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Koutroulou Magoula in Phthiotida, Central Greece: A Middle Neolithic Tell Site in Context

Yannis Hamilakis, Nina Kyparissi-Apostolika, Thomas Loughlin, Tristan Carter, James Cole, Yorgos Facorellis, Stella Katsarou, Aggeliki Kaznesi, Areti Pentedeka, Vasileios Tsamis, and Nicolas Zorzin

Abstract

In this chapter, we present some of the main preliminary results of the Koutroulou Magoula Archaeology and Archaeological Ethnography Project (begun in 2009), centered around the tell site of Koutroulou Magoula in northern Phthiotida, central Greece. The main occupation phase dates to the first two centuries of the sixth millennium B.C. This proved to be an extremely well-preserved, architecturally elaborate site, the inhabitants of which shaped its space of habitation through a range of substantial and probably communal works, such as terraces and perimeter ditches. The site is also materially rich, and various categories of data are currently under analysis and study, including a large and diverse collection of clay figurines (ca. 350 items to date).

We then continue by placing the Middle Neolithic tell settlement in its wider social context, relying in particular on two categories of data: chipped stone and pottery (examined both macroscopically and through petrographic study). The analysis of chipped stone to date has shown that the site participated in a wide network of exchange and circulation of materials, information, and ideas. More than half of the assemblage (58 percent) is made of obsidian, most (if not all) of which has all the visual characteristics of coming from the Cycladic island of Melos. The rest of the material consists of different kinds of flint coming from various distant localities: from the Pindus Mountains to Albania and Bulgaria, and even further to the north.

The analysis of pottery, on the other hand, attests to a more localized pattern of circulation and exchange. Painted pottery in particular gives the impression of a local production, with affinities to Achilleion, but also to pottery from Tzani Magoula, Pazaraki, and areas belonging to the so-called West Thessalian group. In pottery terms, Koutroulou Magoula seemed to have interacted more with the Thessalian tradition, and not with that of southern central Greece. An exception here is the few drinking vessels that show decoration patterns pointing to other "cultural" traditions (e.g. geometric patterns from southern central Greece). This macroscopic picture seems to be confirmed by petrographic analysis of both pottery vessels and figurines.

Keywords

Middle Neolithic, tell sites, Thessaly, radiocarbon dating, pottery, chipped stone, exchange networks

Koutroulou Magoula is a tell site situated at the southwestern edge of the Thessalian Plain, just west of the hills that form the northwestern edge of the Othrys Mountain range. It is also 2.5 km south of the modern town of Neo Monastiri in Phthiotida, within the vicinity of the village of Vardali. The site is part of a rich archaeological landscape, in which dozens of Neolithic tells feature prominently (Figure 1).[1] The abundance of prehistoric tell sites in the area between Domokos and Pharsalus was noted by researchers as early as the beginning of the twentieth century. Wace and Thompson (1912:9) mentioned a prehistoric site north of Vardali, and they may well have been referring to Koutroulou Magoula. Systematic archaeological work on the site started in 2001 under the direction of Kyparissi-Apostolika and continued in the 2002, 2004, 2005, 2006, 2008, and 2009 seasons (Kyparissi-Apostolika 2006). This work revealed a large habitation site rich in finds and dated primarily to the Middle Neolithic, based on conventional pottery chronology. Its architectural features and material culture are characterized by unique elaboration and preservation. Informally since 2009, and formally since 2010, work on site continued as part of the Koutroulou Magoula Archaeology and Archaeological Ethnography Project, carried out by a large and multi-national team of researchers as a collaboration between the Greek Archaeological Service—more specifically, the Ephorate of Antiquities of Phthiotida

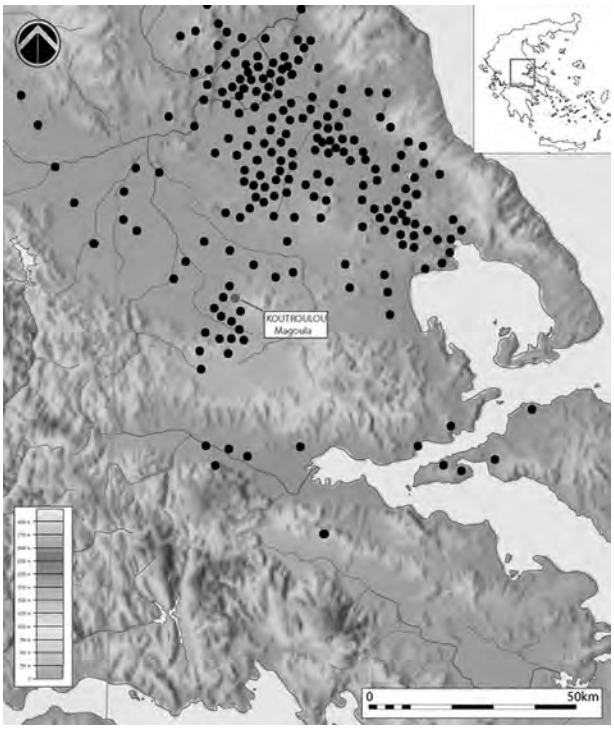

Figure 1. The distribution of Neolithic sites in central Greece. (Based on Papathanassopoulos 1996)

and Evrytania and the Ephorate of Palaeoanthropology and Speleology—and the University of Southampton, under the auspices of the British School at Athens. It is co-directed by Kyparissi-Apostolika and Hamilakis (for preliminary results, see Hamilakis and Kyparissi-Apostolika 2012; Hamilakis and Theou 2013; Kyparissi-Apostolika and Hamilakis 2015; Morgan 2011, 2012, 2013; Papadopoulos et al. 2015; see also Koromila et al., this volume). The main aims of this new project are:

- To understand the material and social life of a Middle Neolithic community through the recovery and detailed study of architecture, artifacts, animal and plant remains, soil, sediments, and other geoarchaeological and archaeo-environmental data.
- To study the embodied and sensorial ways through which this community produced material memory, place, time, and temporality.
- To situate this community in the broader social and physical landscape, and compare its mode of material engagement with other communities nearby.
- To study and understand the role and meanings of the material archaeological past and of archaeological practices among the present-day communities in the area, through long-term, in-depth, and detailed archaeological ethnography (see Hamilakis 2011).

As part of this new project, a range of research activities was initiated, including topographical and surface survey of the tell, a new high-resolution program of geophysical prospection, stratigraphic excavation, a range of new analytical practices, and a program of systematic archaeological ethnography and public archaeology initiatives. The aim has been not only to answer the research questions of this new project, but also study and analyze the material found during the earlier excavations (2001–2008) and prepare the whole site for publication. Our excavation recording methodology is a combination of the "single context" system and the narrative, diary-based procedure traditionally used by the Greek Archaeological Service. In this short article, we will present some of the preliminary results of this new phase of the project, focusing in particular on the positioning of the settlement in its cultural context and in the various networks of regional and long-distance communication and exchange.

Koutroulou Magoula in the Neolithic

On the basis of the topographic work carried out to date (by Vasileios Tsamis), Koutroulou Magoula reveals itself to be a tell 206 m long and 182 m wide, situated at 130.7 masl; it rises 6.6 m above the surrounding fields. With an overall area of ca. 3.7 ha (37 stremmata), Koutroulou Magoula is thus much larger (almost twice as large) than most other tell sites in Greece (cf. Kotsakis 1999:67, where it is noted that most tell sites in Greece "rarely exceed 2h"). Almost half of the mound (the western part) has been destroyed as a result of agricultural activity. Because of this, a 169-m-long step extends across the site. Pedestrian survey carried our by the field director (2009–2012), Thomas Loughlin, revealed that intensive activity seems to have been circumscribed to the area of the magoula and that occupation in the semi-destroyed, western part was more extensive than in the eastern part of the site. The topographical survey also showed possible evidence of terracing and retaining walls on the north, east, and south sides. More specifically, the mound was possibly constructed with three levels of terracing, and it is likely that a retaining wall was present at least on the north side (Figure 2).

