

Communities, Landscapes, and  
Interaction in Neolithic Greece  
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# Communities, Landscapes, and Interaction in Neolithic Greece

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## Book of Abstracts

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## Table of Contents

Narratives of space and contemporary archaeological theory .....	1
Social interaction in the farming communities of Neolithic Greece.....	1
Methods, concepts and narratives: tackling the beginnings of Neolithic life in Greece .....	1
A time of their own: tracing the production of the past in the Neolithic .....	2
Islands ‘out of the mainstream’: landscapes of action, settlements and social identities in the Neolithic Aegean.....	3
Opening a new frontier in the Neolithic settlement patterns of Eastern Thessaly, Greece .....	3
Pictures of home: regional perspectives into the building technology of Neolithic Northern Greece.....	4
A road to variation. Divergence among Neolithic settlements in central Macedonia, Greece .....	5
Communities’ interaction and (intended) land use in Neolithic Greece: the testimony of the defensive architecture .....	5
An investigation of Neolithic settlement pattern and vegetation exploitation at Dikili Tash: reconsidering old and new data from the late 5th millennium BC settlement .....	6
Koutroulou Magoula in Fthiotida, Central Greece: a Middle Neolithic tell site in context.....	7
The environment and interactions of Neolithic Halai .....	8
Diros in context: communities, landscapes, and interaction in the Late Neolithic of the southern Greece.....	9
The human use of caves of Aegean Thrace in the Late Neolithic.....	9
<b>II. DYNAMICS OF LANDSCAPES AND SUBSISTENCE .....</b>	<b>11</b>
Let’s landscapes speak.....	11
Socializing landscapes: structure, mobility and interaction .....	11
Cycladic or mainland? The Neolithic landscapes of southern Euboea .....	12
Human – landscape interaction in Neolithic Kephallonia, West Greece: the dynamic role of Drakaina Cave within an insular environment .....	12
Farming strategies at Kouphovouno, Lakonia, in the MN-LN periods .....	13
Animal husbandry and the use of space in the Greek sector of the Late Neolithic settlement of Promachon-Topolnica .....	13

<b>III. INTERACTIONS AND MATERIAL PERSPECTIVES .....</b>	<b>15</b>
Emergent networks and socio-cultural change in Final Neolithic Greece .....	15
Early Neolithic pottery in Greece: interactions and reconsiderations.....	15
Thessaly and Macedonia relations during the Early and Middle Neolithic .....	16
Pottery exchange networks under the microscope: the case of Neolithic Thessaly .....	16
Ritual and interaction during the Final Neolithic period: the example of Aegina-Kolona .....	17
Chipped stone aspects on the interaction among Neolithic communities of Northern Greece .....	18
Making choices in a Neolithic landscape: raw materials and ground stone technology in Neolithic Avgi, Northwest Greece .....	18
<b>IV. A VIEW FROM NEIGHBOURING REGIONS.....</b>	<b>20</b>
The emergence of early Balkan village: Vinča culture settlement in the Mlava River Drainage (Serbia) .....	20
Beyond the horizon; mapping ceramic assemblages in Neolithic Greece and Anatolia.....	20
Mediterranean networks at Neolithic Çukutiçi Höyük. A model for maritime interaction in 7th Millennium BC .....	21
<b>POSTERS .....</b>	<b>22</b>
Humans, animals, and the landscape at Middle Neolithic Koutroulou Magoula: an approach through soil micromorphology and phytoliths.....	22
Kouphovouno: some thoughts about the settlement pattern at the end of the Middle Neolithic .....	23
Pottery production and the raw material resources: the case of southeast Thessaly .....	23
Magoula Visviki revisited: comparing past excavations' data to recent geophysical research .....	24
Landscapes from materials. Communities, landscapes and interaction as glimpsed through the integrated characterisation of Neolithic ceramic assemblages.....	24
Casting a wide network: the Early Neolithic chipped stone from Revenia, Pieria .....	25
Submerged Neolithic landscapes off Franchthi Cave: the measurements from the Terra Submersa expedition and their implications.....	26
Craft traditions and painted pots in caves, an interpretation in the case of Sarakenos Cave (Kopais, Boeotia).....	26
Causality and meta-rules in the social interactions of the early farming communities in the eastern Balkans .....	27



## I. SOCIAL SPACES, COMMUNITIES, AND LIFEWAYS

### **Narratives of space and contemporary archaeological theory**

*Kotsakis Kostas (Aristotle University of Thessaloniki, Greece)*

Recent theoretical discussion places particular emphasis on the concept of space. Understanding space has shifted from a positivist view of an objective and measurable frame of reference, to a dynamic social space where social action takes place, to a phenomenological approach able to incorporate the subjectivities of the embodied experiences of dwelling. Contemporary understandings of networks and interactions reinstate the materiality of the past through their tangible topologies and reassess the objectivity of systematics in seeking the reconciliation of diverging paradigms. These different and diverging trends and approaches will be assessed in the context of the Neolithic studies in Greece.

### **Social interaction in the farming communities of Neolithic Greece**

*Nikos Efstratiou (Aristotle University of Thessaloniki, Greece)*

The presentation discusses the different ways in which archaeologists perceive and reconstruct forms of social interaction in Neolithic Greece. Different categories of archaeological materials, analytical techniques and concepts – in a constant interplay of scales, structures and narratives – have already been employed for this purpose with positive results. In the present contribution it is suggested and argued that social space and its content can act as the interpretative

framework in which individual phenomena, related to economic or technological practice, interplay, in a multitude of ways, with social relations between group members at any given moment. This eventually leads to the description of mechanisms of social interaction in the context of different social realities in time and space. It is also suggested here that, by addressing local stories where empirical finds may be made into something more than simple abstract archaeological categories (ceramics, lithics, bones, seeds etc), we may be able to give form to specific social realities and their dialectic phenomena within the prevailing modes of production and the historical content of the period under study.

### **Methods, concepts and narratives: tackling the beginnings of Neolithic life in Greece**

*Agathe Reingruber (German Archaeological Institute, Germany)*

During the 1950ies V. Miložčić applied in Greek prehistoric research the method of comparative archaeological analyses based on relative chronological schemes. Although he was the first to send charcoal samples for radiometric dating to the radiocarbon laboratory in Heidelberg in 1959, he nevertheless did not accept this method. It was only much later that absolute chronology became widely applied – yet good sequences for statistical modelling are still very few. Nevertheless, the relative chronology of the Early Neolithic in Greece relies on the sequences elaborated by V. Miložčić and D. Theocharis

based on evidence from limited trenches or soundings, excavated according to methods of the past century.

Between 1950 and 1970 concepts deriving from Near Eastern archaeology were applied in Greek archaeology as well. The “Preceramic” was defined by V. Milojčić after K. Kenyons and R. Braidwoods investigations of Pre-Pottery-Neolithic layers in Jericho and Jarmo respectively; the term “Aceramic” was introduced by J.D. Evans shortly after J. Mellaerts excavations in Hacilar. Also the concept of the “Neolithic Package” played a major role in explaining Neolithisation processes in the Aegean. Besides such concepts also assumption were largely involved, for example the assumption that Neolithic inventories with monochrome pottery devoid of decorations, belonged exclusively to the earliest phase of the Early Neolithic (EN I) or that all items belonging to the Neolithic Package were in use from the very beginning, but because of the small size of trenches not always detected.

These approaches favoured roughly created pictures and broad narratives, prominent among them being the swift and complete colonization of Greece from Anatolia. Yet, a re-evaluation of old and new data, freed from assumptions and seen in a broader Aegean perspective, has led to a different view of the beginnings of Neolithic life in Greece. Certain networks and traditions can be traced back to the Mesolithic, for example, the distribution of obsidian from Melos in the Aegean, the use of microliths even in the Middle Neolithic (MN) or the prevalence of burial practices. A considerable time-depth of nearly 600 years, from the first signs of Neolithic

life up to the beginning of the MN (ca. 6600 to 6000 cal BC), saw the successive incorporation of new “stuff” and habits. It is therefore appropriate to introduce other concepts (mobility, interaction, face-to-face contact), and narratives (the spread of innovations) to the discussion of the Neolithisation process.

