The Dynamics of Isolation and Interaction in Late Bronze Age Thrace

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Declaration of Authorship

I, Denitsa Nikolaeva Nenova, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

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Abstract

In a period when complex systems of Bronze Age social life and urban communities were well-established in the Aegean and Anatolia, the southeast corner of the Balkans, commonly known as Thrace, appears to have remained largely unaffected. Nevertheless, the presence of a few similar artefacts between the latter and the first two regions during the 2nd millennium BC has provoked scholars to propose various forms of cultural encounter. This has diverted the research focus in Thrace from a thorough examination of local characteristics and, along with the lack of much systematic study, has limited our understanding of internal social patterns of development. Moreover, the existing partition of the area among Bulgaria, Greece and Turkey and repeated amendments to borders throughout the 20th century has further constrained synthetic archaeological investigations. Bearing in mind that modern political divisions do not necessarily coincide with any prehistoric social pattern, this thesis approaches the Late Bronze Age (LBA) in Thrace from an alternative contextual and geographic perspective.

More than a hundred LBA sites have now been identified in the area of modern day Bulgaria, and there is a wealth of complementary information from north-eastern Greece, with a contrasting possible gap in Turkish Thrace. In this dissertation, a new, detailed cross-border examination of the local ceramics calls into question existing culture-historical constructs such as the 'Plovdiv-Zimnicea' culture and offers a chronologically structured analysis of local pottery sequences. Complementary multivariate spatial analysis of the site distribution reveals settlement patterns with different micro-regional characteristics. As a result, the study highlights clusters of attributes and cycles of micro-regional interaction and independence at this key location of potential Eurasian articulation. Ultimately, a general pattern of isolation in the final phases of the Bronze Age can be recast by considering a combination of both persistent vectors of long-range contact and also a high degree of local cultural diversity.

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Chapter 1. Introduction

1.1. Background

The archaeology of the LBA in the Balkan area commonly known as Thrace presents particular challenges. Distribution maps of the region in the 2nd millennium BC traditionally stop at the borders of today's Bulgaria. It seems that in Thrace, at the junction where Asia meets Europe, certain conditions and specific kinds of evidence have combined to discourage much joined-up research. The essence of the problem lies in more recent dynamics: the area has been floating between two or three countries for the entire history of archaeology as a discipline: Bulgaria, Greece and Turkey (Figure 1.1). Three different national and nationalistic archaeologies have thereby had a likely impact on the study of Bronze Age Thrace. Not only have there been practical difficulties, but it is worth emphasising that the modern geopolitical divisions rarely coincide with any prehistoric social pattern, despite the fact that some would wish it so.

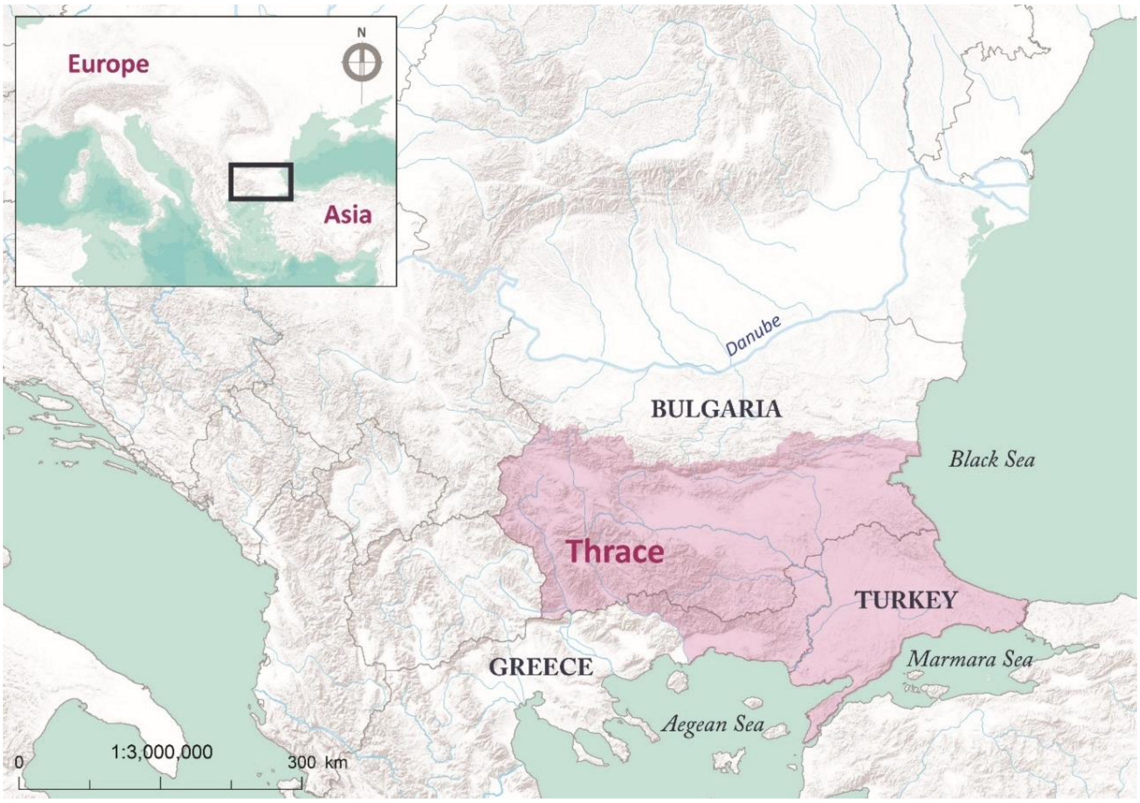

Figure 1.1. Map of the area with places mentioned in the text.

In fact, such a cross-border study has become possible only now, building upon recent research. The level of information was insufficient for the most of the 20th century and thus has resulted in only very limited attention being paid to this problematic region, mainly by those seeking links between the Aegean and central Europe. Local researchers often searched for direct connections, mostly with the southern Aegean, where by the latter part of the 2nd millennium BC, complex political and economic systems had emerged alongside the growth of urban centres. Large sections of the northern Aegean coast and its hinterland, however, show little sign of adopting the same kinds of organisation and lifestyle and instead almost certainly developed social structures that emphasised definitely smaller-scale and potentially more socially egalitarian principles.

While one should avoid thinking of Thrace as a unit that is solely determined by geography, a general cultural unity has nonetheless sometimes existed in the southeast corner of the Balkans, but more obvious in certain periods and less clear in others. Based on archaeological site records and pottery data I will address possible patterns of behaviour in the region, which are recognisable through spatial distributions as long as we are careful with our evidence. Furthermore, the chronology of the local LBA and the entire Bronze Age in general is still problematic. Therefore, in order to investigate the character of LBA culture in the area, the internal nature of the recognisable structures needs to be examined first and thereafter scrutinised in a broader context.

After this brief introduction, the second chapter of the thesis will propose a theoretical framework which I argue is particularly relevant to my research questions, to the chosen regional conjuncture and consistent with my final interpretations. It addresses questions such as regionalism, culture change and population movement from different perspectives. In the second part of chapter 2, my methodology is outlined in more detail, addressing site and pottery analysis from both qualitative and quantitative perspectives.

Chapter 3 provides a wider historical context for this research. It deliberates issues such as the very concept of 'Thrace' and Thracians, and the changing history of the use of these terms through time. Evidence from Classical-Roman texts is discussed, as well as a brief description of the prehistory of the area, prior to LBA which is the focus here. An important aspect of this research is the partition of the area due to the creation of modern nation states and the ideologies born thereafter. The resulting trends in the archaeology of each country likely had an impact on the research from a number of perspectives. This impact and the character of Balkan nationalism, using archaeology as a main ideological tool, is considered. Each country's archaeological development, that has to some extent affected research into the 2nd millennium BC, is taken into account. In the next section of chapter 3, I describe the region geomorphologically and climatically, divided by sub-regions according to modern geographical partitioning of the area. Finally, I discuss natural routes and potentially exploited routes in Thrace.

Chapter 4 presents an overview of the existing archaeological record of all three countries involved throughout the 20th century and the first decade of the 21st century. Processes and trends have been divided into five periods and addressed accordingly: from the beginning of the 20th century, with major thresholds defined by the World Wars, the interwar period, the resurrection of archaeology in the late 1960s up to modern-day archaeological practice, and the current extent of investigations. The accumulation of evidence and publications has in fact established certain boundaries, problems and pre-conditions. These problems of recognition and interpretation are addressed at the end of the chapter.

After this background and necessary context, the full record of known LBA sites in the region is presented in chapter 5. The use of such evidence for the purposes of this study is first described along with a number of issues and uncertainties present in the current record. Thereafter, a typological description of the archaeological sites is offered, driven by analysis of site type and function. Sub-categories of site are also introduced when applicable.

In chapter 6, I describe the studied pottery sample. First, the character of the regional LBA pottery is defined in relation to its main technological and stylistic features. Potentially spatially sensitive technological features are thereafter defined and described. The pottery group under study is then divided into morphological types and sub-types (variants) and each of them is discussed. The next chapter, chapter 7, subjects the pottery types and selected technological features to a statistical analysis of spatially-sensitive elements. Before the analysis is conducted, the existing definition of local archaeological groups and cultures is described and some problems outlined. The aim of this chapter is to juxtapose the material evidence with existing constructs and the perception of local 'culture'. A spatial-statistical approach is chosen for this purpose, which allows for analysis of all features separately and then combined. The resulting clusters of evidence are used to suggest small 'cultural areas' in a relatively traditional sense, but hopefully in a more informed and flexible way. Each proposed area of aggregated distributions is then described.

Chapter 8 addresses the chronological position of the Thracian LBA from several perspectives. First, the existing chronological periodisations and their context are described. Then, sub-regional archaeological sequences based on pottery synchronisation as well as more recent radiocarbon data are developed. Issues that would define critical moments in the area's LBA, such as the contemporaneous appearance of two different pottery styles are also addressed. The end of the Bronze Age is discussed with the help of evidence from the beginning of the next period, the Early Iron Age (EIA). At the end, a modified periodisation and chronology of the local Bronze Age is offered.

Within the spatial-temporal framework defined in the previous chapter, chapter 9 returns to the site-level dataset and analyses the spatial distribution of sites in different proposed micro-regions, in an attempt to reveal patterning with respect to environmental and geomorphological characteristics. Nine zones are defined for study, the detailed results of the applied analyses are presented, followed by reflection on their wider meaning. At the end of the chapter, one much better surveyed sub-region is re-studied with a proposed alternative, finer-scale approach, as a complement and counter-point to Thrace-wide perspectives.

Chapter 10 combines the results of all my analyses and offers interpretation at both a local and a broader regional scale. Issues of regionalism with respect to cultural and chronological discrepancies are one of the focal points of this chapter. The main goal, however, is to explore the origin of the Thracian LBA, its development and transformation. From a regional perspective, perceived gaps in the archaeological record are discussed with respect both to the analytical results arising from this dissertation and pre-existing research on LBA Thrace.

A short last chapter, chapter 11, offers a summary of the research and draws out the central points arising from the preceding analyses, as well as addressing wider questions of importance to the current sphere of study. Finally, I discuss future opportunities and approaches that would help to continue developing our understanding of the Thracian LBA.

1.2. Research Questions

A central part of this dissertation is devoted to understanding the existing pitfalls associated with characterising LBA Thrace and then to overcoming them. Thus the main research questions I will address are the following:

i) What are the key cultural characteristics present in the study region during the LBA, especially with respect to pottery production, settlement patterns and burial practices?

ii) Is the local LBA culturally homogenous or, if not, what level of heterogeneity is visible across the area?

iii) Based on recently available evidence and refined chronological data, is it possible to trace the formation, development and decline of LBA tradition(s) in Thrace?

iv) What are the nature and the extent of local and interregional networks of social and economic interaction across the Thracian region?

Chapter 2. Theory and method

2.1. Theory

This dissertation addresses material accumulated over nearly one hundred years of archaeological research and also reflects the development of archaeological thought over that period. Implicit or explicit archaeological theory has been shaping and re-shaping research strategies, methodological approaches, and interpretations relevant to the current research, with the relative influence of different schools such as Culture History, New/Processual Archaeology and Post-processual approaches. Yet more recent developments can also be detected that deserve attention. However, to summarise quickly as a starting point, traditional culture-historical archaeologists, in the Thracian region as elsewhere, addressed past realities via attention to empirical variations in archaeological data within a clear spatial-temporal framework: they sought and continue today to seek empirical generalisations such as easily described cultural groups. An Anglo-American born, New Archaeology became prominent in the 1960s and 1970s (which can be conflated with what people also call 'processual' archaeology), and was a reaction against this pragmatic approach in Culture History. A core focus on material cultural studies evolved into a wider agenda for behavioural pattern recognition, where the environment played a central part alongside a new more scientific toolset. Classifications and typologies were considered no longer necessary unless they served more complex theoretical reconstructions (see Stark 1998). Attention to detail and reducing the scale of studies was also central, while subjective interpretation was devalued. Accordingly, different approaches were employed by different practitioners with different ideologies either for relatively benign goals or more worryingly to facilitate the generation of identity, historical rights, and gender privileges or to justify and promote technological progress. As a reaction, post-processual archaeologists, from perhaps the 1980s onwards, criticised this turn and its positivist take on how successful we could hope to be in developing objective conclusions using scientific methods in general. The focus turned mostly towards a more symbolic-behavioural side of the discipline. In this context, there are some key concepts, like regionalism, culture change and population movement that will intersect with the methodology applied in later chapters of this research as well as resulting interpretations and it is worth looking at them below in more detail.

2.1.1. Cultural history and ethnogenesis

In the 1870s and 1880s, archaeological research in Central and Eastern Europe was influenced by evolutionary perspectives on archaeology in France, England and to a lesser extent Sweden. Once the idea of cultural evolutionism was rejected by culture historians, a central internal driver for change was also reduced in popularity, which promoted other possible explanations, especially external factors such as the diffusion of ideas and migration of people. Diffusion gradually replaced evolution in the late 19th century in English ethnology and anthropology (Slobodin 1978). In accordance with a desire for strong modern national identity and internal unity, serious efforts were made to explain any economic or social conflict via external drivers. A central precept of that tendency became the belief that “change was contrary to human nature and potentially harmful to people” and thus it was always forced upon them (Trigger 2006, 218). Furthermore, the possibility of independent development was undermined and most inventions like pottery or bronze technology were considered unlikely to have been discovered more than once. Therefore, diffusion and migration remain for many traditional culture historians, in previous decades and now, as the only explanation of culture change. The complex variations of cultures across the world were and continue to be considered, in this context, a prominent result of cultural intermingling (Harris 1968, 382-392).

Culture history took a particularly extreme position in Gustaf Kossinna’s work, which asserted that geographical and chronological variation, as well as deep continuity, in past peoples and tribes could be traced in the archaeological record, and his work influenced populist debates in early 20th century Europe, e.g. the folk ideologies of Nazi Germany (see Kossinna 1913, 1941). More generally and less problematically, through work by Gordon Childe (e.g. *The Dawn of European Civilization* 1925) and others, the idea of an archaeological ‘culture’ became the main tool of European archaeologists. In a traditional culture history approach, constantly reoccurring types of ‘pots, implements, burial rites, and house forms’ are associated with a ‘cultural group’ or a ‘culture’, which stands for a complex normally associated with a particular people (Childe 1929, v-vi). Childe argued that homemade pottery, ornaments and burial rites tend to be related to local tastes and traditions and thus are most useful for identifying ethnic groups; weaponry and technologically advanced artefacts tend to diffuse rapidly because of either trade or copying (Childe 1929, 248; Binford 1983, 400). This idea counts artefacts as expressions of cultural norms and those norms define the meaning of culture and the alignment between archaeological culture and human culture (Johnson 2010, 35-36). In the culture history sense, differences between ‘cultures’ are more desirable than similarities in order to justify their nature, while internal group culture is viewed as preferably unchanging. Furthermore, the duration and geographical limits of each culture had to be treated separately for each individual culture; geographically different cultures could be aligned chronologically employing stratigraphy, seriation and synchronisms. In this way, Childe interpreted the prehistory of the whole of Europe as a complex mosaic of cultures (Trigger 2006).

Gordon Childe had also argued that archaeological assemblages could actually stand in for historically acting groups of people (Anthony 1990, 896; Childe 1958, 10), which corresponded to a growing interest and efforts towards constructing national identities using ethnicity. It was an important step for European archaeology when this idea was modified via the more specific and contingent concept of an ‘archaeological culture’ that was still often linked with perceived tribes or other ethnic elements, but perhaps now more equivocally (see Roberts and Vander Linden 2011). But outlining the distribution and the origin of cultures still “provided a theoretical and methodological framework for the emerging national archaeologies” (Roberts and Vander Linden 2011, 3) and even recently, the counter-reaction to such nationalist archaeologies has been European Union’s attempt to trace a widespread phenomenon such as ‘Celtic’ culture across the different national borders of Europe from the Bronze Age onwards (Demakopoulou et al. 1999; Roberts and Vander Linden 2011).

The development of culture-historical archaeology in the late 19th century coincided with a growth in nationalism and racism, promoting ethnicity as “the most important factor shaping human history” (Trigger 2007: 211). Nationalism as a concept, arguably born in its most recent form in the French Revolution, integrates a sense of national identity and the sharing of a common homeland, but not explicitly of a common ethnicity. A change in that perception, however, occurred soon after, when most European nation states came to identify themselves with a specific ethnicity, based on language, common culture and shared history. The British identified themselves as Nordic or Aryan, as did the Germans. A sense of national identity was promoted also amongst eastern European ethnic groups under Austrian, Russian and Prussian rule (Trigger 2006, 212).

In northern and central Europe during the 19th century, prehistory was already strongly related to nationalism. Although there was some progress in the attempt to understand more complicated processes, the main focus of the majority of archaeologists remained cultural chronologies and tracing the perceived deep roots of their countries' pasts (Fischer and Kristiansen 2002). Historical and ethnic issues of this sort, along with the ideals of growing nationalism, encouraged the tracing of distributions of types of artefacts across space; such research focused on the Neolithic and undermining other periods. The resulting archaeological methods and interpretations were thus strongly influenced by the need to demonstrate the longevity of the nation and a long-established shared identity (Kohl and Fawcett 1995; Trigger 2007, 215).

During the interwar period, German promotion of the idea of an Aryan race became so strong that there was even an attempt to 'adopt' the Mycenaeans as Aryans (see Trigger 2007, 228). In response, the Soviet Union encouraged or forced Soviet archaeologists to demonstrate that Slavic culture was older, more developed and evolved independent of German influence. This became the main emphasis in studies of 'ethnogenesis' with the results already being outlined before the research was even started (see Klejn 1974; Miller 1956, 84). After 1945, when Eastern Europe was recognised as part of a Soviet sphere of influence, an International Congress of Slavic Archaeology was founded to encourage closer relations among Slavic nations and substantial resources were allocated towards researching Slavic ethnogenesis. This, however, did not restrict research only to chasing Slavic origins, but also encouraged the opening up of questions concerning the time of the arrival of the 'Indo-Europeans' in Europe, as well as a debate on the origin of the Thracians in Bulgarian and Soviet studies (see Fol 1997; Popov 2006; Tacheva 1987).

2.1.2. The archaeological culture as a concept

The actual definition of an archaeological culture still follows Childe's construction and requires that "certain types of remains – pots, implements, ornaments, burial sites, house forms, constantly [recur] together" (Harris 1994). As noted above, this formulation drew upon certain aspects of Kossinna's Siedlungsärcheologie Methode (Veit 1989), and also influenced by many other European researchers and North American approaches (Lyman et al. 1997). The main critique of the concept of archaeological culture was that material culture does not equal society and that ethnicity in all its complexity cannot be identified based simply on groups of artefacts (Hodder 1978). Furthermore, the association of archaeological culture with ethnic belonging, which served the needs of national archaeologies, was also exposed as one of the main pernicious influences on both methodological frameworks and subsequent interpretations. However, despite the bias caused by the perceived need over the 20th century to contribute to the shaping of national identities, the practical 'assembling' of Europe's archaeological cultures, from a time-space systematics point of view, was arguably largely successful, so that many of them are still in use today.

In more recent research and as a reaction, archaeological assemblages or archaeological cultures were somewhat distanced from the identification of social, cultural or ethnic belonging (Hu 2013). Hu argues that the "constructivist view of identity" has provoked a heated debate on the ability of archaeology to trace and recognise clear ethnic identity (Hu 2013, 372). Furthermore, different processes were involved in the making of the material culture on one hand and in the production of a variety of identities on the other, and that archaeology lacked the methodological toolset to address such forms of identification (Emberling 1997, 325; Tilly 2008, 5).

There have therefore been consistent attempts to re-define the concept of the archaeological culture, but these have mostly been inspired both by the adoption of new scientific techniques and our ability to look at archaeological entities on smaller scales.

One of the consequences of such approaches, however, has been a tendency to ignore the larger-scale (see Vander Linden 2011, 4). Given the lack of a better definition or central notion, the archaeological culture continues to be in use in the sense of large-scale entities sharing collective material culture, burial rites, and/or settlement organisation of a sort. The term is thus largely, although without acknowledgement, accepted due to its ability to accommodate new data (Adams and Adams 1991). The concept of an archaeological culture is thus a fundamentally culture-historical notion that has persisted for most of the 20th century. It has often been treated as a deeply flawed anachronism, particularly in the Anglo-American literature, but continues to be employed by many archaeologists of different backgrounds and origins (Roberts and Vander Linden 2011). In fact, the universal function of the concept of an archaeological culture is to allow treatment of similar material assemblages as interconnected units and to allow the tracing of archaeologically identifiable patterns through space and time (Roberts and Vander Linden 2011). This same drive has also prompted the adoption of related terms such as 'traditions' (Osborne 2008) 'cultural groups' (Willey and Phillips 1958), 'horizons', 'techno-complexes', and 'zones' (Cunliffe 2005; Roberts and Vander Linden 2011), each of them serving a similar role to the notion of archaeological culture, often used interchangeably or with minor embellishments. Although the concept has often been demonised, it has robustly withstood overall critique and remains one of the main instruments of a number of archaeologies, particularly European prehistory. Thus, in countries with a strong culture-historical tradition, such as Bulgaria, archaeological cultures and cultural groups have become an accepted and rarely questioned notion. Summarising the results of this discussion, Roberts and Vander Linden (2011) argue that the term does not need to be discarded entirely, but rather that there is a need to re-assess it. As they clearly state "such a consideration is often seen as a retrograde step by more theoretically inclined archaeologists or as more unnecessary theorising by more empirically orientated colleagues" (Roberts and Vander Linden 2011, 2).

Following a course between these two positions, in the current study, I will discuss a number of topics, which will address directly or remotely ethnicity and identity and need to be considered in the outlined context. One of the main subjects of this research is based on distribution of material culture, in particular local ceramics, and in this respect, the analysis need not to be assumed as directly representing real people, but as more pragmatic definition to serve in organising the data, which potentially would facilitate an interpretation regarding further social or cultural dimensions.

2.1.3. Pots as politics

Within culture history, pottery is traditionally treated as one of the most robust elements of the archaeological record and is seen as a main index of an archaeological culture. Great attention had been paid to ceramics as a means to establish chronology as well as cultural affiliation. It has been a prime tool in attempts to synchronise different cultures for the purposes of constructing local chronology and has resulted in numerous pot typologies. In slight contrast, processual archaeology treated pottery studies as more than mere data collection (see Binford 1983). Quantitative methods, middle-range theory, and cognitive archaeology became very influential in prehistoric archaeology in Europe (see Renfrew 1980), and while typological and stylistic analysis was still in focus, utilitarian, often coarser fabric, ceramics became increasingly recognised as tools for investigating social, economic and political aspects of the past.

Nevertheless, the problems of directly 'equating pots with people' persisted and have been discussed on various occasions (see Hodder 1991; Politis 2003; Trigger 2006). One of the main questions about the social role of artefacts is how we reconstruct aspects of past social structure from artefacts alone and the problems caused by the analytical gap between material culture and social structure. In particular, fragmentary ceramics are often considered incapable of answering ideological or political questions. That said, the production and distribution of pottery, however, happens through the agency of people and thus transfers information within the past and from the past to the present; the condition of the ceramics on their own can be a 'witness' of such transfers of information and the processes involved to produce fragmentary remains. Moreover, from the pottery cycle, the first observable evidence of human involvement is in traces of production processes, macroscopically visible mostly in forming techniques, paste preparation, surface finishing, decoration and firing; further details related to provenance can be examined on microscopic and petrographic levels. In all this, the process of decision-making, in choosing certain techniques and not others is of major importance for the social aspect of our reconstruction of the past. "Indeed, pottery producers (…) select particular courses of action based on their particular knowledge of and position within collective structures and social institutions" (Knappett 2002, 171).