Additional support for these topographical features was provided by the geophysical (magnetometer) survey conducted in 2012, the second geophysical survey at the site (for the first resistivity survey, see

Tsokas et al. 2009). The high-resolution magnetometer survey, carried out by James Cole, provided some particularly significant results, confirming at the same time the indications of the pedestrian survey. Discounting the geophysical signature to the extreme east of our survey area, which probably reflects modern activity, it is clear that there are several prominent linear, rectilinear, and dipolar features present within the geophysics (Figure 3, on Color Plate I and Figure 4, on Color Plate II). Given the time depth of human activity in the magoula, the chronological association between these features will need to be clarified through excavation. It is possible, however, that features such as P3-P25 and N9-N23 may represent Neolithic buildings (Figure 4, on Color Plate II), showing the density and extent of building activity. The group of features P1, N6-N8, and N26-N28 may represent the building of terracing, retaining walls, and concentric ditches surrounding the tell. Terraces and retaining walls would have aimed at expanding and supporting living space, while the ditches may have served a variety of roles and functions, including the marking of site boundaries in material and symbolic terms. A test trench investigation in 2012 (Trench E14) offered some stratigraphic indications of a ditch that was not fully excavated but has an extrapolated U shape; interestingly, this ditch appears to have been recut, suggesting continuous use and maintenance. A further test pit at the periphery of the magoula (Trench Θ22) (see Figure 2), offered some stratigraphic evidence for the existence of a large perimeter ditch. In future fieldwork, we hope to confirm with greater certainty the existence of these ditch features and investigate their nature and character.

The features outlined above, and especially the ditches, most likely date to the Middle Neolithic based primarily on their position in relation to the excavated buildings. These ditches would have defined and delineated the area of occupation on the tell, producing at the same time a sense of collectivity, in both social as well as spatial terms. Along with the terracing projects, the ditches were more likely to have

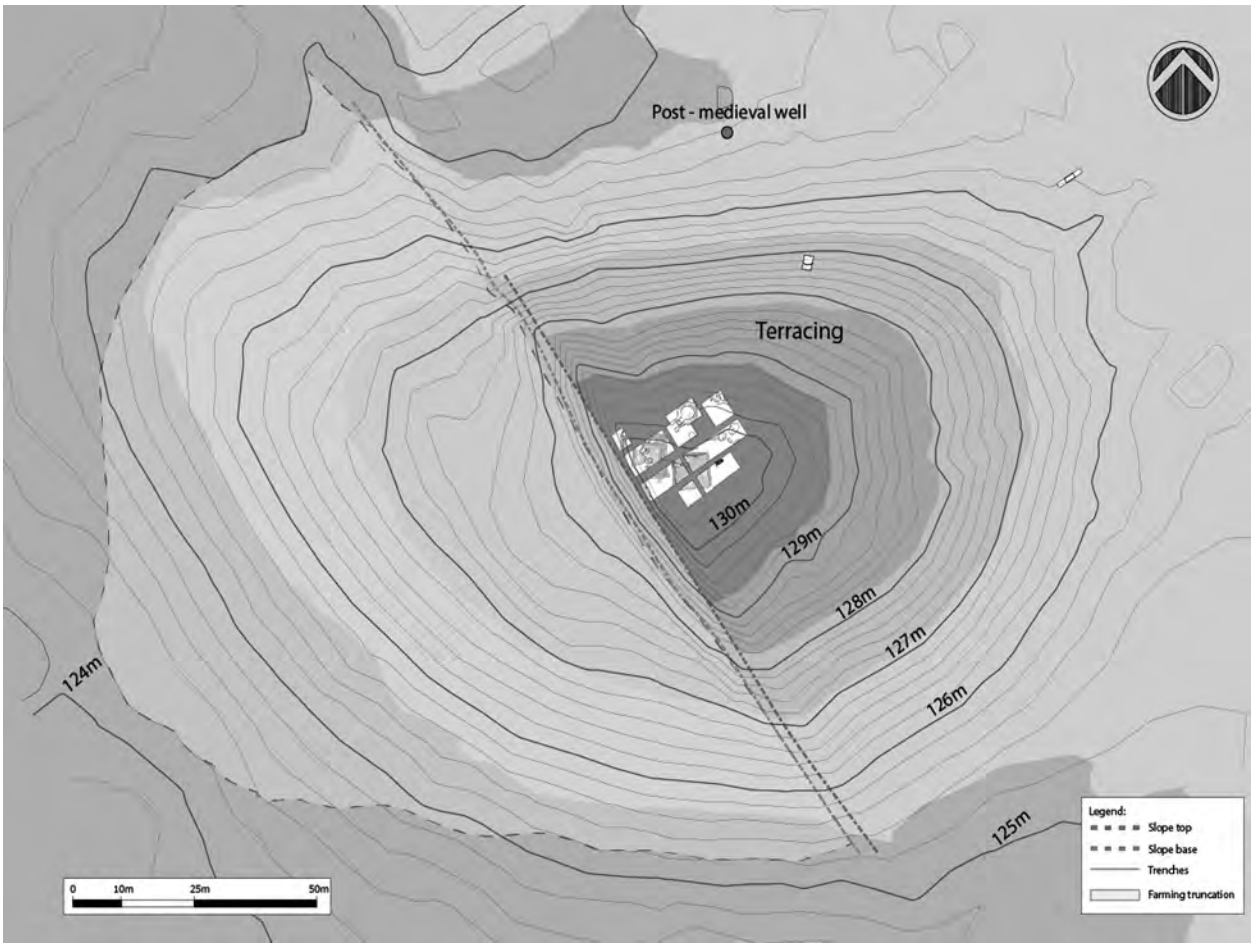

Figure 2. The topography of Koutroulou Magoula (2012).

been substantial, communal works that would have required a significant investment of labor. Combining the topographic and geophysical research offers a picture of an elaborate, and possibly communal, reshaping of space. These practices are fairly common in the Greek—and broadly, European—Neolithic (see Sarris et al., this volume) but are rarely studied in detail. Koutroulou Magoula represents, therefore, an ideal location to investigate these relationships further, especially in relation to tell sites.

To date, excavation at the top of the magoula has unearthed cultural layers that reach at least 2.5 m in depth from the surface of the tell. A coring program conducted in 2012 showed that these cultural layers reach at least 5 m in depth. This corresponds well with the overall 6.6 m rise of the tell from the surface of the surrounding plain. Two rectangular buildings have been unearthed in their entirety, and several others only partially (Figure 5). Building 1, which was unearthed during the earlier excavations directed by Nina Kyparissi-Apostolika, preserves two or possibly three building phases, whereas the traces of a further and more recent Middle Neolithic phase were removed by the excavators in 2001 due to its fragmentary and partially destroyed state. Successive buildings appear to have been rebuilt on the same spot, often respecting previous orientations (Figure 6), a well-known practice linked to ancestral ties and material memory (e.g. Chapman 1994; Kotsakis 1999; see Souvatzi 2008 for further references and discussion). Most walls, especially in the later phases, appear to have stone foundations with mudbricks for the upper structure. In the early phases of the site, as seen with Building 1 and the building in Trench Z1 (see Figure 5), stone-built walls rise up to or exceed 1 m in height, possibly suggesting that the entire height of the wall may have been stone. At times, different phases used stones of different color and texture, for example white and soft limestone for the later phases, vs. grey, angular, and harder limestone for the earlier phases, which would have had a distinctive aesthetic and sensorial impact if left exposed. In Buildings 1 and 2, as well as the building partially unearthed in the northeast corner of Z1 and the northwest corner

