatial expressions between the earlier and the later phases of the Neolithic, indicating that social coherence was achieved through various communal quotidian and special, individual and collective performances, in both the domestic–private and communal–public spheres. The paper is crucial for understanding social developments in the region in the sixth and fifth millennia cal BC, with an emphasis on the socio-cultural changeover from the Middle (5600 to 5300 cal BC) to the Late Neolithic (5300 to 4500 cal BC).¹

¹ The paper follows the Greek chronology system of the Neolithic after Papathanassopoulos 1996: Early Neolithic (EN), 6800 to 5600 cal BC; Middle Neolithic (MN), 5600 to 5300 cal BC; Late Neolithic (LN), 5300 to 4500 cal BC; and Final Neolithic (FN), 4500 to 3300 cal BC.

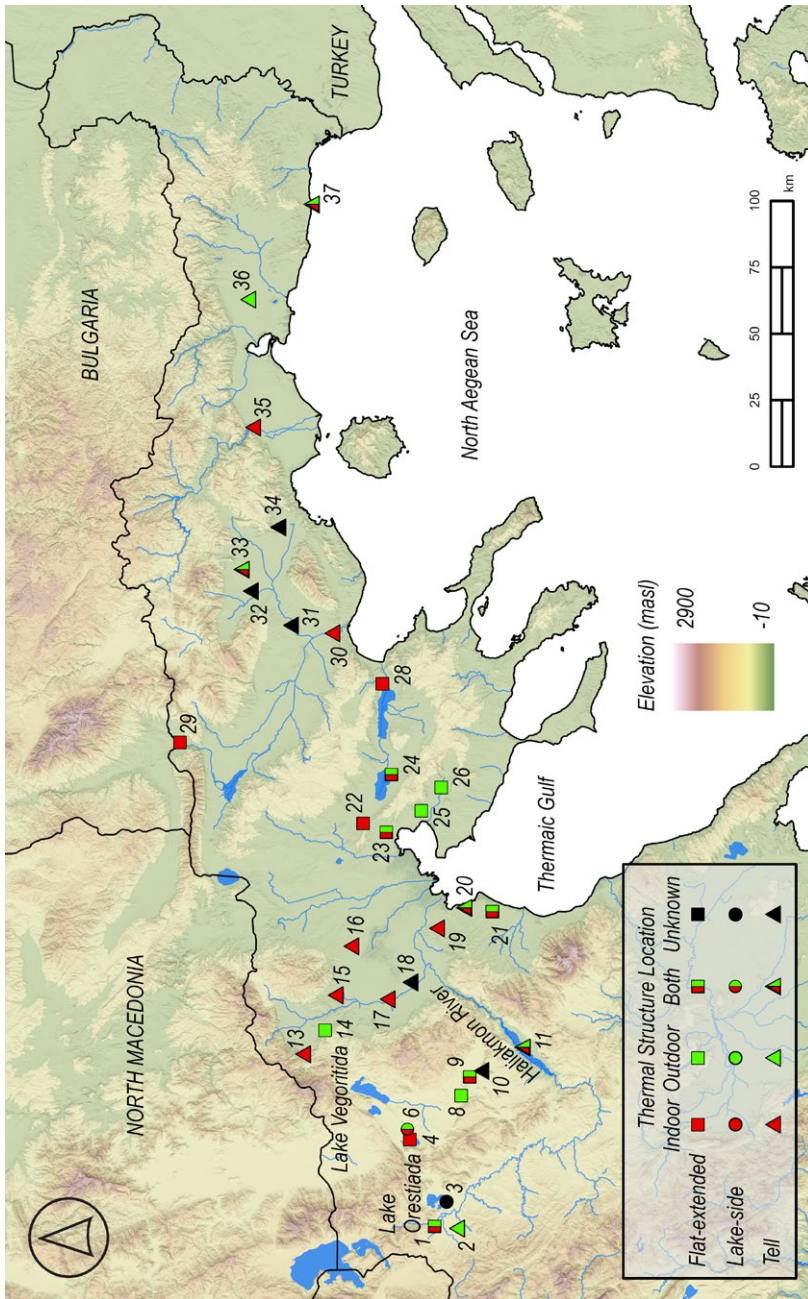


Figure 2. Map of Northern Greece showing the selection of Middle and Late Neolithic sites. For the sites listed, see also Table 1: (1) Trita Koronias, (2) Avgi I & II, (3) Dispilio, (4) Limnorchori III, (6) Anargyroi IXb, (8) Souloukia-Pontokomis, (9) Kleitos 1 & 2, (10) Megalo Nisi Galanis, (13) Sossandra, (14) Apsalos-Grammi, (15) Mandalo, (16) Giannitsa B, (17) Polyplatanos, (18) Nea Nikomedeia, (19) Paliambela, (20) Makriyalos, (21) Revenia, (22) Lete I & III, (23) Stavroupoli, (24) Koroneia, (25) Thermi B, (26) Vasilika Kyparissi, (28) Mikri Volvi, (30) Kryoneri, (31) Dimitra, (32) Sitagroi, (33) Arkadikos, (34) Dikili Tash, (35) Paradeisos, (36) Paradimi, and (37) Makri. Image Credit: J. Donati.

ID	Site	Location	Periods	Settlement type	Open-air spaces	TS location
	Macedonia & Western Thrace					
1	Trita Koromilias	Kastoria	LN	flat-extended	loose	indoors & outdoors
2	Avgi I & II	Kastoria	MN/ LN	flat-extended	loose	outdoors
3	Dispilio	Kastoria	MN/LN	lake-side site	loose	indoors & outdoors
4	Limnochori III	Florina	LN	flat-extended		indoors
5	Anargyroi III	Florina	FN	flat-extended	loose	indoors
6	Anargyroi IXb	Florina	LN	lake-side site	loose/ trackways	indoors & outdoors
7	Mavropigi-Filotsairi	Kozani	EN	flat-extended		indoors
8	Souloukia-Pontokomis	Kozani	EN/MN	tell		outdoors