To extend this argument, social structures and activities in archaeology are traditionally perceived as consisting of political, economic and cultural components (see Knapp 1988). While these three aspects are all parts of any social phenomenon, it is difficult to analyse them together. A good way to understand and distinguish these processes has been defined by Knappett (2002) as 'material relations' (economy), 'social relations' (politics) and 'social meanings' (culture). The need for distinction comes when differentiating between processes such as pottery production, adjudged predominantly economic, and pottery consumption, which would instead be considered political or cultural, as would the use of different pottery types from cooking ware to luxurious feasting ensembles, sometimes used to explain social differentiation in early complex societies (see examples in Renfrew 1972). Although this scenario becomes accepted almost by default, especially in Eastern Europe during the period of Marxist influence, it comes with the assumption that when there are quality distinctions among pottery assemblages, it is always to be viewed as class-related. On the other hand, a new shape of utilitarian ceramic may well speak of cross-cultural contact or migration or concomitant social change. Aspects of cultural and social identity can potentially be detected via ceramics in order to illuminate identities, networks, distribution paths, trade, migration, culture change, exchange and innovation (see Rodríguez-Alegría and Graff 2012; Spataro and Villing 2009; 2015). In this respect, it is also important to stress that ceramic vessels can participate in complex processes and travel considerable distances, both as technical trends and as individual objects, containers and commodities. Technological innovations can also take hold or conversely tradition and ideological values can stimulate the maintenance of a style for centuries despite innovations. As traditional behaviours are often linked to identity and a variety of social and cultural factors, they influence aspects of pottery production from fabric, shaping, decoration, and firing (Livingstone Smith 2000; Gosselain and Livingstone Smith 2005; Gosselain 2011). Cultural and political factors can play a significant role and also include the movement of people, which leads to the introduction of new foods, drinks, and serving practices along with pottery shapes and potentially new pottery techniques (see Boileau and Whitley 2010).

An ongoing debate exists also between scholars who see pottery as evidence of trade and those who see it as an ethno-cultural marker of movements of people; this debate extends to whether or not there is a way to distinguish between these two processes (Voskos and Knapp 2008). A further issue concerns the interpretation of pottery sequences and more specifically, whether ceramics from consecutive layers are linked by processes of local cultural inheritance or whether synchronic pottery types with shared characteristics are similar because of a common ancestor or independent but convergent development (Shennan 2002: 74).

Beyond the conservative perspective on pottery in human cultural history, it is still possible to argue that ceramic style can be an attribute with which to explore long-term cultural traditions and wider spatial interactions. One of the main reasons why pottery is favoured by archaeologists is the fact that, along with lithics in certain periods, it is usually the most abundant preserved artefact type, present at most European post-Mesolithic sites, usually datable and receptive to different analyses concerning its morphology, technology, fabric and decoration. A combination of at least some of these elements can be associated with collective groups of people reproducing cultural traditions via a range of learning and sharing mechanisms. For example, based on fineware pottery alone, “changes in the strength of inter-site relationships over time” are detectable (Morgan and Whitelaw 1991, 79). Variations in fabric, style and design can indeed be indicators of local or foreign production and can sometimes reflect group identity, local norms and traditions.

2.1.4. Culture change

One of the inadequacies of the culture-historical approach described above was the lack of interest in understanding how prehistoric cultures operated and changed. The New Archaeology’s reaction was to adopt new approaches that would facilitate the investigation of such questions. Technologically inspired processual studies tried to understand social and cultural systems from the inside by examining different interlinked parts of cultures. Although the initial attempt was to understand how a culture functions, there was also a significant effort made to understand how and why cultural systems changed.

Hypotheses of human migration are often central, if controversial, when addressing culture change. Arguments for the movement of people have been regularly arrayed against non-migrational models of cultural diffusion and indigenous development. In the discussion between radical diffusionists and extreme migrationists, the former were more likely to accept a people's capacity to change. The growing interest in cultural variation, as material evidence accumulated across Europe, prompted early European archaeologists to try to account for both spatial and temporal change. Based on Montelius' interpretation of cultural development was the concept of cultural cores and peripheries, where innovations appear over long periods in particular areas and then diffuse towards the related peripheries (Trigger 2006). This view of change was later called by Binford 'an aquatic view of culture', referring to the perception that every innovation, once invented, spreads gradually outwards like water ripples (Binford 1965, 204). What became typical for this approach, however, was the lack of comprehensive analysis of the nature of human culture and related processes. In the late 1920s, Childe referred to diffusion as no longer a better explanation of culture change than evolutionary concepts, unless archaeologists were to address both internal and external factors that favored the change. He then turned to look for answers in broader economic development (Childe 1958). Also, cultural change was no longer seen only as the result of singular innovation, but depended also on broader economic and political contexts influencing the need for and facilitating the use of those innovations. In this way was explained how the same technological innovations could be related to very different types of societies in Europe and the Middle East (Trigger 2006).

2.1.4.1. Climate change as a forcing factor

While far more dramatic climate change can be documented for early periods of the earth's history, serious if smaller-scale climate changes have been documented for the later Holocene. Whilst there is little argument that larger-scale climatic shifts had an impact on hominid and human range, it is far more debated whether these later

Holocene, smaller-scale climatic variations were still important enough to have had a major causative role in culture change. Some have made links, for example, between early farming and herding in the Near East and changes in the social organisation and the supporting climate conditions, further arguing for the existence of repetitive global cooling anomalies known as Rapid Climate Change events (e.g. Weninger et al. 2009). Some of these anomalies are often pointed to as one of the possible reasons for dramatic culture shifts, alongside economic and military explanations, perhaps beginning somewhat earlier as a part of the arguments of processual archaeology but with increasing emphasis given wider debates in the present day.

Bar-Matthews et al. (1998; 2003) and Meller et al. (2015) discuss three major climatic events in the Holocene, where the first two were associated with events around 3150 BC and the third one related to low precipitation at around 1150 BC (Drake 2012, 1864). There is a hypothesis that the entire Bronze Age was influenced by a climatic episode that led to the highest registered level of the world's oceans after 3500 BC (Todorova 2007), and with the later 4th millennium BC coinciding with the gradual depopulation of Anatolia and the Balkans, the end of Chalcolithic cultures in the region, but considerable demographic growth in the Alps and north-central Europe. Another commonly invoked climatic episode is at the end of the 3rd millennium BC (4.2k BP 'event') as part of which Vasif Şahoğlu (2005) amongst others has suggested the climate-induced collapse of the extensive Anatolian Early Bronze Age (EBA) networks. Another ecological crisis has been suggested for before the beginning of the 2nd millennium BC (Todorova 2007). Another dramatic cultural shift that has been ascribed to rapid climate change is the destruction and abandonment of many Eastern Mediterranean urban centres at the end of the Bronze Age (Dickinson 2010), with Kaniewski et al. (2010) arguing that a "centuries-long megadrought" (Drake 2012, 1862) was responsible for the collapse of Bronze Age palatial systems. The comprehensive analysis by Drake shows evidence for changes in the entire Northern Hemisphere during the LBA collapse (Drake 2012, 1864). This climatic cataclysm is envisaged as having occurred between 1315 and 1050 BC, after which the entire Aegean is more sparsely populated for more than three centuries (Desborough 1964). The arrival of presumably ethnically diverse 'Sea Peoples' (e.g. as evoked by Egyptian records) is then, according to this logic, associated with the relocation of west-central Mediterranean and Aegean groups of people to other areas, and argued to be visible in changes such as local pottery from the Levant and other regions being executed in Mycenaean style (Drake 2012, 1863).

The climatic or environmental factor in such LBA 'catastrophes' was proposed for the first time by Carpenter (1966), but Kaniewski et al. (2010) were the first to identify the end of the Bronze Age as potentially linked to climate change and to propose it as a significant cause. In the Ionian region, these changes were expressed as a 3-4 degrees Celsius decline and, in the Adriatic, cooling of 1-2 degrees Celsius at the same time. More climatic shifts with different significance can be seen also in a larger span between 1694 BC and 1197 BC (Rosen 2007; Staubwasser and Weiss 2006), but the general conclusion is that between 1350 BC and 1124 BC temperatures remained relatively low. The cold climate persisted until around 800 BC, when there is a registered small thermal maximum (Maisch and Neffe 1987). In contrast to this view embracing the significance of smaller-scale environmental catastrophes, a more critical take on the impact of climatic shifts on people argues that the effect of climate on culture can vary and depends on the "rapidity, magnitude, duration, and frequency" of such events an indeed the resilience of specific cultures (Broodbank 2013: 50). Short climatic fluctuations are thus a more predictable risk, while rare, larger-scale, and unprecedented events are more likely to trigger social change, where the role of food supplies and the perception of such catastrophes from a collective instead of individual perspective is a leading variable.

2.1.4.2. Metals and Metallschock

A research project that discusses the Bronze Age, let alone the Thracian Bonze Age, cannot be fully accomplished without addressing the theoretical baggage, for better or worse, of the term 'Bronze Age' itself. Naturally, the defining aspect implied by this label is the development or adoption of bronze technology as a dominant source for a wide range of products all over Europe, where the most important and complex point is the transition from 'pure' copper to alloyed bronze. The spread of bronze technology in a strictly diffusionist way was long considered to be from the Near East towards Anatolia, then southeast, central and at the end northwest Europe (see Sherratt 1993). Early studies were dominated by diffusionist models involving travelling agents from the Near East in search of copper and tin. Recently, most of the Carpathian and Central European cultures have been re-dated via radiocarbon dates to much earlier than previously thought with a transitional period of metal use argued to exist between the Chalcolithic and the Bronze Age going back as far as 3500 BC (for example Glina III – Schneckenberg B). This could account for at least partially independent development of bronze production within Europe and possible broader employment of European 'tin-specialists' from central and western Europe, for example as part of the Bell Beaker phenomenon (Pare 2000). Furthermore, the distinctive development of an earlier copper smelting tradition from as early as ca. 5000 BC as a part of Vinca culture, along with the early development of metallurgy within the Chalcolithic complex Kodzhadermen-Gumelnitsa-Karanovo VI (see Dzhanfezova 2012), has suggested the independent origins of Balkan metallurgy (Radovojevic and Rehren 2016: 205).

The term *metallschock* was suggested by Schachermeyr (1955) and later developed by Branigan and Renfrew for the EBA II period in the Aegean, as a way of describing a sharp increase in metallurgical activities and the elevated ideological importance of metal in the Aegean in general (Papadatos 2007, 154); a phenomenon that has also been described as an 'explosion' of metallurgy (Kayafa et al. 2000, 39). More generally, metallurgy has been argued to have triggered an Aegean-wide increase in cultural interactions, because metal was the first "commodity worth trading" (Renfrew 1972, 455). Renfrew also considered the increase in metallurgy in the Aegean as a part of an 'International spirit', consisting of intensive interaction between regions and people exchanging raw material, technological skills, knowledge, ready-made objects and abstract ideas (Renfrew 1972, 451-455).

The 'metallurgical provinces' (arguably a substitute term for a culture defined by pottery) first defined by Chernykh (1992) play an important part in the discussion of bronze in the Balkans. He saw a significant change in southeast European metal production at the end of the Chalcolithic, which he described as the replacement of a Carpatho-Balkan metallurgical province by the Circum-Pontic one (Chernykh 1992; Pernicka 1998). That early 'boom' of metallurgy seems to have collapsed and been replaced entirely by the use of arsenical copper in the early 4th millennium BC (Vaysov 1993). According to Chernykh, the Circum-Pontic province lasted until the mid-2nd millennium when it was replaced with diverse regional metallurgical traditions from the European and Caucasian traditions (Chernykh 1992). The European metallurgical province, however, was an interaction area already present before the beginning of the 2nd millennium BC and is often considered a driving factor in economic growth, social complexity and elite stratification.

Important for this discussion is that out of the Bulgarian bronzes, the EBA ones are mostly arsenic bronze or 'pure' copper and metallurgy only changed dramatically in the LBA with a large number of tin bronzes (Chernykh 1978). Regular use of tin bronzes in the Carpathian Basin started during the Romanian Middle Bronze Age (MBA). Furthermore, arsenic copper is predominant in Bulgaria and in the Caucasus, while tin bronze is typical for the Carpathian Basin, but infiltrates also both Bulgaria and the Caucasus (Pare 2010, 14-15). However, tin bronze artefacts appear south of Danube only with the appearance of scrap hoards, which started in Central Europe towards the end of the MBA. The pattern of hoards changed c. 1500-1300 BC, when scrap metal and oxhide ingots began to circulate regularly. With the increase in the amounts of copper, tin and bronze available, long-distance trade was undermined by a low-level short-distance exchange (Primas and Pernicka 1998). Whether or not the adoption of bronze was unavoidable as a techno-evolutionary imperative, the abundance of bronze artefacts must have enabled long distance relationships at least in pursuit of tin, the closest known sources of which are in Afghanistan and on the Iberian Peninsula (Harrison 2011, 10). It is worth noting that the sudden appearance of tin bronzes in fact happens in considerable numbers in EB II in the Aegean in general, which suggests an already existing network and knowledge on the ways of obtaining at least raw material. In fact, the origin of those tin bronzes is associated with metal sources of a type that does not occur in the Mediterranean or Anatolia (Stos-Gale 1992; Kayafa et al. 2000, 42). However, according to some, the metallurgical boom at least in the northeast Aegean (e.g. at Troy and Poliochni) was caused by developments in the Near East such as importation of tin bronze (Pernicka 1987).

This type of evidence signifies that weighed metal was possibly used as a means of payment and corresponded to the rise of the Tumulus culture and the end of tell settlements in the Carpathian Basin (David 1998; Pare 2010). Nevertheless, the hoards and the majority of the bronze finds remained concentrated north of the Balkan mountains, while Thrace remained outside of the zone of intensive distribution. There is a hypothesis that the elite-regulated exchange system collapsed, due to the increased amount of tin bronze circulation and was replaced by weighed fragmented bronze. After 1600 BC, the new system was adopted across the entire European Metallurgical Province and in the Urnfield period a large number of scrap hoards had already accumulated between the Carpathians and the Atlantic (see discussion in Pare 2000 and Sherratt 2000). These processes perhaps affected the development of the communities in Thrace in the 2nd millennium BC, but left it somehow out of the bronze circulation zone, possibly not participating intensively in the regional trade or in processes related to extraction and exchange of raw materials. Some Aegean types of bronzes appeared during the 16th and 15th centuries BC, but their number remained small. During the final stages of the LBA some new bronze types of tools and weapons from the northern Black Sea and central Europe emerged in Thrace and remained- in use until the adoption of iron as raw material (Leshtakov 2011, 48).

2.1.4.3. Demographic change

There is often an emphasis on the role of human populations and their demographic dynamics in cultural change. A widespread view exists that technological advances must have been accompanied by a demographic rise (see Hassan 1973; Shennan 2001). Such fluctuations in the size of a population were treated as though they were determined by the availability of the resources used. Accordingly, technological, social and ideological change takes a population out of this homeostatic state and encourages expansion and growth (Chamberlain 2006, 4). Against this model was the position of the New Archaeology and mostly Binford (1968) and Renfrew (1973) that cultural change is triggered by population growth rather than vice versa. However, demographic growth has been seen as a prime driver in prehistoric cultural change, especially in the model of the agricultural spread from the Near East to Europe (Ammerman and Cavalli-Sforza 1973; Chamberlain 2006; Zubrow 1989).

The New Archaeology reacted by emphasising cultural evolution. According to the New Archaeology, cultures evolved from one state to another, for example from 'band' societies to 'tribal networks' or 'chiefdoms' (Johnson 2010, 39). The focus shifted towards seeing the internal dynamics of a society as defining the general direction of its development. The processualist optimistic approach allowed the consideration of more complex possibilities for past reconstruction. Furthermore, processual archaeology was not focused only on the question of 'what' happened, but was more inclined to analyse 'how' and 'why' change happened. When sudden invasions or disasters were considered, processual archaeology would address the processes that determined why such a process was initiated and whether this event would be catastrophic. Were there any internal factors such as demographic increase and territorial stress or indeed changes in the political structure that led to irrecoverable decline rather than rapid regeneration? The stress on the environment led to increasing interest in cultural ecology and subsistence economy and the role of a demographic change. In this sense, an environmental change would affect subsistence, which would in turn affect the surplus and thus the trade-exchange system. The latter could then have an effect on social stratification and the position of the elite (Hassan 1978).

Intensification in subsistence agriculture was often thought to be related to population increase, but the direction of cause and effect is disputed (Shennan et al. 2013). For example, Snodgrass attributed the rise of the Greek city-states to demographic increase, which he considered a primary factor leading to intensive agriculture (Snodgrass 1980). Already in the late 19th century, change was ascribed to pastoralism giving way to farming as population densities increased in prehistoric Scandinavia (Nilsson 1868 in Trigger 2006, 225). The so-called 'oasis' theory, according to which postglacial drought in the Middle East forced people to cluster around water sources and then to innovate in order to feed higher population densities (see Childe 1928), was also based on this concept. An argument also existed that cultural development inevitably resulted in increasing population, whereas 'primitive' people declined in numbers or remained static (Lubbock 1865 in Trigger 2006). Finally, it was noted that culture change may itself result in demographic change, and therefore the demographic signature of migration or related processes may remain unclear (Adams et al., 1978; Anthony, 1990).

2.1.5. Population movement

Understanding human movement and mobility in the past is important but difficult. Movement of individuals or migration of groups has long been employed to answer some of archaeology's biggest questions and thus it has been the focal point of archaeological theory for decades. It was definitively introduced in European archaeology in the late 19th century. As noted above, Kossinna created archaeological cultures, based on material distributions, which he related to distributions of people and their movement (Anthony 1990, 896; Shennan 1987, 366-367). Culture historical archaeology also emerged in the late 19th century and was essentially a reaction to the "awareness of growing variability in the archaeological record" (Trigger 2006, 211). The diffusionist approach in the early 20th century argued that "cultural change in the archaeological record was attributed to the diffusion of ideas from one group to another or to migrations that had led to the replacement of one people and their culture by another (Trigger 2006, 221). Flinders Petrie (1939) proposed that cultural change in Egypt was a definitive expression of mass migration or the intermingling of indigenous population with small but dominant foreign groups.

Migration, then, has been forcefully defined by Gordon Childe and various attempts, although unsuccessful, have since been made to develop a method for recognising it (Haury 1958 and Rouse 1958 in Anthony 1992, 896). As a concept, migration was also tossed around among both processual and post-processual archaeologists (see Anthony 1990; van Dommelen 2014, 477), initially triggered by Childe's use of migration to characterise archaeological cultures and to explain cultural change (Cherry and Leppard 2014, 11). To him there was no question of how or why migration happened, but that it inevitably did. In justification, he stated that "when a whole culture replaces another we are quite clearly dealing with migration" (Childe 1950, 8; Anthony 1990, 896-97; van Dommelen 2014, 479; Hakenbeck 2008, 11-13).

The allegation that archaeological cultures are often defined based on a single category of evidence, mostly ceramics, coupled with extreme migrationist explanations, was essential to the birth of processualism. Binford (1972) aimed to define archaeology as a proper scientific discipline and thus argued that patterns are due to behavioural rather than cultural reasons (Roberts and Vander Linden 2011, 8). Processual archaeologies focused more on internal triggers of cultural change and cultural evolution and left the concern with external relations central to migration theory behind. Some argue that this was a case of "the baby being thrown away with the bathwater" (Anthony 1990, 1992; van Dommelen 2014, 479). However, such a discarding of migration as concept was mainly in a western, English-speaking tradition, while in other regions, like Eastern Europe and the Soviet Union, the culture-historical approach continued to dominate and migration was rarely questioned especially with regard to debates about Indo-Europeans. A good example of an established migrationist view in Europe is the Post-Roman 'Völkerwanderung', also known as the Migration Era, when large-scale barbarian invasions were relatively well documented historically and thus widely accepted. Nevertheless, there has been little attempt to understand the mechanisms of this 'Great Migration' (Burmeister 2000, 540). Furthermore, these isolated examples of accepted migration led to the default perception of population movements as only large-scale invasions and the main drivers of culture change (van Dommelen 2014, 479). Processual Archaeology did not reject migration as an event entirely. Instead, migration was rather avoided, due to the lack of good mechanisms for detecting migration or tools for exploring and explaining how it worked (Anthony 1990, 896). Post-processual archaeologists were traditionally not involved in the migration discussion and instead favoured an interpretative approach towards cultural change, with less emphasis on ultimate cause. The main Post-processual critique was directed towards the scientific method involved as well as the 'materialist' interpretations of previous works and the 'method-centred' approach biasing interpretation (Miller and Tilley 1984, 2). The very nature of post-processual theory arguably did not allow it to seek migration as an explanatory mechanism (Trigger 2006).

The reaction against culture history's take on migration remains important. The main objection is that mapping archaeological cultures and their spatial variations should not be justified by the arrival of new people, but may well be a result of other environmental or behavioural factors (Hodder and Orton 1976; Schiffer 1976). A further criticism has been that many archaeological cultures were created to serve nationalist ideologies and thus cannot be used as trustworthy proof of change (see Kane 2003). Moreover, assigning certain elements of archaeological culture to a specific group of people creates the appearance of archaeological culture, as noted above, so it is then easy to assign any sudden archaeologically visible change to the arrival of another specific group of people (Anthony 1990; Burmeister 2000; Roberts and Vander Linden 2011). Eventually, the rejection of interpreting principally spatial patterning in terms of archaeological cultures led to the dismissal of both it and migration. As Anthony (1990, 897) described it, population movement is often seen as a process whereby a "people invades another's territory, travelling in one direction and establishes residence there" and he argues that such events of a sudden, one time migration, are extremely rare.

Renfrew (1988) attempted to look beyond the movement of people and to focus on economic and other preconditions. He treated movement as a complex development driven not only by conflict, but also by the distribution of technology (Renfrew 1988, 288). Although his view was also criticised, Renfrew's biggest step forward was his demonstration of the complex nature of movement, in that it involves numerous social, economic, spatial and temporal factors. Migration, in fact, resurfaced in the late 1980s in the works of Ammerman and Cavalli-Sforza (1984), Rouse (1986) and Renfrew (1988), but only recently is it making its way back to the theoretical stage.

The reappearance of migration as an explanation has been closely linked to the development of regional and interregional research. One of Anthony's contributions (1990), some time ago, to the re-emergence of the population-movement theme is that he tried to explain some of the actual mechanisms of migration. He suggested we should think of the possibility of an initial wave of migration, followed by a "counterstream moving back" to the perceived homeland. This initial migration of an individual, family or a small group is considered exploratory, since people need to know the conditions in the target destination (Wiseman and Roseman 1979, 330-331 in Anthony 1990, 900). Anthony also argues that a return migration is a "well-known aspect of many migration streams" and at least some of the 'imported' goods traditionally considered as trade objects should rather be identified as a product of such a forth and back movement, especially when addressing a limited number of foreign commodities (Anthony 1990). He considers not only the mechanisms, but also the causes of migration and employs the concepts of 'push' and 'pull' (Anthony 1990, 898). The decision-making element is also discussed and often comes down to the question, 'who moves?' Is it the family, the village or an entire extended group? Moreover, he distinguishes long-distance movement (from short-distance), which could have potentially different consequences and traces in the archaeological record. In addition, he argues that different types of movements are associated with different conditions, where besides economic factors and invasion, there could be a dominant population pressure, culture-specific value and belief-system reasons, environmental stress or a combination thereof (Anthony 1990, 899-900). Considering the mechanisms of migration, Anthony stresses that migration is not an event, but a process (Anthony 1990, 905), and thus, if visible in the archaeological record, its path should be recognisable. One exhaustive example of such processes is, he argued, provided by the gradual mixture of material culture between the agricultural towns of the Cucuteni-Tripolje culture on one hand and the horse-domesticating (probably Indo-European speaking) Yamnaya culture from the Pontic-Caspian steppes on the other. After their initial mutual expansion, Cucuteni-Tripolje cultural forms appear to be eventually replaced by Yamnaya, with the latter argued to have defined the Bronze Age development of much of the rest of Europe (see Anthony 1990). Anthony offers this reconstruction as an example of gradual mass-migration, but also stresses that migration on any scale does not start as such and usually an entire 'culture' does not migrate, but only specific, goal-orientated sub-groups (Anthony 1990, 908).

Although reviving all culture historical migration theories, recent developments in bioarchaeology, ancient DNA and strontium isotope analysis make it possible, at least in principle some of the time, to connect different individuals genetically or identify particular people as coming from particular geochemically-defined regions (Cavalli-Sforza et al.,1994; van Dommelen 2014, 479; Kristiansen 1998; Kristiansen and Larsson 2005; Boric and Price 2013). These new lines of research render it more possible to demonstrate scientifically the plausibility of migration in the past and this re-emphasis should encourage further analysis of the motivations behind people's movement, the mechanisms involved, the likely composition, scale and character of moving groups and the actual consequences (van Dommelen 2014, 480). With population movement put back on the table as a topic, more emphasis has concentrated on the actual mechanisms of movement, such as demic diffusion, so-called folk migration, leapfrog colonisation or a sort of acculturation of local population. For example, Boric and Price (2013) state that, in the Danube Gorges during the Late Mesolithic/Early Neolithic transition, there is a documented mixed population from more than one place of origin, supplemented by cultural hybridity visible in the material culture, as well as some innovative settlement structures and foreign burial rites. They also argue that a route through the Bosporus, linking Anatolia and the Balkans, must have been a central axis for the dispersal of Neolithic groups from Asia and that during the early period of prehistory, dispersal must have happened rather rapidly, for about two centuries, covering large territories (Boric and Price 2013, 3302). While remaining cautious, the same potential holds true for this region in later periods.