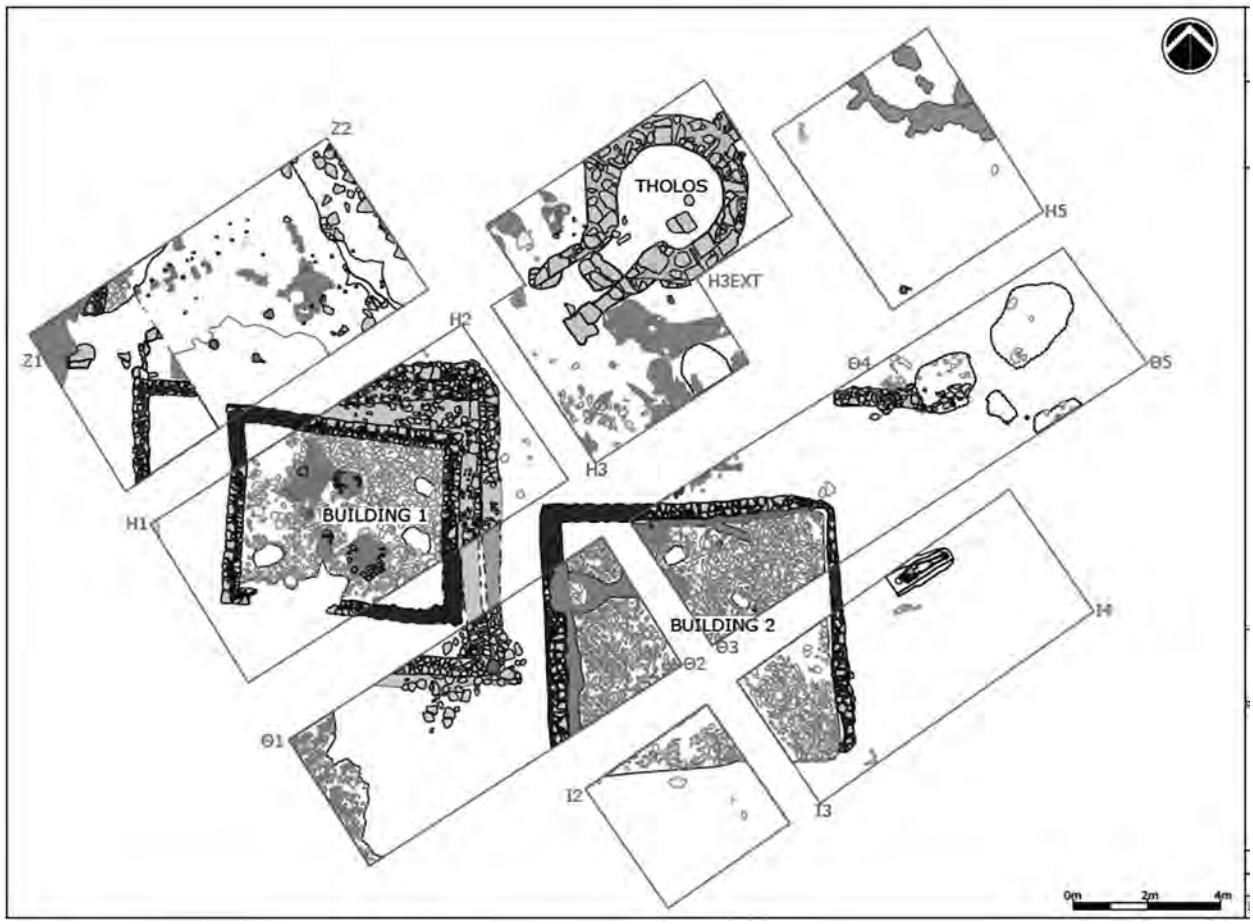

Figure 5. Site plan of Koutroulou Magoula (main excavation area) at the end of the 2015 excavation season.

of Z2 in 2015 (see Figure 5), it is more likely that beaten earth or clay floors were laid out on the top of paved, subfloor deposits, constructed of small, flat or semi-rounded stones. The appearance of these possible earthen floors, however, is highly fragmented and disturbed.

Building 2 measures 7.2 x 6.4 m and sits on the highest point of the tell, as does Building 1 (see Figure 5). Its stone foundations seem to have been protected by upright clay slabs (Figure 7). It contained very few finds, its southern wall was missing, and during excavation extensive layers of burned clay were noted on the top of the floor and the walls. The function and role of this building is still open to interpretation, but the low density of finds, elaborate architectural features, and the absence of one wall may suggest a non-habitational space, possibly communal in nature, that was deliberately destroyed by fire.

The spaces between buildings seemed to have been intensively used, and they include paved courtyards that may have been partially covered, as suggested by a series of postholes. There were also some elaborate hearths with a concentration of figurines and quern-stones around them, as well as several pits. These open areas were extremely rich in finds, including pottery, faunal remains, and other feasting paraphernalia. The site has already become widely known for its large and distinctive collection of clay figurines, numbering more than 350 objects to date (Figure 8, on Color Plate II), found in diverse contexts and locations across the site. A detailed analysis (funded by the British Academy) including petrography, photogrammetry, and 3D scanning is underway. In addition to several well-known types, there are many forms that seem to depict hybrid human-animal (especially bird-like) entities, as well as imaginary beings. In 2014, a large number of human fingerprints were found on the figurines. These have been subjected to Reflectance Transformation

Figure 6. The successive architectural phases of Building 1 at Koutroulou Magoula (Trench H2, from the east; 2010).

Imaging (RTI) photography and 3D scanning to allow for further identification and analysis, which may reveal information on the age and possibly the gender of the people who handled them.

According to the zooarchaeologist, Kerry Harris (working together with Yannis Hamilakis), and based on preliminary examination of the animal remains found between 2001 and 2012, the Neolithic inhabitants of Koutroulou Magoula kept primarily sheep and goats, which amount to over 70 percent of the sample, but also cattle, pigs, and dogs in smaller numbers. They also hunted, and small numbers of red and roe deer remains were found. In addition, the inhabitants of the tell seem to have had a particular taste for a river shell, the thick-shelled river mussel, *Unio crassus,* which they had to dig out from the sandy bottoms of the local river, according to Tatiana Theodoropoulou. Most of the bones came from areas outside the buildings, confirming the general impression of the importance of outdoor, communal areas. Further analysis and study of the material may reveal spatial and chronological diversity in the representation of species, and more broadly in human-animal interactions.

In addition to meat, bone marrow was also valued, and bones were heated and then broken up to extract it. It is worth noting that in addition to the animal bones, a number of disarticulated and scattered human bones were found among the Neolithic layers, which may indicate that the bodily remnants of the ancestors were circulating among the living in the spaces of daily routines. According to the archaeobotanist, Georgia Kotzamani, the Neolithic inhabitants of the site cultivated mostly einkorn and emmer wheat, and less commonly barley and oat, but also lentils, peas, bitter vetch, and grass peas. Fig seeds, terebinth, and elder were also found. They also collected a wide variety of wild plants.

As part of our project, we carried out a pilot program of AMS radiocarbon dating (coordinated

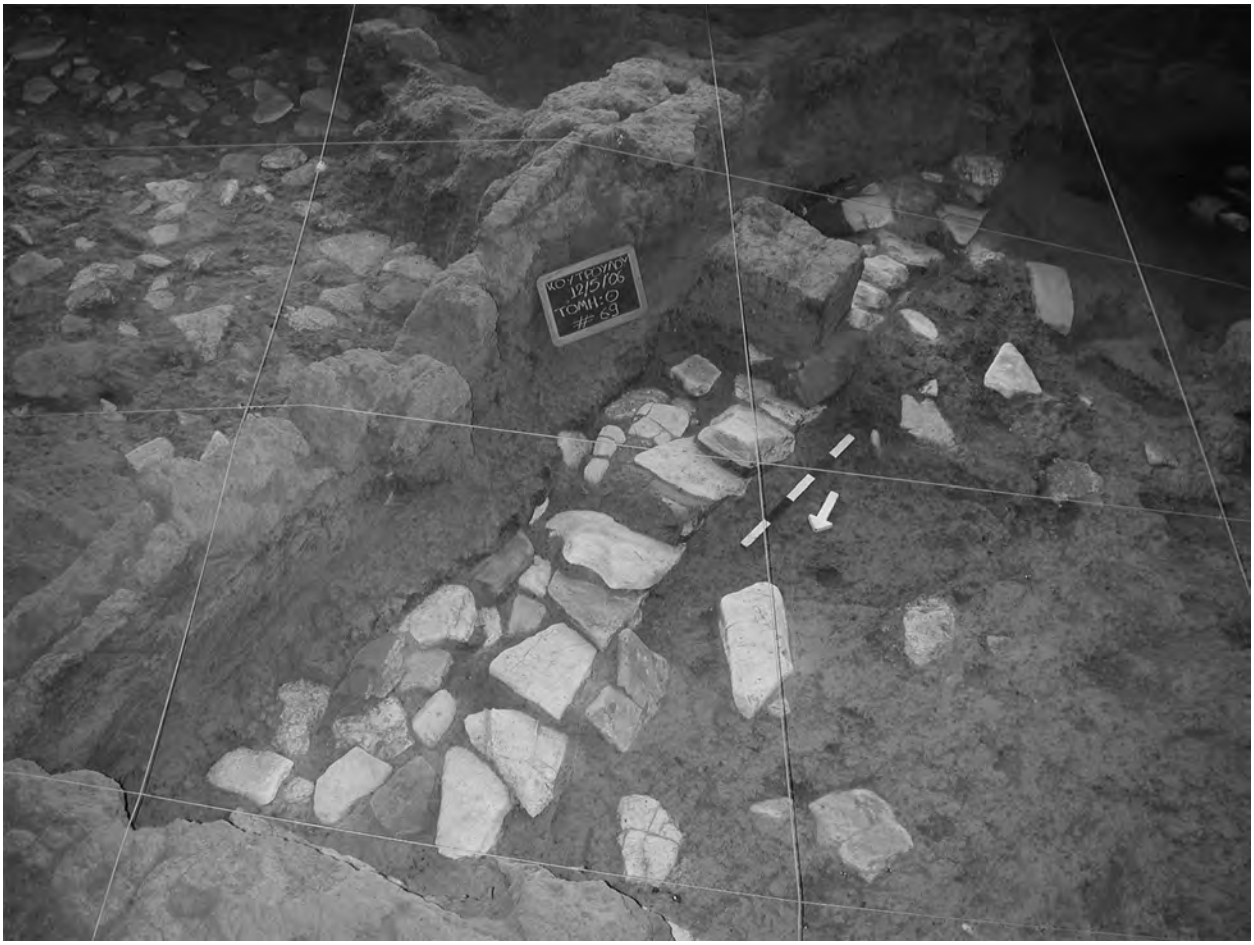

Figure 7. Building 2 at Koutroulou Magoula during excavation (2006), showing the clay slabs which seem to have covered the stone foundations of the walls.