### **A time of their own: tracing the production of the past in the Neolithic**

*Stratos Nanoglou (Hellenic Ministry of Culture, Greece)*

Landscape archaeology in Greece and the Balkans was linked to ‘the past in the past’ perspective early on, especially as far as the Neolithic is concerned. The very differentiation between tells and extended settlements has been at the forefront of discussions pertaining to the inhabitation of the landscape and indeed it has been interpreted in the light of the different relationship their inhabitants had with the past. There is a cohort of studies that ask how people dealt with their past, depending on the kind of community they were part of and indeed depending on the landscape these communities would have helped form. But in asking that, these studies almost invariably take the past as a given and explicitly or implicitly equate it with the very accumulation of what remains. The past is construed as being there all along, waiting to be found and used. In this paper I revisit the ontological status of the past and ask under what conditions and through which practices the past is produced. That is, I explore the production of the past as a distinct period of time and trace its history in prehistory, asking about the effects of such a history on people's lives.

### **Islands ‘out of the mainstream’: landscapes of action, settlements and social identities in the Neolithic Aegean**

*Evita Kalogiropoulou (Institute for Mediterranean Studies, Greece)*

Humans and landscapes are tied to continuous interaction processes that dynamically and reciprocally transform them. Current debates on landscape studies reconsider the dynamics of human-environment interplays by examining historical embeddedness in landscapes of action, putting emphasis on changes at the local scale, and re-evaluating the impact of social transformations on past communities. These ever-changing properties were involved in the formation of distinct cultural and social identities as people became increasingly entangled with local territories. It has been suggested that new areas of habitation not only sheltered people from the elements and tethered them to places, but that they also created new habitual spaces, formed new identity maps and new conceptual understandings.

Historically, Aegean archaeology has considered islands as special places; as ‘laboratories’ for the study of past communities and human behaviours. It is believed that island social identities were formed by the ontological notion of insularity and connectivity. A progressively increasing number of Neolithic cultural remains in the Aegean basin, however, challenges the widely held perception of islands as stepping-stones for the Neolithization of mainland Greece and give rise to the need for an examination of the causal processes of visits, colonization and settling down. The systematic and broader inhabitation of Aegean islands during the Final Neolithic

period could indicate transformations of social scale as well as possible changes in landscape preferences. Moreover, islands are not involved in the discussion of settlement formations and social organization that is ongoing for Neolithic mainland Greece and that omission has consequences for the interpretation of the trajectories of the Neolithic for this region. This paper examines forms of local social identities and island lifeways in Cyclades and Northern Sporades during the Neolithic period. I attempt a synthesis that holistically examines the fragmented information pertaining to settlement remains along with what this reveals to us about the choices of Neolithic people in terms of their preferred landscapes. Key elements of this analysis are the remains of architectural material culture such as buildings, boundary markers and open spaces.

### **Opening a new frontier in the Neolithic settlement patterns of Eastern Thessaly, Greece**

*Apostolos Sarris, Tuna Kalayci, François-Xavier Simon, Jamieson Donati, Carmen Cuenca García, Meropi Manataki, Gianluca Cantoro, Evita Kalogiropoulou, Georgia Karampatsou, Nassos Argyriou, Sylviane Dederix, Cristina Manzetti, Nikos Nikas, Konstantinos Vouzaxakis, Vasso Rondiri, Polyxeni Arachoviti, Kaliopi Almatzi, Despina Efstathiou and Evangelia Stamelou, (Institute for Mediterranean Studies, Greece - Hellenic Ministry of Culture, Greece)*

ARISTEIA-IGEAN (Innovative Geophysical Approaches for the Study of Early Agricultural Villages of Neolithic Thessaly) project has been running for the past 3 years aiming at the

systematic and extensive geophysical exploration of Neolithic landscape of Thessaly. The research project has been focused in the study of the natural landscape and social dynamics of Neolithic settlements within the coastal environs of eastern Thessaly, Greece. The goal of the project was to offer a broad non-destructive remote sensing coverage of a number of Neolithic settlements in order to study habitation practices that are developed in various ecological niches and document their cultural and environmental characteristics.

The geospatial technologies employed satellite remote sensing images, aerial reconnaissance through the use of UAV, ground based geophysical surveys that engaged new generation prospection instrumentation and soil analyses. The manifold research agenda which was developed specifically to approach the particular archaeological questions proved effective for the detailed mapping of the natural properties of the soil that hindered the archaeological residues of the past occupation. The engagement of the specific methods was possible to capture both the horizontal and vertical extent of the cultural layers offering a more holistic image of the plan of the settlements.

The results of the methodology applied proved to be revealing in terms of the internal organization of space of the tells (magoules) and the usage of space in their vicinity, outlining at the same time details of the environmental settings of the Neolithic settlements. The intra-site distribution and clustering of dwellings, the structural differences of them (daub or stone made structures of variable sizes), the existence of ditches and

enclosures demarcating the limits of the sites and the differentiation between habitation quarters and open spaces within the settlements, the existence of corridors and entrances within the enclosures are included among the various finds of the campaign.

Dealing with relatively small size mounds or much larger extensive settlements, the project revealed a large degree of variation in the occupation of the landscape and the usage of space. The study was able to capture an integrated image of the habitation settings and to highlight the large degree of divergence in the settlement patterns of these agrarian societies in Neolithic Thessaly.

### **Pictures of home: regional perspectives into the building technology of Neolithic Northern Greece**

*Dimitris Kloukinas (Cardiff University, U.K.)*

The study of building remains, even when mundane in nature, constitutes an appropriate field for the understanding of prehistoric house-based societies. Domestic dwellings, apart from spatial-organisational features and key analytical social units, constitute technological and social products that can be subjected to similar conceptual schemes as other artefact categories (Stevanović 1997). Following this, the present paper will address some of the entwined components of building technology in Neolithic northern Greece (Macedonia and Thrace). The main objective is to synthesise the principal characteristics and workings of house construction, as well as to trace recognisable patterns of homogeneity or variability and

continuity or discontinuity within different spatiotemporal scales.

During the last few decades, intensive fieldwork in the form of rescue excavations or more systematic projects has considerably enriched the architectural record of the area under consideration. The large number of excavated settlements and, therefore, dwellings has offered the potential for a more comprehensive regional analysis of building practices. It will be supported that, although portraying a more or less mutually tangible ‘architectural vocabulary’, the available evidence indicates a significant degree of intra-regional variability. This refers not only to certain stages of the building process, but also to the fundamentals of house construction. The plurality of ways in which Neolithic inhabitants built their dwellings can only partly be attributed to external broad-limiting factors or ‘pragmatic’ considerations (including material and environmental constraints or the differential level of technological know-how and skills). As a result, the adoption and distribution of specific technological conceptions or solutions will also be viewed as the outcome of social and culturally defined choices. In addition, their circulation can be indicative for the operation of overlapping networks of communication and social interaction between contiguous or more distant communities.

#### **A road to variation. Divergence among Neolithic settlements in central Macedonia, Greece**

*Maria Pappa, Stratos Nanoglou and Melina Efthymiadou (Hellenic Ministry of Culture, Greece)*

Vasilika Kyparissi is indeed a site known for some time now, investigated as it was in the 1980’s and publicised as Vasilika C. The site has been at the centre of discussions pertaining to the size of Neolithic communities, although its internal occupational structure was elusive, due to the limited excavation. New research carried out in the past two years allows a better understanding of its inhabitation practices and sheds new light as much as it complicates the picture. This is especially so, in view of major projects carried out in a number of extended sites, like in Makriyalos, Pieria or in Thermi, Thessaloniki, which lies just a few kilometers away from Kyparissi. Presenting a first summation of our work at the site, we place it within this emerging new context and offer a few comments on the consequences of these early results on the character of the community and its relevance to the reconstruction of the landscape with which its people interacted.

#### **Communities’ interaction and (intended) land use in Neolithic Greece: the testimony of the defensive architecture**

*Tomas Alusik (Czech Centre for Mediterranean Archaeology, Czech Republic)*

Since the prehistory the people tried to secure the safety of themselves, their relatives and properties during the settlement location choices. In various periods and regions they relied purely on the topographical qualities of their settlements, elsewhere and at other times they took precautions against any possible danger by construction of the defensive architecture,

most often by means of outer fortification in the form of an enclosure wall. In the area of Greece the earliest examples of fortifications are known already from the Neolithic, especially from the late phases of this period.