2.2. Methodology

2.2.1. Data and material

The rest of this chapter moves from outlining some key theoretical perspectives to questions of method. To begin, it is necessary to make some opening remarks concerning the nature of the material under study. There are two main types of data, which have been chosen as the focus for this research. The first and foremost is a large sample of published pottery sherds and whole vessels across the whole study area, constituting the main type of artefact identified as belonging to LBA societies. Most of the registered sites are in fact identified based on the presence of 'incised ware' pottery, traditionally associated with the second half of the 2nd millennium BC and thus the only candidate for uncovering any potential spatial variations across the region. The second type of evidence consists of known archaeological sites, which are the second most-numerous entity and particularly different site types, again all approached from a spatial perspective. The aim in the chapters that follow is to investigate and combine any potential patterns in an attempt to reconstruct some of the complex social, economic and potentially demographic processes that were taking place in Thrace during the LBA.

However, there are some problems associated with a two-pronged dataset thus defined. The majority of the pottery on the one hand is in a very fragmentary state, which obstructs a more comprehensive understanding of the artefacts' shape, style and function. On the other hand, the studied data is an aggregate of raw, unpublished assemblages, but also contains a large amount of published data. This leads to a bias in description and interpretation due to a variety of research and fieldwork priorities, instead of being a sample designed by one individual or a cooperating team or with a specific question in mind. Similarly, and perhaps even more complicated, is the situation for the site records which originate from a number of intensive and extensive survey campaigns as well as excavations of different character and extent, combined with chance finds. Thus, the interpretation of site type and function largely depends on the original researcher, the period when the research took place and other priorities. This can and most certainly has resulted in artificial gaps in the archaeological record that need to be taken into account. Individual or regional archaeologists' research agendas can also influence interpretation as well: there has been preferential sampling of certain regions and site types and some site types are over-represented due to different levels of difficulty in their detection.

This research, however, intends to synthesise, analyse and understand data obtained from almost a century of archaeological work and is certainly not alone in using uneven and far-from-perfect datasets. Due to substantial progress in the field, adopting, adapting and developing scientific techniques in dealing, at least partially, with such patchy datasets, it becomes feasible, productive and urgent to initiate such a study in a region that has long suffered from either pure 'sherdology' (Özdoğan 2003) or politically-driven avoidance of the Thracian area altogether. In view of the obvious fact that many years of research in the area should not be ignored, the proposed methodology deliberately combines a more traditional stylistic- and typology-based approach on the one hand, and spatial statistical techniques on the other. The sections below address what I think are the key methodological issues in greater depth.

2.2.2. Pottery analysis

2.2.2.1. Sampling

From the existing published record, this projects' selection of pottery records to present in full is based on my direct experience as a finds specialist and initial exploratory analysis over nearly a decade. In particular, representative diagnostic ceramics with clearly discriminative features and potential spatial character have been prioritised. Such features include functional and morphological markers, decorative techniques and style, and some preserved macroscopically observable technological evidence such as specific surface treatment or sometimes colour. The selected ceramics are those with least uncertainty in the interpretation of these diagnostic characteristics, and the resulting set constitutes a database of 3094 selected ceramic fragments coming from over a hundred sites and the entire Thracian study area.[1] I also return to the question of any gaps in this diagnostic assemblage in the final chapter. As a whole, it can be argued that this is the first large-sample, holistic treatment of such a dataset for this region and hence an illustrated appendix of pottery examples is included as a key contribution.

2.2.2.2. Classification and Typology

The ceramic dataset has been classified into macroscopically identifiable groups. A first level of classification is based on generic technological characteristics, separating coarse from fine and semi-fineware, which is also often referred to as a distinction between cooking on the one hand and tableware on the other. I employ 'coarse' and 'fine' for the following reasons. First, I do not separate fine from semi-fineware, because of the lack of any precise distinction observable at a macroscopic level and the subjectivity involved in the existing description of the types and the density of inclusions. Second, I find it more suitable to refer to coarse and fineware instead of cooking ware and tableware as general groups because many types that would usually be described as table ware have been found also in burial contexts and some categories could be used as table, storage, or cooking vessels, although executed in different fabric. That said, the typology applied

[1] The sample size of the site record is larger (358), but not all sites yielded diagnostic ceramic material or the ceramics were not accessible for study.

hereafter is based on general vessel shape defined by category, deviations from the main shape grouped by types and further specific details assigned as variants. Morphological characteristics are defined based on the forming of the rim and its lip, the neck size and silhouette, the shoulder transition, the shape of the body, and when applicable, the type of base. The type of decoration technique is also included in the analysis. The distribution of each type is then plotted as part of initial exploratory analysis. Technological markers such as different techniques used for similar types of decoration are also traced across the sample, as are differences in the surface treatment as well as general colour schemes.

Unique one-off examples of a vessel type are typically excluded from my distribution maps, but incorporated into the final interpretation of origin and function. For the purposes of visualising typology and material presentation, line drawings have been produced (by me) for a large, representative sub-sample of the pottery dataset (see Appendix 1), some of which are accompanied by photographs. A large portion of the data was unavailable for direct study for reasons of loss or restricted access, but I have personally studied some 60% of it, and am personally familiar with a yet wider collection from the region from both excavation and survey.

2.2.2.3. Regional zoning and spatial clustering

One of the challenges of this dissertation and the study of Thracian LBA ceramics in general, lies in the fact that the majority of pottery under study is in a highly fragmented state and good stratigraphy or stable existing chronological frameworks are lacking, all of which inhibits thorough statistical analysis. That said, there is a significant body of accumulated material and it is possible to trace pottery production and distribution patterns within specific regions. For example, the regional zoning suggested by the distribution of specific site-types can be compared with the observed spatial variability of the whole pottery repertoire. One formal statistical approach used here is to examine the distribution of different ceramic types across the study area by constructing ‘relative risk’ surfaces, which map the spatialvarying ratio of the probability of an event occurring (Bevan 2012; Hazelton and Davies 2009; Kelsall and Diggle 1995), identifying the extent to which different types are spatially correlated and whether their combined distribution forms clusters of preferred pottery shapes. The idea is to assess whether spatial variation in the incidence of two or more types of events, in this case ceramic types, is the same (Kelsall and Diggle 1995: 2335). Alternatively, the identification of areas of unusually high or low incidence of one of the types within the study region identify possible 'risk factors'. In other words, the analysis results in raster 'relative risk' surfaces with an estimate of the spatial variation of each type across the area. The study covers the most common pottery groups and types that can be traced throughout different parts of the area. Some rather rare or specific shapes are also included when they exhibit clear, spatially sensitive characteristics.

It is also important to examine the cumulative distribution of different, seemingly unrelated pottery types, in order to test whether or not there is a wider regional pattern, beyond the plotting of single distributions. The method is more experimental but extends the idea of relative risk surfaces to a multivariate case, taking the ratio of the kernel density of the observed cases to the population at risk (Bevan 2012, 500). An unsupervised clustering technique, identifying whether there is a hidden structure within the data regardless of its categorisation, is applied on a stack of relative-risk surfaces of all pottery types as if they were a multi-band raster image. The image is then classified based on each individual pixel across these different bands using Random Forests classification (see Breiman 2001). The Random Forest classification technique is attractive, because it handles mixed variable types, is invariant to monotonic transformations of the input variables and is robust to outlying observations. It also handles large number of variables due to its 'intrinsic variable selection', which weighs the contribution of each variable according to how dependent it is on other variables (Shi and Horvath 2006: 134, 135). This multivariate version of relative risk analysis is a novel methodological contribution in archaeology to my knowledge.

2.2.2.4. Limitations

The main limitation in the pottery analysis is first related to perceived gaps in the data. There are many sub-regions without an archaeological record due to the unevenness of archaeological work in the area and methodological discrepancies where work has been done, which makes the comparison difficult. Second, pottery data was not available for study from all of the sites, because of primary record loss with regard to context and provenance and/or lack of accessibility to the actual artefacts. Thus, despite having directly studied a great deal of material, some of the pottery characteristics I use in what follows, especially concerning technological descriptions, combine my personal observations and those of other authors. This inevitably results in bias embedded in the analysis and, therefore, I have tried to involve as many morphologically-based criteria as possible, in an attempt to reduce the effect of so many different people's interpretations combined in one study. Furthermore, only one class of pottery, the 'fineware', is taken into account in this thesis, due to the character and the condition of the record. Any future studies that would involve other scientific methods, such as petrographic and neutron activation analyses, would contribute to explicating LBA ceramics in Thrace in a fuller fashion.

2.2.3. Site analysis

Given this patchy prior context for research, the spatial analytical component of this PhD project focuses on three major objectives: a) a qualitative assessment of variation in the character of settlement and burial sites across the whole region, b) a semi-quantitative assessment of landscape change and of perceived gaps in the archaeological distributions across the whole region, and c) fully quantitative modelling of the locational preferences exhibited by settlements and burial sites.

2.2.3.1. Site definition and exploratory site-based analyses

The site data collection strategy was first formulated based on the presence of 'incised ware', which identifies sites dated in the LBA. Limitations were imposed by the presence of the borders of the existing nation states as these resulted in a research gap in terms of how does incised material relate to the archaeology on the other side of the border and local regions where this ceramic marker is not relevant. The sites included in the analysis were identified based on the presence of this distinctive type of pottery under study. Thus, 249 sites have been gathered in the Bulgarian portion of Thrace and 109 sites in Greek territory, with more than half of them falling into the geographical bounds of Greek Macedonia.[2] All of these sites have been included in general analysis offered in in chapter 9 in order to avoid any deterministic starting choice of a geographical 'Thracian' study area in an attempt then to trace the distribution and dispersal of similar prehistoric cultural features empirically.

Although a significant amount has been published in both the Bulgarian and Greek archaeological literature which is relevant to the material under study, almost nothing is really known about the Turkish part of Thrace. While there have been several intensive survey campaigns in Turkish Thrace (see Özdoğan 1993; 2002; 2003), the material has never been made publicly available. Özdoğan referred in print to the pottery found during those surveys and concluded that the entire 2nd millennium BC was underrepresented. Nevertheless, due to terminological issues that exist in the region, especially when discussing what the LBA and the EIA actually are, I decided to try to address this apparent gap directly as a part of this research. Due to a generous collaboration enabled by Professor Özdoğan, I was able to study the material from his survey in its entirety and anything else relevant that was available at Istanbul University. It is striking therefore that, as a result of this exercise, I was not able to identify any material comparable to the LBA incised ware from the rest of Thrace. There are no sites from Turkish Thrace that can be included in this study as currently formulated, with incised ware as a core diagnostic marker. However, a separate section in chapter 10 is dedicated to the possible reasons for the absence of this material.

A substantial number of Bulgarian sites were initially discovered and recorded as part of the project 'Archaeological Map of Bulgaria' (Arheologicheska Karta na Bulgaria or AKB), which was initiated in 1990 and in which I have been heavily involved since 2001. As part of the main strategy of the project, the results of a number of survey campaigns and other forms of site registration were entered in a standardised way into a database (initially a relational database, but presented in the Appendix 3 as a flatsheet table for simplicity) that allowed extraction and querying of a number of basic criteria. The most

[2] In this context, the name 'Macedonia' is used to address a territory adjacent to West Thrace, e.g. the modern-day Greek province of East Macedonia and parts of Central Macedonia. This topic will be discussed further in chapter three.

useful available site attribute information of this kind relates to environmental location, functional site interpretation and identification of each site's chronological phases. Some of the sites have also been published in a more detailed fashion, which allows further refining of the record mostly in terms of site interpretation.

The equivalent information concerning sites on the Greek side of Thrace has been obtained mostly thanks to the work of David French, who undertook careful cataloguing and mapping of the majority. Some site information was also extracted from other publications, mostly the works of Chaido Koukouli-Chryssanthaki, Stelios Andreou, Kostas Kotsakis, Demetrios Grammenos, Kenneth Wardle and Diamantis Triantafyllos. Adjustment of coordinates, when necessary, was made based on personal visit to sites using a handheld GPS with the assistance of Google Earth for precise location. Coordinates were recorded in unprojected Latitude/Longitude format (WGS84 datum, see Appendix 3).

With that empirical foundation, I have further divided Thracian sites into three main categories: settlements, burial sites, and possible sanctuaries. For the first two categories, the interpretation leaves little room for misidentification, due to the usually obvious characteristics of those places, which I will describe in later chapters. However, due to the fact that the majority of these sites have been identified by survey alone, there is a possibility for some error, mostly when the site is not a tell or a burial mound. The third category, possible sanctuaries, however, is traditionally assigned by Bulgarian archaeologists to rocky, steep environments with no visible possibility of continuous occupation and little obvious agricultural potential. Very few of them have produced actual features or artefacts, which could be related to strategically selected places for religious practice (see Leshtakov 2008). However, this category of site seems to have specific characteristics in its landscape choice, presence of material and geographical distribution, and cannot be directly associated with any of the other site categories. A significant amount of surface ceramic material, however, originates from these locations and thus I consider them in what follows as a separate category provisionally termed 'sanctuaries'.

In addition, there are a few other types of sites with relevant material, i.e. caves, mines, niches, well deposits, and enclosures that have been taken into account. However, there are only isolated examples and thus it is difficult at this stage to incorporate them in any formal locational modelling. Nevertheless, they have been included in the main model and considered in the general interpretations offered towards the end of this study.

As a complement to the pottery distribution analysis, a regional zoning approach using 'relative risk' surfaces will also be applied to the site types (as for the pottery distribution), identifying the way in which different site types are distributed across the Thracian region and how this relates to independent evidence arising from the pottery-type zoning. More precisely, the combined ratio-based surfaces of the site evidence will be subjected to an unsupervised Random Forest clustering and compared with the results from the similar approach to pottery to explore their relationship.

2.2.3.3. Statistical location modelling

Despite the risks associated with an uncritical drift into geographical determinism (Gaffney and Van Leusen 1996), here I am taking a view that technologies such as Geographical Information Systems (GIS), whilst focused on modelling Cartesian spaces, can also be employed in various ways to understand wider human social landscapes (see Wheatley 1993). Besides revealing relationships between people and space, they can also be used to trace changes over time. Central to these GIS-led aims is the effort to detect a pattern, if one exists, and the attempt to identify how this pattern came into existence. A further important part in my research is therefore a spatial analytical component that builds upon simpler assessment of ceramic distributions and focuses on three major objectives: i) qualitative assessment of variation in the character of archaeological sites across the whole region, ii) semi-quantitative analysis of the spatial distribution of sites, and iii) quantitative assessment of differences across space and of perceived gaps in the archaeological evidence. This strand of research falls under the umbrella of formal, computationally-led, site location modelling. Location modelling in general addresses what we might learn about external factors influencing the relative density or intensity of an observable pattern of locations in space. In archaeology, the analysis of site distributions has commonly become known as 'site predictive modelling', ‘site location modelling’ or often just ‘predictive modelling’ (see Kohler and Parker 1986; Judge and Sebastian 1988; Kvamme 1989, 1990, 1995, 2006; Hudak et al. 2002 Bevan et al. 2013; Crema and Eve 2014; van Leusen et al. 2005; van Leusen and Kamermans 2005; Verhagen 2007, Verhagen and Whitely 2012; Allen et al. 1990; Lock and Stančič 1995). A predictive model is generally an expression of a probabilistic relationship between human site location behaviour and pre-existing environmental conditions (Verhagen and Whitley 2012, 71). There are many statistical approaches to predictive probability modeling. Here, I have employed multivariate logistic regression, which allows us to consider what factors might affect the presence or absence values of a dependent variable, in this case site presence or absence across different cells of a landscape. The choice and the processing of variables will be discussed later in chapter 5.

A first major concern when addressing spatial patterns of site locations is the choice of their representation by a point, which is considered a significant simplification of a real-world entity that could otherwise be abstracted as a more complex 2d polygon footprint, a fuzzily bounded distribution of on-site artefacts or complex 3d topographic or architectural entities. The degree to which such abstraction is a problem depends on your requirements for the chosen analysis (Bevan et al. 2013). For a macro-regional study such as this one, a point abstraction for each site seems appropriate. The dichotomous nature of the dependent variable requires input data for site presences on one hand and site absences on the other (simply put, grid cells on the digital elevation model and related surfaces, which are either 1 for site presence or 0 for absence). The former should consist of known archaeological locations, while the site absence category should ideally consist of locations where archaeological sites are directly-confirmed as absent (non-sites). However, in this particular study, not all regions have been explicitly surveyed (as is true of many or most country-scale datasets), so we must live with the fact that the non-site sample is created using a random sampling method. The use of randomly generated non-site samples has been addressed by Kvamme (1992) and subsequently employed broadly. It is commonly assumed that if a site is not reported at that location, then it is in fact a non-site. Nevertheless, it is almost impossible to determine whether a non-site selection is actually absent of archaeological remains, sometimes not being superficially exposed. However, archaeological sites are considerably rare occurrences across the landscape and it is very likely that a randomly generated non-site is in fact a non-site. Thus, the global model produced is generated on the assumption that random locations remain a good indicator for general trends and dependencies in environmentally-based correlations.

Beyond the identification of sites and non-sites, our understandings of geographical and cultural patterns and processes are highly dependent on scale (Harris 2006, 39). Ignoring the importance of scale and its complexities, might lead us to misrepresent the past in a variety of ways (Lock and Molyneaux 2006, 1). Changing the size and positions of the chosen spatial units, such as the sub-regional blocks used in subsequent chapters, can result in the disappearance or emergence of statistical patterns (Harris 2006; Openshaw 1984, 18). A core question is how to define an appropriate scale or scales of analysis, and how relevant the results will remain if we change that scale. One of the tasks of spatial analysis in this dissertation will therefore be to explore the influence of scale on inferences across the study area and to acknowledge the effect of spatial heterogeneity (localised variability that undermines global conclusions) or spatial non-stationarity (a more specific term meaning that modelled statistical relationships are seen to vary locally, Fotheringham et al. 2000), and especially to experiment with different spatial scales and resolutions in order to achieve better interpretation. This concept of local spatial heterogeneity of pattern relates to both natural and social aspects, for example with respect to the uneven distribution of resources like drinking water or communication routes. Similarly, arable land is not available everywhere or can already be occupied by others, ores and minerals have restricted distributions too. This diversity is therefore employed to reveal and interpret people's locational choices across the landscape with respect to their social, cultural or economic needs.

Before the initial multivariate model is generated in a later chapter, issues of interdependence and significance amongst the possible predictor variables that I might use also need to be addressed. Due to the relatively large number of possible predictor variables, certain key candidate variables are explored in a univariate way first, and then the significant ones are combined via a stepwise model selection based on Akaike Information Criterion (AIC, see Anderson, Burnham and White 1994; Burnham and

Anderson 2002). The latter criterion attempts to minimise the loss of information in a given model by detecting which model best approximates the observed data, via sequentially reducing the number of predictors and considering how much their absence from the model reduce the effectiveness of the prediction. Although suitable for archaeological research, the information-criterion approach has been employed rarely (see the discussion in Eve and Crema 2014, 272). The key issue with this approach is the possibility of integrating too many variables within the sample. Reducing their number, however, could result in another bias if we select the ones that might be of importance to one sub-region but do not play a role in the prehistory of another. "The best model is thus the one that provides the highest amount of information that we are interested in, with the lowest level of complexity and number of assumptions" (Eve and Crema 2014, 272). Therefore, in this case, the information criterion is applied as a second option after the general fitted model is produced, to assist in omitting statistically unnecessary variables, after which the alternative models can be compared to see which is more likely to produce the observed record. Finally, an alternative approach provides a comparison of the means of the variables in the so-called analysis of covariance (ANCOVA). This is a way to address the same dataset, but under different conditions and hence to use it as a corrective when possible. At the end, a reconstruction is suggested based on the strongest selection comparing the global model, the stepwise AIC model, and the analysis of covariance of raw and logged data.

It is logical to assume that different types of sites result from differently motivated choices about location. The criteria necessary as desired for a settlement would not be the same as those relevant when choosing a place to bury the deceased. If a cult were involved, other factors would have played a primary role. A model that discriminates consistently between settlements and other site types would support much better interpretation, but the possibilities for its application to a Thracian LBA context are limited. In most areas, certain site types dominate, whilst others are under-represented to an extent that they are too few to be analysed statistically. Nevertheless, there is one much better known intensively surveyed area in the Rhodope Mountains that provides a sufficient basis to integrate site categories into a location model. Considering one micro-region this way is also a useful way to explore the implications of a change to a smaller scale of interpretation. I first explored this Rhodope region as a part of an MSc dissertation and here I develop that work further, introducing a non-parametric multinomial logistic regression, which allows the prediction of possible outcomes of a categorically distributed dependent variable. In this case, all sites from the area were examined within the same model and the non-site dataset became unnecessary. This model was used as a corrective and explored as a potentially useful, novel technique for future research.

A further crucial and well-known methodological aspect that needs to be mentioned is the fact that correlations between site locations and the environment do not automatically imply a causal relationship (Kohler and Parker 1986, 400, 401). Nevertheless, used carefully and with attention to issues of missing variables or co-dependency among variables, location modelling can still serve to highlight people's locational priorities and help to identify specific patterning within individual human groups in a sub-region or common patterning across many different groups. This approach, besides the specifics it might reveal, in combination with the examination of the pottery characteristics across the region, better supports a wider assessment of Thracian Bronze Age life and regional cultural groups. Accordingly, in what follows, I will refer to the models developed in this dissertation as 'site location analysis' or 'site location modelling', with the purpose of implying my goal is at least in part to try to understand decision-making, instead of 'predictive modelling' where pure prediction is the only required outcome (Verhagen and Whitley 2012, 53).

Last, but not least, "most archaeological predictive models rest on two fundamental assumptions. First, that settlement choices made by the prehistoric peoples were indeed strongly influenced or conditioned by characteristics of the natural environment. Second, that the environmental factors that directly influence these choices are portrayed, at least indirectly, in modern maps of environmental variation across an area of interest" (Allen et al. 1990, 62). Predictive models assume the environmental factors that influenced settlement choices are accurately represented in modern maps of environmental resources (Warren and Asch 2000). So one issue is the relevance of modern data, but another is a post-processual critique of predictive modelling which duly argues that the modern natural environment is a very incomplete and unsatisfactory explanation of past human behaviour, and rather that cultural choices are determined by the individuals themselves who need to be more central to our interpretation. Such a criticism maintains that no quantitative model can be more convincing than a human's perception of the past (Verhagen and Whitley 2012, 60). The main issue is therefore to recognise what might have been a people's drive towards or interest in a location within their socio-environmental context. Too 'straightforward' a relation to the environment is considered insufficient as an approach for humans. A way to overcome this area of fierce processual/post-processual argument, and to learn from it, is to place emphasis on complexity theory where multiple model outcomes and interpretations are seen both as likely and as part of an ongoing research process, rather than as a barrier to analysis (Bentley and Maschner 2003).

2.2.4. Comparative regional analysis

The penultimate and final chapter of the dissertation steps back to compare the results of pottery and site analyses with a wider set of regional artefact types. Following a central methodological point for this study, i.e. the need to let different study sub-regions arise out of the distinctiveness detected via the pottery and site records, each suggested sub-region has been modelled separately, and alternative configurations have been proposed. An attempt is made to trace directions of influence and cultural change over the LBA in Thrace, and to refine and discuss the current chronological picture with regard to external connections, partial synchronisms among neighbouring sites and the limited but recently accumulating number of radiocarbon dates.

This approach requires recognition of some concepts to do with our perception of past landscapes and the relationship between people and the environment, such as cultural ecology. A central tenet of culture ecology holds that adaptation to the environment provides an impetus for culture change (Steward 1955). In this, the level of human adaptation to social and physical environments is believed to enable a human population to survive in accordance with that environment, implying culture variation with respect to geographic areas with different ecologically-based resources (Duncan 2007, 15). Accordingly, the majority of archaeology studies are considered 'region-sensitive' or 'site-sensitive', regardless of the subject of the research: they implicitly or explicitly have a study area beyond which their conclusions are not meant to hold. On the one hand, however, it is often hard to choose and define precisely a study region and, on the other, even harder to justify that choice. A major consideration is how a 'region', which ideally would reflect a space of defined human behaviour in the past, is delineated in practice. Indeed, archaeological research is regularly restricted spatially by modern political borders or other practical constraints (Parsons 2004, 8). It is also common to initiate a study based on topographic boundaries, whilst considering the patterning of material culture to define analytical regions, "often equating a spatially contiguous distribution of distinctive artefacts with a sociopolitical or sociocultural group" (Kantner 2008, 42). Thus, the questions, the methodology and the tools applied depend largely on the choice of region and its boundaries (Johnson 1977, 499). Nevertheless, although it is nearly impossible to suppress the modern perception of a region, the controlled awareness of the restrictions caused by that perception can enhance many aspects of research.