Table 1. The AMS dates from Koutroulou Magoula (Groningen Laboratory).

Lab Nr	Location	Date of Unearthing	Depth below Surface (cm)	^{14}C Age (B.P.)	Calibrated Date (cal B.C.)	Probabilities (%)
GrA-60924	Trench H3 (Extension), NK285, Context 048/01, base of tholos tomb	9/26/2012	55.0	3745 ± 40	2206–2045 2286–2032	68.2 95.4
GrA-60921	Trench Θ3, Context 36/23	9/17/2010	84.0	6930 ± 45	5869–5743 5967–5723	68.2 95.4
GrA-60916	Trench Θ2, Pass IB Square Γ46, A.Δ.2, Orientation: 130 cm north x 280 cm east	11/7/2005	63.0	6960 ± 45	5894–5776 5977–5738	68.2 95.4
GrA-60918	Trench H, Pass IA, Square A38, OM κ.π. 288γ	5/30/2002	128.3	6990 ± 45	5976–5812 5984–5764	68.2 95.4
GrA-60919	Trench Θ4, Context 721/073	9/22/2011	18.0	7040 ± 45	5986–5891 6014–5814	68.2 95.4
GrA-61065	Trench Θ3, Context 008/02	9/9/2009	74.0	7050 ± 45	5987–5899 6016–5841	68.2 95.4
GrA-60912	Trench Θ1, Boring KTLC-1	9/2012	500.0	7095 ± 45	6020–5916 6055–5891	68.2 95.4

by Yorgos Facorellis), and we hope to expand this in the future. The samples were dated by AMS in the Centre for Isotope Research of the University of Groningen, and as can be seen in Table 1, with the exception of a sample that comes from a disturbed context with Bronze Age activity, all six samples give dates which fall within the first two centuries of the sixth millennium B.C. The radiocarbon conventional ages were converted to calendar dates with the latest issue of the international calibration curve IntCal13 (Reimer et al. 2013), using the OxCal v4.2.4 software (Bronk Ramsey 2009, 2010).

Culturally, this period is normally associated with the transition from the Early Neolithic to the Middle Neolithic period. The other interesting feature is that the average time difference between the deepest sample in the sequence—taken from a depth of ca. 5 m from the trench's surface (via coring, as opposed to excavation)—and the one only 20 cm from the surface is just 150–170 years. This close clustering of dates, which are stratigraphically so far apart, makes Koutroulou Magoula a rather short-lived site within the timeframe of the Neolithic. It also indicates intense, rich, and regular building and depositional activity.

The placing of the site within the first two centuries of the sixth millennium by the AMS radiocarbon dates would seem to contradict the dating of the site based on pottery typology. The pottery typology would suggest that the site was occupied a few centuries later. This apparent disparity between the conventional pottery-typological dating and the radiocarbon dating points to the need for reconsideration of conventional dating in the Greek Neolithic, something which requires the coordinated effort of researchers from many different sites across the region and beyond.

It is also worth mentioning that this is a multi-temporal site: there is substantial material evidence for its use for burials in the Late Bronze Age, as a small "Mycenaean" tholos tomb was detected in Trenches H3 and H3 Extension in 2011 and excavated in 2012 (see Figure 5). The tomb was completely looted, most probably in antiquity. Moreover, the tell was also used for burials in medieval times: an inhumation burial of a young woman in an extended position was found and excavated in Trench I4 in 2011 (see Figure 5). It was AMS-dated (Beta–318215: 770 ± 30 B.P.) to cal A.D. 1040–1220 (2σ). This evidence complements earlier finds, such as a twelfth-century A.D. coin and medieval pottery. More detailed information on these important finds will be presented elsewhere, as their presence show that the tell was an important mnemonic site for many thousands of years after its original Neolithic habitation.

The Pottery Evidence and its Local-Regional Associations

Koutroulou Magoula has yielded large quantities of Middle Neolithic pottery fragments from all areas and contexts (amounting to around 45,000 potsherds, including 5,457 catalogued pieces), under study by Stella Katsarou and Aggeliki Kaznesi. Preliminary assessment of the ceramic assemblages attests to large numbers of Red, Buff, and Dark Monochromes, alongside significant quantities of various styles of Pattern-Painted ware. All shapes and features indicate some degree of standardization (cf. Pappa et al. 2004). The Red-on-White, classic Thessalian "solid and linear styles" (Andreou et al. 1996; Gallis 1996; Kotsakis 1983; Theocharis 1973; Tsountas 2000 [1908]) are prevalent in the painted pottery (Figure 9, on Color Plate III). The most usual shapes associated with the red patterns include the flat-bottomed flaring or convex cups, bowls, and wide basins with upright sides (*lekanides*). The White-on-Red wares are less frequent, but still occur in considerable numbers (Figure 10). Other painted classes, such as the Red-Painted and Scraped wares are found in small quantities.

The monochrome vessels consist primarily of small and medium-sized serving containers in flaring profiles. The site has also revealed a significant collection of elaborate, miniature offering tables standing on three or four legs, and featuring figurative details such as human anatomical parts (legs, fingers). On the basis of Wace and Thompson's (1912) categorization, the pottery from Koutroulou seems to belong to the "Western" Thessalian group (Figure 11), and comparisons with recently excavated sites nearby testify to its affinities with the region, extending to Achilleion in the east (Gimbutas et al. 1989) and the Karditsa area to the north, that is, within a radius of 30–35 km (Figure 12). Indeed, preliminary observations show that color, texture, and painted patterns in pottery coming from old/known and recently excavated sites in this area, such as Tzani Magoula, Pazaraki, and the mounds in the Sofades region (Chourmouziadis 1967; Dimaki 1994; Rondiri 2009; Tsouknidas 1994; Vaiopoulou 2012; Wace and Thompson 1912) are very similar, if not identical to those at Koutroulou. In contrast, comparative work with southern sites, especially regarding the White-on-Red style, has shown no affinities with Koutroulou. Any potential imports to Koutroulou from outside its region thus are limited to a few ambiguous pieces.

Greek Neolithic pottery studies, with few recent exceptions, have been very reluctant to move beyond

Figure 10. White-on-Red ware, including the body of a handled and necked globular jar from Building 1.

classification and typology. The detailed stylistic sequences have been inscribed within a cultural evolutionist perspective and a logic of geographical regionalism (e.g. Wace and Thompson 1912). In this framework, pottery styles and their subdivisions were thought to represent distinct "cultures" within the massive Thessalian Plain. Today, despite the considerable advances in theoretical discussion, this taxonomic paradigm still persists in publications. In doing so, it keeps alive the primarily descriptive and typological-comparative approach to style, which is outdated and of limited potential.

In this project, we have sought to challenge this long-established methodology through careful observation of all the macroscopic qualities on all sides of the pottery fragments. Our results have demonstrated that pots carry cross-category features and transcend several of the conventional and well-delineated stylistic groups (cf. Vitelli 1993). There is a wide range of "bilingual" instances of pottery craft in the Koutroulou Magoula assemblage, with feature combinations such as Red-Painted with Red Monochrome, Red-Painted with Scribbled Monochrome, White-Crust on a Red-on-White painted background, Red Monochrome with Black Monochrome, and many more. Pottery craft thus is not a static, compartmentalized practice, but rather can be changing, fluid, and random, just as easily as it can become standardized, repetitive, and conservative.