9	Kleitros I & 2	Kozani	LN/FN	flat-extended	loose/ sheltered spaces	indoors & outdoors
10	Megalo Nisi Galanis	Kozani	LN	tell	?	?
11	Servia	Kozani	EN/MN/LN	tell	loose/ yards & sheltered spaces	indoors & outdoors
12	Paliambela Roditi	Kozani	EN	?	?	outdoors
13	Sossandra	Pella	EN/LN	tell	x	indoors
14	Apsalos Grammi	Pella	MN	flat-extended	loose	outdoors
15	Mandalo	Pella	LN	tell	dense	indoors
16	Giannitsa B	Giannitsa	EN/MN/LN	tell	?	indoors
17	Polyplatanos	Imathia	EN/LN	tell	?	indoors
18	Nea Nikomedeia	Imathia	EN/LN	tell	dense	indoors & outdoors
19	Paliambela	Kolindros	EN/MN	tell & flat-extended	pebbled-paved yards	x
20	Makriyalos	Pieria	LN	flat-extended	loose pebbled-paved yards	indoors & outdoors

Table 1. *Selected Neolithic sites in northern Greece that demonstrate evidence of social space arrangements, indoors and outdoors (continued on the next page).*

ID	Site	Location	Periods	Settlement type	Open-air spaces	TS location
	Macedonia & Western Thrace					
21	Revenia	Corinos	EN/LN	flat-extended	loose	indoors
22	Lete I & III	Langadas	MN	flat-extended	loose	indoors
23	Stavroupoli	Thessaloniki	MN/LN	flat-extended	loose/stone-paved yard	indoors & outdoors
24	Koroneia	Langadas	EN/MN/LN	flat-extended	?	indoors & outdoors
25	Thermi B	Thessaloniki	MN/LN	flat-extended	loose/stone-paved yard	outdoors
26	Vasilika Kyparissi	Halkidiki	MN/LN	flat-extended	?	outdoors
27	Olynthos	Halkidiki	FN	tell	x	x
28	Mikri Volvi	Langadas	EN/MN	flat-extended	loose?	indoors
29	Promachonas-Topolnitsa	Serres – Blagoevgrad	LN	flat-extended	loose/clay & stone paved areas	indoors
30	Kryoneri	Nea Kardyfia	LN	tell	?	indoors
31	Dimitra	Serres	MN/LN	tell	x	?
32	Sitagroï	Drama	LN/MN/FN	tell	?	outdoors
33	Arkadikos	Drama	MN/LN	tell	sheltered space	indoors & outdoors
34	Dikili Tash	Kavala	EN/MN/LN	tell	dense rubbish area yards	indoors & outdoors
35	Paradeisos	Kavala	LN	tell	?	indoors
36	Paradimi	Komotini	MN/LN	tell	?	outdoors
37	Makri	Alexandroupoli	MN/LN	tell	?	indoors & outdoors

Table 1. Selected Neolithic sites in northern Greece that demonstrate evidence of social space arrangements, indoors and outdoors.