In this paper, not only the architectural typology and the summary of Greek Neolithic fortifications will be done. It will be mainly focused on the connection among the form (type) of the defensive architecture, the way of the defence of the settlements and land use. It will investigate if the ways of defence, which are better known and documented from the following Bronze Age, existed already in the Neolithic, i.e. defence of the settlement boundary/perimeter, defence of the selected (important) structures, founding of the fortified refuge area and the preventive way of defence (usually of the wider area) based on the monitoring of the surrounding landscape and the quick reaction upon the potential danger.

The existence, form and appearance of the defensive architecture also testify the extent and way of communities' interaction and land use. By the construction of the outer fortification the community demonstrates its claim to the use of the close vicinity of its settlement. By the establishing of the advanced lookout posts or smaller forts it can widen or shift the boundaries of "its" territory even further and – in case of need – can also secure, for example, the safe access to the port or to the natural resources (water, forest, quarry etc.).

The author will thus carry out within selected (micro) regions the analysis of the above-stated assumptions and facts. On their basis he will define the ways of defence and land use in the

individual phases of the Neolithic, which will then try to generalize into the universal model.

**An investigation of Neolithic settlement pattern and vegetation exploitation at Dikili Tash: reconsidering old and new data from the late 5th millennium BC settlement**

*Dimitra Malamidou, Zoi Tsirtsoni, Maria Ntinou, Sultana-Maria Valamoti, Haido Koukouli-Chrysanthaki and Pascal Darcque (Hellenic Ministry of Culture, Greece - Le Centre National de la Recherche Scientifique, France - Aristotle University of Thessaloniki, Greece)*

Dikili Tash appears today as one of the prehistoric settlements with the longer occupational sequences in the Aegean and the Balkans (ca. 6500-1100 BC). Thanks to the researches of the last fifty years within the site itself and in the surrounding plain of Philippi, Dikili Tash offered information (already presented elsewhere) for understanding the formation process of the tell and the role of physical and anthropogenic processes in landscape formation.

In this paper we focus on a particular time-window of this long sequence, the years around 4300-4200 cal BC, for which we dispose of a large range of high-resolution data from the same context. Indeed, open excavation of sector 6 in big surfaces allowed the exploration of the spatial arrangement and household organisation of the settlement of this date. The buildings that were fully excavated in this sector had been destroyed by fire, thus preserving in situ evidence for a wide array of activities in many cases related to organic materials

that otherwise would have been lost from the archaeological record.

The architectural, artefactual, anthracological and archaeobotanical evidence from these buildings are examined together in an interdisciplinary and integrated approach of the interaction between human societies and their natural environment towards the end of the 5th millennium B.C. Among other issues are discussed the exploitation of vegetation (for food, construction, crafts), in connexion with the specific circumstances under which we perceive it in the archaeological contexts.

The evidence discussed here allows a consideration of new and old data from one of the last Neolithic phases at Dikili Tash, within a framework of a long process of landscape modification that began, based on recent evidence, with the onset of the Neolithic in this region.

### **Koutroulou Magoula in Fthiotida, Central Greece: a Middle Neolithic tell site in context**

*Yannis Hamilakis, Nina Kyparissi-Apostolika, Tom Loughlin, Tristan Carter, Stella Katsarou, Angeliki Kaznesi and Areti Pentedeka (University of Southampton, U.K -, Hellenic Ministry of Culture, Greece - Qatar Museums, Qatar - McMaster University, Canada - British School at Athens, Greece)*

The site of Koutroulou Magoula near Vardali and Neo Monastiri in Fthiotida was first excavated in 2001 under the direction of N. Kyparissi, but, informally since 2009, and formally since 2010, is being investigated by the Koutroulou

Magoula Archaeology and Archaeological Ethnography project, co-directed by Kyparissi and Hamilakis. As part of this project, in addition to systematic excavation, a wide range of analytical methods are employed, as well as a diverse array of ethnographic, public and community archaeology practices. In this paper, we will start by presenting the main preliminary results of this project (from 2010 to the present), and continue by placing the MN settlement of Koutroulou Magoula 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. Somewhat surprisingly for such an inland site, more than half of the assemblage (58%) is made of obsidian, most (if not all) of which has all the visual characteristics of coming from the Cycladic island of Melos. These links with Cyclades were almost certainly mediated by other sites, as we lack the whole knapping sequence, with cores arriving at the site largely preformed/part worked. A small quantity (1%) of the tools is made from a very distinctive and high quality 'honey flint'. These were exceptional and much looked after and curated pieces that would have been very much appreciated, and capable of transferring social information through their rarity and distinction. The exact location of this material remains a mystery but has long believed to come from regions to the north, either Epirus/Albania, or perhaps Bulgaria.

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 Central Greece. An exception here are few drinking vessels which show decoration patterns pointing to other 'cultural' traditions (e.g. geometric patterns from southern central Greece). This macroscopic picture seem to be confirmed by petrographic analysis on both, pottery vessels and figurines. Only one figurine sample is characterised by compositional attributes that are incompatible with local geology, and could possibly have come from the area of Microthebes.

### **The environment and interactions of Neolithic Halai**

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The people of the village of Neolithic Halai, on the shores of the northern part of the North Euboean gulf at the east side of the bay of Atalanti, interacted with both the marine and terrestrial environment. Sea level probably rose about 10 m. during the Neolithic occupation, from ca. 600-5300 B.C., and

people gradually lost some of their farm land. Marine resources were probably a significant part of the diet, including large fish (one bone is of a tuna about 2 m. long) and shellfish. Shells, besides being a food source, were also worked into ornaments, including Spondylus. Spondylus was exported throughout Europe during the Neolithic and Chalcolithic periods from Aegean sites like Halai, both as a raw material and as finished ornaments, especially bracelets.

The terrestrial area around Halai is one of low hills and small valleys which satisfied most of the needs of the community for food for themselves and their animals. Local raw materials such as wood and stones for tools and clay for pottery covered most of the community's needs. The main external commodity attested is obsidian, which was imported in significant quantity in the form of partly prepared nodules, which were worked into tools on site. Food resources included the usual Neolithic crops and animals and scientific research is on-going concerning the human and animal diet.

The bay of Atalanti and the immediate area of the North Euboean gulf together form a basin-like area which is ringed with Neolithic villages, mostly dating to the MN and LN periods, i.e., contemporary with the occupation at Halai. The topography is ideal for local interactions by sea and it is open at either side to the great sea route (θαλασσινός δρόμος) that provided long-distance communication along the eastern side of the Greek mainland throughout history. The Middle Neolithic pottery from Halai and other sites around the bay of Atalanti has close parallels in the interior areas of Phokis and



Boeotia (e.g., Elateia, Chaironeia, Orchomenos), with which there was easy communication via the pass leading WSW from Atalanti. Parallels with Thessaly are somewhat less close and there are relatively few with the Peloponnese until the advent of Matt Painted ware in the Late Neolithic period. We may tentatively conclude, therefore, that in the Middle Neolithic there was active interaction between the North Euboean gulf and the immediate inland areas of central Greece by land and more limited interaction, probably mainly by sea, with Thessaly, as documented by the distribution of obsidian. In the Late Neolithic interactions increase between all these areas.

#### **Diros in context: communities, landscapes, and interaction in the Late Neolithic of the southern Greece**

*William Parkinson, Anastasia Papathanasiou, Michael Galaty, Daniel Pullen, Panagiotis Karkanis and Giorgos Papathanassopoulos (Field Museum of Natural History, U.S.A. - Hellenic Ministry of Culture, Greece - Mississippi State University, U.S.A. - Florida State University, U.S.A. - American School of Classical Studies at Athens, Greece)*

In this paper, we explore the evolution of coastal settlement dynamics during the Late and Final Neolithic of the southern Peloponnese and the islands of the Aegean. Using our ongoing research in Diros Bay as a case study, we investigate the variation in settlement patterns that occurred from the sixth to fourth millennia BC. We discuss the results of our recent intensive survey in Diros Bay as well as our multi-disciplinary investigations of Alepotrypa Cave and Ksagounaki Promontory. Our goal is to situate these sites in the Mani

within the broader context of contemporaneous Late and Final Neolithic sites in the southern Aegean, such as Kouphovouno and Geraki in Lakonia, Franchthi Cave in the Argolid, and Strophilas on Andros.