Our study so far has shown that pottery is associated with intensively accumulated fills of refuse in outdoor areas, which include fragments of plain and decorated vessels as the major component. The bulky nature of these dumps implies that pottery consumption was intensive and conspicuous. While many pots are linked to food preparation (as shown in the examples of cooking vessels, often found with traces of soot) and processing (as in the examples of "clay sieves" that could have been used for milk processing; cf. Salque et al. 2013), the majority of the vessels are tableware for serving food, probably used in performances of convivial feasting (Pappa et al. 2004). These undoubtedly conspicuous events would have been marked by an equally conspicuous deposition of their remnants in the pits found outdoors (cf. Kotsakis 1999; Skourtopoulou 2006), thus producing

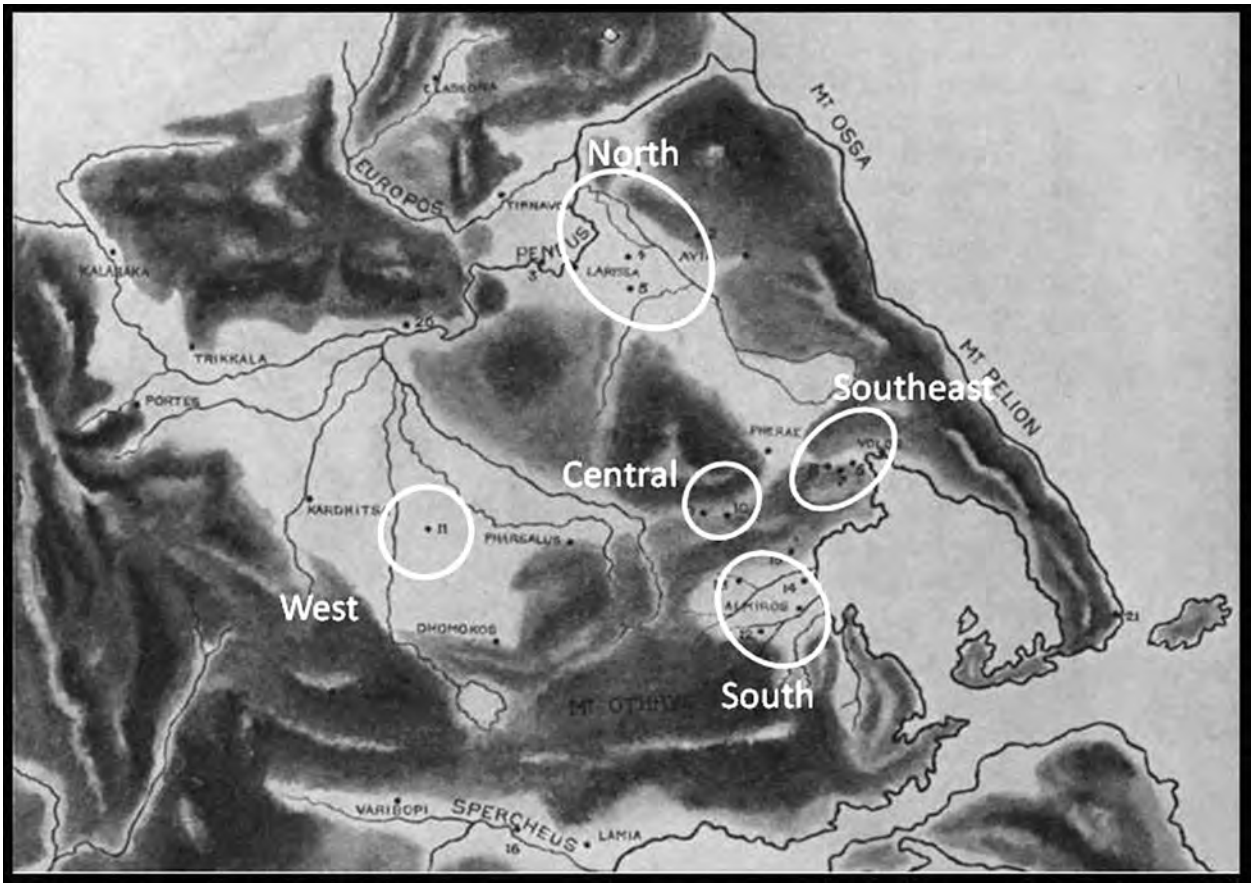

Figure 11. The regional Thessalian Neolithic pottery "cultures" as defined by Wace and Thompson (1912).

material mnemonics (cf. Hamilakis 2010, 2013).

The local and regional character of pottery is corroborated by the results of our petrographic study on pottery and clay figurines, carried out by Areti Pentedeka and based on 36 pottery sherds and 23 figurine fragments from all excavated contexts. Additionally, raw material prospection was carried out in the vicinity of Koutroulou Magoula to explore potential clay sources; this was based on geological maps and the compositional compatibility of the different fabrics identified, following petrographic analysis of all ceramic archaeological samples. Thirteen clayey, loose sandy sediments and rock samples were collected to represent the main geological formations of the area (Figure 13). In total, five fabric groups and three loners have been identified. The majority of the fabrics are considered to be of local origin, as their mineralogical composition matches well with the prevalent geological formations in the vicinity: late Cretaceous flysch and tectonized limestone, shale-chert and ophiolitic formations (Marinos et al. 1957; Mariolakos et al. 2001).

Taking into account all available information, Koutroulou Magoula Fabric Groups 1 and 2 comprise the local production of the settlement. Fabric Groups 1 and 2 are medium- to fine-grained, with major inclusion types being quartz, feldspar, sandstone/metasandstone fragments, clay pellets, altered igneous rock fragments, and quartz-rich metamorphic rock fragments (Figure 14, on Color Plate III). These two fabrics comprise almost 85 percent of the samples studied, pottery and figurines alike, and bear a fair resemblance to raw material samples KMGS1–2, KMGS6, and KMGS13, collected in the close vicinity of the mound. The main local clay paste recipe, as expressed by Fabric Groups 1 and 2, points to the persistent exploitation of a specific source: most probably surface sediments (near or even within the settlement area), as suggested by the invariable presence of organic material (phytoliths and phosphates, most probably indicating dung; cf. Koromila et al., this volume). The sediments exploited for pottery production were used rather unrefined, and derived probably from erosion and colluviation

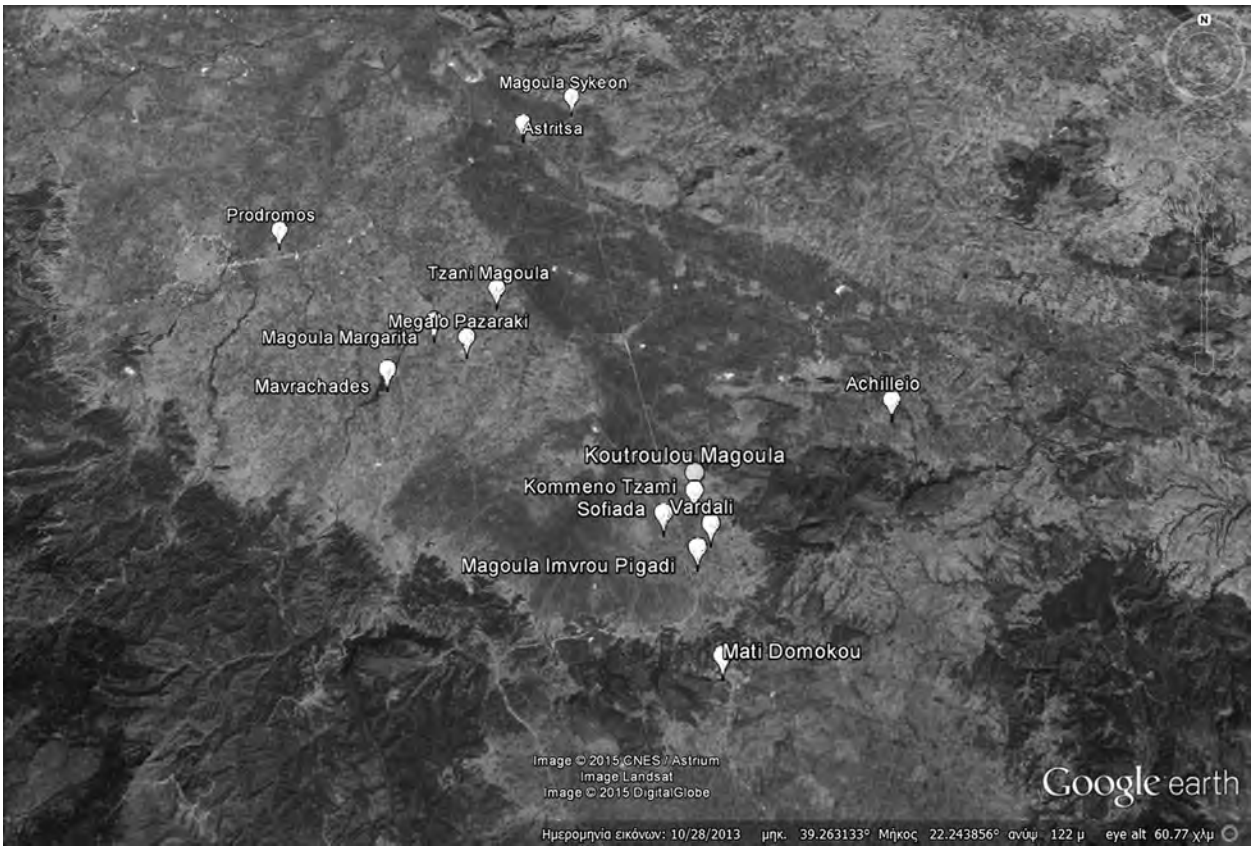

Figure 12. Koutroulou Magoula amidst neighboring Neolithic tells in the area south of Karditsa. (source: CNES/Astrium, DigitalGlobe, ©2013 Google, annotated)

at a short distance (i.e. at the outlet of the drainage network in the flat area of the basin, through stream and/or rainwater force), while the high frequency of rounded iron-rich nodules and clay pellets, and the sporadic occurrence of ooids, suggests fluctuations in the water table and transportation (cf. Pentedeka 2015:271–272). These features usually characterize areas with stagnant water or marshes; this kind of micro-ecosystem is also suggested by Koutroulou macrobotanical and phytolithic data (Koromila et al., this volume), as well as the study of building raw materials in the neighboring Middle Neolithic site of Magoula Imvrou Pigadi (Roussos 2010:62).