Walling off the household: open household dynamics

It has been suggested that the rise of the autonomous household in southeast Europe by the mid-fifth millennium cal BC demonstrates a discernible shift in terms of social coherence that eventually weakened the bonds of community (Chapman 1989, 1990, and 2020; Tringham 2000; Kuijt et al. 2011). A dominant model of social developments in Neolithic Greece has suggested marked alterations in daily domestic dynamics, resulting in the gradual architectural isolation of the household during the Late and the Final Neolithic, 5300–3300 cal BC (Halstead 1994, 1995, and 1999; Kotsakis 1999, 2014, and 2020). According to the proposed model, these changes culminated in walling off the household in favor of communally oriented living strategies during the Early and Middle Neolithic. These strategies were acknowledged by the widespread location of cooking facilities both indoors and outdoors, between buildings, yards, and open-air communal spaces. The Late and Final Neolithic, however, were marked by the progressive separation of the household from these social arenas and the relocation of kitchen spaces in enclosed units. Competition among households and increasing privatization in community lifestyles during the later stages of the Neolithic materialized a shift from an ideology of sharing to an ideology of hoarding that gradually weakened social unity (Halstead 1995 and 1999; Kotsakis 1999 and 2018). Based on these early observations, there was a marked contrast in the location of combustion features between the earlier and the mature phases of Neolithic in the region. During the last two decades, however, the great volume of new evidence unearthed in northern Greece shows that household dynamics during the Late Neolithic preserved earlier traditions of sharing and visibility of cooking practices with plenty of evidence for household variability (Valamoti 2005; Nanoglou 2008; Souvatzis 2008b; Kalogiropoulou 2013 and 2014; Bickle et al. 2016). The interplay between indoors and outdoors, private and public, continued to shape the loose boundaries of domestic space as recorded in earlier phases. Reassessing the body of new findings, my study suggests that spaces constitute arenas of varied performativities that resist neat chronological and cultural classifications, which stresses the impact of local and regional choices in the development of daily living and consequently in the formation of individual and collective social spaces.

Exploring outdoor spaces in Neolithic northern Greece: a synthesis

The assemblage of selected sites is formed by excavated settlements that have provided us with indoors and outdoors spatial information. Settlements offer a body of evidence where remains of buildings, workshop spaces, yards, pathways, and various outdoor constructions have been identified. Data coming from surveys and caves are not included in this study. Diversity in the extent of the excavated area is noted, as the selected settlements vary from small-scale trial trenches to large-scale excavation projects. Tells and flat-extended sites have been the primary settlement type in the study area, together with lakeside sites that have been included in the sample.

The Early Neolithic (EN) in northern Greece provides limited evidence on spatial patterns mainly due to small-scale excavations of irregularly distributed sites. A selection of 12 sites demonstrates a variety of forms of habitation, which could have stemmed from diverse social traditions (table 1; fig. 1). Due to limited data, the EN in northern Greece cannot to date provide much information on the intra-site spatial organization of outdoor spaces, including patterns in the distribution of kitchen spaces. Architectural remains of structures or other domestic features are lacking from Dikili Tash in Kavala (Malamidou et al. 2017), Servia–Varytimides Kozanis (Ridley et al. 2000), and Polyplatanos Imathias (Merousis & Stefani 2000), while scattered finds of combustion features were recorded at outdoor spaces in Paliambela Roditi and Souloukia Pontokomi in Kozani. Although more than eight buildings were found at Yiannitsa B on the Yiannitsa plain, the evidence for spatial arrangements is scarce and inconsistent, due to incomplete publication data and deficient chronological reference points (Chrysostomou 1989, 1991, 1993, 1996, and 2003; Chrysostomou & Chrysostomou 1990). Bedrock installations used as mortars for food preparation that involved grinding grains, pounding and dehusking are recorded at the EN site of Paliambela Kolindros (Tsartsidou & Kotsakis 2020). These installations were probably found in open-air spaces of the settlement suggesting outdoor cooking and household routines in the community. On the other hand, Nea Nikomedeia Imathias is a site that allows intra-site spatial analysis of outdoor and domestic kitchen spaces, due to the large-scale excavation of an area of 1690 m² (Rodden 1965; Wardle 1996). Thermal structures at Nea Nikomedeia were identified both indoors and outdoors in direct connection with designated buildings, suggesting direct association with individual households, rather than shared operations by community groups. Spatial diversity of cooking facilities inside and outside buildings indicated varied cooking practices and traditions (Perlès 2001, 196). Given the shortage of evidence, comparing spatial data for the location of combustion practices produces fragmented stories for the use of outdoor spaces in the EN in Greece. The identification of cooking facilities both indoors and outdoors suggests diverse spatial arrangements for cooking and domestic routines favoring mixed ideologies of sharing and hoarding that were not dominant.