With the employment of computational methods and statistical analysis of large datasets since the 1960s, along with an increasing interest in archaeological survey and the integration of a wide range of new types of data, there was a significant escalation in the development of regional archaeology (see Flannery 1968; 1976; Krieger 2012). The relationship between human behaviour and the landscape was often privileged to the extent that some commentators since have warned of this perspective becoming a kind of 'environmental determinism', with general features and the regional variations of cultures and societies are assumed to be determined by natural landscapes. In subsequent years, the bond between environments and archaeological units became even stronger and archaeologists have had to face the limitations of the discipline when it comes to the reconstruction of prehistoric sociocultural landscapes (Parsons 1972; Kantner 2005, 40). Due to the non-primary nature of a 'region' in archaeological analysis, aiming at a reconstruction of past human behaviour was a much more challenging task for archaeologists than for geographers (Ruggles and Church 1996, 161). Cultural ecology specifically focused on the complex relationship between people and environment on a regional scale (Shennan 2002; 2015). It was argued that people and places could be seen to be connected through the creation of material identities (Chapman 1988; Chapman 2013, 183, 185; Tuan 1977). Such social landscapes are, according to Chapman, created by groups of people within a structure cohesive enough to leave material markers; otherwise, both the structure and the place would remain invisible (Chapman 2013).

During and after the 1990s our approaches to archaeological regionalism have been affected by rapid progress in computer technology and its potential for complex spatial analysis. The adoption of Geographical Information Systems (GIS), which only became widely available during the 1990s (Gaffney et al. 1996; Lake et al. 1998), allowed more thorough regional analysis and understanding of the restrictions involved, and encouraged better applications of tools specifically for archaeological needs (Conolly and Lake 2006; Wheatley and Gillings 2005; Kvamme 1989; Maschner 1996). Within the theoretical framework described earlier, GIS and the combination of methods listed above, have the potential to cast the LBA in Thrace in fresh light and potentially to help reconstruct some of the processes that affected the region during the 2nd millennium BC. Nevertheless, it is important first to define more clearly the geographical setting of the study area and to place Thrace, as an idea, in its historical context. It is to these issues that the next chapter turns.

Chapter 3. The Thracian LBA in Context

3.1. Introduction

One of the most problematic but interesting areas of this dissertation encompasses three questions ‘what is Thrace?’, ‘where is Thrace?’ and ‘why Thrace?’. To begin an answer to the simplest first: most archaeological research, if not entirely theoretical, is by definition bound to a geographic unit of one kind or another. Due to the operating conditions and social networks of 20th-century archaeology, research has tended to be defined strictly within the modern borders of nation states, even when these are not necessarily the best analytical or interpretative units. Neither is an alternative, topographic, rather than a political, boundary ideal for many purposes, but it is at least a start in defining something less anachronistic. I will therefore begin this chapter with a topographic view of Thrace that is very wide, spanning three modern countries and seek to interrogate this further via the questions ‘where’ and ‘what’ in the sections below.

3.2. Modern geographical description and sub-regional definition

Leaving aside the complicated modern geo-political situation, Thrace also constitutes a geographic region which is geomorphologically and climatically diverse. Furthermore, it is the main contact point between Asia and Europe as well as the central position between the neck of the Balkans, the Aegean, the Black Sea and Anatolia (Figure 3.1). For this reason, Thrace has been traditionally considered as a key zone and a cultural bridge transmitting people, ideas and things between the continents (Özdoğan 2004: 390).

Figure 3.1. Map of the area with main places mentioned in the text.

In purely geographic terms, Thrace is a part of the Balkan Peninsula, which is traditionally considered the northern part of the eastern Mediterranean as well as the southern boundary of Europe. Just north of the Aegean Sea lies "Europe beyond the olive trees" (Leshtakov 2006: 142; Yaranov 1940: 10-12), which hosts certain climatic characteristics defined by a mix of mountains, plateaus, valleys, and plains, cut by several large rivers such as the Danube, Sava, Vardar (Greek Axios), Maritsa (Greek Èvros, Turkish Meriç), Struma (Greek Strymon), Mesta (Greek Nestos). The steep slopes of the Balkan Mountains (Stara Planina)[3] cut a large part of the peninsula in half. Due to this serious barrier, there are climatic contrasts dividing the deep snow areas from the olives and the figs.

[3] Stara Planina (Old Mountain) is the modern Bulgarian name of the Balkan mountains (Haemus). Although today we accept Balkan as if the name always existed, it was initially applied sometime in the 19th century to the mountains better known to educated travelers as ancient Haemus (Mazower 2002: 2).

The eastern part of the Balkan Peninsula consists of a number of geographical and climatic zones divided from each other by mountain chains. This segmentation is reflected in the considerable temperature variations characteristic of the region. This diversity comprises continental, trans-continental (or Continental-Mediterranean) and Mediterranean types of climate, which is the full variety of possible climates distributed between central Europe and the Mediterranean coast. An immensely important climatic barrier for the area was and still is the Balkan Mountains, a significant single factor that affects local microclimatic conditions by stopping the northern winds. Its elevation defines the existence of a 'north' and 'south' in the Balkans, where the south is warmed much earlier in the year than the north. North of the Balkan Mountains the climate is fully continental, with cold, wet winters (with temperatures as low as - 30°C) and cool summers. The south is much warmer in summer and reaches 38°C, even in the area of the Rhodope Mountains, the southern barrier that stops the southern dry winds. Trans-continental climate prevails in the area between the Balkan Mountains and the Rhodopes. The temperatures moderate from northwest to southeast and affect the water balance and the vegetation (Leshtakov 2006: 146). These fluctuations are modified along the Black Sea coast to give warmer winters. On the other hand, strong northern winds penetrate through the valley of Tundzha in the winter, which affects the southern part of Sakar Mountain (Leshtakov 2006: 146). South of the Rhodopes the climate is slightly wetter and milder than that further south in the Aegean, but as in the rest of modern Greece there is very little rain during the summer months (Archibald 1998: 18).

In general, the majority of Thrace has a continental climate with long frosts, where snow could last until May, especially in the mountainous areas. The summers are significantly warmer than those in central Europe and the difference in temperature between the Balkan Mountains and Aegean Thrace is far smaller than in winter. In the neighbouring areas, particularly north of Thrace, rains fall all through the year, while within Thrace summer rains are very rare. In prehistory, climatic conditions varied and sometimes the steppe climate reached the Balkans and central Europe. This caused more rains and lower temperatures in the summer period. Today only the very eastern parts of Thrace keep their steppe-like character, especially the Black Sea coast and Turkish Thrace.

The most fertile 'black' soils, similar to those in Ukraine, Moldavia and the Carpathians, can be found along the valleys of Maritsa and Tundzha, as well as in the Strandzha Mountains. The vegetation today is rather limited on the mountains of Thrace, but it was far more plentiful in prehistory. The lowlands and river valleys consist of fertile agricultural areas, while the low mountainous hilly environment was mostly pasture lands and small fields. Deposits of metals were available and mined in the Rhodopes, and also in the Valley of the Roses, near Kazanlak (notably gold and copper). Iron ores dominated in the Strandzha and along parts of the Black Sea coast.

The warmer area defined by the Balkan Mountains to the north, the Aegean to the south, the Black Sea to the west and the high massifs of the Rila and Pirin Mountains to the West is also the physical definition of Thrace. The area is geomorphologically diverse and thus abruptly divided into several sub-regions which imply a variety of living conditions, potentially dependent on water balance, soils, vegetation, raw materials, natural routes or other environmental factors. Traditionally defined are the following units: 1) the Sub-Balkan Fields, 2) the Upper Thracian Plain, 3) the Middle Tundzha (Tonzos) region, 4) Sakar Mountain, 5) Strandzha (*tr.* Istrança) Mountain, 6) the southwest Black Sea coast, 7) Tekir Dağ upland and the Gelibolu Peninsula, 8) the Rhodope Mountains, 9) the Lower Maritsa Valley and the Ergene Plain, 10) the West Thrace, 11) the Valley of the Struma.

3.2.1. Sub-Balkan Fields

The northern zone of Thrace, known as the 'Sub-Balkan Fields' (*bg*. Подбалкански полета) is geomorphologically enclosed by the vast mountainous barrier of the Balkan Mountains range to the north and the forests of Sredna Gora to the South. The region is fragmented in several plains by the rivers Buynovska, Topolnitsa and Stryama. The fields are at a relatively low altitude of about 400 m and mostly consist of alluvial terraces (Galabov et al. 1977: 228-9). Although it is on the southern side of the Balkan Mountains, the climate is continental and isolated by the Rila and the Rhodope Mountains from the Aegean's warm influence. Northern and northeastern air masses from the Atlantic bring frequent rainfalls. Although without favourable living conditions, the area is suitable for different types of agriculture and contains deposits of copper, manganese and pyrites (Galabov et al. 1977: 229-231, 223-226). The paleobotanical record testifies that in the past the region was covered by deciduous forests, mainly oak (Borislavov 1999: 61).

3.2.2. Upper Thracian Plain

Immediately south of the Sub-Balkan fields lies the vast plain of Northern Thrace, known as the 'Upper Thracian Plain' (*bg*. Горнотракийска низина). Four mountainous features surround it: Sredna Gora, the Rhodope Mountains, Sakar Mountain, and the Svetiilijski and Manastirski heights. It is typically flat terrain and movement is not obstructed by any orographic barriers. The maximum elevation reaches 400 m (Kiradzhiev 1990). The main rivers crossing the plain are Luda Yana, Pyasachnik and Stryama to the north and the large Maritsa basin to the south. There are no high terraces in the Upper Thracian Plain and the alluvium deposits shape its flat features.

The area is part of the trans-continental climatic zone. Its typically mild winter is favourable for agriculture. The Maritsa River defines the main drainage network, which was navigable for small rafts in the past. There is evidence for the transport of goods between the North Aegean coast and the interior of Thrace along the Maritsa (Archibald 1998: 13). The valley of Maritsa has also been considered as the most convenient route from Asia Minor to the central parts of the Balkan Peninsula and from there to central Europe. The economic and strategic importance of this valley as a route has made an impact on the concentration and location of settlements in prehistory. Along its full length this route crosses other paths between north and south through the Rhodopes and Balkan Mountains and thus acts as a hub of different influences and goods coming from different directions. Therefore, the deficit of archaeological sites along the lower Maritsa course seems unusual and signifies the importance of the border between Greece and Turkey and its impact on the archaeology of Thrace.

Other streams characteristic of the plain are the Topolnitsa River, Luda Yana, Stryama and Sazliyka, all of which are tributaries of the Maritsa. Entering the Upper Thracian Plain, they have formed wide regions of surface alluvial deposits, which are favourable for agriculture. The soils are typically vertisols known as the most fertile type of soil in the region. Favourable features are the natural mineral water sources near Simeonovgrad and Plovdiv (Borislavov 1999: 34).

3.2.3. Middle Tundzha Region

The area between the Upper Thracian Plain and the Black Sea coast is known as the 'Middle Tundzha region'. It consists of small heights, hilly valleys and low fields. The basin of the middle stream of the Tundzha River, flowing from north to south, unites this diverse relief. The Tundzha *per se* is a left tributary of the Maritsa. It springs from the southern slopes of the Balkan Mountains and flows through the Kazanluk Basin and the Upper Thracian Plain. The river flows through Bulgaria and joins the Maritsa near the city of Edirne, Turkey. Here, its width is approximately 35-40 m, but it is very shallow and thus unnavigable. (Galabov et al. 1977: 234). The climate of this zone has trans-continental characteristics and is very similar to that of the Upper Thracian Plain. Likewise, in this region the conditions for agriculture are very propitious: there are vertisols along with alluvium deposits. There are deposits of copper on the lower heights of Bakadzhitsite (Borislavov 1999: 38).

3.2.4. Sakar Mountain

Sakar is a small and relatively low mountain, dividing two other massifs – the eastern part of the Rhodope Mountains and Strandzha, by two main rivers, the Maritsa and Tundzha. The slopes are steep, mostly denuded of forests and sharply cut by the valleys of the multiple river tributaries. The main ridge of Sakar is determined by a row of flat peaks (northwest-southeast), with the highest peak being that of 'Vishegrad', which has an altitude of 856 m (Borislavov 1999: 46). Sakar is an interesting spot in the sense that its northern part is very similar to the Upper Thracian Plain's trans-continental climate, while the southern part of the area is strongly influenced by the Mediterranean and is one of the hottest spots in contemporary Bulgaria. In geological terms, the largest part of the mountain consists of granite-gneiss, marbles and metamorphic schist (Borislavov 1999: 47). The diversity of rock compositions coerces a variety of soils, amongst which the cinnamon-forest soils dominate. In general, the area is poor in minerals, except for some auriferous river streams. There is evidence that in the past, the mountain was covered by woodland, but today it is almost completely deforested.

3.2.5. Strandzha Mountains

The Strandzha massif is a metamorphic complex that is located in the southwestern region of the Black Sea, where it occupies a relatively large area of Thrace. Here also, the main part of the border between Bulgaria and Turkey stretches from the Tundzha in the west to the Black Sea in the east. The northern boundary of the mountain is an 'east-west-trending flysch-volcanic zone' (Yýlmaz et al. 1997). The southern boundary of the mountain reaches the Bosporus hinterland and is a fault-line zone. Major rivers in the area are the Veleka and Rezovska. Rivers and creeks cut deeply into the terrain, with river gorges and 'sunken valleys' close to the Black Sea.

Strandzha is also known for its karst landscape, although its highlands are composed of masses of gneiss and granite. In the region of Malko Tarnovo there are iron and copper ores. There is evidence of the exploitation of some copper ore deposits in the Strandzha region from the 5th century AD (Konyarov 1953: 18; Nakov and Sharp 2008: 115; Raichevski 1986: 318). During the 1970s, there were more than fifty copper ore deposits and separate ore sections registered (Chernykh 1978: 61-2). Next to Slivarovo village, there are also gold deposits (Archibald 1998: 23).

The climate of the area is considerably influenced by the Black Sea and is predominantly transitional to Mediterranean. The clearest evidence of trans-Mediterranean climate is the presence of podzolized soils, a relic soil type, formed in a once warm and humid climate (Borislavov 1999: 48). The weather in this region is defined mainly by the influence of the Black Sea and the climatic impact of the coastal circulation. It seems that dense forests covered the slopes of the Strandzha range until the very recent past, making it highly impenetrable (Ayanov 1938: 10, 21). On the eastern half of Strandzha stretches a comfortable saddle, through which run the natural geographic routes of this part of Thrace.

3.2.6. Southwest Black Sea Coast

The southwest Black Sea coast of Thrace stretches from the Emine cape to the Bosporus, which includes parts of Balkan Mountains, the Gulf of Burgas and Medni Rid in Strandzha (Popov and Mishev 1974; Galabov et al. 1977: 328), which makes the coastline look complex. Along the Gulf of Burgas, the sea encroaches inland due to sinking. The sinking was accompanied by a massive accumulation of alluvial material and continued into historical times (Baltakov 1988: 232). The 'Straits' or Bosporus, the Sea of Marmara, and the Dardanelles, once being riverbeds (Erol 1976; Ustaömer and Robertson 1997), have traditionally played a double role: they are the passage-way between the Mediterranean and the Black Sea and thus they are the barrier, but also the connecting link between Asia and Europe.

The shores of the Dardanelles are formed of almost horizontal beds of yellowish sandstones, chalky and marly limestone, and marls. Mainly Upper Cretaceous volcanic rocks (andesites and andesite tuffs) in layers of marine sediments formed the Black Sea coast of Strandzha. Solid andesites, granites and conglomerates form rocky capes (Popov and Mishev 1974; Galabov et al. 1977: 328). There are several copper-rich ore deposits in the low mountainous areas (Borislavov 1999: 56). The Black Sea has a mitigating effect on the climate of the coast. Autumn along the Black Sea coast is warmer than spring and the winter months have average temperatures above 0°C. On the south coast there is also an interweaving of Black Sea with Mediterranean climatic influence.

3.2.7. Tekir Dağ upland and the Gelibolu Peninsula

Tekir Dağ is the southern upland behind the Marmara coast, which continues into the Gelibolu peninsula. The upland is an outlier of the sheer mountains of Çanakkale. The Tekir Dağ area consists of micaceous sandstone. The highest altitude is in the northeast part - Pirgos (874 m). The upland follows the Marmara shore and then continues to the Gelibolu peninsula in the southwest. From the northeast, the area is connected to the low hills of Strandzha and forms the watershed between the Ergene plain and the Marmara coast. Gelibolu on the other hand is a low plateau of soft marls and sandstones deeply dissected by numerous streams. The landscape is small-featured and hilly, while the coast consists of mainly cliffs and narrow gorges. The maximum elevation reaches 426 m (Erol 1976; Robertson and Dickson 1984).

3.2.8. Rhodope Mountains

The Rhodope Mountains are part of the Rilo-Rhodope Massif, which is the oldest landmass on the Balkan Peninsula. The larger component of the mountain range belongs to the territory of Bulgaria and the smaller to Greece. The average altitude of the entire mountain range is 785 m. It is geomorphologically divided into the East and West Rhodopes. The western part is higher and larger (66 percent of the range; Deliradev 1953) with typical mountain topography, while the eastern is hilly and considerably lower. The boundary between the two areas is considered the valley of the rivers Kayakliyka, Borovitsa, Arda and Chepinska (Georgiev 1991: 347; Batakliev 1963).

The relatively low relief of the eastern part of the mountains sharply increases the influence of the zonal hydro-climatic factor by its differentiation as a separate geographical unit (Galabov et al. 1977: 209-219). The sub-region is extensively open to the east and southeast in the direction of the Mediterranean. To the north the mountains' slopes steeply descend towards the Upper Thracian Plain. The high values of the slope declinations as well as the common heavy rainfalls contribute to the intensity of the present-day slope processes. The extensive surfaces of the East Rhodopes are denuded and markedly eroded. The soil coverage consists of brown forest soils in the western part and secondary brown forest soils in the eastern part of the sub-area (Galabov et al. 1977: 209-219).

A central place inside the morpho-structural plan of the East Rhodope range is given to Paleogene deposits and related volcanic and tuff constitutions (Vaptsarov 1962: 75). The complicated geological processes in this area are the reason for the formation of specific ores and minerals. Together with the copper fields, there are also isolated deposits of obsidian (in the area around Dzhebel). Iron ores are found in the region of Haskovo (Radev and Nikolov 1960: 118, 126). Silver and gold deposits are known around Madzharovo and Zvezdel, Sedefche and Krumovgrad. Most of the rivers and streams all over the Rhodope Mountains are weakly auriferous (Archibald 1998: 21-22, Figure IX). Morphologically, when the river valleys are cut into hard rocks (gneiss or vulcanite), they have the nature of gorges, and when they are cut into soft young Paleogene sediments, they are wide with alluvial fills and terraced slopes.

The western part of the mountain range is much higher than the eastern. Its average altitude is 1150 m, but it often reaches 1500 m and above. It is described by its plains located on high ridges, deep river valleys, and wide tectonic basins. The right streams of the Maritsa River cut deeply into the mountain’s surface, a fact that determines its asymmetric appearance: long ridges and banks to the north and short ones with insignificant dimensions to the south.

The northern part of the West Rhodopes is considerably lower and gouged. The upper parts of the river valleys are wide and shallow, while the middle streams are deep with steep and rocky slopes. The soil coverage in the West Rhodopes consists mainly of brown forest soils (Galabov et al. 1977: 165-405).

The Western Rhodope sub-region consists mainly of vast masses of granite plutonium covered by a set of metamorphic rocks and occasionally sandstone, conglomerate or tuff (Yaranov 1956: 97). Numerous mineral springs are related to the Neogene tectonic processes. A group is positioned near Velingrad and another group is close to the north periphery of the mountains, which draws its waters from the Upper Thracian Plain. There are numerous locations with iron and gold ore deposits, as well as copper, lead-zinc and silver (Archibald 1998: 22, Figure IX; Popov 1973: 43).

3.2.9. Lower Maritsa Valley and Ergene Plain

The area includes the Maritsa Valley below Svilengrad and Edirne, where the river turns south. It consists of low hills composed by soft tertiary and later sediments, along with many valleys apt to be marshy during most of the year. The simple pattern of the valleys is evidence of the geological youth of the drainage system; the origins of the Maritsa valley itself, below Edirne, stem from the sinking of the land blocks that produced the North Aegean Basin (Angelova et al. 1993: 41-59). It is also due to the structural origin of the opening between the Rhodope Mountains and the hills bordering the Gulf of Saros that the river has not succeeded in shaping a significant delta.

The Maritsa receives its last main tributary at a point about 30 km directly northeast of the estuary, the Ergene River, draining Eastern Thrace. A flood plain has formed above the point of confluence of the Ergene and Maritsa rivers. Farther upstream, there are many marshy tracts between one or the other edge of the plain and the riverbank, which has been raised by flood deposits. Moreover, there are three parallel rivers instead of a single channel. Thus, the Maritsa is a real natural barrier, because of its high-water state. Its two major right-hand tributaries are the Kizil and the larger Ardhas, which joins the Maritsa at Edirne. The main left tributary rises from the southern part of Strandzha. Its plain drains the inland slopes of the mountain and the southern highlands. Spring flows from Strandzha periodically flood the Ergene Valley (Ayanov 1938: 13, 26). The lowland is filled with old lake deposits of soft limestone, marl and gravel.

3.2.10. West Thrace

West Thrace is a structural basin, in that it was once a lake that collected the waters from the surrounding mountains. There are widespread alluvial valleys to the north and vast marshes to the south of the area. It is divided by the lagoon of Lake Vistonis and Porto Lago Bay into an eastern and western part. The latter differs by the absence of large streams and consists of coastal high hills. It also has a separate drainage system independent from the lower stream of the Mesta. The northern margin reaches the area of modern Komotini and ends with the Rhodope mountain edge. There the area consists of conglomerate and weaker tertiary sediments which at height transitions to crystalline rocks. An opinion exists that the climate in the Drama plain was suitable for oak forests during all prehistoric periods, as well as olive cultivation from the 2nd millennium BC onwards (Nikolova 1999).

3.2.11. Struma Valley

The Struma Valley can be divided into two parts: the northern upper stream and the southern lower stream. The upper stream includes the Osogovo-Belasitsa mountain chain and is located in the southwestern corner of today’s Bulgaria. Its western border is the political border with the Former Yugoslav Republic of Macedonia. It is a steep river gorge enclosed by the Rila and Pirin Mountains from the north and east. The average altitude of the area is 806 m. The southern part of the area consists mostly of the delta and the marshy areas of its hinterland on the Greek side of the Greek-Bulgarian border.

The geological structure of the mountainous part consists of old metamorphic rocks – gneiss, schist and amphibolite. Common are sandstone, limestone and conglomerate in the lowlands of the area (Galabov et al. 1977: 404-410). The climate changes from Continental to Mediterranean and it is favourable for a variety of agricultures. Although it allows the intrusion of northern Aegean air currents along with olive trees and citruses in a large part of the area, in the highlands, similar to the West Rhodope range, the climate acquires an entirely mountainous character and precludes cultivating Mediterranean crops (Georgiev 1991: 321-368).

3.3. Natural Routes

This assorted set of Thracian landscapes of relatively small valleys and large plains divided by mountain chains, which lies between the north Aegean coast and Balkan Mountains, certainly has influenced the lifestyles and directions of people's interaction across the area. The above described segmentation naturally encourages the existence of local as well as interregional routes. Since early prehistoric times the region has been a crossroads of human communication and occupation, where east meets west and north meets south. It is the link between Anatolia and the Greek lands as well as the bridge between the whole Aegean world and the farmlands of the Lower Danube (Elster and Renfrew 2003: 6). Thus placed strategically at the crossroads of Europe and Asia, the area has proven both a tempting object of conquest and a passageway. The Straits, Bosporus and Dardanelles, have routinely played a double role as both a dividing corridor between the Mediterranean and the Black Sea, and a connecting link between the two continents. All this has generated a predisposition to the existence of local as well as interregional routes, with the region being culturally and climatically transitional between the Mediterranean and central Europe.

From ancient sources we have information about existing formal roads or informal but well-known routes in the first millennium BC, some of which might be considered as likely to have been functional still earlier. It is known the main Roman arteries crossing the Balkan Peninsula were already long established convenient routes. Little is known about the Via Pontica, but its trajectory can be traced generally north-south, along the western coast of the Black Sea. The Via Egnatia crossed the northern Aegean coast and connected the Adriatic coast with the Bosporus. The Via Diagonalis also started from the Bosporus area but travelled towards the Danube in today's Serbia via the valleys of Maritsa and Morava (Popovic 2010). Earlier sources mention distances to Philippi and Amphipolis from different places in the north Aegean (Collart 1935; Koukouli-Chryssanthaki 2001). Thucydides talks about a thirteen-day trip between Byzantion (Istanbul) and Vitosha Mountain (near Sofia, 2.97.2). An inscription from Pistiros offers information about a road between Upper Thrace and Thasos, Maroneia and Apollonia (Valeva et al. 2015).

Natural routes link the Upper Thracian Plain and the North Aegean through the valleys of Mesta (Gr. *Νέστος*), Maritsa (Gr. *Έβρος*, Tr. *Meriç*) and the Black Sea littoral via the Straits (Batakliev 1942; Delchev 1965: 7-12; Stuard 1997; Nikolova 1999; Leshtakov 2006: 144). On the other hand, a maritime route between the south and the north has been proposed to explain the distribution of oxhide ingots and stone anchors (Velkov 1972; Leshtakov 2007). The distribution of LBA bronze weaponry in the western part of the Rhodope Mountains (Panayotov 1980; Panayotov 1981; Bonev 1988; Leshtakov 2011) suggests that some goods were carried through the Rhodope passes. Further west, the Axios Valley was seen as a main route joining south with north (Theocharis 1971). Nevertheless, even if one normally assumes that ancient roads followed the most convenient routes, having favourable physical and geographical features (Theodossiev 2011: 16), it is rational to suspect that other, cultural or economic factors also lay behind the peoples' choice of how to move across the landscape.