Koutroulou Magoula Fabric Group 4, consisting only of painted White-on-Red pottery, is a coarse fabric characterized by phyllite, amphibole-rich, and quartz-rich metamorphic rock fragments, quartz, light green amphibole, and mica. This composition is compatible with the geological setting of the Narthaki Mountain to the east of the site; interestingly, it is also attested in a number of similar, amphibole-rich, pottery fabrics of nearby Achilleion, where they are considered to be locally produced (Dimoula 2014:158–163). If this is indeed the case, and is not an example of potters exploiting similar sediment outcrops for pottery manufacture, it can be tentatively argued that these two decorated pots are Achilleion products that were brought to Koutroulou.

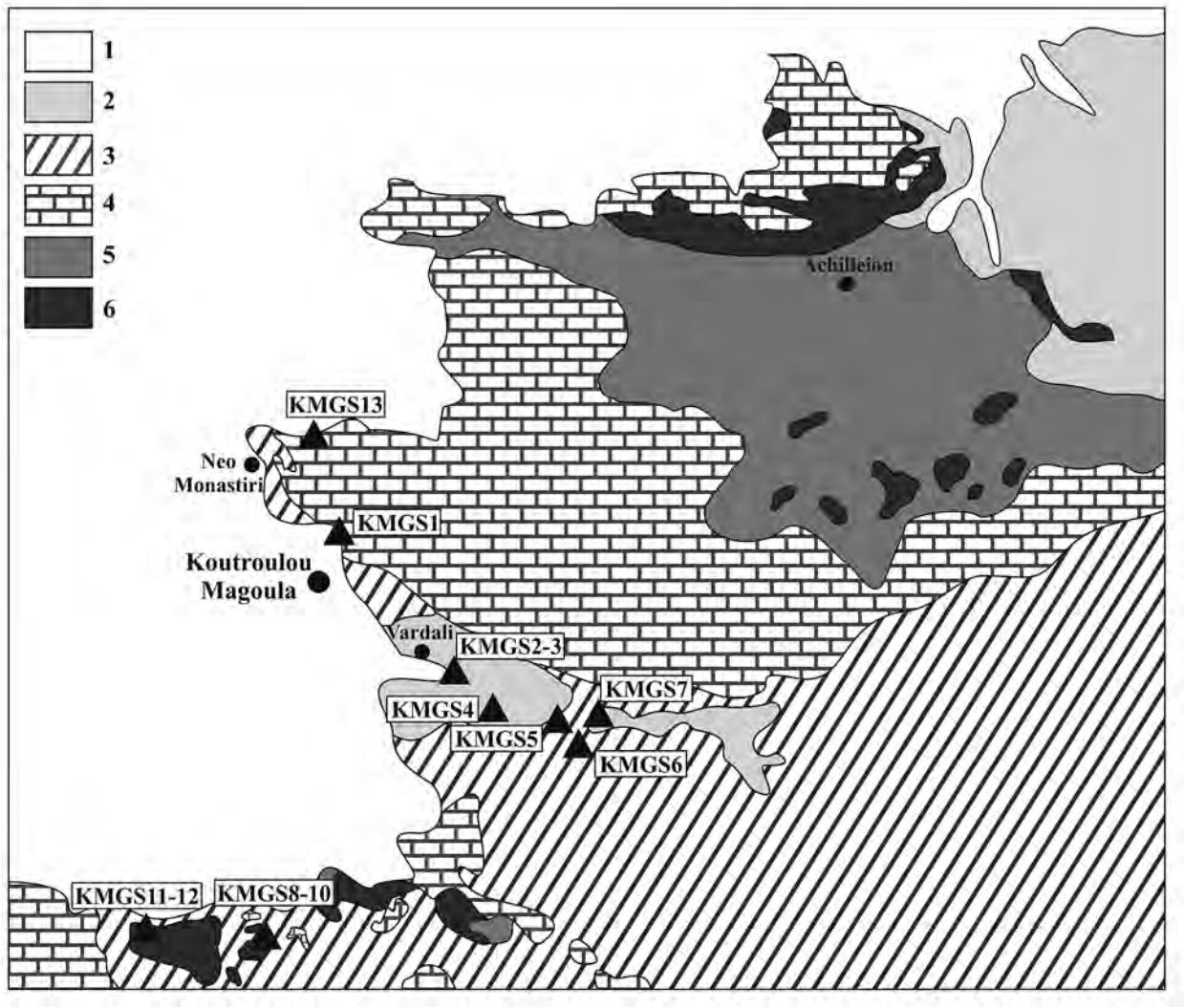

Figure 13. Geological map of Koutroulou Magoula and its vicinity, showing the sampling locations of KMGS1–13 (black triangles): (1) alluvial deposits; (2) fluvio-lacustrine formations (Pliocene); (3) flysch (Late Cretaceous); (4) limestone (Late Cretaceous); (5) shale-chert formations (Triassic-Jurassic); (6) ophiolitic units and mélange. (Adapted from Bornovas and Philippakis 1964; Marinos et al. 1957).

The Chipped Stone and its Long-Distance Character

The chipped stone assemblage, studied by Tristan Carter, reveals a rather different picture from the local and regional pattern of interaction seen with the pottery. Of the 805 chipped stone artifacts recovered from 2001 to 2012, more than half (58 percent) were made of obsidian, the vast majority of which appeared to be Melian, procured in the form of prepared cores and/or finished tools that likely arrived at the site through intermediary exchange. The fact that so much of the assemblage comprised obsidian artifacts is noteworthy in a western Thessalian Middle Neolithic context, where toolkits tend to be primarily made of chert (Karimali 2009:Table 1). The distinction is noteworthy, suggesting that the community enjoyed preferential access to the exchange networks through which this exotic media circulated, and/or the site represented a central gathering and redistribution locus amongst western Thessalian populations. While the relative proportion of obsidian is atypical, the manner in which it was worked on site is entirely in keeping with wider Thessalian lithic traditions of the period, i.e. it was used to make pressure-flaked blades and bladelets, with the relatively few (15 percent) modified tools including notched pieces, plus a few trapezes and scrapers. The close similarity of the obsidian blades from these sites, in terms of the size of the end products and of the method of manufacture, suggested strongly to Catherine Perlès (1990) that these Thessalian communities were linked by itinerant specialists.

The remaining 336 artifacts (42 percent) were made from a wide variety of other raw materials, including radiolarite, chalcedony, chert, "chocolate flint," and "honey flint." The largest group comprised 165 pieces of a red radiolarite (20 percent), a raw material that likely came from the Pindus Mountains, some 90 km to the northwest (Efstratiou et al. 2011; Kourtessi-Philippakis 2009:308; Perlès 1990:6). This material was worked on site, and a very large proportion of the blades had been denticulated, that is, given a saw-like edge with multiple notches. These edges are often highly glossed, i.e. showing a form of use wear that likely derived from the cutting of cereals.

While there are many likely plant-working tools, there are far fewer pieces that can be related to hunting or the processing of animal skins, with only 2 Middle Neolithic projectiles, plus 14 scrapers and 7 perforators. This is not uncommon, however, for Middle Neolithic Aegean toolkits, and as far as the hunting is concerned, the picture is supported by the faunal evidence, which shows very small numbers of hunted animals, such as red and roe deer. The chalcedony (N = 44, 5 percent) likely originates from outcrops around the mouth of the Strymonas (Struma) River (Arkoudorema region) in the Rhodope Mountains that straddle northern Greece and into Bulgaria, at least 240 km linear distance to the northeast (Kourtessi-Philippakis 2009:308). The implements themselves were probably made by Macedonian populations and then exchanged southwards.