In the Middle Neolithic (MN), open-air spaces in northern Greece were in flux, lacking systematic and recurrent forms of spatial arrangements, which suggests an opportunistic organization of daily routines in the settlements. As opposed to the variability recorded for the organization of outdoor settlement areas and kitchen spaces in the EN, a selection of 19 MN sites shows a marked preference for practices taking place outdoors (table 1; fig. 2). Cooking facilities were found both inside and outside buildings, with a preference for the extension of household practices outdoors, either close to buildings directly associated with them, as in the case of Avgi I in Kastoria (Kalogiropoulou 2013; Stratouli et al. 2020), or in visible communal areas, as in the cases of Trita Koromilias in Kastoria (Stratouli et al. 2019) and Souloukia-Pontokomis in Kozani (Stroulia et al. 2022). Seven sites from the selected assemblage demonstrated domestic cooking routines

outdoors: Avgi I, Souloukia Pontokomis, Apsalos Grammi, Thermi B, Vassilika Kyparissi, Sitagroi, and Paradimi (table 1). Additionally, spatial arrangements of domestic routines and cooking facilities distributed both indoors and outdoors have been identified at seven of the sites: Dispilio, Servia, Stavroupoli, Koroneia, Arkadikos, Dikili Tash, and Makri (table 1). Only three MN sites organized their kitchen spaces indoors: Sossandra in Pieria (Georgiadou 2015) and the settlements of Lete I and III in the Langadas Basin in central Macedonia (Tzanavari & Filis 2002). At the MN settlement of Paradimi in Komotini in Western Thrace, thermal installations have exclusively been found in the open-air spaces, in direct association with the buildings, possibly suggesting extension of the household outdoors in favor of visible and semi-public domestic and cooking routines (Bakalakis & Sakellariou 1981). In central Macedonia, the large-scale excavations at Thermi B exposed widespread parts of a flat-extended settlement. The site had irregularly scattered habitation clusters with open-air spaces at intervals that included clay floors, cooking facilities and stone-paved spaces or yards among the buildings (Pappa 2020; Grammenos et al. 1992). The lack of indoor combustion features at the site indicates a preference for the public sphere and possibly signifies cooking as a visible social activity (Byrd 1994; Halstead 1995 and 1999; Hodder 1990; Kalogiropoulou 2014; Kalogiropoulou et al. 2025).

At the site of Grammi in Pella County, western Macedonia, a single oven was found in the open-air space, suggesting the presence of an outdoor kitchen space, which was lacking direct connection to a building (Chrysostomou et al. 2000 and 2001). No combustion features were uncovered in the buildings at Avgi I, and therefore food processing and cooking were taking place outdoors, making household practices visible to the community (Kalogiropoulou 2013; Stratouli et al. 2020, figs. 6 and 12). Cooking facilities at Avgi I were organized either in clusters or as single units, directly or indirectly connected to buildings, indicating that food processing and cooking did not occur in private household contexts but constituted daily routines recurrently taking place in public (Kalogiropoulou 2013). Moreover, at the settlements of Arkadikos in Drama, Stavroupoli in Thessaloniki, and Servia in Kozani, kitchen spaces were organized both indoors in buildings and outdoors in open-air community spaces, suggesting diverse traditions of household routines. Furthermore, pebbled-paved yards were identified at MN Paliambela, demonstrating notable outdoor constructions that put an emphasis on public or communal spatial investments.

The Late Neolithic (LN) shows a diversity of intra-site spatial arrangements and demonstrates variability within patterning in intra-site domestic and social spaces. People organized their community spaces both indoors and outdoors, constructing smaller or larger-scale community works to allocate their numerous domestic and communal activities. The selection of 27 LN settlement sites shows mixed spatial arrangements of daily domestic and public routines that were spread between indoors and outdoors (table 1; fig. 2). Space seems to have been more unified than we have seen previously, while out-

door areas were becoming extensions of domestic practices, blurring the boundaries of the household and the public sphere. Social coherence was achieved in daily routines and exceptional events both inside building units and outside in community areas, suggesting fluid and open social living traditions. Cooking facilities were found both inside and outside buildings, showcasing the spatially mixed distribution of daily cooking routines.