#### **Fluid landscapes, bonded people? The role of burial areas as places for interaction, exchange and deposition during the Final Neolithic period in central and southern Greece**

*Katerina Psimogiannou (University of Illinois at Chicago, U.S.A.)*

The Final Neolithic period in central and southern Greece is considered to have witnessed a transformation of the landscape and a general change in settlement patterns. The use of marginal environments and the dispersion of small sites, which were probably engaged in long-distance trading, imply extended and more fluid social networks of interaction. At the same time, the archaeological record indicates an intensification of mortuary expression through the creation of several burial areas where continuous practices of exchange and deposition of material culture seem to have taken place. This paper reviews old and new evidence, and presents recent analysis on material from several sites in the above region (e.g. Phthiotida, Attica, Laconia), supported by new radiocarbon dates, in order to elaborate on the role of these mortuary areas as focal places for social integration in the end of the Neolithic period.

#### **The human use of caves of Aegean Thrace in the Late Neolithic**

*Anna Panti (Hellenic Ministry of Culture, Greece)*

The study of prehistory of Aegean Thrace due to its key position to the crossroads between the Balkan peninsula and the Mediterranean world is significant in defining the cultural influences exercised between these regions. Our knowledge about the prehistory of Aegean Thrace is limited. Only a few sites, such as Paradimi, Paradeisos and Makri have been thoroughly investigated. In the region of Aegean Thrace there are several cavities, caves and small rock shelters which were inhabited from prehistoric times to late byzantine era. The peak period of caves inhabited by human communities not only in Aegean Thrace but generally in Northern Greece is the Early Bronze Age.

In the southern foot of Rodopi, on Mount Ismaros, there are situated the Maroneia cave, known as the Cyclops' cave and the cave complex of the Strymi gorge, caves A and B. Several smaller cavities are observed along the cliffs of the ravine. The distance between them is rather small, about 5km and both of them have easy access to the sea. The cave of Maroneia is 5km distant from the sea and the Strymi complex 11km.

The first has been excavated by the Ephorate of Palaeoanthropology and Speleology of Northern Greece. In the Strymi complex was recently conducted a survey.

The examination of the pottery indicates that the earliest human use of these caves is dated in Late Neolithic period. The study of the pottery of both sites reveal similarities with Paradimi IV, Paradeisos, Karanovo IV, Vinča etc.

The stratigraphy of Late Neolithic period of the Maroneia cave consists of successive red clay masses, black layers representing open fire remains and lenses of grey-white ash densely packed. The main organic material preserved consist of burnt coprolites. Obviously shepherds used to set fire to the whole internal space for sanitary purposes. It seems that the Maroneia cave was inhabited by transhumant pastoralists that moved through the district of Rodopi and the valley of the Strymon river on a regular base as it is known for the inhabitants of other neighbour sites.

It is hoped that the examination of the pottery will reveal the cultural influences among the sites on Ismaros as well as with the neighbouring regions of Aegean Thrace and the Balkan peninsula.

## II. DYNAMICS OF LANDSCAPES AND SUBSISTENCE

### **Let's landscapes speak**

*Maria Pyrgaki (Hellenic Open University, Greece)*

The last three decades have produced a wide range of methodological developments in the study of landscape. The landscape during the Neolithic has been influenced by the interactions of water and human land use. This paper aims to present an overview of the research about the Neolithic off-site land use in Greece, based on old and new data and techniques. Our focus is on the well-known Neolithic record of Thessaly and Macedonia and also the Peloponnese and Attica with decidedly lowest density of Neolithic sites and elsewhere. Land use changes and landscape processes are influenced by multiple bio-physical and socioeconomic factors in a multi-scale system.

This paper will answer questions such as: What sorts of activities can be identified? What about the off-site land use intensity? What is the major source of subsistence? Land use changes should be analysed in isolation or with accounting for both on-site and off-site effects on landscape processes?

### **Socializing landscapes: structure, mobility and interaction**

*Stella Souvatzi (University of Thrace, Turkey)*

This paper explores some of the many ways in which people in Neolithic Greece constructed and used the wider landscape,

moved across it, projected meanings onto it and ultimately transformed it into a social landscape.

Traditional approaches have tended to focus almost exclusively upon resources and environmental conditions in order to reconstruct past landscapes, and to view these, in addition, from a strictly economic, or rather economicist, perspective – for instance, through a need for intensification of land exploitation and productivity – thus often projecting capitalist notions onto past societies. Recent studies, however, increasingly move towards a view of the landscape as a social and historical construct, advocating greater account of human perception, agency and meaning, which so far has been little embraced in Neolithic eastern Mediterranean studies.

This paper argues that associations of people with land are not a series of formalistic or technical matters, but configurations of relationships linking the social, economic and ideological spheres. Although it makes sense to consider land in terms of economy or the natural environment, life is conceivably a lot more complex and variable. The negotiation and reproduction of wider social relationships and dependencies, ideologies and cultural meanings might also shape the connection between people and land. This approach is explored from the perspective of village communities in Neolithic Greece, particularly through a synthetic examination of settlement patterns, architecture, residential mobility, and production practices. A main aim is to demonstrate the diversity of links to

land at multiple scales of space and time. In doing so, the paper includes questions to do with social networks and with the mapping out of different social groups.

### **Cycladic or mainland? The Neolithic landscapes of southern Euboea**

*Zarko Tankosic and Markos Katsianis (Norwegian Institute at Athens, Greece - Aristotle University of Thessaloniki, Greece)*

We present a first preliminary report on the Neolithic use of space in southern Euboea in an attempt to approach the way the landscape was populated and socially constructed during the Neolithic times in this part of Greece. To achieve this we use legacy published and unpublished data in combination with newly acquired evidence from surface surveys and pertinent excavations. GIS are employed to combine data recorded in different scales and using alternative observation methods (extensive fieldwalking, tractwalking, gps survey, systematic material collection, excavation) into a normalised and coherent body of information that can be collated with other data sources and explored through formal statistical methods. An initial assessment of the spatial distribution of sites and off-site material in comparison to ground visibility, terrain relief and soil characteristics using exploratory data analysis suggests the existence of large-scale land management consisting of deliberate avoidance of larger habitation on agriculturally significant land. Moreover, the situation in southern Euboea mirrors in many ways the one in the Cyclades, where there is no evidence of permanent and more substantial habitation predating the Late or even Final Neolithic. Finally, there is

some tentative indication that ritual use of landscape predates the Neolithic peopling of this part of Greece.

### **Human – landscape interaction in Neolithic Kephallonia, West Greece: the dynamic role of Drakaina Cave within an insular environment**

*Georgia Stratouli and Odysseas Metaxas (Hellenic Ministry of Culture, Greece)*

Drakaina Cave is part of an impressive landscape feature, situated on the steep cliffs of a gorge at the coast of southeastern Kephallonia. The location of the cave was most probably conducive to its use for communal gatherings with a social-symbolic aspect. In this framework, a reciprocal relationship should have existed between the landscape and the groups residing in the area: the gorge and the cave were instrumental in shaping the cosmological and mythological narratives of the locals, while those narratives were to a large extent implemental to the appropriation of the landscape through a certain usage of the cave, thus shaping its cultural sequence during the Neolithic.

However, a broader look at the insularity of Kephallonia has to be undertaken. Seafaring was critical for the long-term viability of local groups, but entailed several challenges on a social level. We will argue that certain findings, as well as facets of the cave's use have a pronounced local, idiosyncratic character and that this was possibly related to the negotiation of 'local' vis à vis 'interlocal' identities. The use of the cave in the imposing gorge, which was perceived as perennial, highly

charged within the local cosmological web, could have a crucial role in balancing the asymmetries created by interregional connectivity. This is significant because the gorge was connecting the natural harbor in its area with the interior of the island, likely to be a locus of contact between the islanders and the neighboring areas, including those on the opposite mainland, through exchange networks.

Therefore a twofold significance of the landscape, i.e. on a local level (the gorge as a monumental feature) and on an interregional level (connectivity through the lens of insularity), can be detected and taken into account in the discussion of the social aspects of the cave's use.