While the exact provenance of the well-known "honey flint" remains unknown, the region of Epirus/southern Albania has been suggested as a likely source on the basis of geology and finds distribution (Perlès 1992:124), though another view favors the Danube platform in northeast Bulgaria and southeast Romania (Kozłowski et al. 1996:337; Tringham 2003:84). The technical attributes of some of the "honey flint" blades further suggest links to Bulgaria, with at least one large piece having been produced by the highly skilled lever technique, which is associated with contemporary toolmakers of northeast Bulgaria (Manolakakis 2005).

It seems, therefore, that the chipped stone media accessed and employed by the inhabitants of Koutroulou are remarkably cosmopolitan. While the lack of good-quality local raw materials meant that these people necessarily relied on resources and ready-made tools from afar, the significance of these media would have transcended utilitarian/functional desires alone. Knowledge of and participation in remote realms and other worlds, as well as the sensorial and affective qualities of the material, its color and luminosity, its tactile properties and effects, would have been important (cf. Hamilakis 2013).

Conclusion

Koutroulou Magoula is of great potential in helping us understand in some depth the Greek Neolithic—and Neolithic life in general—and can even transform some of our long-held views on the matter. This was a complex, dynamic, materially elaborate, and, it seems, communally organized site that was constantly in flux. The Neolithic community of Koutroulou Magoula interacted intensely with its immediate landscape and with diverse ecological, terrestrial, and aquatic niches in the plain and surrounding hills and mountains. Domesticated animals in particular shared the space of the tell with its human inhabitants, being thus co-producers of its material presence and history (see Koromila et al., this volume; cf. Overton and Hamilakis 2013). The people of Koutroulou Magoula also partook in a shared local and regional network of communication and cosmological understanding, ex-

changing information, possibly materials and objects such as fine pottery, and perhaps even members of their own community as partners. At the same time, they were also engaged in a long-distance network of circulation and exchange of precious, brilliant, and sensorially and affectively memorable and evocative materials and objects, such as special chipped stones and stone tools. The site also may have had a preferential access to obsidian and/or acted as a center for its regional exchange and distribution. The material and embodied histories of the inhabitants of Koutroulou Magoula would have dialectically weaved together the local/regional senses of place, community, and ancestral memory and temporality with the senses of geographical and perhaps cosmological distance, travel, and participation in remote chronotopic realms.

Notes

[1]All images are copyright of the Koutroulou Magoula Archaeology and Archaeological Ethnography Project.

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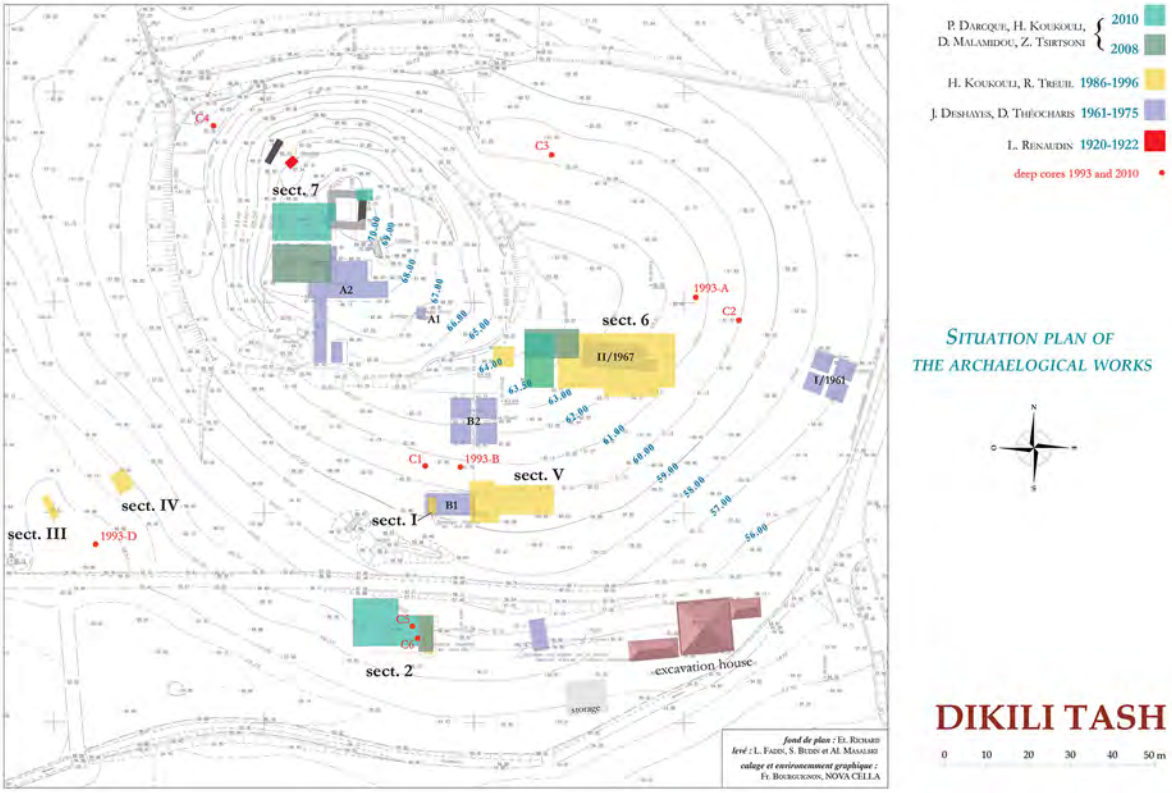
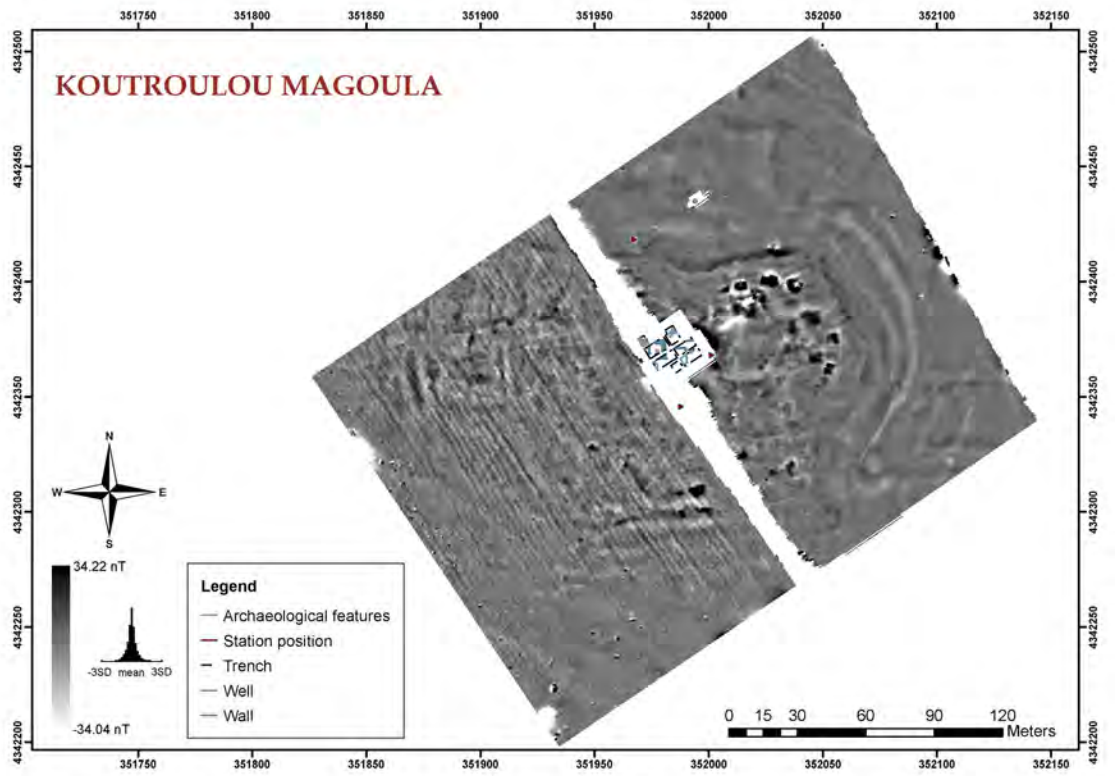
Plate I