Thirteen sites from the selected assemblage organized their cooking spaces both indoors and outdoors: Trita Koromilias, Dispilio, Anargyroi IXb, Kleitos 1 and 2, Servia, Nea Nikomedeia, Makriyalos, Stavroupoli, Koroneia, Arkadikos, Dikili Tash, and Makri (table 1; fig. 2). Additionally, spatial arrangements of strictly outdoor cooking facilities have been recorded at five sites, raising the overall number to 18 settlements with a preference for open-air spaces for daily domestic and cooking routines. Settlements with only outdoor cooking facilities are Avgi II, Thermi B, Vasilika Kyparissi, Sitagroi, and Paradimi (table 1; fig. 2). In contrast to the latter group, nine settlements organized their kitchen spaces indoors: Limnochori, Sossandra, Mandalo, Giannitsa B, Polyplatanos, Revenia, Promachonas-Topolnitsa, Kryoneri, and Paradeisos (table 1; fig. 2). The development of diverse intra-site spatial models of domestic practices indicates the variability of LN social structures and arrangements.

During the last two decades, western Macedonia has been a region of thriving archaeological research that has provided us with abundant evidence of outdoor arrangements. At the LN site of Avgi II in Kastoria, a large assemblage of outdoor cooking facilities was recorded, including clusters of features or individual constructions for daily cooking operations. A designated burial ground was also found outdoors in Avgi II, showing that both variable routines and exceptional practices took place in open-air spaces in the settlement (Triantaphyllou et al. 2010). Moving southeastwards, at the LN settlements of Kleitos 1 and Kleitos 2 in Kozani, we have identified pluralistic models of pyrotechnological management by the community of the settlement (fig. 3). Here combustion features are distributed in different spatial arrangements in the settlement, both indoors and outdoors, revealing diverse spatial settings at both household and settlement scale (Kalogiropoulou & Ziota 2021; Kalogiropoulou et al. 2023). A concentration of large clay basins located centrally in the settlement could be linked to large-scale social events and indicates potential communal use. In the space west of building A, a rich set of thermal structures of different typologies combines the integration of everyday culinary practices with workshop activities, forming complex pyrotechnic palimpsests within the settlement (Kalogiropoulou et al. 2025). The western area of the settlement brought to light clay floors that define designated outdoor activity spaces (Ziota 2014). Additionally, open-air spaces at Kleitos 1 hosted scattered burials, possibly suggesting a socially approach of the community to funerary customs (Ziota 2014). Another example of mixed domestic spatial arrangements has been identified at the lakeside site of Anargyroi IXb in Florina County, which has provided us with numerous community works and evidence of management of the open-air space at the settlement. Cooking installations