There are a number of imported goods from throughout the first millennium BC, which can be traced in the whole area of the West Rhodopes reaching the Upper Thracian Plain (Archibald 1998: 14), complemented by a number of 2nd millennium Aegean weaponry finds (Panayotov 1980). This would suggest that communication was achieved at different periods through the West Rhodope passes. More insignificant is the evidence for such connections along the Struma Valley; but farther west, the valley of Axios was seen by some researchers as a main route joining south with north, which left in a secondary position the valley of Strymon leading towards the Sofia fields (Elster et al. 2003).

Natural routes in the heart of the Rhodope Mountains can be traced mainly through the major river valleys. The valley of Mesta in the Western Rhodopes appears to be relatively easy to pass until the area south of Nevrokopi where it becomes too narrow; a link with the Drama plain at this spot can be achieved through the Zarnevski pass. The Mesta Valley is a convenient way to cross the mountain since from its upper course the route continues northwards through Yundola, along the valley of the river Yadenitsa to Belovo where it enters the Upper Thracian Plain.

Another natural connection exists between the modern towns of Smolyan and Xanthi and from there along the Valley of the Chepelarska river, one could easily approach the area of Assenovgrad to the east and the valley of the Maritsa. There is also a natural connection between the towns of Nevrokopi and Serres. The river valley of Matnitsa serves to link the plain of Batak with Chepino. These routes have been described as utilised by the seasonal migrants, the Yurutsite, who summer in the Rhodopes and lead their flocks to winter in the Aegean lowlands (Batakliev 1942). Seasonal migrant artisans, mainly tailors and masons, exploited the same routes when transferring from the Pirin and the Rhodope mountains to the Aegean Sea. There are several other paths over the mountains, long used by transhumant herdsmen, the nomads of the Balkans (Wace and Thompson 1912).

In the Eastern Rhodopes the direction of the river system changes from north-south to west-east. This change provides relatively convenient connections east-west; the major tributaries of the river Arda cross the mountain here in a north-south direction. A convenient pass is the depression located along the river Suyutliyka in the middle of the valley of Ardino. It is a natural link between the modern towns of Kardzhali and Haskovo, connected with the south along the river valley of Varbitsa and through the pass of Makaza leading to Komotini. The lowest and most suitable passage in the Eastern Rhodopes is indeed Makaza, which joins Kardzhali with Komotini (Batakliev 1942: 20). Here, together with the Avren Pass, one meets the most appropriate conditions to cross over the eastern part of the mountains and to connect the Upper Thracian Plain with the Aegean. The natural longitudinal road in the Eastern Rhodopes follows the valley of Arda. This road was used by the tailors (abadzhii), who would come down from Smolyan to Edirne (Batakliev 1942: 199).

Leshtakov offers a retrospective method for reconstruction of the meridional pathways between the Upper Thracian Plain and the Aegean in prehistory. A necessary comparison was made with a reconstruction of the paleo-environment, geomorphology and paleoclimatology, complemented by data about certain shepherd groups (Yurutsi, Karakachani, Vlachi and Bulgari) and their seasonal migrations, ethnographic sources and local history. The author maintains that the entire vast Rhodope Mountains could be crossed over, in a south-north direction, in less than 10 days (Leshtakov 2006: 144). Concerning ethnographic examples from the 19th century, Leshtakov implies that people used to sail along the Maritsa (Èvros *gr*., Meriç *tr.*) River from the area of modern Pazardzhik to the delta in 5–6 days, with the return journey taking less than a month (Delchev 1965: 7-12; Stuard 1997). According to Nikolova (1999: 24), the western and highest part of the Rhodope range was not a serious barrier to contacts and interaction between the north and the south. The Rhodope passes were the usual way to connect western Upper Thrace with the northern Aegean. Theocharis argues, however, that prehistoric inter-communications between Aegean Thrace and inland Thrace were problematic because of the Rhodope mountain barrier, which obstructs movement from south to north and vice-versa. Accordingly, the Nestos (Mesta) valley can hardly be described as a pass, since it is mostly hilly and mountainous with relatively high elevation. However, the author saw the major value of the river system – the Èvros, Strymon and their main tributaries, namely the Tundzha and Arda – and links them to the still more important route leading from Axios to Anatolia (Theocharis 1971: 144).

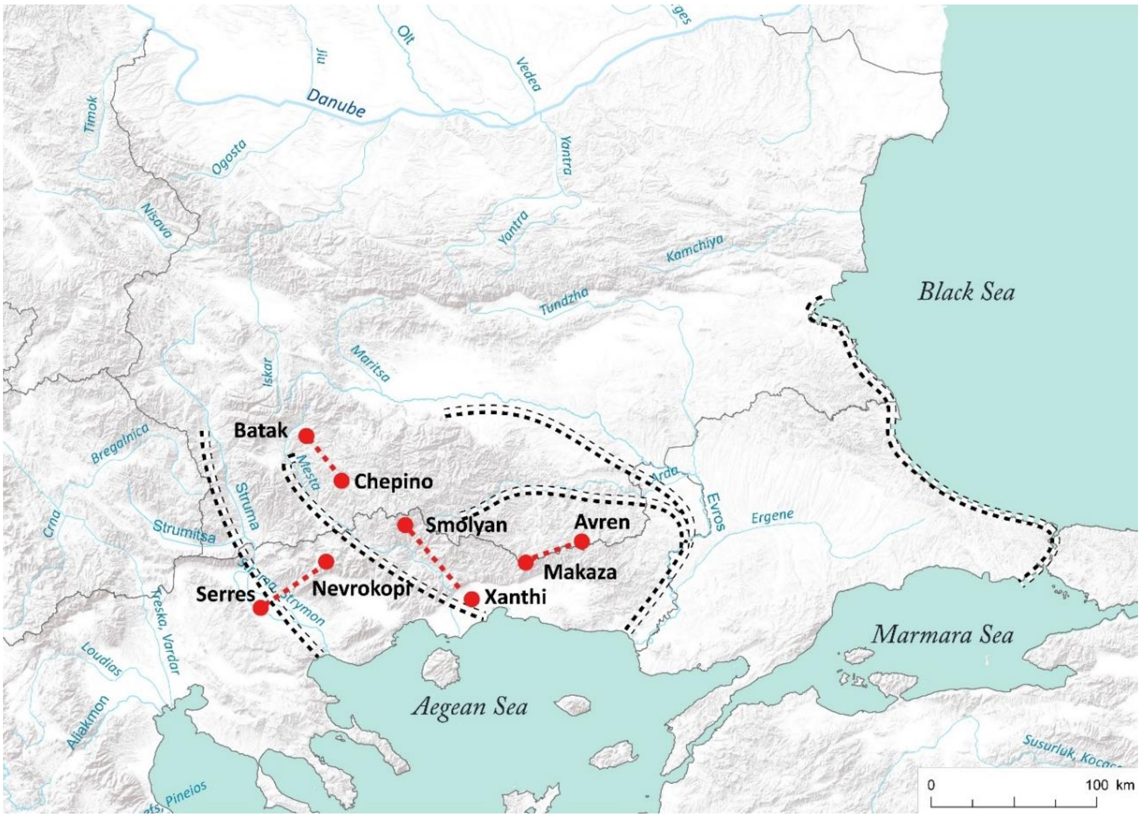

Figure 3.2. Natural routes (dotted lines) through the Rhodope Mountains, the Valley of Strymon and the Black Sea coast.

Nevertheless, even if one would normally assume that the ancient routes followed the most convenient and easily passable routes, having favourable physical and geographical features (Theodossiev 2000: 16), it is useful to bear in mind the cultural and potential cosmological nature of the choices of how to cross the landscape: "the knowledge of the 'natural' routes of exchange over mountain-passes, through river valleys or over the sea is usually taken as granted, thereby unconsciously transferring today's so familiar geographical impression of the world to the distant past …. Moreover, M. H. Helms has reminded us that notions of space and distance are culturally created." (Maran 2007: 4; Helms 1988).

3.3.1. Where is Thrace in the ancient texts?

As far as historical perceptions of Thrace go, there have been two main ways of describing it: the land the ancient (post-Bronze Age) Greeks called "Thrace" and the regions inhabited by tribes identified as Thracians. Ancient Thrace was an area located beyond the olive trees on the northern periphery of the Greek world in the late second and during the first millennium BC, before it was incorporated into the Roman Empire.

The *Iliad* contains the very first known historical record of the indigenous inhabitants of Thrace, where the “Thracians” are defined as allies of the Trojans against the Greeks, “all those whom the strong stream of the Hellespont encloses” (II.844 ff.; cf. X.434; Boardman et al. 1970: 836). The earliest real documentation of interaction with Thrace comes with the beginning of Greek colonisation in the area (Theodossiev 2011). Greek and Roman texts contain essential information and provide an observer’s insight into the distinctiveness of Thrace. What is thought-provoking is that here, as well as in the works of some seminal Classical Greek authors, the term “Thrace” is used to describe an area located to the north of Ancient Greece, but in fact they do not address the territory per se, but rather its human population (Boardman et al. 1970: 53). According to Herodotus (V.3) the Thracians were the most numerous of peoples after the Indians and either cremate or bury their dead and pile a mound over the grave (V.8).

"The Thracians are the biggest nation in the world, next to the Indians; were they under one ruler, or united, they would in my judgment be invincible and the strongest nation on earth; but since there is no way or contrivance to bring this about, they are for this reason weak. They have many names, each tribe according to its region. All these Thracians are alike in all their usages, save the Getae, and the Trausi, and those that dwell above the Crestonaeans" (V.3).[4]

Archaeological and linguistic evidence increasingly supports the Herodotean model of a multitude of Classical era Thracians who, despite a fundamentally common language and heritage, failed ever to achieve a tight national consciousness, but still maintained a basic cultural homogeneity. Some scholarly publications provide a comprehensive analysis of the ethnonymic situation in ancient Thrace and identify different tribes known from Greek and Roman historical sources (Archibald 1998; Boteva 2011;

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[4] Translation by Godley

Boshnakov 1999; Detschev 1957; Danov 1979; Delev 2014; Fol 1970; 1975; Fol and Spiridonov 1983; Gattinoni 1992; Lund 1968; Papazoglu 1978; Tacheva 1987; Stronk 1995; Popov 2002; Todorov 1933). One could only guess the exact number of Thracian tribes, but by the end of the first century BC Strabo (Str. 7.48) counted 22 tribes, while in the Imperial Age, Pliny (Plin. *NH* 4.11.40) wrote that Thrace was separated into 50 strategiae (which may have reflected a division on ethnic lines, and not only a partition of administrative character). In contrast, Claudius Ptolemaeus designated fourteen Thracian strategiae (Cl. Ptol. III 3.11.6).

While most ancient authors probably had indirect contact with the Thracian area or population, Thucydides lived on the Aegean side of Thrace and acquired first-hand observations and understanding of the local realities (Cartwright 1997). Partially of Thracian origin himself, he tells of his many connections in Thrace (4.105.1). Thucydides was also an Athenian general charged with affairs in Thrace (gr. στρατηγὸς ἐπὶ Θρᾷκες, Thuc. 4.104.4; Smith 1930) and when he failed to defend Amphipolis from Brasidas, he was exiled to Thrace, married a local woman and completed the writing of his history (Plut. Cim. 4; Mor. 205c; Marc. Vit. Thuc. 46-47).

Thrace was apparently often used as a place of exile as we know also from the case of Alcibiades, who had his private armies and forged alliances with several Thracian kings (Nepo. Alc. 7-8; Plut. Alc. 30.4-5, 36.3, 37.2; Diod. 13.105.3-4); from the same sources, we also know that Thracians were employed by Greeks as soldiers and in private armies. Thrasybulus used Thracian fighters in Athens during the battle to restore democracy in 404-403 BC. Thrace was also materially and strategically important for the Athenians, who were seeking to secure a foothold in the north Aegean. The valley of Struma was an important source of timber, when Athens became a maritime power (Sears 2013, 29-30).

Xenophon was another author with personal experience of Thrace. He reports on the winter of 400/399 BC when Greek mercenaries were employed by the Thracian King Seuthes, for whom they helped to restore control over certain territories and tribes.

Xenophon participated and directly observed the habits of the population, their daily life, military tactics and other conditions in Thrace (Stronk 1995).

Strabo in his *Geography* explains: "whereas the districts beyond the Strymon, extending as far as the mouth of the Pontus and the Haemus, all belong to the Thracians, except the seaboard (Jones 1924: Str. 7.7.4). Such description seems to suggest that the interest expressed at the time was not towards the area, but towards the inhabitants who were assigned a certain ethnic label. Both Herodotus and Thucydides variously refer to different divisions of Thracians as *ethnos* or *genos* and the Thracians as a whole are labelled as *ethnos* (Hall 1997: 34-36).

Etymologically the term ‘Thracian’ comes from Ancient Greek Θρᾷξ (pl. Θρᾷκες) or Θρᾴκιος (Ionic: Θρηΐκιος), and the toponym Thrace - from Θρᾴκη (Ion. Θρῄκη) (Navicula Bacchi – Θρηικίη). Both names are exonyms developed by the Greeks and applied to non-Greeks. "We have no way of knowing what the Thracians called themselves and if indeed they had a common name ... Thus the name of Thracians and that of their country were given by the Greeks to a group of tribes occupying the territory” (Boardman et al. 1970: 597).

The fertile and rich area to the east of Thrace, which is bounded by the Black Sea (Pontos Euxinos) in the north, by the Bosphoros (Bosporos Thrakios) to the east, by the Propontis Sea to the south and by the line stretching from the Classical town of Salmydessus on the coast of the Pontus Euxinus to the town Perinthus on the coast of the Propontis sea, is called the Delta. This was well explained in Xenophon’s *Anabasis* (‘Return of the Ten Thousand’). On the southern tip of the peninsula was the Chersonessos Thrakios (Chersonessos of Thrace; Gallipoli/Gelibolu) peninsula, which was surrounded by the Dardanelles and the Propontis and by the Bay of Melas (Saros) to the west (Brownson 1998: Xen. Anab. 6.3).

In the time of Herodotus all who lived south of the Haimos and the Rhodope Mountains, as far as the Aegean, the Propontis and Macedonia were called Thracians, while the peoples north of the Haimos were known as ‘Barbarians’. In the Roman period the province of Thrace was restricted to south of the Haimos (Mihailov 1991). In the light of the above, the more generally accepted limits of Thrace as defined by Greek and earlier Roman authors, are the following: from the Black Sea in the east to the river Vardar in the west and from the river Danube in the north to the Aegean Sea in the south. Thrace is bounded by the Pontus Euxinus (Black Sea), Bosporos Thrakios (Bosphorus Strait), and the Propontis (Marmara Sea) in the east, by the rivers Istros (Danube) and Axios (Vardar river) in the west, and in the south by the Aegeus (Aegean Sea) and Dardanelles (Hellespont Strait). Right in the heart of this ancient region is Edirne (ancient Hadrianopolis). However, in numerous sources the northern border is considered the Haimos (Balkan Mountains) and the western border the Strymon (Struma) River.

An alternative, more compact delineation of Roman period Thrace was Diocletian's creation of the administrative Diocese of Thracia, a part of the Prefecture of the East. Thracia's territory was divided into four smaller provinces – *Thracia*, *Haemimontus*, *Rhodope* and *Europa*. Strabo describes some adjustments to the western border of the area: "[the Hebrus] was the boundary of the Macedonia which the Romans first took away from Perseus and afterwards from the Pseudo-Philip … [The Romans] divided the country into four parts for purposes of administration" (Jones 1924: Str. 7 (fragments).48).

Generally, and as the above should make clear, the boundaries of what was considered Thrace varied through time and the term 'Thracians' represents a broad category. At some point Thracians inhabited the entire northern Aegean coast. Thracian cultural elements could also be seen as far as the Crimea in the 4th century BC (Moreno 2007, 168). To the east, Thracians inhabited the Gelibolu peninsula, which at that time obtained the name 'Thracian Chersonese'. Herodotus also tells us that the Thracians, who had migrated to Asia or the southern shore of the Black Sea, continued to live exactly as their European relatives, becoming known as Bithynians (Goodley 1922: 7.75).

3.3.2. Thrace in prehistory

Ancient Thrace, located on the northern fringes of the Greco-Roman world, was among the most dynamic regions of the eastern Mediterranean. It played a key role in the history and culture of south-eastern Europe during the entire first millennium BC and the first centuries AD (Katsarov 1925; 1926: 534-60). There are various complicated processes leading up to this first millennium BC/AD situation and it is worth taking a longer-term perspective, from early prehistoric times onwards. It is today broadly accepted that around the end of the 7th millennium BC, southeast Europe was colonised by Neolithic farmers and for a few centuries the formation of an earlier Neolithic 'Balkan-Anatolian block' is evident (Todorova 1986; 1995; Hoddinott 1981: 15). Thrace was a key bridge for this spread of Neolithic life out from Anatolia and into Europe.

A later important manifestation of Thrace in prehistory is marked by the development of Chalcolithic societies (see Gimbutas 1956; 1974; Renfrew 1972). By the beginning of the Late Chalcolithic, in the Near East, the prerequisites for increasing urbanisation were already present (Özdoğan 2004: 392) and simultaneously, in the Balkans, the formation of the Kodzhadermen-Gumelnitsa-Karanovo VI (KGK) complex in the south and Cucuteni-Tripolje complex in the north can be observed. Although rather developed socio-economic environments, both of the latter were quite different from Anatolian and Near Eastern social structures, with no signs of urbanisation in the Near Eastern sense (Özdoğan 2004: 392). During this period, the eastern part of Thrace, that bridge of cultures and continents, was left out of both distributions, settled only sporadically with small non-tell settlements, while the Balkan cultures were building tells with continuous long-term occupation.

The period between the end of the 4th millennium and the end of the 2nd millennium BC is confusing for the Thracian region in terms of chronology, cultural identity as well as geography and political relations. Some works on EBA ethno-cultural affiliation suggest a logical connection between the northwest Anatolian societies and Thrace through similarities in ceramics, metal assemblages as well as local architectural traditions, but these the two areas do not share any pre-existing cultural unity. On the Anatolian side, urban life flourished, while in the Balkans several new cultural complexes can be recognised throughout the entire EBA, including groups from the Yamnaya and the Corded Ware complexes (Valentinova and Nenova 2008). In the south, the Ezero, Mihalich, Sveti Kirilovo and Yunatsite culture-historical groups are recognised via some very specific pottery styles and can be placed chronologically in the EBA. Cultural, commercial and perhaps social interaction seems to have focused on major communication routes within the south Balkans and northwest Anatolia in the EBA, but what happened during the Middle and LBA, is still a challenging question for many researchers. The characterisation of Bronze Age culture in Thrace is a task confronting any prehistorian dealing with European archaeology.

3.4. Historical scale and international relations

The modern political fragmentation of the overall Thracian area has inevitably affected archaeological scholarship and has superimposed itself on the ancient landscape (Graninger 2015). One of the factors that makes Thrace unique from a research perspective is the modern-day sharing of (and dispute over) the area among three Balkan countries: Bulgaria, Greece and Turkey. The essence of the 'Thracian question' can be seen in the medieval ambition of Bulgarians and Greeks (and sometimes Serbians) to dominate the peninsula. An ideal claim or a fair division was, nevertheless, impossible, if one were to consider it based purely on perceived ethnic grounds. The Slavic origin of the majority of the Balkan population would require an arrangement between Bulgaria and Serbia in a hegemonic way and inevitably, the question of the Greek *irredenta* would further make the delimitation of states on purely ethnic grounds practically impossible (Forbes et al. 1915: 8).

At a more local scale, difficulty exists on further levels. It becomes clear that the traditional emphases of Greek, Turkish and Bulgarian archaeologists are very different from each other and even today serve the needs and follow the consequences of political conjuncture in the aftermath of World War II. The problem, however, lies deeper in the common historical past and it is essential to uncover the circumstances surrounding a deeply rooted antagonism. The beginnings of the historical disputes over Thrace as a region started with Philip II, who in 342 BC subdued the area between the Aegean and the Balkan Mountains. Alexander's interest, however, was usually elsewhere, and could not protect the Balkans from Celtic-speaking groups, who appear to have invaded the peninsula at the end of the third century BC. In AD 46, Thrace became a Roman province and several Roman emperors reorganised its borders, ending with the main provincial reorganisation of Diocletian. The following few centuries appear to have been marked by numerous repeated attacks on the entire Balkans by "Huns of various kinds", Goths and Slavs, with all the uncertainty that entails (see Hall 2011; Tsvetkov 1993; Wachtel 2008). The local population is considered to have been gradually assimilated during centuries of both cataclysm and (at least slightly more peaceful) re-location. Due to intensive political developments, accompanied by significant changes in ethnic landscapes and complex cultural interactions, the frontiers of Thrace were therefore dynamic, flexible, and approximate (Fol and Spiridonov 1983). After the arrival of the apparent Bulgars in the late 7th century consolidating several Slavic tribes and what remained from the indigenous Balkan pre-Slavic population, the newly founded state of Bulgaria became the constant and regular enemy of the Byzantine Empire until the arrival of the Ottomans in the 14th century. The Bulgarian Kingdom covered the entire Balkan hinterland from the Danube and the Black Sea to Adrianople and Salonika (today's Thessaloniki). What connected the Byzantine Empire and the Bulgarian Kingdom on a cultural level was the Christianisation of the latter by the former. The new religion also helped to finalise the consolidation of the multi-ethnic inhabitants of the Bulgarian Kingdom. A further step was the translation of Byzantine ritual into Church Slavonic with the invention of the Glagolitic alphabet. As a result, both the Byzantine Empire and the Bulgarian Kingdom developed their own church under Orthodoxy and lived next to each other for a further four centuries as independent and self-sufficient semi-nationalities, with all the conflict that entails, but also linked through some common elements of culture and religion.

During Ottoman rule, the role played by the Greeks in Bulgaria was almost as important as that of the Turks themselves. The religious aspect of the entire Christian population was left to their own management under a Patriarchate controlled from Constantinople and the Greek populations would take the leading role in the Orthodox world. This enabled the Patriarchate at Constantinople to become the official intermediary between different ethnic groups of the entire conquered Christian population. In 1767, the religious control of the Greeks was complete, Church Slavonic was replaced by Orthodox Greek and the last traces of Bulgarian identity were nearly obliterated. The engagement of Greece with Russia, which considered itself the trustee of Orthodox

Christians and the direct heir of Byzantine Constantinople, played an important role in the ways Balkan history would develop. After the Russo-Turkish War of 1828-1829 concluded with the Treaty of Edirne, a national awakening began with the proclamation of the reformation (Tanzimat) of the Ottoman Empire in 1839 (Daskalov 2013: 151). By 1830, Greece had managed to earn its complete independence. Bulgaria, being closer and thus more easily suppressed by Constantinople, had to wait. By the first half of the 19^{th} century, there was a considerable intellectual renaissance in Bulgaria, fostered by Bucharest and Odessa, but mostly influenced by the 'Hellenisation' (Graecisation) of many Bulgarians. Greek influence was mostly due to the Greeks' dominant position in commercial life within the Ottoman Empire, while the Bulgarians and the rest of the non-Greek Orthodox population within the Empire were treated as more of a peasant class (Stoyanovich 1992: 50). Under the designation of "Greek", however, were included all educated Greek-speaking populations, which were generally multi-ethnic. The Greek language had already become the *lingua franca* of the Ottoman Empire (Daskalov 2013: 151; Lilova 2003). Furthermore, Greek influence had already reached all corners of the Ottoman Empire via the church. In fact, the Greek ambition of widespread Hellenisation and the later *Megali Idea* was mostly based on the distribution of the *lingua franca* and the association in the West of 'Orthodox faith' with the Greek ethnic name, which itself was later employed as a Hellenising strategy (see Detrez 2009; Kitromilides 2007).

In addition, Greek cultural heritage was never forgotten in Europe, while not only had Europe no memory of Bulgaria and its population, but also the Bulgarians themselves had to be taught anew about their regional past. Due to the establishment of Greek in the education system, Greek culture played the role of high-culture, while Bulgarian culture was perceived as of a lower ethno-class. The assimilation process within these class-differentiated societies advanced gradually as a natural outcome of cohabitation, and, as Daskalov argues, "had the Greeks also been politically dominant, the Bulgarians might have assimilated … readily" (Daskalov 2013: 155). The birth of nationalist ideas, while the Ottomans were still the ruling power, helped the joint Greco-Slavic community to fight the alien Muslim culture and, afterwards, each other. Areas such as Thrace and Macedonia always possessed a mixed population of Greeks, Bulgarians, Hellenised

Bulgarians and a variety of minorities, so that it facilitated and at the same time prevented a potential social-cultural assimilation.