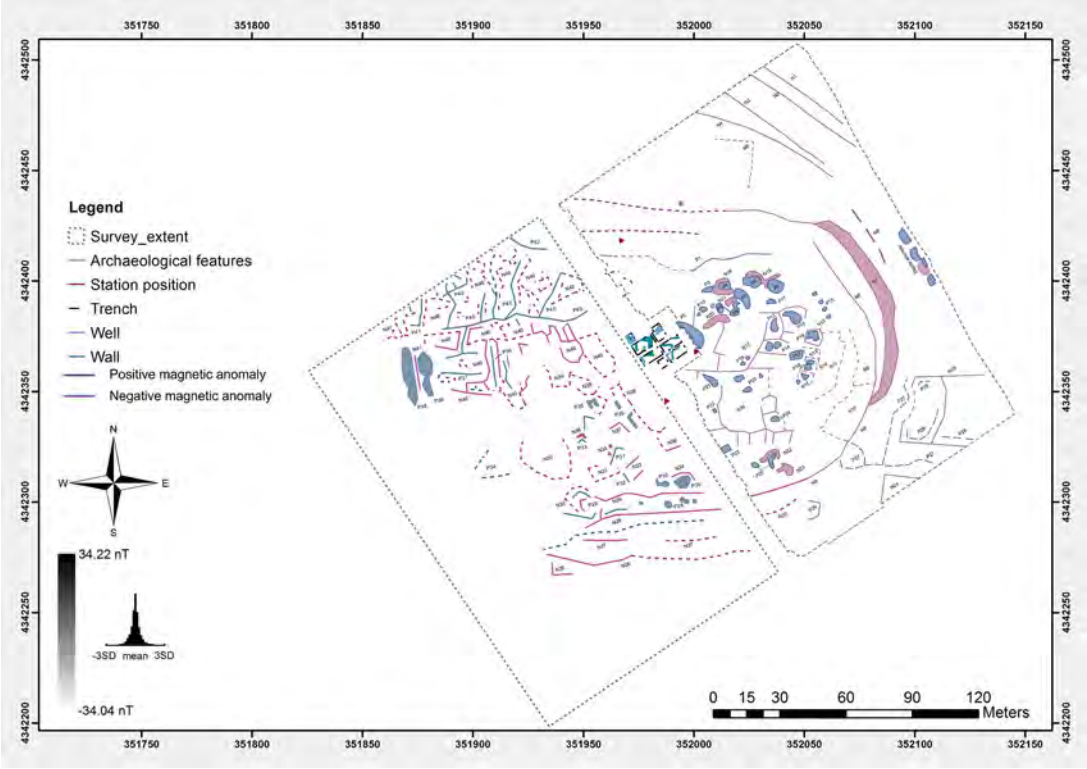


Chapter 5, Figure 3. Topographical plan of the tell of Dikili Tash, showing the excavation trenches.



Chapter 6, Figure 3. Results of the magnetometer survey at Koutroulou Magoula (2012).

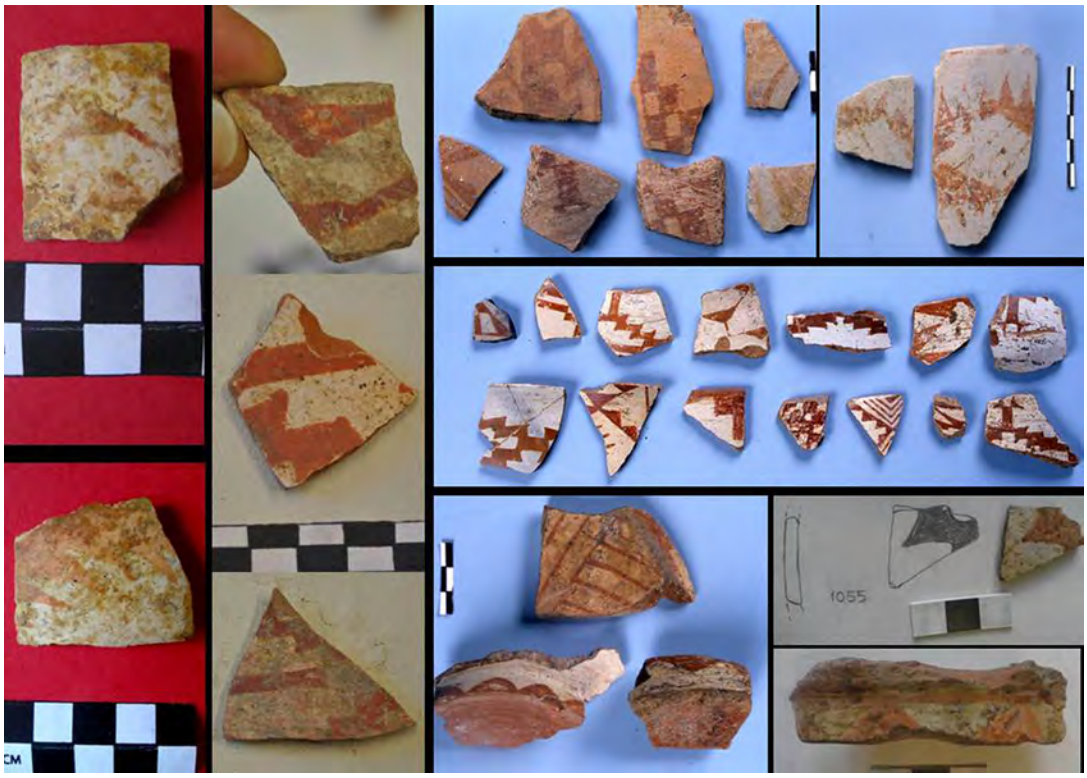
Plate II



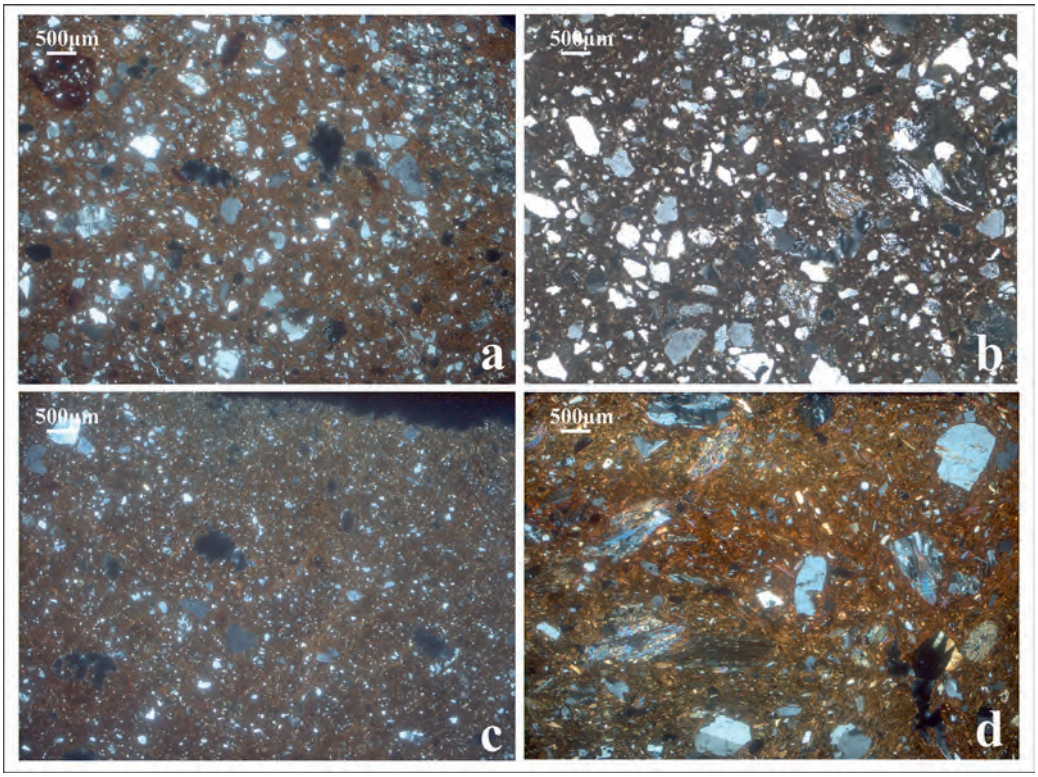
Chapter 6, Figure 4. Interpretation of the magnetometer survey at Koutroulou Magoula shown in Figure 3, on Plate I (2012).

Chapter 6, Figure 8. Some of the clay Neolithic figurines found at Koutroulou Magoula. (Courtesy Fotis Ifantidis, photographer).

Plate III



Chapter 6, Figure 9. Pottery sherds of Red-on-White/Buff ware from Koutroulou Magoula, featuring various flamed, stepped, rectangular, and other linear motifs.



Chapter 6, Figure 14. Microphotographs of Koutroulou Magoula petrofabrics (under crossed polars): (a) Fabric Group 1 (KTM7, Monochrome Red bowl); (b) raw material of KMGS2 (briquette fired at 700 degrees Celsius); (c) Fabric Group 2 (KMF2, figurine); (d) Fabric Group 4 (KTM25, White-on-Red bowl).