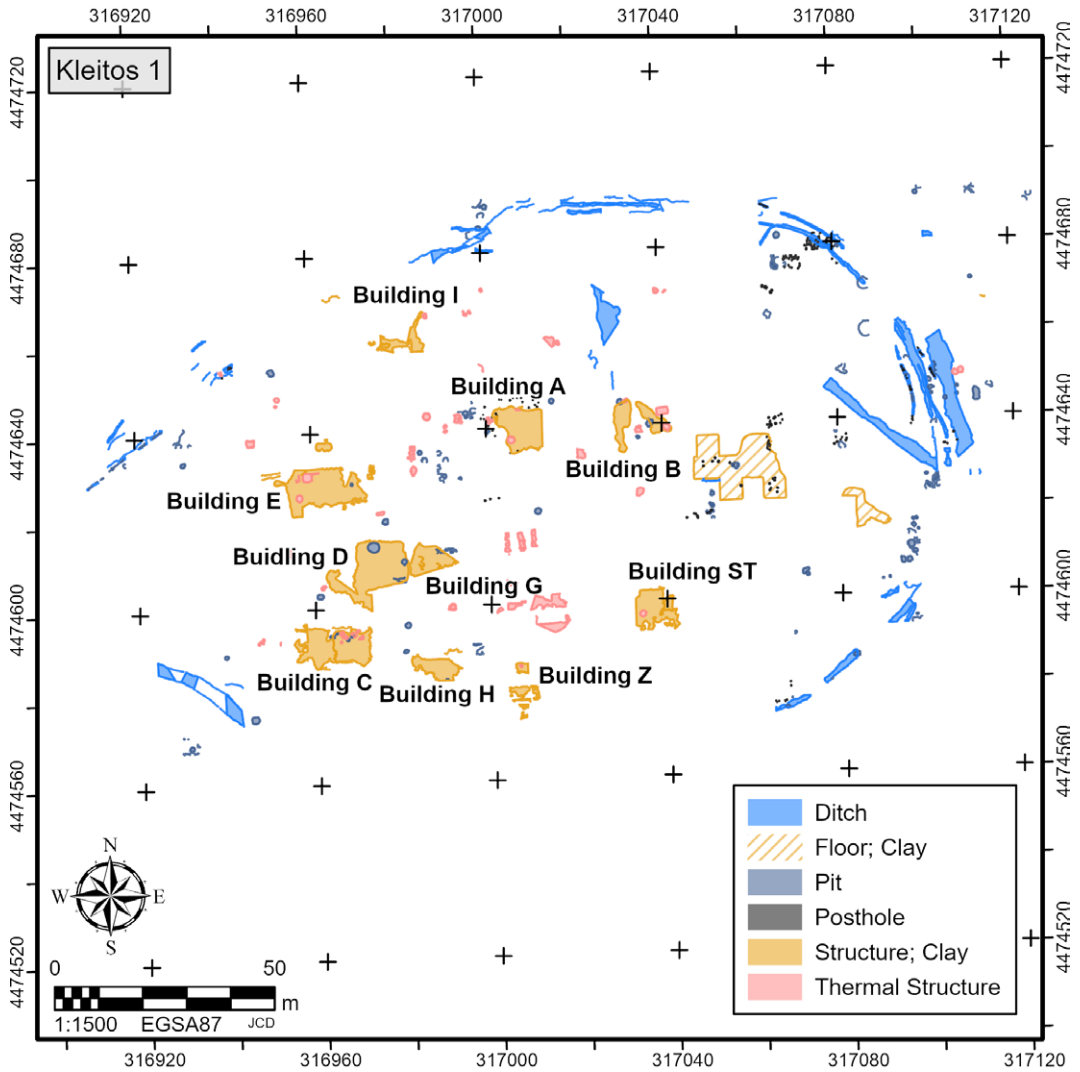


Figure 3. *Layout of the Neolithic settlement site of Kleitos 1 in Kozani, Greece. Image Credit: J. Donati.*

were found both inside dwellings and in the open-air spaces, suggesting a mixed model of daily household routines. The eastern open-air area of the settlement was designated by waste disposals, while its western boundary was marked by wooden fences and trackways leading to the lake. The 122 m long Trackway 3 connected the site of Anargyroi IXb to the neighboring settlement of Anargyroi XI, bringing to light a unique case of large-scale inter-communal public work (Giagkoulis 2020; cf. fig. 5).

In central Macedonia, the prominent LN settlement of Makriyalos in Pieria demonstrates another expression of the spatial organization of cooking operations, where

private/not visible and public/visible spaces were entangled, extending the boundaries of household into the public space (fig. 4). Cooking areas at Makriyalos were placed in shallow pits, allocated directly across pit-dwellings and subjected to public view. These semi-outdoor and semi-private kitchen spaces worked as extensions of household units, adding another proxy to the overall discussion of the spatial distribution of cooking operations in the region (Pappa 2008; Pappa & Bessios 1999; Skourtopoulou 1999; Tsoraki 2007; Urem-Kotsos & Kotsakis 2007). Large borrow pits were scattered across the settlements occupying large open-air public spaces, while ditches enclosed several settlements, creating artificial boundaries and potentially water supply constructions (Pappa 2020). Pebbled-paved yards were also found between pits and pit-dwellings suggesting planned investment of public spatial management. Additionally, the exceptional pit 212 hosted a social event of extreme food consumption and marked a significant outdoor area that brought people together in a large-scale social gathering (Pappa et al. 2004; Halstead 2007; Vaiglova et al. 2018). Two more sites, Stavroupoli and Thermi B in central Macedonia, brought to light designated outdoor stone-paved spaces. These carefully constructed artificial spaces demonstrate preplanning, time and workload investment by the community for the management of outdoor spaces, indicating potential local practices or traditions for the manipulation of outdoor spaces. Additionally, Promachonas-Topolnitsa in east Macedonia and southwest Bulgaria is another LN site with outdoor stone-paved spaces that shows evidence of public investment in outdoor spatial organization (Kazantzis 2018). Finally, at the LN sites of Servia in Kozani and Arkadikos in Drama, cooking facilities were found both indoors and outdoors in yard spaces. Some outdoor features were found covered with wooden shelter constructions that show planning for lasting use of the features (Ridley et al. 2000).