### **Farming strategies at Kouphovouno, Lakonia, in the MN-LN periods**

*Bill Cavanagh (University of Nottingham, U.K.)*

The site of Kouphovouno, just south of Sparta, is one of the main Neolithic sites in Laconia. It was first settled in the Middle Neolithic period and developed into a large village with remains occupying some 4–5 hectares, flourishing particularly over the period c. 5800-5000 BC. The investigation of the environmental remains from the site has brought together the results from a number of researchers on faunal and plant remains, incorporating stable isotope analysis. The aim is to investigate methods crop management and animal husbandry in the context of small-scale, closely integrated farming, but also investigating the seasonal management patterns of livestock and test the hypothesis of whether the farmers practised any

form of transhumance. The paper will present an overview of research thus far and the latest results. These findings have implications for our understanding of the process of transformation that southern Greece underwent in the course of the later sixth millennium BC.

### **Animal husbandry and the use of space in the Greek sector of the Late Neolithic settlement of Promachon-Topolnica**

*George Kazantzis (University of Sheffield, U.K.)*

Excavations on the border between Greece (sector Promachon) and Bulgaria (sector Topolnica) in the basin of Strymonas, central Macedonia, Greece, have revealed 'flat-extended' settlement dating to the Late Neolithic. In addition to the rich array of material culture evidence, the excavation yielded a substantial quantity of animal bone remains, thus offering an unparalleled opportunity to study the human-animal relationships.

This paper will focus on husbandry strategies at the Greek sector of Promachon and will examine the role of the domestic livestock and their contribution to the economy of the site. Within Promachon, animal remains indicate an economy particularly tuned to the production of meat; however, a small-scale exploitation of caprines and cattle for milk could also be inferred. This information is valuable, considering the scarcity of data from contemporary settlements across central Macedonia in general, and the basin of Strymonas in particular. The substantial better representation of cattle in Promachon than any other settlement in Greek Macedonia, suggests that, to

some extent, husbandry practices in Promachon are linked to settlements of the Balkans. Of additional interest is the presence of a "communal" structure in Promachon, rich in material culture evidence and animal bones, thus creating an interesting contrast to the rest of the deposits, which indicate a more likely household origin.

This paper will present new information on subsistence strategies in an underrepresented area of northern Greece during a time-period (fifth and fourth millennium BC), that is

considered one of the most dynamic eras of the prehistory of southeastern Europe. It will also clarify both temporal and regional trends in animal management, placing Promachon in the broader spectrum of contemporary agro-pastoral communities and creating an integrated picture of human-animal relationships that encompasses both the basin of Strymonas and Greek Macedonia.

### III. INTERACTIONS AND MATERIAL PERSPECTIVES

#### **Emergent networks and socio-cultural change in Final Neolithic Greece**

*David Smith (University of Liverpool, U.K.)*

The Final Neolithic period on the Greek mainland is a period of significant cultural change which nevertheless remains very poorly understood. Previous study has been made difficult both by a general lack of stratified archaeological deposits and by a relative lack of published Final Neolithic material. However, with increasing volumes of data being generated by survey and excavation and with cultural features considered prototypical of the Early Bronze Age now recognised during the preceding period, there exists a pressing need for a comprehensive analysis of the nature of cultural change during this phase and the processes through which it was enacted.

Complexity discourse has moved beyond the binary categories of simplicity and complexity or egalitarianism and hierarchy (see Wynne-Jones and Kohring 2007). In its place is a more flexible understanding of the interrelationships and tensions between contemporary and complimentary social and economic processes conducted across multiple scales. At the same time, the idea of ‘emergence’ in complex systems has been used to explain the seemingly spontaneous appearance of new cultural phenomena. Drawing upon recent network-thinking and complexity ideas, this paper will examine the emergence and maintenance of social and economic networks during the Final Neolithic period on the Greek mainland and

the visibility of shared identities between local and inter-regional groups. Importantly, it will make clear the role of these discrete regional and inter-regional networks in diachronic social and cultural innovation, when and where such processes took place and also how these components were manipulated to both frame and negotiate social identity in traditionally ‘peripheral’ areas.

#### **Early Neolithic pottery in Greece: interactions and reconsiderations**

*Lily Bonga (Institute for Aegean Prehistory, Greece)*

The site of Mavropigi-Filotsairi in western Macedonia provides a fresh look at Early Neolithic Greece. Its geographic location on a natural crossroads between the Balkans and southern Greece is reflected in the cultural material, which demonstrates affinities with sites in the surrounding plains and valleys. These connections offer new information on the process of Neolithisation in the Balkan Peninsula by early farming groups via Greece.

Take for instance the decorated pottery, which falls into two main groups—painted and “Impresso.” The polychrome painted pottery and some of tool-made “Impresso” examples find their closest parallels in the Korça basin in southwest Albania (i.e., the “Devollite” type at Vashëmi and Podgorie). The red-on-white painted pottery, however, is similar to that from the Macedonia plain (i.e., Nikomedia and Paliambela)

and further south in Thessaly. White-on-red like that the Macedonian plain (i.e., Yiannitsa B and Axios) or Pelagonia (i.e., Velušina and Porodin) is rare. Given that Mavropigi-Filotsairi was occupied for several hundred years, these observations indicate that exchange was more routinely carried out to the northwest, rather than the northeast or south.

Additionally, the variety in decoration and quantity of vessels challenges previous notions of Early Neolithic Greek pottery production on a limited scale and as having more of a symbolic value rather than simply a tool for cooking or storage. It suggests a more nuanced processes of production and consumption.

With its early radiocarbon dates (6590–6450 to 6200–6010  $2\sigma$  BC), Mavropigi-Filotsairi's ceramic assemblage challenges the established chronologies for painted pottery and "Impresso" pottery in both Greece and the neighboring regions, which has ramifications regarding the direction and rate of "leapfrog colonization." While it may seem fairly straightforward the movement of Early Neolithic people was predetermined by geographical features, the question to what extent cultural preferences dictated the communication with certain areas must also be considered. This is a particularly relative point precisely because "Impresso" and white-painted pottery have traditionally been the focus of cultural periodization in the Balkans (i.e., Starčevo –Criş Culture) and later in the Adriatic (Impressed Ware Culture).

### **Thessaly and Macedonia relations during the Early and Middle Neolithic**

*Dushka Urem-Kotsou, Anastasia Dimoula, Gazmed Elezi, Trisevgeni Papadakou, Anna Papaioannou, Niki Saridaki, Ioanna Siamidou, Teresa Silva, Eirini Tzemopoulou and Kostas Kotsakis (Democritus University of Thrace and Aristotle University of Thessaloniki, Greece)*

Based on the pottery analysis of sites from central and western Macedonia, it can be argued that there is a close connection between these regions and Thessaly during the Early and Middle Neolithic. However this wide network of communication may have been remodeled as manifested through pottery. For instance, sites like Revenia, Ritini and Varemnoi Goulon during the Middle Neolithic appear distinct from Paliambela Kolindros. In this paper we shall present data from sites from the areas of Pieria and the middle reaches of the Aliakmon River, both morphological as well as data from petrographic thin section analysis.

### **Pottery exchange networks under the microscope: the case of Neolithic Thessaly**

*Areti Pentedeka (Austrian Academy of Sciences, Austria)*

Thessaly, situated in the heart of the Greek mainland, comprises a diverse landscape, combining mountain formations, flat plains, river valleys, lacustrine environments and coastland in harmony. It was a densely populated area during the Neolithic, the majority of settlements forming tells, others being extended, while cave habitation is also attested. A rich and rather uniform pottery production characterises the



entire region throughout the Neolithic period, forming a robust typology that has heavily influenced our view of the Neolithic of Central and Northern Greece, while until recently it was widely accepted that Neolithic pottery did not circulate, and when it did, this concerned only highly decorated finewares, which acted as rare goods.

A large-scale research programme on the archaeometric analysis of both coarse and finewares attested in Neolithic Thessaly focused on potting traditions and regional connectivity, including pottery deriving from a large number of settlements in Thessaly and combining excavation and surface/survey contexts. The detection of a) different production centers, most frequently ware-specific, b) the parallel activity of different exchange networks, and c) the variability of distribution patterns of the pottery produced, have significant connotations for the unravelling of the complex relations developed between settlements situated in different micro-environments and the recognition of inter-regional diversification in Thessaly. The study of exchange and its networks reveals a new perception of the Thessalian landscape within the Neolithic cosmos, which appears less uniform and more segmented, yet more "human" than originally considered.