The promotion of the ideology of Greek liberation had a huge impact on Bulgarians. Velestilis' *Megali Idea* planned to extend the Greek Republic across the entire Balkans, based on a concept of personal liberty rather than ethnicity following the example of the French Revolution. The *lingua franca* was supposed to assimilate not only all non-Greeks, but also ordinary Turks (Stavrianos 1944: 35-36). With this agenda, in the early 19th century many Bulgarians supported the Greek secret network Zavera of 1821 (Seliminski 1904: 42), but such support was most certainly aimed at advancing Bulgaria's own goals (Nikolov 1996: 10-16). Any sense of a coherent nationalist consciousness was at that time limited amongst the Bulgarian population, however, and fighting Islam was seen by most as the immediate reason for concerted action (Daskalov 2013: 161).

Voluntary participation in the Zavera and partial assimilation amongst Greeks and Bulgarians lasted only until about the 1830s. A complex mixture of factors, such as Bulgarians developing urban centres and handicrafts after the Greeks 'left' the Ottoman Empire, the necessity of commercial control, the newly emerging Bulgarian bourgeoisie and the very example of the Greek liberation, pushed Bulgarians towards rejecting Greek influence, trade and education and turning towards Russia (Daskalov 2013: 161). The outcome of the Crimean War (1853-1856) and the opening of the Ottoman Empire for European economic penetration facilitated this separation. Furthermore, the fact that the first generation of Bulgarian intelligentsia was educated in Greek schools gave them an appreciation of contemporary European achievements and familiarity with Greek nationalism per se; through this example, they remembered or learnt all over again to revere their native land and people. Consequently, they realised that it was necessary to speak, write and practice religion in their mother tongue and eventually decided that it was the Greeks and the Greek Church that stood in the way. In 1860 Bulgarians refused to recognise any longer the Patriarch of Constantinople and a decade later, after a long battle, the Bulgarians gained their own Exarchate.

In 1877, Russian Czar Alexander II declared war on the Ottoman Empire. Bulgarians were granted their freedom in March 1878. The terms of the Treaty of San Stefano provided the new Bulgarian state with the lands she possessed nine hundred and fifty years earlier. It was a territory stretching between the Danube and the Aegean, from the Black Sea to Albania, including all Macedonia and leaving behind (to the Ottomans) only the district between Constantinople and Adrianople, Salonika, and Chalkidiki. This was, however, intolerable for many interested parties, such as Great Britain and Germany, since it practically established Russian hegemony in the Balkans. The Treaty of Berlin, which followed in July 1878, divided that territory and gave half of it back to the Turks, including most of Thrace and the entirety of Macedonia. In 1885, most of the southern territory ('East Rumelia') was united with the rest of Bulgaria, but only north of Adrianople and without Macedonia.

In the thus-consolidated new Bulgarian state, there were many other issues which took priority and the Macedonian question was not mentioned again until 1908, when Bulgaria under King Ferdinand officially declared its independence from the Ottoman Empire. Because of the mixed ethnic character of this territory (mainly Greek along the coast and mixed Slav in the interior) that still remained under Ottoman rule, the Macedonian question consisted mostly of the liberation of that part of the Balkans in a way that would satisfy all interested parties, i.e. Greece, Serbia and Bulgaria. The lack of attention from European countries to the administration of that territory opened a door for the Balkan states to initiate their campaigns for extending spheres of influence. Bulgaria claimed a large part of Macedonia including Thessaloniki, the Aegean coast (except Chalkidiki), Okhrid and Monastir; Greece claimed all southern Macedonia, and Serbia parts of northern and central Macedonia. The problem was that while the claims of Greece and Serbia did not clash, Bulgaria's would drive a thick wedge between both and thus still have the territorial hegemony on the peninsula. This situation became the root of irreconcilable conflict.

The effects of the Young Turk revolution amongst the Balkan States contributed to the formation of the Balkan League and the re-consideration of the shares of Thrace and Macedonia. King Ferdinand and Venizelos are mostly credited for engineering the

Balkan League. In 1912 agreements for the eventual delimitation of the provinces to be conquered from Turkey in the event of war was signed between Bulgaria and Serbia and between Bulgaria and Greece, with the most controversial district being Macedonia. The First Balkan War soon followed and the majority of military actions were concentrated in Thrace and ended with a major advantage for the allies that was legitimised with the Conference of London, where the new Turco-Bulgarian boundary was determined to be the Enos-Midia line, leaving most of Thrace to Bulgaria along with access to the Aegean and Adrianople.

The situation in Macedonia became more complicated with the appearance of the Albanian question and the determination by Greece and Serbia to resolve the Macedonian question locally. In May 1913, both countries concluded a new military convention between them. In response to the resulting disregard for previous arrangements concerning Macedonia, Bulgaria did not wait for the planned arbitration and initiated the Second Balkan War in June 1913 with a sudden attack on the Serbian army in Macedonia. The Serbs were victorious and the Turks took advantage of the situation and re-occupied Thrace and Adrianople. By the end of July, Bulgaria accepted defeat and the following Treaty of Constantinople gave the majority of Thrace back to Turkey.

Because of the Balkan wars (1912-1913), Thrace was divided between Bulgaria and Turkey (west and east Thrace) through the valley of the Èvros (Maritsa) River. World War I caused further partition in the region. The Treaty of Neuilly in 1919 and the Treaty of Sèvres in 1920 gave most of southern Thrace apart from the zone around the Straits of Bosporus and the Dardanelles to Greece. This was revised in 1923 in Lausanne, when the whole of eastern Thrace was restored to Turkey and Western Thrace remained Greek (Figure 3.3). In World War II Bulgaria tried to gain its southern share again, but the boundaries remained unchanged after 1923 (Eldarov 2001: 3-11; Hall 2000; Lampe 2006; Boeckh 1996).

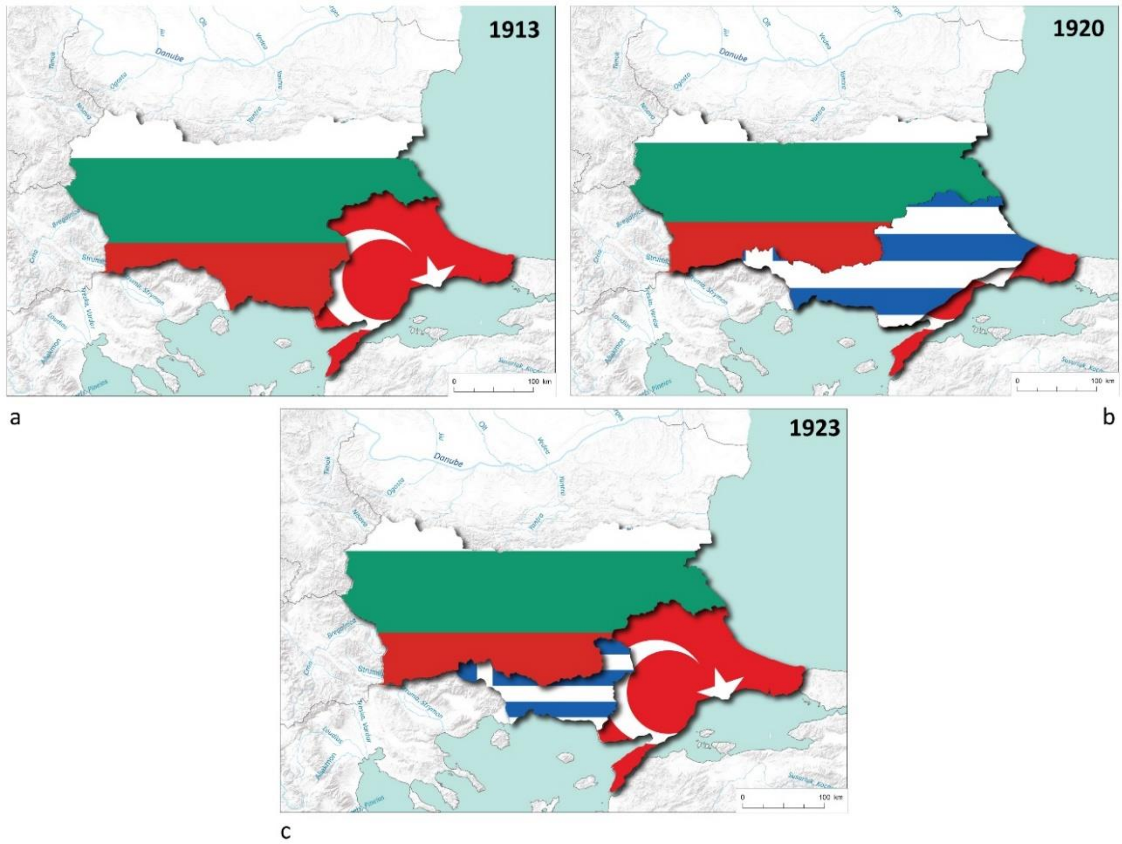


Figure 3.3. Fluctuations of the Thracian boundaries in the early 20th century.

This sequence of events naturally left very bitter feelings amongst the countries involved. The established antagonism also helped to foster the nationalist ideas of the deeper past that each country tried to bring to the surface during each national movement. Thrace, which was of central interest during the conflicts, suddenly became marginal to all countries in the region. This shift had serious consequences, which were far more complex than the shift of political borders.

3.5. The impact of nationalist ideologies on the archaeology of Thrace

Revealing the intimate relationship between archaeology and nationalism is nothing new. Nation-states use archaeology and the ancient world to make claims about the modern world and to project the past into the present in order to create and justify national identity. What are more complex, however, and in need of discussion are the intricate ways in which nation-states develop and how each version of nationalism shapes a different type of archaeology.

3.5.1. The birth of Balkan nationalism

The collapse of the Ottoman Empire during the 19th century created an unexpectedly problematic geography, which led to various conflicting nationalist agendas (Meskell 1998). It came naturally to the newly emerged nation states to claim ancient lines of descent and inherited cultural property (Hamilakis 2007). It has been suggested that archaeological interpretation is often used when a group of people has been oppressed by another (Silberman 1995: 253). As new nations gain independence, nationalist ideology employs archaeology to facilitate the formation of national identity and to enhance a nation's self-confidence (Trigger 1989: 15). Constructing an archaeological narrative to serve a newly emerged country as a part of its identity involves remembering and valorising claimed ancient ancestors. Despite the implied support for subjugated groups, however, nationalist ideology fails to address minorities within the emerging nation. In fact, one of the obstacles to performing objective archaeology lies in the fact that the recognition of cultural diversity is often in conflict with state ideology (Atakuman 2010). The nature of Balkan nationalism, however, was instigated by a western idea, on which it only managed to build. In the context of later disentanglements between Bulgaria and Greece, a large part was played by their mutual construction of self-confidence. To complicate the picture even more, Greeks had a lot to do with the construction of the Bulgarian nation in the last decades of the Ottoman Empire via education and the extensive use of Greek as a *lingua franca* (Daskalov 2013: 149-150). In both cases, prioritising only one group above the inevitable ethnic diversity often leads to misappropriation of historical and archaeological evidence for political reasons (Trigger 2006: 272).

One important precondition for the emergence of nationalism in the Balkans was the introduction of the western-born principle of nationalism, which eventually results in a massacre. Arnold Toynbee has argued that "such massacres are only the extreme form of a national struggle between mutually indispensable neighbours, instigated by this fatal Western idea" (Toynbee 1922: 34). The western variety of nationalism managed to arrive, settle and develop on the basis of the 'Eastern Question' and international interest in the 'sick man of Europe', namely the Ottoman Empire, and what should replace it (Carmichael 2002: 16). Because of the massacres and ethnic cleansing in the

Balkans and the wider region a very different ethnic picture emerges were we to compare the population in the 1800s with that of the 2000s (Carmichael 2002: 12). The process involved the endemic genocide of Armenians in Turkey since 1895, and the mutual massacre of Greeks, Bulgarians, Serbs, and Albanians in Macedonia since 1899. The Muslim element in the ex-Ottoman provinces was also endangered and many Muslim refugees fled from Macedonia to Thrace and Western Anatolia, where the Greek and Turkish populations have "both been seized by fits of homicidal national hatred" (Toynbee 1922: 34). Due to that hatred, these regions have almost entirely erased their minorities. The idea of cultural nationalism, which binds speakers of the same language, was obviously extremely complicated in the Balkans after nearly five centuries of stirring the Ottoman ethnic soup.

Furthermore, not only were the previously oppressed groups in need of an identity, but also the 'robbed' oppressor, whose identity was stolen by the now independent oppressees. The proto-nationalist idea in Turkey emerged as a reaction of the 'Young Turks' to the decades-long religious politics of suppression initiated by Sultan Abdülhamit II (1876-1909). The ideological centre of the nationalist movement, however, started as Pan-Islamism, Pan-Turkism and Ottomanism. Eventually, irredentist ideas were abandoned and the building of an ethnically and geographically defined nation-state began as a foundation of the Turkish War of Independence (Atakuman 2010).

The general conditions that emerged after the Balkan Wars and intensified after the First World War, naturally discouraged supra-regional research across borders. In particular, the type of archaeology practiced in each of these countries contrasts substantially to that practiced by its neighbours according to each country's ideological and political circumstances. Traditionally, in earlier research, different diffusionist models made Thrace the bridge between the Near East and Europe. However, when 'National Identity' became the foremost research interest of each Balkan country, foreign influences were considered an embarrassment and this attitude pushed Thrace outside of the sphere of interest (Özdoğan 2004: 389). More recently, this trend is being reversed; nevertheless, the marriage between nationalism and communism has had its impact on the formation of local schools of archaeology and research-design strategies in the region. State boundaries came to mark "hostile ideological blocks" (Marinov and Vezenkov 2013: 469; Özdoğan 2004: 394), which largely shaped the formation of socio-historic theories and research strategies. In other words, three different national and nationalist archaeologies have made their impact on the archaeological investigations in the overall area (Bailey 1998). The discrepancies born thereafter have caused not only practical difficulties and miscommunication across borders, but have also influenced the level of objectivity in any pattern recognition, while constrained by modern geopolitical divisions.

3.5.2. Nationalism, archaeology and Greece

The Greek state was, in a sense, a political consequence of 19th-century European classicism, which favoured the construction of new state boundaries based on the glorious past of those who had lived on the same soil. The Greek national movement and Renaissance caused a significantly high level of interest towards the Ancient Greek past from both the Greek Orthodox population and European intellectuals. Western Europe as well as Russia saw the Greek-speaking communities of the Ottoman Empire as direct heirs of Classical and Hellenistic Greece and encouraged the formation and promotion of Greek nationalism (Alexandri 2002). The turn to antiquity was a process, which started before the Greek War of Independence and was needed to transform society into a nation. There were major changes in the economic and social structures of Europe, which refracted to Greece and created Philhellenism as a phenomenon concerned with "returning the positive evaluation of Greek antiquity to the modern-day Greeks in support of their political, national, and cultural emancipation" (Güthenke 2008: 11). The process had a cultural, political, but also military side, which involved hundreds of volunteers from all over Europe to fight alongside Greeks in their War of Independence. The revival of classical heritage became the key element of Greek nationalistic discourse in imagining the nation and creating its own nation-state. Already in the early 19th century, classical antiquities became an instrument of the nation-to-be as the material that signified continuity. The remains of Classical and Hellenistic buildings were employed as landmarks in defining Greek territory. The materiality and visibility of antiquities provided the appearance of a nation.

The Greek War of Independence was a result of the first national movement in the region produced by a conscious application of the Western national idea (Toynbee 1922: 33). At the time of King Otto's reign the material remains were already meant to provide indisputable evidence of the continuity of Hellenism. From the very beginning of the Greek nation-state, archaeologists were stimulated to discover and record the past in service of the nation's ideals. They were appointed to create and guard social values in accordance with political issues. Gradually and systematically the protection of monuments came to be equated with the protection of the Greek nation. Preservation and restoration of sites and monuments soon became a priority of Greek archaeology. There were two occasions in the history of archaeology in Greece when national ideology played a particularly strong part and left a deep mark on society and its relationship with the past (Damaskos 2011).

In the aftermath of the First World War, following their invasion Greece suffered defeat on the coast of Asia Minor and had to withdraw all ethnic Greeks living in Turkey in 1922. This extraction was the end of Greek hopes for further expansion of its territories. This created a number of economic and social problems. The state turned again to the instruments of Greek nationalism and encouraged the emergence of artists and intellectuals, along with archaeologists, who made it their main concern to look for what they would call ‘Greekness’ in Antiquity, Byzantium and Modern Greece, while neglecting other periods.

Another traumatic blow to the concept of the Greek nation, caused by the re-emergence of the ‘Macedonian question’, also called on the help of archaeology at the end of the 20th century. The collapse of Yugoslavia and its fragmentation into smaller nation states provoked an introverted reaction in Greek society, which felt threatened by the intention of the Former Yugoslav Republic of Macedonia (FYROM) to name its autonomous state ‘Macedonia’. Archaeologists did their bit, for better or worse, as part of this wider confrontation by organising exhibitions on ancient Macedonia, which aimed to ‘sensitise’ the public abroad to the Macedonian question by showing off the antiquities which had been excavated in northern Greece, mostly in recent decades, and also promoted other scholarly publications. Generally-speaking such matters of nationhood seem to continue to cause heated debate in states that have been segregated within larger multinational or multilingual political entities.

After the many episodes of large-scale population movement instigated by geo-political crisis in the last two centuries, the mode of communication between Bulgaria, Greece and Turkey became very delicate. The conditions were replicated socially, culturally, politically, ethnically and demographically in each country. All had their own Thrace and no one was interested or allowed to look beyond borders (Castellan 1992; Dimitrova 2006; Manchev 2000; Todorova 2002). The establishment of an archaeological tradition in Greece was thus focused on Ancient Greek cultures in the Aegean, leaving Thrace, which brings only bad memories with it, marginal. Research did happen in Thrace, but was not encouraged by the state and remained far from Bulgarian and Turkish borders. It is remarkable, in fact, that Greek researchers managed to pursue their interest in the Near East, especially when tracing the origins of early farming, despite the complicated state of affairs between Greece and Turkey (see Theocharis 1973).

3.5.3. Nationalism, archaeology and Bulgaria

The early development of nationalism in Bulgaria was caused by the sudden and somewhat unexpected creation of a Bulgarian state. In its early days, beginning with the national movement, the resurrection of a perceived glorious past played a major role. It strongly influenced the main territorial claims discussed during the Balkan Wars and partially contributed to the regional animosity and disintegration that followed. However, unlike Greece, Bulgaria did not develop a national policy in its archaeological pursuits until the establishment of the Communist regime. Furthermore, the lack of monumental Classical or Hellenistic sites in Bulgaria stimulated interest in and development of prehistoric archaeology much earlier than in Greece. A radically new archaeological programme was developed immediately after the end of World War II. In his study 'The Condition of the Bulgarian Archaeological Discipline in 1948 and 1949' Krastyo Miyatev placed priority on Slavic and Slavic-Bulgarian complexes. The history of the material culture from prehistory until the mid-19th century needed to be re-written with a dialectical-materialist framework. Thus, Dimitar Dimitrov argues that archaeology must be an essential part of the political life of the working class (Dimitrov 1950: 163).

The Russian historical education of most Bulgarian archaeologists from the early 20th century led to the formation of a 'categorical' archaeology, which was focused mostly on the artefacts rather than on the construction of theoretical frameworks (Özdoğan 2004: 398). This resulted in tendency towards 'sherdology' among Bulgarian prehistorians and the publication of a series of typologies in articles with limited interpretation. Furthermore, the discovery of the Varna cemetery in 1972 gave the Bulgarian Communist Party an incentive to use archaeology for promotion before the rest of the Balkan countries, the Soviet Union and Europe. In fact, this heritage site was part of Bulgaria's first attempt to exit the general state of deep political isolation it had been in after World War II. The discovery of Varna provided an opportunity for the country to blend into the general spirit of European archaeology and to help 'prove' the European identity of its prehistoric cultures (Özdoğan 2004, 398). Attention to the 'significant' object often influenced the process and methods of excavation and often failed to produce any more elaborate record or publication of archaeological research. This contributed to an accumulation of bias during the last decades of the 20th century and left a gap in the international archaeological map, which prevented any proper understanding of wider processes spanning not only the Balkans, but also the Near East and the rest of Europe. Furthermore, the 'centralised ideology' in Bulgarian archaeology, which was promoted by the ruling party, attempted to maintain strong links between the naturally divided lands on both sides of the Balkan mountains, forcing the formation of artificial cultural groups and emphasising formulas such as 'transbalkan' cultural horizons (Bonev 1988: 55). The design of such cultures and cultural groups, however, resulted in the fragmentation of Bulgarian prehistory, where many researchers focused on a particular 'culture' and became narrow specialists in it. This further prevented any opportunity for analysing and understanding regional processes and caused chronological discrepancies across the entire country.

Another trait in Bulgarian archaeology was the promotion of a Thracian ethno-cultural identity instead of an emphasis, for example, on a medieval Bulgarian past. This approach was strongly promoted by members of the Communist Party and led to the creation of the Thracology Institute. Whatever the broader agenda behind this effort, it stimulated research into the Iron Age (IA) in Bulgaria, all the way to the very borders of both Greece and Turkey. After the instigation of the Thracology programme in the 1960s, 1978 saw project 'Röhrich' initiated as a preparatory step towards the long-term initiative '1300 Years Bulgaria'. It aimed to reinstate Bulgarian identity and to define it as a central factor amongst the Balkan countries in the development of European civilisation.

In 1971 Dimitar Angelov published a large study on the 'Formation of the Bulgarian Ethnicity', where the Thracian element played a central part (Teodorova 2004). The search for the 'Thracian substrate' became a fixed idea for a number of generations of archaeologists and historians. Nevertheless, there was also another view of the 'Thracian element'. Bogdan Filov, at the beginning of the 20th century, argued that a so-called 'Thracian style' did not have an ethnic character and could be seen only as part of a broader conjuncture and as a result of contacts with other groups in the northern Black Sea steppes and the Caucasus (Filov 1919: 1-3).

Both these approaches have become obsolete today. A lot of new evidence has accumulated and more inter-disciplinary research has been conducted, that has helped turn Bulgarian archaeology into a largely modern discipline. National ideology and centralised interest in resurrecting the past of Bulgarian lands has also vanished, however, and along with it governmental funding and any real possibility for long-term planned research. Most of the excavations and survey campaigns during the last fifteen years have been conducted thanks to a variety of infrastructure projects and a number of independent non-governmental sponsorships. All this makes it difficult to address an area or a subject with appropriate research questions as well as to design unbiased research. Furthermore, in order to initiate a detailed study, one needs to incorporate also 'old' data, which is nowhere near a carefully recorded dataset and is plagued by the prejudices of the recent past.

3.5.4. Nationalism, archaeology and Turkey

Turkish nationalism developed differently from that of the Balkan countries, in an environment straddling the eastern and the western worlds. The population of Turkey was considered to be neither Arab nor European. During the Ottoman Empire, their identity was Ottoman with all that it entailed: no importance was given to ethnic elements, but mostly to religion and its practice (Özdoğan 1998: 116). Nationalism was imported to Turkey after the disintegration of the Ottoman Empire, following the examples of the newly founded 'modern' states of the Balkan Peninsula. In fact, it was much more difficult to create a national identity, since the majority of the subjects of the Ottoman Empire have never considered themselves to be of Turkic origin. Atatürk had the challenging task of creating a perceived Turkish homeland. He focused on Anatolia and chose the Hittites and the Sumerians as potential ancestors with a glorious past. At the same time, this Anatolia-centric approach embraced all cultures who lived in Anatolia and thus the archaeological focus did not ignore the impressive Hellenistic or Roman sites (Özdoğan 2004: 401). The 'Westernisation' of the Empire contributed to the interest of the first generation Renaissance archaeologists in Ancient Greek and Roman monuments. In fact, Atatürk also managed to associate the word 'Trak' with Turkish and sponsored the excavation of a number of tumuli in Turkish Thrace. This policy, however, was abandoned after his death (Özdoğan 2004: 401).

After the formation of the Republic, a radical secularist ideology led to the creation of and focus on so-called 'Anatolianism' (Atakuman 2012: 305). Archaeology was treated as a servant to the needs of the new nation state and the construction of Turkish identity, which crystallised with the creation of the 'Turkish History Thesis'. Its central goals were to define the existence of Turks in prehistory and to prove, by studying genealogical connections and linguistics, that the Turkish nation was at least equal to the European. The Thesis also meant to underline that Turkish history was independent of Islam (Ersanlı 2006) and argued that the old Turkish culture brought civilisation to many parts of the world through a series of migrations. Within the two national historical conferences that followed, archaeology was officially employed to pursue the above highlighted aims (Atakuman 2008). Accordingly, until World War II, major attention was paid to Hittite and Sumerian heritage as representatives of the ancient glorious Anatolian empire (Atakuman 2012). During this period, some interest emerged in the archaeology of Thrace as a direct link between Anatolian and European prehistory.