Discussion: outdoor spaces in the spotlight

In *The Construction of Society* Anthony Giddens (1984, 165), aiming to attribute agency and diversity to social developments, suggested that ‘the degree of ‘systemness’ is very variable.’ He argues that social systems should not be understood to designate only clusters of social relations which set clear boundaries from others. Giddens (1984, 164) adds that ‘all societies both are social systems and at the same time are constituted by intersections of multiple social systems.’ Projecting Giddens’s approach for social systems onto Neolithic communities and their social formations, this study argues that the key to understanding social structures and lifeways in dissimilar cultural and social surroundings is to disentangle the diversity of social expressions and to discern variability within patterning to approach social groups and people. Considering that Neolithic communities integrate complex agglomerations of varied agents, traditions, and materialities, this study suggests that we should incorporate the various forms of spatial expressions both in spaces of routine daily operations in private and public contexts, and also in community-wide venues that bring people together in diverse social events. Space has been approached here as a ground that unites people,

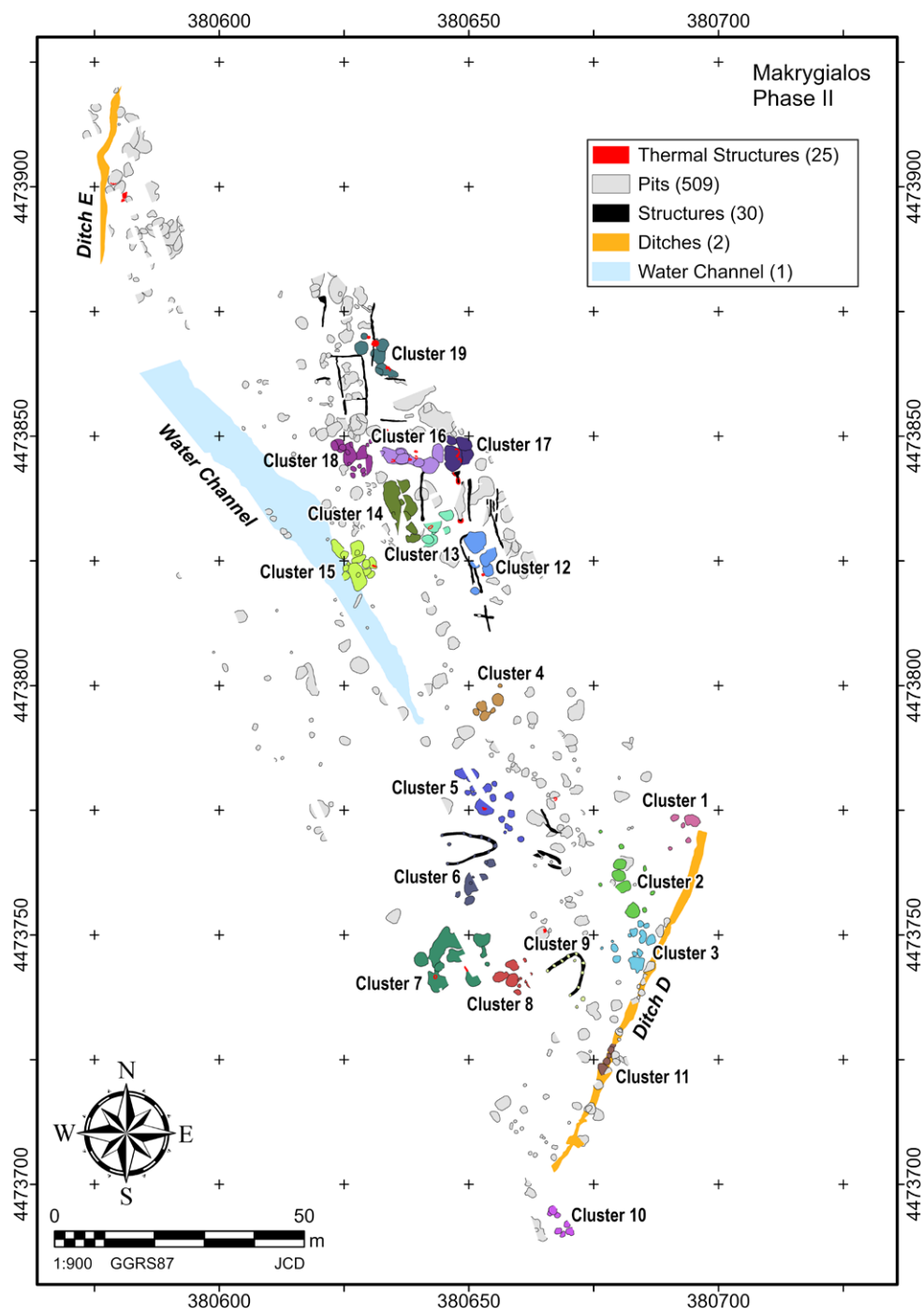


Figure 4. *Layout of the Neolithic settlement site of Makryialos II in Pieria, Greece. Image Credit: J. Donati.*

material agents, routines, and traditions. To counterbalance the lasting research interest in buildings, our analysis has turned the spotlight on the outdoor social spaces, aiming for the formation of inclusive perspectives and nuanced interpretations of the Neolithic of Greece.

Evidence from the EN suggests diverse spatial arrangements of domestic and cooking routines, indicating communities of unsettled and variable social formation. The given shortage of spatial data for cooking spaces has resulted in the generation of fragmented narratives of social developments, domestic routines and traditions in the communities studied. The identification of cooking structures both indoors and outdoors points to mixed ideologies of sharing and hoarding reflected on the living social space.

Various formations and spatial arrangements were identified for the MN. Spatial evidence provides more coherent narratives of the distribution of domestic and cooking routines. The selection of sites suggests that open-air spaces in the MN were still in flux, but preference for open domestic and cooking routines was noted at many sites, as in the cases of Avgi I in Kastoria, Vassilika Kyparissi in Halkidiki, Stavroupoli in Thessaloniki, and Paradimi in Komotini. The distribution of cooking facilities in the MN indicates the extension of household practices in visible communal areas, either close or distant from buildings.