### **Ritual and interaction during the Final Neolithic period: the example of Aegina-Kolona**

*Eva Alram-Stern (Austrian Academy of Sciences, Austria)*

Excavations in Final Neolithic contexts of the settlement of Kolonna on Aegina in the Saronic Gulf revealed 26 human

figurines which have been classified into several types. Especially the naturalistic types seem to be unique by a most precise representation of details like their partly removable headdress. Otherwise, especially the more schematic types have similarities to other finds in the Aegean, in Southern as well as Northern Greece and in the Balkans. However these stylistic connections go far beyond their shapes and their standing or sitting position, but also concern details pointing to similarities in dress and decoration. Therefore we have to consider that people in a large area shared similar perceptions of their costume.

Furthermore, special interest should be focused on a deposit of 12 entire and 6 parts of figurines in a stone-lined pit inside a house of which six had been set into miniature bowls. This ritual deposit is unique in Southern Greece, but its concept has similarities to the famous house model of Platia Magoula Zarkou as well as the deposit of figurines in a pot in Ghelaiesti/Rumania. In addition, the use of miniature bowls alongside figurines is known in Northern Greece. This relation to the North reminds us of the wide-spread distribution of symbols like the so-called ring-pendants.

Therefore we should consider that during the Final Neolithic period the Balkans, Greece and the Aegean were not only connected by technological innovations and exchange of goods but also by a similar perception of ritual objects and ritual. Since various features discussed above are wide-spread phenomena connecting the Balkans and the inland of Greece with the Aegean we argue that their distribution was based on a

complex social network covering the entire area discussed above.

### **Chipped stone aspects on the interaction among Neolithic communities of Northern Greece**

*Odysseas Kakavakis (Hellenic Ministry of Culture, Greece)*

It has long been acknowledged that material culture in prehistory served, among other functions, as a means of demonstrating individual, group, and regional identities. The Neolithic populations of Northern Greece developed diverse cultural traditions, but they were always in close contact and shared a great deal in common. Communication and exchange have been the focus of considerable attention and research over the last decades. However, within a puzzling network of sites where evidence is often scanty and fragmentary it is indeed difficult to come up with answers and figure out actual connections and interrelations.

This paper focuses on communication and interaction among Neolithic people of Northern Greece from the perspective of the chipped stone industries. Chipped stone is a durable and variable material that is encountered in all Neolithic settlements. At the same time, it is a dynamic tool of analysis and knowledge because the production sequence can be studied and reconstructed in its totality. Lithic raw materials are, in addition, assignable to specific or potential sources (local, regional, or distant) on the grounds of geochemical and petrographical evidence.

The primary aim of this study is to analyze the different aspects and characteristics of the chipped stone assemblages in order to look more closely into patterns of acquisition, production, and exchange. Within this framework, emphasis will be placed on shifts in chipped stone patterns during the settlements' lifespan. Evidence that comes from lithic procurement sites and activity areas, although partial and preliminary, may also contribute towards a better understanding of the production contexts and the lithic resource management from a territorial perspective. In this regard, chipped stone analysis is expected to provide an insight into the changing conditions in which the Neolithic farmers interacted with each other.

### **Making choices in a Neolithic landscape: raw materials and ground stone technology in Neolithic Avgi, Northwest Greece**

*Tasos Bekiaris, Christos Stergiou and Stella Theodoridou (Aristotle University of Thessaloniki, Greece)*

Ground stone objects constitute indispensable and rather essential material elements of the Neolithic life. Archaeological interest on such artifacts was for many years confined to their techno-morphological description, failing to sufficiently integrate them into the Neolithic technological and social practices. Excavations at the Neolithic Settlement of Avgi (c. 5650-4500 cal BC), at the region of Kastoria, Northwestern Greece, brought to light one of the largest ground stone assemblages known from Neolithic Greece. More than 8000 ground stone tools and objects, raw materials and by-products comprise a valuable record for investigating how ground stone

technology was articulated (produced, consumed and discarded) in the context of a Neolithic community.

This paper examines ground stone technology by focusing on the selection of rocks and minerals employed in the production of ground stone artifacts at Neolithic Avgi. The availability of diverse raw materials (sandstones, limestones, marls, conglomerates and ophiolites) in the sediments of the Mesohellenic Trough, where the Neolithic Settlement is situated, and the large size of the assemblage allows for a thorough exploration of the technological choices made by the Neolithic stoneworkers during various stages of ground stone manufacture. By correlating specific tool-types (grinding stones, abraders, percussion tools, edge tools, maceheads) with

various raw materials, we explore how the physical properties of the rocks were perceived by the Neolithic people. Furthermore, we investigate the various criteria through which material selection and ground stone production was achieved. The paper suggests that these were complex technological procedures and that human choices were determined not only by environmental or mere 'practical' factors (e.g. the proximity and availability of the resources, the appropriateness and workability of the rocks), but they were formed and practiced in accordance with various social aspects (e.g. participation in social networks, interaction with other social groups, technological traditions, aesthetics and symbolic values).

#### IV. A VIEW FROM NEIGHBOURING REGIONS

##### **The emergence of early Balkan village: Vinča culture settlement in the Mlava River Drainage (Serbia)**

*Dušan Borić, Duško Šljivar, Bryan Hanks, Roger Doonan, Miroslav Kočić and Dragan Jacanović (Cardiff University, U.K. - National Museum Belgrade, Serbia - University of Pittsburgh, U.S.A. - University of Sheffield, U.K. - National Museum Požarevac, Serbia)*

The paper presents evidence from the Middle/Late Neolithic settlement of Oreškovica-Selište located in north-eastern Serbia. The site is dated to the early phases of the Vinča culture, i.e. the period from around 5400 to 5000 cal. BC. Results of geophysical prospection indicated multiple ditches and a palisade around a substantial settlement covering ~6.1 ha. These results have been confirmed by excavation of enclosure features. Oreškovica is among the earliest elaborately enclosed settlements in the Balkans. The site is located in the immediate vicinity of the copper-rich mineral zones of eastern Serbia, which provided evidence of the earliest Vinča culture metallurgical activities (Borić 2009; Radivojević et al. 2010; Šljivar and Jacanović 1996). Oreškovica has produced evidence of copper ore collecting for either pigment preparation or smelting likely from the copper mining zone some 10 km away. The site is also situated only 6 km away from the larger Vinča culture ‘mega-site’ of Belovode which provided evidence of enclosure features and copper smelting associated with Vinča culture occupation. Belovode, similar to Oreškovica, dates from the earliest phases of the Vinča culture but lasts until its end in the 47th to 46th centuries BC. The

evidence of these two sites from the micro region of the Mlava River drainage offers a possibility to study differential diachronic dynamics of settlement foundation, fortification and abandonment. The paper makes links between settlement developments in this micro region and contemporaneous settlements from across the Balkans and in particular the Greek Neolithic.

##### **Beyond the horizon; mapping ceramic assemblages in Neolithic Greece and Anatolia**

*Beatrijs de Groot (University College London, U.K.)*

The Aegean Sea played a role in the Neolithisation of the Balkans that both restricted and facilitated the spread of people and their ideas through the area, but the routes of these transmissions are, as yet, poorly defined. To attempt to reveal how these processes occurred, this presentation will provide an overview of the similarities between Neolithic sites in Anatolia and Greece through the systematic analysis of stylistic and technological attributes of ceramic assemblages. In addition, petrographic analyses in the area will be drawn upon to demonstrate how Neolithic sites positioned themselves within the landscape, with regards to ceramic raw material procurement; information which ultimately will improve our understanding of the movement of Neolithic communities both on the local, and the interregional scale.

**Mediterranean networks at Neolithic Çukuriçi Höyük. A model for maritime interaction in 7th Millennium BC**

*Barbara Horejs (Austrian Academy of Sciences, Austria)*

Based on new archaeological data gained by excavations at Çukuriçi Höyük and surveys at neighboring Arvalya Höyük (both near Ephesos/Turkey), a model of early farming villages will be discussed in the context with other Neolithic sites known in the region. For the first time a new cultural cluster (Neolithic Group of Central Aegean Coast) can be defined for 7th millennium BC in this particular area. Due to various investigations at the Aegean coast of Turkey during the last decade, it is possible to provide a more detailed picture that allow to analyze different networks of the initial stages of the Neolithic period and the following centuries.