After Atatürk's death and in the aftermath of World War II, the Turkish History Thesis was abandoned, in favour of a more strongly Islamist-ethnicist ideology. But new attempts to demonstrate European connections began in the 1980s, triggered by the efforts of Turkey to become a member of the European Community. After the 1980s political crisis, "Turkish archaeology, perceived to be a Kemalist secular endeavour by the religiously orientated state authorities, has since been left in limbo struggling to justify its existence between conflicting identity politics and economic expansion policies" (Atakuman 2012: 306). A tendency to present archaeology as a positivistic enterprise that is above politics was established as a reaction, which resulted in numerous culture history publications based on object typologies from Anatolian excavations (Atakuman 2012).

The main discrepancies were the following: in Turkish archaeology, the divide between the traditional Islamic framework and the Western model (Pamuk 1987; Özdoğan 2003: 112) led to emphasising the formation and development of Anatolian cultures, while little attention was paid to the coastal areas and even less to the European hinterland. The direction of investigations was largely influenced by the idea that the cradle of civilisation was in the east and Anatolia was on the boundary of a Mesopotamian core region. The discoveries of the last fifty years and the fact that radiocarbon dating places the Neolithic very early in the Balkans was systematically ignored by the majority of Turkish archaeologists (Özdoğan 2004: 394). Thus the research interests of Anatolian prehistorians and early historians generally stop at the Bosporus and the Marmora Sea.

Taking a general shared view of the above archaeologies of Thrace, the region was either systemically avoided or overemphasised. Archaeological schools developed so locally that research language and terminology has strongly limited cross-border research. Thus Thrace appeared divided into three politically conditioned archaeological zones, for the focus of this study, each of them seeking to connect local research to the South Aegean, Anatolian or central European LBA cultural spheres.

3.6. Conclusion

Several aspects emerge from the above discussion. The region of Thrace was exceptionally suitable for habitation, with water sources, fertile soils, accessible raw materials, generally mild climate, varied relief and vegetation, and direct link with the Aegean and the Black Sea. Prehistoric developments in the Balkans were determined by these geographic and ecological factors, but exhibit considerable diversity and it is very difficult to isolate only 'lowland agricultural' or 'mountain cattle' cultures, for example (Delchev 1965: 7-12). It seems possible that numerous micro-regions throughout prehistory have consistently favoured a mixed inter-regional economy (Earle 1997: 65; Nikolova 1999: 23). In particular, I will argue in the chapters that follow that the period between 1600 and 1000 BC was the time when a degree of 'connectivity of micro-regions' took place (Purcell and Horden 2000).

The Upper Thracian Plain, structurally open to the Aegean through the major river valleys and the passes of the lower eastern part of the Rhodope Mountains, inspires some scholars to define Thrace as belonging to the Mediterranean (Katincharov 1974; Treuil 1983: 2, 15-18). Others link Thrace and Macedonia with the Troad and defend the cultural, ethnic, and language unity of the population (Georgiev 1987: 127). One approach to the Thracian Bronze Age tends to describe the area under study as a independent phenomenon connecting central Europe with the Aegean (Leshtakov 2006: 145). Even from this basic description of the area it becomes obvious that at least two topographically defined units have been cut across to serve the needs of modernity. However, this division failed to assist archaeological research in the area, since it obliged researchers to end their investigations at the border. How the Bronze Age communities behaved around these borders is a subject of the present dissertation, but it is more than clear that the borders appear as political as they are on any archaeological map, limiting possible research syntheses. Accordingly, when the idea for this dissertation arose it was restricted to a Bulgarian perspective due to the availability and my familiarity with the data. However, when Greek and Turkish literature became more accessible to the main Bulgarian archaeological institutions, it became clear that it would be unacceptable to delimit a prehistoric cultural region by modern frontiers, which cut across two of the main mountain ranges in the area – Strandzha and the Rhodopes. With this discussion of the wider political context in mind, the next chapter now addresses what people have said so far about an under-determined LBA phase of the region's past.

Chapter 4. Archaeological Overview and Prior Research

4.1. Introduction

Research on the LBA in Thrace can be traced back to the end of the 19^{th} century and has continued to accumulate throughout the 20^{th} century until today. Although Thrace remained outside the main scope of archaeological interest of western archaeologists, the latter inspired local research and led to the evolution of local archaeologies. The proximity of the area to the south Aegean and Anatolia (Figure 4.1), as well as its position on the way to continental Europe, has provoked a consideration of Thrace with regard to such theoretical issues as migration, ethnicity, trade and exchange and centre-versus-periphery. The location of Thrace spanning three nation states has made efforts to approach such questions particularly difficult. This chapter offers an overview of the empirical record of archaeological finds and the historical record of previous archaeological investigation across this region, as a necessary preliminary for the analysis to follow in later chapters.

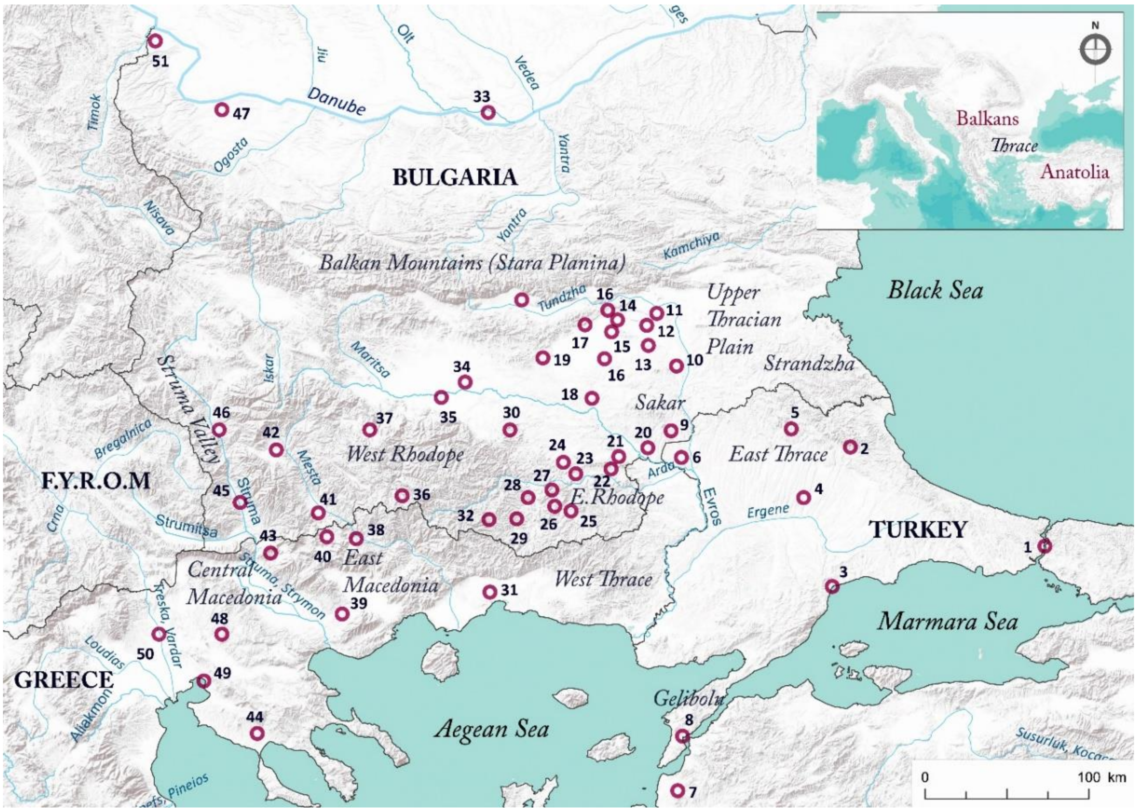


Figure 4.1. Map of the area with main places mentioned in the text.

1. Istanbul; 2. Vize; 3. Tekir Dağ; 4. Lüleburgaz; 5. Kırklareli; 6. Edirne; 7. Troy; 8. Eceabat; 9. Mihalich; 10. Drama (Merdzhumekya); 11. Chokoba; 12. Bikovo; 13. Ovcharitsa; 14. Nova Zagora; 15. Ezero; 16. Asenovets; 17. Karanovo; 18. Konstantsia (Asara); 19. Sveti Kirilovo; 20. Svilengrad; 21. Kush Kaya; 22. Gluhite Kamani; 23. Stambolovo; 24. Perperikon; 25. Ada Tepe; 26. Zvezdel; 27. Tatul; 28. Plazishte; 29. Stomantsi; 30. Dragoyna; 31. Dikili Tash; 32. Startsevo; 33. Zimnicea; 34. Razkopanitsa; 35. Plovdiv; 36. Trigrad; 37. Batak; 38. Potamoi; 39. Aggista; 40. Exohi; 41. Koprivlen; 42. Bresto; 43. Faia Petra; 44. Olynthos; 45. Sandanski; 46. Kamenska Chuka; 47. Orsoya; 48. Assiros; 49. Toumba Thessaloniki; 50. Kastanas; 51. Baley.

4.2. Archaeological evidence and previous research

The numerical majority of the record relevant to the Thracian region comes from Bulgarian archaeology, for which five separate periods of development, shifting research agendas and changing intensity of investigation can be outlined. The first stage starts at the very end of the 19th century, growing out of an antiquarian tradition and lasting until the First World War. After the end of the war, there was an awakening of archaeological research that laid the foundations of 20th-century archaeology and lasted until World War II. After the intellectual vacuum caused by the war, there was slow progress beginning in the 1950s. The 1980s and 1990s were the years of more rapid archaeological intensification while the beginning of the twenty-first century marked a further development of the discipline locally. Research on the Greek side does not entirely match the divisions of Bulgarian LBA study, but it follows the same trajectory to some degree. Early on, archaeological interest in northern Greece was mostly orientated towards Macedonia, but some satellite attention was directed to Thracian lands. The interwar period strongly defined the archaeological agenda in northern Greece, when a range of serious research took place. The post-World War II years were very quiet and more intensive research can only be associated with the period from the early 1970s onwards. Archaeology in Turkish Thrace began in the 1930s because of Atatürk's policy, which involved a research strategy in European Turkey. The work in the area essentially stalled after Atatürk's death and was only restored during the 1980s and 1990s.

4.2.1. The early period – end of the 19th century until the end of the First World War

The foundations of modern archaeology in Bulgaria were laid during the last years of the 19th century. One of the first archaeological investigations in Thrace, involving collection of information about a variety of periods, was the professional expedition of Albert Dumont in 1868 that was published in 1892 after his death and raised the profile of Thracian lands on the international stage. Following Bulgarian independence from the Ottoman Empire in 1878, a number of Czech scholars and intellectuals began documenting sites and finds in the area. The brothers Karel and Hermenegild Skorpil travelled all over Bulgaria and collected a number of artefacts later dated to various stages of the Bronze Age. Another Czech scholar, who played an important role in early Bulgarian history and archaeology, is Konstantin Jirecek, who travelled in Bulgaria during the 1880s and published a number of studies involving the historical geography of Thrace and the region (Tapkova-Zaimova and Miltenova 1996).

The identification of the Bronze Age in Bulgaria occurred at the beginning of the 20th century with the publication of a few chance finds (Popov 1912) and the initiation of the excavations at tell Sveti Kirilovo in 1914 (Katsarov 1914). The first documented interest in the function, date and origin of megalithic monuments at Sakar (Bonchev 1901) also dates to the beginning of the century. Rafail Popov also published some of the early Bronze Age and IA finds before the First World War (1912a; 1912b) and his later works were dedicated to some larger issues concerning the entire 'Stone Age' and 'Metal Age' (Popov 1930a; 1930b). At the turn of the century, some interest in the tell sites (toumbas) and tumuli in northern Greece appeared. The settlements were recognised from the burial mounds in the typological work of Paul Traeger (1901; 1902). Some archaeological material was also collected from the surface of the sites. A first attempt was made to classify this material by shape and size, which resulted in a catalogue published by the German Archaeological Institute in Athens (Struck 1908). During World War I, a compilation of the mounds along the frontline was elaborated (Rey 1916; 1919), which laid the foundation for post-war archaeological work in the area.

4.2.2. The interwar period and World War II

After the First World War, a new generation of scholars emerged in Bulgaria. One of the main researchers with a pronounced interest in prehistory and the Bronze Age was Vassil Mikov. Petar Detev, whose impact on LBA archaeology would become crucial in the next period, also appeared on the archaeological scene in the 1930s. During the interwar period and after the initial investigations at tell Sveti Kirilovo, other tell sites along the streams of the Maritsa and Tundzha rivers attracted attention. Some of the artefacts inspired comparison with the South Aegean and Asia Minor. By the 1920s, a number of bronze finds had already been donated to the National Archaeological Museum, which inspired Bogdan Filov, at the time professor of archaeology at Sofia University, to seek contacts between Thrace and Mycenae (Filov 1920; 1937/1938). Simultaneously Gavril Katsarov initiated a discussion about the origin of EBA societies in Bulgaria and argued that by the 16th century BC, Thrace constituted a parallel development to the 'Mycenaean world' (Katsarov 1926: 14). At that time, a number of chance metal finds and hoards were discovered, and some of them were already associated with the LBA, which stimulated Bulgarian researchers to seek connections between the Bulgarian lands, Troy and Mycenae (Popov 1927; 1930).

In the following years 1931-1933 several articles presenting isolated LBA finds were published (see Petkov 1932-1933: 375; Filkov 1933: 18, 19). In 1933, Vassil Mikov published all known archaeological finds to that time and suggested several locations for LBA settlements (Mikov 1933). Mikov also had a specific interest in the Rhodope and Sakar mountains. During the 1930s, he collected material and initiated some small-scale excavations in the area (Mikov 1933; 1934; 1935; 1940/1941/1942). He later transferred his attention to northern Bulgaria (Mikov 1970; Mikov and Dzhambazov 1960). The period between 1933 and the end of World War II generally lacked archaeological research, but it was also the time of the first excavations of a LBA settlement (Tsonchev 1939: 12-14). During World War II, only a deposit of seven small bronze axes was discovered near Semerdzhievo (Gerasimov 1940: 283).

From 1933, major steps were taken towards developing archaeology in Turkey. A few exploratory excavations and surveys also took place in Thrace. The main trigger was the motivation of establishing prehistoric racial connections between Turks and Europeans, as a strategy defined during the First Turkish History Congress in 1932. A large regional study was initiated as the 'Marmara Region Research Project', which involved surface survey as well as some excavations around Kırklareli (Atakuman 2008: 224). In 1936, on behalf of the Turkish History Institute, Arif Müfid Mansel conducted research on the tumuli in Turkish Thrace and more specifically in the areas of Vize, Kırklareli and Lüleburgaz, which constituted the first systematic research in this area. It resulted in the excavation of a number of tumuli, but all of them dated from the fifth to the second century BC (Delemen 2001).

After the death of Mustafa Kemal in 1938 and the political aftermath of World War II, the Turkish History Thesis was withdrawn, which pushed the discipline of archaeology into a long-term vacuum. Turkish archaeology went through a methodological and ideological transformation after the 1940s which focused on the centrality of Anatolia. Thereafter Turkish archaeology became mostly perceived as 'Anatolian Archaeology' (Atakuman 2008: 230). Mansel's work was also interrupted by World War II and reinstated only in the 1960s by other Turkish archaeologists interested in the area.

During the interwar period, the archaeology of northern Greece was mostly connected to the names of Casson and Heurtley. One of the pioneers of the Macedonian Bronze

Age was Walter Heurtley. He began excavating in 1924 and his intentions were to study one site in each part of Macedonia in order to get a more comprehensive idea of the prehistory of the region (Heurtley 1939; Heurtley and Hutchinson 1927). In 1939, a compilation of Heurtley's work during the 1920s and 1930s in Macedonia was published (see Heurtley 1939). In 1926 Casson's *Macedonia, Thrace and Illyria* appeared (Casson 1926), which provided some of the very first examples of and insights into the prehistory of those areas. In 1928, Robinson began excavations at Olynthos (Mylonas 1929). In the 1920s the investigation of Dikili Tash, initiated by Louis Renaudin, also began.

4.2.3. The post-war period

After World War II, a number of infrastructure projects enabled an intensification of archaeological research. Many new archaeological finds and sites were discovered. The first year of planned archaeological research was 1946. Petar Detev started excavations of tell 'Razkopanitsa', which continued in 1964, 1965, 1966 and the results were published in 1981 (Detev 1981). Razkopanitsa later became emblematic of LBA culture in southern Bulgaria. During the 1950s the quantity of chance bronze finds increased; most of these became the subject of a discussion promoting a direct link to Mycenae and were usually interpreted as evidence of an established trade network (Koychev 1950; Detev 1959; Nikolov 1959: 333; Koychev 1959: 95; Milchev 1955). Joseph Wiesner was the first western scholar who directed his attention towards the LBA in southern Bulgaria. Wiesner also spent some time on the relationships between Thrace and the south Aegean, arguing that the contacts between these two areas were always strong (Wiesner 1963: 45-46).

Between 1940 and 1950, there was almost no archaeological activity in northern Greece. In the early 1960s, Bulgarian archaeologists and historians began to highlight the Bronze Age and treat as a priority the excavation of a number of large tell sites and open-air settlements, amongst which Karanovo, Ezero, Mihalich, Razkopanitsa, Bikovo, Kazanlak, and Nova Zagora and Asenovets were included. During that period the question of Thracian ethnogenesis, which later became a popular topic in Bulgarian history and archaeology, was introduced. The first organised survey campaigns in the 'hunt' for the Thracians began in the late 1960s. The interest in the archaeology of the end of the Bronze Age and the following EIA also increased significantly. A number of researchers were encouraged to investigate the characteristics of 'early Thracian society' (Velkov 1972; Chichikova 1968; Kanchev 1974; Todorova 1972). To this time the discovery of the emblematic well find from Plovdiv (Detev 1964), which later became an eponym for an entire cultural horizon known as 'Plovdiv-Zimnicea', is also assigned. In the early 1960s investigations of the LBA settlement at Nebettepe begun as well (Botusharova 1963; Detev 1963). Detev also worked in the entire Plovdiv region and further contributed to our knowledge by publishing short inventories of LBA and EIA settlements and finds during the 1960s and 1970s (Detev 1960; 1968; 1974). He described some similarities between finds from tell Razkopanitsa and those from some sites in Transylvania and justified them with established connections between the LBA cultures south and north of the Danube (Detev 1981).

The work at Nebettepe was continued by Atanas Peykov in the 1970s (Peykov 1971). By that time, Rumen Katincharov had also studied the well find from Plovdiv and based on the results of his analysis suggested an indigenous development of Thrace, independent from the south Aegean, Anatolia or central Europe. Katincharov also argued that this isolated development had started already during the MBA (Katincharov 1975, 3).

Outside of Plovdiv, Katincharov also worked at Nova Zagora and Asenovets (see Katincharov 1972). He also developed the first more elaborate periodisation of the Bronze Age in south Bulgaria (Katincharov 1974; 1982a) and advanced the debate on the cultural connections between Bulgarian lands and other southeast European territories (1979; 1982b). After Katincharov, Mityo Kanchev and Tatyana Kancheva inherited the work in Nova Zagora and Asenovets (Kanchev 1973; 1982; 1984; 1991; Kanchev and Kancheva 1988; 1990). At the same time, the first stone anchors from the western Black Sea coast associated with the LBA and the Bronze Age in general were found (Lazarov 1969: 33-57).

The Rhodope Mountains were also re-discovered archaeologically in the 1970s. Nedyalka Gizdova's work at Tsepina resulted in the identification of a new pottery style under the site name 'Tsepina', which was originally thought to belong to the LBA

(Gizdova 1974; 1990). Nevertheless, this material was later re-dated to the second half of the 1st millennium BC. The initiative of Dimcho Aladzhov in the region of Haskovo has produced a significant amount of registered LBA sites (Aladzhov 1969; 1997). The excavations of tell Asara (Konstantsia) took place in the second half of the 1970s. An important find was discovered during the construction of the 'Batak' dam in the west part of the Rhodope Mountains, which was the first obvious link with LBA pottery in some Macedonian toumbas (see Tsonchev and Milchev 1970).

Another tradition rooted in the 1970s were the survey campaigns targeting the discovery and documentation of 'cult places' in the Bulgarian part of Thrace, as a part of the strategy of the newly founded Thracology Institute in Sofia. An important step in this direction was the survey expeditions in the Rhodope, Sakar and Strandzha mountains (Venedikov et al. 1982: 173). One such expedition aimed to record any 'mysterious' megalithic monument and to attempt to date its origins as early as the LBA. As well as the uncertainty and compulsory interpretation attached to this process, it also led to the registration, and occasionally small-scale excavation, of a number of sites with actual LBA material, amongst which the site 'Gluhite Kamani' continues to be excavated today. The work of the expedition resulted in a three-volume publication, *The Megaliths in Thrace* (Delev et al. 1982; Fol et al. 1982; Venedikov et al. 1976). The 'thracologist' Alexander Fol focused on reconstructing the "political history of the Thracians from the end of the second and the beginning of the 1st millennium BC" (Fol 1972, 88).

Bernhard Hänsel contributed greatly to our knowledge of LBA Bulgaria by connecting the majority of the finds held in museums at that time with other contexts from Romania as well as EIA deposits (Hänsel 1976). This monograph is still in use as a major comparative study by many Bulgarian archaeologists and researchers working on the Bulgarian LBA and EIA. He followed this work with some interpretative articles in the early 1980s, after he began to work at Kastanas and started re-thinking the regional LBA conjuncture (Hänsel 1976; 1982a; 1982b; 1989). The work at Kastanas was done in collaboration with Alix Hochstetter (1982; 1984).

During the 1960s David French visited a large number of prehistoric sites in Macedonia as part of his doctoral research; this research was facilitated by the Greek Government, British School of Archaeology (as the British School at Athens was known at the time) and the British Council (French 1967). French's work documented both previously published (mainly by Rey and Heurtley) and newly discovered sites and did not represent a detailed or intensive survey.

From 1961 to 1975, after initial research in the 1920s, Jean Deshayes and Dimitrios Theocharis conducted the first systematic excavations at Dikili Tash under the auspices of the French School at Athens and the Archaeological Society of Athens. Their main objective was to determine the stratigraphic and chronological sequence of the Neolithic and Bronze Age in the region, which was poorly understood at that point. Since the 1960s, a few excavations have uncovered Bronze and IA settlements (Elster and Renfrew 2003; Petsas 1954; Renfrew et al. 1986; Romiopoulou 1971). Ken Wardle also worked in the area, although he focused mostly on the West Macedonian Bronze Age. During that time, he initiated work at Assiros toumba as well (Wardle 1977). In 1973, an Archaeological Research Centre was established in Edirne to facilitate studies conducted in Thrace (Belli 2001). Aiming to investigate cultures and civilisation at the juncture of Asia and Europe, the attention focused on Anatolian lands has also now spread to Thrace. The research, however, was devoted to Neolithic and Chalcolithic discoveries.

4.2.4. The 'Archaeological Enlightenment'

Towards the end of the 1970s and during the 1980s, investigations increased dramatically in all three countries. During that period, the first excavations in the Rhodopes (Panayotov 1981; Kissyov 1988: 55; 1998: 21-23; Kulov 1991: 73), Sakar (Venedikov 1982: 37-43; Aladzhov and Balabanyan 1984: 185-235), and Strandzha mountains as well as investigations along the Black Sea coast (Orachev 1988: 353-362; Porozhanov 1988; 1989) took place. The number of studied sites on the Upper Thracian Plain also increased (Gergova and Iliev 1982: 11-23; Gergova 1986: 13; Kanchev 1984: 134-159). In the western part of the Rhodope Mountains, Hristina Valchanova excavated a LBA burial mound with cremation near Trigrad and associated the bronze finds directly with Mycenae. She also attempted to identify the main features of the LBA pottery in what was termed at the time the 'Middle Rhodopes' region (Valchanova 1984; 1986; 1999).

Further emphasis on LBA research was supplied by Goranka Toncheva, who divided the period into geographically distinguished groups identifying two separate regions – northeast and northwest Bulgaria – and described the LBA in southern Bulgaria as culturally originating from an earlier local Bronze Age (Toncheva 1973: 25-26). At this time, different archaeologists started to notice and recognise a cultural difference on either side of the Balkan Mountains (Bonev 1988: 42).

Towards the end of the 1980s the material associated with the end of the Bronze Age had increased in quantity and variability, which motivated Alexandar Bonev to publish the compilation '*Thrace and the Aegean World in the Second Half of the Second Millennium*', incorporating a large number of the discoveries to date (Bonev 1988). Bonev was the first to attempt to analyse and interpret on a larger scale the society and activity in LBA Thrace, placing it in the context of the south Aegean and the Carpathian Basin (Bonev 1978). He made the same attempt with Troy a few years later and incorporated some elements concerning the connection to the EBA (Bonev 1982; 1983). Other connections between Thrace and Troy were attempted by Plamen Georgiev (1981), based on finds from Konstantsia. Some work of his is also directed towards the interpretation, origin and date of deposition of the Valchitran treasure, while he defined the cultural horizon, 'Mycenae-Valchitran-Borodino' (Bonev 1990).