For the LN, diverse intra-site arrangements suggest variability within patterning in domestic spatial configurations. People organized their domestic and cooking spaces both indoors and outdoors, through numerous spatial expressions. The selection of sites shows mixed arrangements of daily routines that were taking place both indoors in private contexts, but also outdoors in the public sphere of the community. Spatial boundaries of household and public works were blurred, creating mixed distributions of daily cooking activities. Kleitos in Kozani, Anargyroi IXb in Florina, Makriyalos in Pieria and Dikili Tash in Kavala for example brought to light diverse expressions of spatial arrangements, where domestic routines were interchanged between indoors and outdoors, blurring the boundaries of the household and the public sphere.

Based on the spatial analysis conducted above, a main question emerges: Can we use cooking facilities as a key means to understand domestic routines and socialities in the Neolithic? The answer is yes, we can. This paper suggests that domestic habitual behaviors among different social groups, as reflected in spatial arrangements, were not markedly different throughout the Neolithic of northern Greece. In fact, the study shows some degree of continuity in community living that potentially suggests geographical or cultural deviations. The leading pattern of outdoor kitchen spaces that continued from the EN to the LN indicates that domestic activities could be described as bonding practices, enhancing social coherence for the communities, chosen to take place in the public eye (Byrd 2000; Overing 2003; Bailey & Whittle 2008; Souvatzi 2012; Bickle & Kalogiropoulou 2017; Koromila et al. 2017; Chapman 2020). The study suggests that kitchen spaces served more than utilitarian purposes, as arenas for social interactions, cultural performances, and community bonding. Varying configurations of domestic spaces observed across geographic regions

throughout the Neolithic put emphasis on the heterogeneity of social identities and practices, highlighting the ways in which cooking and food preparation acted as pivotal nodes for everyday social engagements. Outdoor spaces have been identified here as fields of diverse everyday routines and interactions that brought people together in the formation of shared choices and traditions. Social coherence was achieved visibly in the various arenas of quotidian practices, while household space remained in flux and socially open. This study invites us to consider Neolithic communities beyond chronological and spatial classifications and to look at human actions as continuous dynamic processes formed by living together, creating shared traditions and routines.

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