The patterns of subsistence strategies, exchange systems, technologies, material assemblages and architectural systems of these neighboring Pottery Neolithic sites form an entity that can be compared with other Aegean zones, like Thessaly, Crete or Macedonia and Thrace.

The main focus will lie on the different dynamics, scales and intensities of the Aegean-Anatolian interactions within this group. These complex on- and offshore interactions will be displayed and therefore highlight the role of the Aegean in general and the coastal zone of Western Turkey in particular.

## POSTERS

### **Humans, animals, and the landscape at Middle Neolithic Koutroulou Magoula: an approach through soil micromorphology and phytoliths**

*Georgia Koromila, Takis Karkanis, Kerry Harris, Georgia Kotzamani, Yannis Hamilakis, and Nina Kyparissi-Apostolika (University of Reading, U.K. - American School of Classical Studies at Athens, Greece – University of Southampton, U.K. - Hellenic Ministry of Culture, Greece - University of Southampton, U.K. - Honorary Ephor, Hellenic Ministry of Culture, Greece)*

Animal dung is increasingly becoming an intensively investigated material in archaeology, and its archaeological value widely recognised (see Jones 2012). It has been shown that it holds significant potential for studying, amongst others, animal diet, and, by extension, animal management practices, and different types of human and animal mobility as ways of engaging with the landscape (e.g. Valamoti 2007).

This paper employs micromorphological analysis of intact sediment samples in order to identify the presence of animal dung in archaeological deposits, thereby providing direct evidence of animal diet. Building on these observations, phytolith analysis is then utilised to produce quantifiable data of plant content that can be compared to the more qualitative results of micromorphology. These data are integrated with the information gained from zooarchaeology and archaeobotany.

The case-study examined is the Middle Neolithic tell site of Koutroulou Magoula, Phthiotida. A number of samples were

taken from diverse contexts, primarily from open areas at the core of the settlement, in order to produce a high resolution record of space use and site formation processes.

Micromorphological analysis shows that dung is a major contributor to sediment accumulation in the examined contexts. It was encountered in what appear to be penning deposits, but also in secondary refuse accumulations, and in in situ fuel. It was also found that dung is extremely rich in phytoliths. Observed cases regularly include a mixture of grass and reed-derived morphotypes, as well as possible dicot types. Based on this analysis, it is suggested that a combination of animal foddering and grazing/browsing practices were employed by the inhabitants of Koutroulou. The possibility of temporal and/or seasonal variations in these practices is further explored by comparing successive deposits.

By integrating micromorphology with archaeobotanical, zooarchaeological and other analytical methods, as well as with the broader archaeological, on-site and off-site data, this paper aims to achieve a more holistic understanding of human and animal engagements and relationships with the environment.

### **Kouphovouno: some thoughts about the settlement pattern at the end of the Middle Neolithic**

*Josette Renard (Université Montpellier III, France)*

The site of Kouphovouno is located in the southern Peloponnese, in Laconia, c. 2,5 km southwest of Sparta, on the right side of the Parori, a tributary of the river Evrotas. Continuous occupation over a long time has formed a small tell which is about 5 m above the alluvial plain. The excavations recovered well preserved Middle Neolithic remains in two areas, Area C at the top of the tell and Area G on its south slope. In both areas, the last phase of Middle Neolithic occupation is well represented by habitation remains, some of which lay undisturbed by later occupation immediately below the plough soil. The aim of the paper is to examine the remains which give an idea of the organization of the village at the end of the Middle Neolithic period (5600-5500 BC) and suggest an evolution in the use of space after the Middle Neolithic.

### **Pottery production and the raw material resources: the case of southeast Thessaly**

*Areti Pentedeka, Petros Koutsovitis and Andreas Magganas (Austrian Academy of Sciences, Austria - Institute of Geological and Mineral Exploration, Greece - National and Kapodistrian University of Athens, Greece)*

Thessaly during the Neolithic was characterised by dense settlement distribution on a wide range of geomorphological and topographic zones. This paper focuses on the neighbouring sites of Magoula Visviki (Velesino 4 / Agios Georgios Ferron

3: ATAE 274), Magoula Agrokipiou (Velesino 1 / Velesino 2: ATAE 280) and Hatzimissiotiki Magoula (Stefanovikeio 5 / Stefanovikeio 5: ATAE 277), all situated in the southern niche of the eastern Thessalian plain, but in different microenvironments (plain, hillside, lacustrine). The ceramic assemblages of these sites were examined as a case study of defining local origin and distinguishing the ceramic production of adjacent settlements, inevitably exploiting very similar (if not the same) raw material sources.

To this end, a total of 138 pottery samples, representative of all wares and shapes and dating to all Neolithic sub-phases (from Early Neolithic to the Chalcolithic period), along with 23 raw material samples (rock fragments, plastic sediments and sands from the vicinity of the sites, then processed experimentally in the laboratory) were examined under the polarising microscope, and were subjected to refiring tests. Additionally, 65 rock samples were analysed petrographically and chemically (EPMA-EDS & WDS, XRF, ICP-MS). The integrated approach adopted enabled the geological and geochemical characterisation of different geological formations in SE Thessaly, thus shedding light on the pottery production and ceramic technology characterising each site, and facilitating the micro-scale discrimination between typologically very similar ceramic sequences. Moreover, the analyses results allow for further discussion on the formation of local potting traditions and the shaping of regional connectivity.

### **Magoula Visviki revisited: comparing past excavations' data to recent geophysical research**

*Eva Alram-Stern, Mario Börner, Kalliopi Almatzi, Vaso Rondiri, Despina Efstathiou, Evangelia Stamelou, Konstantinos Vouzaxakis, Apostolos Sarris, Carmen Cuenca García, Tuna Kalayci, François-Xavier Simon, Gianluca Cantoro, Jamieson Donati and Meropi Manataki (Austrian Academy of Sciences, Austria - Hellenic Ministry of Culture, Greece - Institute for Mediterranean Studies, Greece)*

In 1941 the German Professor Hans Reinert and his team of the Reichsamts für Vorgeschichte carried through excavations on the Neolithic tell site of Visviki Magoula near Lake Karla. According to the mapping of the site, the German expedition dug two deep soundings at the flank of the tell to reconstruct its settlement history. Trench A produced a stratigraphic sequence starting in a late phase of the Early Neolithic period. In contrast, trench B, situated at the edge of the tell, produced mainly irregular loam layers; the lowest, steeply sloping clay layer possibly representing a ditch-like structure. At the highest point of the mound the German team excavated an area of 30 x 20 m to yield information about the settlement ground-plan. According to the newly studied drawings, the ground-plan combined several settlement phases. Project “Visviki Magoula” was financed by the Austrian Science Fund, carried through by the Institute for Oriental and European Archaeology, Austrian Academy of Sciences.

Recently, Innovative Geophysical Approaches for the Study of Early Agricultural Villages of Neolithic Thessaly project (IGEAN), carried out by the GeoSat ReSeArch Laboratory of the Institute for Mediterranean Studies – Foundation for

Research and Technology (IMS-FORTH) in Crete in cooperation with the II' Ephorate of Prehistoric and Classical Antiquities in Volos, was able to scan the whole magoula through geophysical mapping techniques. The survey was carried out via multi-sensor magnetic arrays and GPR systems. The project was implemented under the "ARISTEIA" Action of the "OPERATIONAL PROGRAMME EDUCATION AND LIFELONG LEARNING" which is co-funded by the European Social Fund (ESF) and National Resources.

The above projects allowed an integration of a) the old (1941) excavation drawings, b) the new study and interpretation ("Visviki Magoula" project) of the older plans and c) the geophysical survey results of the IGEAN project. Based on these it was possible to confirm the large rectangular structure that was excavated from the German expedition and in addition to verify the existence of one of the ditches that run around the settlement. The fusion of the results of the above studies will contribute to our further understanding of the settlement layout and its relation to the surrounding area.

### **Landscapes from materials. Communities, landscapes and interaction as glimpsed through the integrated characterisation of Neolithic ceramic assemblages**

*Peter Tomkins and Brecht Lambrechts (University of Leuven, Belgium)*

Over the last four decades the idea that Neolithic communities were static, homogenous, isolated entities, preoccupied with producing the subsistence that would ensure their own survival,



has been replaced by an emerging picture of dynamic, diverse and developing communities, for whom interaction, of various forms, scales and intensities, played a fundamental role. Initially this new picture was driven by advances in the theoretical modelling of small-scale farming communities and the recognition that the distribution of certain raw materials, such as obsidian, mapped out extensive zones of procurement and transportation. Clearly the Neolithic Aegean was always a connected place. But how did connections between communities and across landscapes actually play out at the local and regional level. How did these patterns vary in time and space? How might we gain a sense of changing directionalities and intensities in such relations?

Until relatively recently, the role played by pottery in interactions between communities was less clear or closely defined, owing to an array of conceptual, methodological and empirical issues. However, over the last two decades it has become clear that highly detailed, fully integrated, contextual characterisation of Neolithic ceramic assemblages, in which a wide variety of attribute data is collected and related (e.g. fabric, forming, finishing, firing, morphology, use-wear, taphonomy etc.), has the potential to open up detailed windows on the actual connections that existed between people in space and thereby provides a rich body of data to explore different patterns of interaction and changing constructions of community and landscape in time and space. In order to illustrate this, the paper will present several case-studies drawn from research conducted on EN-FN ‘cerami-scapes’ on the islands of Crete and Chios.

### **Casting a wide network: the Early Neolithic chipped stone from Revenia, Pieria**

*Lilian Dogiama (McMaster University, Canada)*

In this paper I will present the preliminary results of my study of the chipped stone assemblage from the Early Neolithic site of Revenia Korinou, in Northern Pieria (6th-5th millennium BCE).

Revenia is a flat-extended settlement with semi-subterranean structures and 86 large pits with evidence of preferential deposition of material. Some of its unique features are the five human burials within the structures, strikingly reminiscent of Neolithic practices in the Near East and Anatolia, and its enormous shell midden deposits, whose size is not the norm for Greek Neolithic sites.

The chipped stone assemblage is equally interesting. The people of Revenia had access to high-quality raw materials that ‘travelled’ a long way to reach them. Most notable among them are obsidian, chocolate and honey flint. These exotica are represented in great numbers within the assemblage and demonstrate strong connections and established networks that are quite unusual for sites of such an early date. In the case of obsidian we know that its circulation during prehistory was never widespread in northern Greece and when it does occur, it is always in minute amounts. In this respect Revenia seems to be a unique case study that could perhaps alter our perceptions on Neolithic networks.

### **Submerged Neolithic landscapes off Franchthi Cave: the measurements from the Terra Submersa expedition and their implications**

*Julien Beck, Dimitris Sakellariou and Despina Koutsoumpa (University of Geneva, Switzerland - Hellenic Centre for Marine Research, Greece, -Hellenic Ministry of Culture, Greece)*

Systematic, high resolution seafloor and subseafloor geological-geophysical survey was conducted in August 2014 with the aim to (1) map in high-resolution the seafloor, the sedimentary deposits and the sub-seafloor structure of the Eastern Argolic Gulf, (2) map precisely and reconstruct paleo-shorelines and submerged prehistoric landscapes of the Late Pleistocene and Early Holocene when the sea-level was lower than present and (3) to search for and discover potentially surviving remains of prehistoric human presence or occupation on the submerged landscapes close to Franchthi Cave.

The survey was part of the University of Geneva TERRA SUBMERSA expedition, in collaboration with the Hellenic Centre for Marine Research, the Greek Ephorate for Underwater Antiquities, PlanetSolar, the Laténium (Switzerland), and the Swiss School of Archaeology in Greece.

Preliminary results of the processing and seismic stratigraphic and structural interpretation of the Boomer and Chirp subbottom profiles, the swath bathymetric data and the side scan sonar records yield a wealth of information on the location, depth and nature of submerged shorelines of Late Pleistocene and Early Holocene age and on the numerous morphological features and environmental conditions of the

submerged Neolithic and pre-Neolithic landscapes in the Bay of Kiladha, off Franchthi Cave.

These results, and their implications for the Franchthi Neolithic, are discussed in the light of previous research (geological-geophysical surveying and coring) in the Bay of Kiladha.

### **Craft traditions and painted pots in caves, an interpretation in the case of Sarakenos Cave (Kopais, Boeotia)**

*Vagia Mastrogiannopoulou (National Kapodistrian University of Athens, Greece)*

Sarakenos cave is the longest-lived cave excavation in Greece, with an uninterrupted stratigraphical sequence (Middle Palaeolithic to Middle Bronze Age). Human activity evidently related to the varying environment of Lake Kopais, the strategic position but also to the particular configuration of the cave itself, all in all constituting a communal, focal point for local societies.

Among the categories of finds, the painted pottery speaks of several prolonged, universal and exclusive craft traditions across mainland Greece, primarily exhibiting conservatism and standardization. Several important issues concerning the neolithic material culture are examined such as a) the mode of production of painted pottery through typological analysis b) the manners of pottery consumption in the context of the cave c) the interpretation of interregional, common traditions.

It is suggested that painted pots were neither intended nor treated as special items but rather related to food culture (procurement, production, preparation and consumption), challenging their proposed importance as valuable goods.

The scarcity of burial places or other ritual-related, non domestic contexts has inevitably directed the quest for places of symbolic behaviour towards caves, automatically transformed to a uniform “type” of wild places juxtaposed with the domestic area. In the case of Sarakenos cave however, diverse and multiple activities are documented.

The rural frame, poses human movement and activity not just inside the cave itself but more importantly, beyond the confines of the settlement. A second variable is inserted, the communal, inter- regional space as an arena of social interaction.

Lastly, the continuity of the stratigraphy allows the monitoring of some debated economic and cultural transformations. The economic dimensions of painted pottery traditions are related to the ongoing debate on prehistoric economies. In this light, the examination of a cave contributes multiply as these sites have been closely related with several socio-economic shifts which lead to an acclaimed evolution.

### **Causality and meta-rules in the social interactions of the early farming communities in the eastern Balkans**

*Tsoni Tsonev (Bulgarian Academy of Sciences, Bulgaria)*

Traditionally in archaeological interpretation there have already been established causal relationships that explain the

appearance of social outcomes as a result of social action. For example, the appearance of Alpine jade axes within the Alpine zone forms a spatial distribution that approximates a Gaussian one. This fact means directly that there is a causal relationship established between the presence of these artefacts and the appearance of social inequality. In other words the importance of the mean value that summarizes the meaning of the distances between the different occurrences of artefacts supports the idea of existence of direct causal relationship. Or it may be called the ‘first-order rule’ that is valid in this geographic region.

A. Giddens, however, defined the concept of unexpected social consequences. Some social actions that aim accomplishing definite social goals receive reactions in the form of unpredicted outcomes. Common sense requires admitting that in archaeology this kind of feedback will have effects on the spatial distribution of archaeological materials. For example, it was found out that the spatial distribution of Alpine jade axes in the eastern Balkans follows Binomial distribution rather than a normal one. In other words there are invisible rules that break down the otherwise clear-cut causal relations established in the Alpine zone. On the other hand by approaching the northwestern Black Sea coast the probability of occurrence of such artefacts increases significantly. Contrary to this the chances of finding Alpine jade artefacts in the delta of the Danube River or on the Aegean islands are very low. Thus the general rule that unites as a thread all these diverse presence/absence patterns is their unpredictability. So far the concept of ‘unpredictability’ has been avoided in

archaeological interpretations but I will further elaborate on its usefulness especially in the area of defining the concept of a boundary between “archaeological cultures”. Thus the ‘unexpected’ or ‘unpredicted’ occurrences or absence of particular artefacts have the quality to break down the first-order rules which indicates that they obey higher-order meta-rules.

In my analyses I will try to show that meta-rules do not stay outside time and causality. I will present that part of their nature consists of following simple causal chains but their feedback under certain circumstances will follow complex behavior. Further I will draw these concepts from diverse archaeological examples of spatial distributions (presence/absence patterns) of particular artefacts some of which so far have been neglected but which I think played an important role in the successful adaptation of early farming communities in the eastern Balkans. Of particular interest will be the examples of human colors in prehistory, the distribution of flat bone figurines (amulets and probably elements of clothing) and some aspects of the spatial distribution of the Alpine jade axes. They will be considered in terms of communicative networks that will reveal their recurrent and relational nature.





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