Another tendency in Bulgarian archaeology was the chronological, but also territorial, distribution of topics and areas of interest among archaeologists. For example, the Rhodope Mountains were divided into two or sometimes three parts, where as well as local museum archaeologists, centrally based, strategically distributed researchers also worked, such as K. Kissyov in the western part of the mountains and G. Nekhrizov in the eastern part (with occasional input from Krassimir Leshtakov). Sakar Mountain was the topic of a dissertation of Borislav Borislavov. Tsvetana Dremsizova-Nelchinova, who worked in the 1980s mostly in the Eastern Rhodope range, discovered and published the site of Visherad (Dremsizova-Nelchinova 1985). Rumyana Georgieva (1985) first reported LBA material from tell-Dyadovo, but she also discovered and excavated an important LBA site, Plazishte, in the East Rhodope region (Georgieva 1985).

Konstantin Kissyov has worked since the 1980s on LBA burial practices in the West Rhodopes, which was also the topic of his PhD dissertation (Kissyov 1985; 1988a; 1990a; 1991; 1993a; 1993b; 1994). He has also attempted a thorough description of the settlements' characteristics in the middle part of the Rhodope Mountains (1988b; 1990b; 1998). G. Nekhrizov's main interests were the settlements and cult sites of the IA, but due to many years of archaeological research in the East Rhodopes, also as a part of the Archaeological Map of Bulgaria project, which he inherited after the death of Mecislav Domaradzki, his campaigns resulted in the discovery of a number of LBA sites.

After 1981 and the rise of national-identity propaganda, the importance of the Thracian past, having been initiated by the project '1300 Years Bulgaria', was established. Different studies focused on proving the longevity of Thracian ethnicity, and the primary targets beyond the temporal scope of the written sources were LBA and EIA archaeology. Russian archaeologist Tatyana Zlatkovskaya contributed important work on the ethnic processes in Thrace at the end of the second and beginning of the 1st millennium BC (Zlatkovskaya 1964).

Besides area- or subject-specific studies, there were also a few studies focusing on more general issues. An interesting contribution to the problems of the LBA in Bulgaria was the work of Lam Thi My Dzung, which covered the development of the defined cultures and more specifically Baley-Orsoya and Razkopanitsa-Asenovets (Dzung 1982; 1987; 1989). Ana Yotsova (1989) also worked on a broader topic, defining some of the problems of the settlement system in the Late Bronze and EIA. The Yugoslavian archaeologist Milutin Garašanin worked on some problems related to the chronology and culture history of the 'south Thracians' and 'south Macedonians' (Garašanin 1983). Diana Gergova contributes to the discussion on LBA burial rites and general culture in Thrace (Gergova-Domaradzka 1989; Gergova 1995). Although outside the scope of this dissertation, it is worth mentioning the fundamental work of Evgeniy Chernykh on the metallurgy and metallurgical provinces covering Bulgarian lands in the LBA (Chernykh 1978; 1981).

An introduction to the potential of interdisciplinary research also took place in the 1980s with the development of radiocarbon dating, which was 'delegated' to Yavor Boyadzhiev. Boyadzhiev's contribution to the chronological understanding of prehistory in Bulgaria and synchronisation with the archaeology of neighbouring countries was immense (Boyadzhiev 1986; 1994; 1995; 2003). Unfortunately, although some samples originated from LBA sites, they were far too few to explicate a more precise chronology and synchronisation of the period.

After initial steps were made by Katincharov, Ivan Panayotov has developed the chronology and periodisation of the Bronze Age since the 1970s (1975; 1981; 1985; 1989). Panayotov compiled the bronze weapons, which he dates in the second half of the 2nd millennium BC and defines several chronological horizons based on synchronisation with the archaeology of neighbouring regions (Panayotov 1978; 1980a; 1980b; 1986). After Panayotov's efforts to establish the precise chronological scheme of the Bulgarian Bronze Age, Herman Parzinger also investigated and attempted to redefine the periodisation of Bulgarian prehistory (Parzinger 1993). Panayotov also worked on the problems of LBA cultures in the area (Panayotov 1985; 1990; Panayotov and Valcheva 1989) as well as contributing to the early development of the 'Archaeological Map of Bulgaria' project (Panayotov et al. 1976).

The work of Jan Bouzek also marked the 1980s and the 1990s, although it began in the early 1970s. He addressed the regional context of the Thracian LBA and focused on issues of migration (Bouzek 1973) and relations between the Aegean, Anatolia and Europe, with emphasis on the Balkans (1985; 1994; 1996). Some of his works are also dedicated to the Bronze Age-Iron Age transition in Europe (1989).

The 1990s were marked by the establishment and development of the national information system known as the 'Archaeological Map of Bulgaria' (AMB), designed and administered by Mecislav Domaradzki. The aim of the project was to record all known archaeological sites in Bulgaria in a common system with established criteria and a map-based approach. Furthermore, his intentions were to survey and register new sites in the same way and to encourage other researchers to contribute in order to create a complete database of Bulgarian archaeology. The entire decade was devoted primarily to the attempt to cover large areas of the country and to feed data into the system. After Domaradzki's death in 1998, this project continued under the leadership of Georgy Nekhrizov. Nekhrizov worked in the Bulgarian part of Thrace, but his specific interest was in the eastern part of the Rhodope Mountains. As part of AMB, he conducted numerous intensive as well as extensive surface surveys. The results included the discovery of many archaeological sites of various dates, amongst which there were many with LBA characteristics. Nekhrizov documented and excavated a number of dolmen sites in the East Rhodopes in collaboration with Iliya Kulov (1991; 1999; Kulov et al. 1990) and Georgy Nekhrizov. Both of them also initiated excavations at the LBA settlement of Stomantsi in the East Rhodopes (Kulov et al. 1989). Excavations at the East Rhodopean site of Perperikon began with the work of Nikolay Ovcharov and Zhivko Aladzhov in the 1980s (Ovcharov and Aladzhov 1984). Ovcharov also collaborated with Georgy Kulov during excavations at the site at Zvezdel in the same area (Ovcharov and Kulov 1990).

In general, after the beginning of the 1980s, major planned excavations in different regions across Bulgaria took place as well as a number of survey campaigns along the Struma valley, and in the Rhodopes, Strandzha and Sakar Mountains. Due to the intensive infrastructure development initiated in the 1990s, a large accumulation of registered sites and rescue excavations contributed to the documented material base. The earliest 'Maritsa-Iztok' project (Borisov 1991: 13-31; Georgieva 1991: 91-104), the 'Trakiya' motorway and the 'Plovdiv-Svilengrad' railway were the main concentrations. Along the 'Maritsa-Iztok' route over the last nearly forty years, habitations from the end of the 2nd millennium and the beginning of the early IA have been discovered. Two of the sites, Ovcharitsa I and Radnevo, both of which are open-air settlements, have provided information that is more substantial (see Kancheva-Ruseva 1991; Nikov 1994; Savatinov 1995). Krassimir Nikov's work in the 1990s resulted in the study and publication of the site at Radnevo in Upper Thrace, some of which was dated in the LBA

(Nikov 1994). Sava Savatinov later continued the work at Radnevo with some test pits (1995).

One of the rare planned excavations in the area, outside of the infrastructure projects, was that at tell Drama-Merdzhumekya (Fol et al. 1990; Lihardus et al. 2001; 2002; 2003; 2004). Nevertheless, as with other tell sites, LBA materials were discovered on top of the sites, without stratigraphy or recognised structures (Lihardus 2001).

The number of surface survey campaigns and test-pit excavations on the Sakar Mountain increased significantly from the beginning of the 1990s, following the existing inertia of investigations of dolmens alone. Between 1992 and 1997 in this region several settlements with LBA material were also recognised (Stoyanov and Nikov 1997: 171-240).

Research in the Rhodope Mountains has been especially intensive since the late 1980s. Several terrain surveys and test-pit excavations of LBA sites have been completed (Kissyov 1988: 55; Kulov 1991: 73-86; Kulov 1999: 160-166; Valchanova 1999: 150-156). Material that had already been collected allowed more precise observations on settlement life in the area (Bonev 1988: 23-24; Gotsev 1990: 13-15; 1994: 137-138; 1995: 46-52; Georgieva 1991: 91-95; Gergova 1990: 19-20; Kissyov 1988: 55-74; 1998: 21-23; Kulov 1991: 73-86; Panayotov and Valcheva 1989: 12-15; Shalganova and Gotzev 1995: 334-335). Along with the survey campaigns, the first test-pit excavations began at some sites such as Tsrancha, Alada, and Bosilkovo (Georgieva 1980: 65-102; Domaradski 1986: 10-23; 1986a: 89-104; Leshtakov 1990: 1-17; Raduncheva 1998: 9-19). A large majority of scholars suggested that the rock/peak sanctuaries first appear in the region in the LBA. As a combined result of these survey campaigns and test-pit excavations, Nekhrizov (1995) published the first detailed article on pottery from the East Rhodopes after Leshtakov's publication of the site of Alada (Leshtakov 1990).

During the 1980s, surface surveys also started in Thrace, first in the district of Kırklareli, when mostly prehistoric sites were discovered. In 1993, an international team conducted research under the leadership of Hermann Parzinger, covering a large portion of east Thrace and including Turkish, German, Bulgarian, Spanish and Slovakian interdisciplinary scholars. Besides the documentation of many Neolithic and Chalcolithic sites, one of the most significant results of this project was the discovery and partial excavation of the EBA site by Kanlıgeçit (first discovered in 1980). A general result of this work was the realisation that there is a significant absence of material from the time after the end of the 3rd millennium BC. After the continued excavations of Kanlıgeçit in the 1990s, an important observation was that a serious fire destroyed the site and no new settlements in the vicinity of Kırklareli were established in the 2nd millennium BC (Özdoğan 2001: 62). This expedition provided a valuable first insight into the prehistory of the east Thracian region.

In 1980, during the same Kırklareli survey campaign, a rescue excavation on a burial mound took place. The site known as 'Taşlıcabayır' produced fifty-one fluted vessels initially associated with the LBA, but later related to Troy VIIb2 and the Balkan EIA (see Özdoğan 1987; 2001). It was part of a larger project that aimed to continue the work of the 1930s, which had been encouraged by Ataturk himself, and to shed some light on the archaeology of the Marmara region and the link between Anatolia and Europe. Özdoğan noted that the results were quite different from those initially expected (Özdoğan 2002: 284). Between 1980 and 1985 the Thracian parts of the project, including the districts of Istanbul, Edirne, Kırklareli, Tekirdağ, Gelibolu and Ecebat, were covered, resulting in the discovery of 300 prehistoric sites, 100 sites of later periods, 800 tumuli and 90 megalithic structures (Özdoğan 2001: 284). Study seasons took place between 1989 and 1997 (see Özdoğan 1984; 1985; 1987; 1993; 1998). The results of this project established that EBA settlements in European Turkey are few and small, part of the Balkan pastoral communities, but also most probably in contact with Anatolia. There was no settlement definitively dated in the 2nd millennium BC and new evidence was registered only from the end of it, the transition between the LBA and the EIA, which Özdoğan interpreted as belonging to a migration from Southeast Romania, which brought with it the tumuli as well as the dolmen structures (Özdoğan 2001: 287).

In the 1980s, Demetrios Grammenos worked partially in western Thrace, but mostly in east Macedonia. During this period, he recorded a number of new sites and excavated tumuli in the villages of Exohi and Potamoi near Nevrokopi. He also excavated some tumuli near Nevrokopi in the late 1970s (Grammenos 1979), which inspired further investigations into the LBA of Macedonia and Thrace (Grammenos 1982). The 1980s also saw the work of Chaido Koukouli-Chryssanthaki in the same area. Besides her work on Thasos, which resulted in a large monograph that was an essential contribution to the regional LBA and EIA (see Koukouli-Chryssanthaki 1980; 1984; 1992), she also excavated at Aggista, but a comprehensive publication never resulted from that work. Nevertheless, there is a short publication in a Bulgarian periodical from 1982, in which the characteristics of the site and its material are presented and to a certain extent interpreted. Kostas Kotsakis and Stelios Andreou also initiated a survey in the Langadas basin in central Macedonia, which was the next relevant work and is partially related to the study area (see Andreou et al. 1996; 2001). Andreou, Fotiadis and Kotsakis published a fundamental synthesis covering a number of LBA sites from northern Greece (Andreou et al. 1996). The work at Dikili Tash also continued during this period. From 1986 until 1996, a second Greek-French research programme was conducted under the direction of Chaido Koukouli-Chryssanthaki and René Treuil, although little attention was paid to the later phases of the Bronze Age. With several intermissions, the work at the site has continued until today. During the 1980s investigations along the lower Axios Valley began. The excavations and publication of the internal pottery sequence played a significant role in regional archaeology and how the character of local pottery production was approached (see Hochstetter 1984). This coincided with excavations on Thasos, which offered comparative material for both Macedonia and LBA sites identified in Bulgarian lands (see Koukouli-Chryssanthaki 1982a; 1982b). The finds from east Macedonia and Thrace, however, remained limited and were usually chance finds (Grammenos 1982). Wardle also continued the work at Assiros during the 1980s and the following decades (Wardle 1982; 1986; 1997; 1997a; 2005; 2007). The site, being very close to Kastanas, provides important comparative material, both culturally and chronologically.

4.2.5. Modern archaeology

Work from the very end of the 1990s until today is mostly marked by rescue excavations caused by a boom in infrastructure projects, initially related to the acceptance of

Bulgaria into the European Union and then continuing via European programmes for regional development. A large number of sites were investigated only through test-pits, while others were explored simply through surface collection. Another group of sites subject to rescue archaeology have been those endangered by looting, which became very common in Bulgaria after the collapse of the totalitarian regime in 1989. This emphasis on archaeology attempting to save the majority of endangered sites resulted in more excavations, more survey campaigns and naturally an increase in the number of registered sites of all periods. On the other hand, this boom in archaeological investigation reduced the time and possibility for comprehensive publication and the new data became available only within obligatory annual reports, which lacked detailed documentation.

Nevertheless, a few major works were influential for the development of LBA archaeology during recent years. Krassimir Leshtakov's PhD dissertation, which was written in the 1990s, but only published a decade later, compares different Bronze Age sites aiming at a 'comparative stratigraphy' within Thrace. Besides important EBA sites, he also incorporated and published some LBA ceramics and attempted a reconstruction of the settlement system in this period in comparison to earlier periods (see Leshtakov 2006).

After Alexander Bonev's (1988) summary of the LBA in Bulgaria, there was no other research of the sort until the posthumous publication of a manuscript he was working on before his death (see Bonev 2003). After that no general research has been dedicated to the period apart from some articles by Leshtakov in 2002 and 2006 covering the entire Bronze Age in 'Upper Thrace' (Leshtakov 2002; 2006), as well as the unpublished PhD dissertation of Borislav Borislavov concerning the Transitional Period between the LBA and the EIA (Borislavov 1999). A study devoted to the LBA and EIA pottery in the Rhodope Mountains was also the topic of a PhD dissertation defended by Nekhrizov in 2005, which remains unpublished (Nekhrizov 2006).

Besides this work, a few major excavations have produced material for investigation capable of answering questions that are more complex. Two sites along the route between Thrace and Macedonia were also excavated during that period – the settlement at Koprivlen and the cemetery at Sandanski (Alexandrov 1998; 2002). Excavations at Kamenska Chuka began in the late 1990s and produced some of the scientifically based dates of the LBA in this area (Stefanovich and Bankoff 1998; Yordanova and Kovacheva 1998). More recently, in the same area, large-scale international excavations are taking place at Bresto (Athanassov et al. 2013). In Sakar, Borislavov worked for many years at the LBA/EIA site at Dositeevo. Georgy Nekhrizov continued the surface surveys in the Eastern Rhodopes and also excavated and began excavations at sites like Ada Tepe, Gluhite Kamani, and Stambolovo. Exploration of the mines of Ada Tepe was later continued by Christo Popov, who excavated another important transitional site known as Kush Kaya. Shihanov Bryag has been partially excavated and dated to the LBA (Kancheva-Ruseva 2008). Krassimir Leshtakov excavated other significant sites in the Rhodope Mountains, such as Perperikon and Tatul. The site at Dragoyna just outside of the Rhodope region claimed its place as a Bronze Age site by the discovery of some imported pottery of Mycenaean style (see Bozhinova 2008).

The survey campaigns and excavations still emerging due to the ongoing projects along the construction zone of the 'Trakiya' motorway have also documented a number of LBA settlements and cemeteries (Kancheva-Ruseva 2011). More recently, as part of the same infrastructure project, Krassimir Leshtakov and Lyuben Leshtakov investigated a couple of LBA sites near Chokoba (Leshtakov 2011; 2011a) and recorded a number of settlements from the end of the LBA (Leshtakov 2010). Bakardzhiev also excavated a settlement in the region, near Zavoy, whose beginnings date to the end of the Bronze Age (Bakardzhiev 2010).

Relevant to the LBA archaeology of Thrace is the discovery of a tumulus cemetery at Faia Petra near Serres and the excavations that followed until 2002 (Valla 2007). Of some relevance as well are the ongoing excavations and study at Toumba Thessaloniki and the recently renewed work and interest towards later periods at Dikili Tash in the

West Thrace.[5] A number of articles and a few dissertations on the pottery from Toumba shed light on the central Macedonian handmade pottery tradition and innovation (Andreou and Kotsakis 1996; Andreou 2001; 2003; Andreou et al. 2001; Andreou and Psaraki 2007; Kiriatzi et al. 1997; 2000; Psaraki 2004). In 2007 the remarkable work of Barbara Horejs, which made the handmade pottery from Agios Mamas (Olynthos) available for interpretation, was also published. Particularly significant was Horejs' analysis of the pottery placed in a broader regional context with reference to Thrace, but also the material culture of the Lower Danube (see Horejs 2007).

4.3. Problems of Interpretation

One of the main challenges facing any attempted archaeology of LBA Thrace is the absence of an excavated stratified settlement. All the material is interpreted on a micro-regional level, and based on attempted synchronisation with sites from adjacent territories, which results in the creation of large cultural horizons with even larger gaps within. The general hope that there is an undiscovered 'stratified' site, analogous to the toumbas in Macedonia, which once found will solve many of the problems of the Thracian LBA, prevents any more serious attempts to analyse and interpret almost a century of research.

A second obstacle is the shortage of radiocarbon dates for this period that would allow the tracing of some chronologically distinguishable patterns and material sequences. In addition, and especially in Bulgarian archaeology, the obsession with typology as the final goal of archaeological research is still alive and, for many studies, it is difficult to escape the field of 'sherdology' and instead prioritise broader discussion. External comparisons have been used mostly to refine chronology or to prove trade and consequently the participation of local societies in some significant regional patterns. This general lack of thematic investigations has usually resulted in small publications which, although numerous, are in the local language and thus inaccessible more general, usually western, academia. As a result, the map of Thrace is habitually left blank when

[5] During the second year of my PhD work, I applied for a permit from the Greek Archaeological Service. The access to that material was unfortunately denied so the pottery from Dikili Tash is not included in the overall analysis provided here.

general LBA patterns are being discussed, usually in relation to connections between the south Aegean and the Carpathian Basin or Anatolia and central Europe.

A further problem is the extensive reliance on external sources not only in terms of chronological synchronisation, but also as cultural comparisons. Probably because of this hidden history of Thrace, a major goal of Bulgarian archaeologists has been the 'chase for Mycenae' and sometimes Troy (see Leshtakov 2009) in order to establish contacts, trade networks and thus place Thrace on the regional map. Related to this shortcoming is the long-lived culture history approach in the area and the excessive use of migration to explain the early 'arrival' of the Thracians. Thus every diverse or foreign object is explained by trade or exchange and nobody speaks of population movement anymore. In fact, in many studies, LBA culture is considered indigenous, without questioning either its origin or (except in very rare cases) its transformations.

Another limitation of any research on LBA Thrace is working with a combination of primary raw artefacts/site data and also secondary, material from old excavations, which are often lacking essential contextual information. In addition, the differing extents of investigation is also problematic. Between Balkan Mountains and the Aegean there is no substantially excavated settlement. In the best cases in this region, test-pit excavations covering different parts of a site have been performed, but most of the sites have been registered only through the discovery of surface material from terrain surveys of varying intensity. Accordingly, the unsatisfactory extent of investigation causes a problem in accurately identifying different functional types of settlement. Thus another category has been created for a type of site that does not fit normal settled habitation conditions. These sites have been called 'peak sanctuaries' or just 'sanctuaries', usually based on their location. Another challenge is the investigation of sanctuaries and, especially, their identification. This is closely related to the criteria used to define a site as a settlement or a sanctuary and the fact that not many of them have been explored via regular excavations; a large number have been registered and identified as cult places based on different external signs, like location and the existence of rock cuts (Borislavov 1999: 154). It is also difficult to distinguish the so-called 'peak sanctuaries' from settlements located on peaks. Through the increasing amount of archaeological material and observations, however, the function of many sites interpreted as settlements has been reconsidered and corrections have been made according to their formation (Kissyov 1990: 67). Most emblematic are the examples from the sites near Startsevo (Valchanova 1986: 67), Plazishte (Georgieva 1985: 66) and Nebettepe (Detev 1960: 51). The widespread opinion, prevalent in the 70s, concerning the sudden appearance of "Thracian fortresses" in the EIA has been revised (Petrova 1975: 89-98; Chichikova 1976: 15-17; Panayotov 1977: 47-58; Balkanski 1977: 131-134). Most of them have been secondarily identified as sanctuaries originating in the LBA (Kissyov 1990: 64-74). The origin, the function and the distribution of these so-called "sanctuaries" then became one of the main topics of discussion in LBA and EIA archaeology in Bulgaria.

The extent of site preservation is also a concern. Only a few sites have survived in a well-preserved state with some evidence of stratigraphy. Very often, the LBA layer is very close to the surface and thus at some point in its life was involved in either ploughing or mixing with later as well as earlier material or was exposed to erosion and denudation. Tell sites and the open-air settlements, if not affected by disturbances from later periods, have been largely destroyed by modern agricultural activities or military trenches. This fact facilitates the recognition of the sites on the surface but does not provide any evidence for stratigraphy or structures.

The lack of LBA sites on the Black Sea coast is another challenge. Although there are many possible reasons for this, the absence is assumed to result from and is also explained by climatic change and a rise in the sea level between the 14th and the 11th century BC (Orachev 1988: 12; Nekhrizov 2005). The absence of settlements along the coast is also explained by submergence or a displacement inland (Dimitrov and Orachev 1982: 1-11). A hypothesis about earthquake disturbances also exists (Stiros and Papageorgiou 1991: 263-276).

The problem with Turkish Thrace is that either there is no relevant LBA or the issue is one of terminology. Furthermore, a large area between Turkey and Greece exists that is still, and recently especially so, politically sensitive, where no archaeological research has ever taken place. In a similar way the limited research in the Greek part of Thrace has never systematically approached the border with Bulgaria. Those large corridors without any identified archaeological sites can only be explained by their border-zone location.

The Greek part of Thrace presents another problem. There are a relatively large number of sites that were registered via survey or chance finds, but the level of investigation is not comparable to that in Bulgaria. There are only a few excavations east of Macedonia and the rest are merely sites noted in surface survey. The border between the nation states that cuts across the Rhodope Mountains along their length further obstructs observing how the patterns change between the mountainous Rhodopean and the coastal north Aegean environment.

In ending this chapter with a set of problems arising out of existing research priorities and data gaps, the goal is not to postpone or neglect the research of the local LBA but, despite the complex condition of this cross-border archaeology, to propose a way of investigating such a dataset. With all this in mind, we will now move on to the characterisation and typological description of the archaeological sites involved in this study.

Chapter 5. Site characterisation, typology and preservation

5.1. Archaeological sites as a part of the social landscape

Settlement and landscape approaches in archaeology have become increasingly important as a means to detect, understand and explain cultural behaviour at the regional and sub-regional scale. One important subject of this research involves characterisation of individual LBA archaeological sites, building up towards spatial modelling in an attempt to examine variation in site characteristics and to detect any patterning visible in the landscape. At the beginning of this chapter I discuss issues of archaeological recovery and also dedicate a section to the specific character of Turkish Thrace. Then, the chapter focuses on characterisation of three main site types: settlements, cemeteries and sanctuaries, with respect to their physical properties and regional distribution. The qualitative assessment of variation in the character of archaeological sites across the whole region presented in this chapter will then lead to full spatial modelling of a sub-region of sites and a semi-quantitative analysis of the entire Thracian site distribution in chapter 9.

5.2. Issues of archaeological recovery

Previous research has mainly involved publication of single sites, single finds or particular site typologies, and has mainly been disseminated via annual fieldwork reports (Leshtakov 1990; Leshtakov 2009; 2010; 2011; 2012; Kissyov 1993; 1995; 1995; Nekhrizov 1995; 2002; 2004; 2005; 2007; 2008; Nikov 1998; Popov 2007; 2008; 2010). More synthetic work on burial customs in the Western Rhodopes region was conducted by Kissyov for his PhD dissertation (1993) and an attempt to summarise the existing LBA data from the eastern Balkans (including Thrace) was made by Hänsel (1976), Bonev (1998; 2003) and more recently by Horejs (2007), albeit with a focus still mostly on pottery. It is also worth adding that Hänsel attempted to define local cultural groups at a time when the evidence was very limited (Hänsel 1976). A key point to stress is that variation in the intensity of archaeological investigation across different parts of Thrace has also led to large gaps in data. For example, for the region around Nova Zagora, there are a number of registered and partially investigated settlements due to multiple infrastructure projects during the 1990s and 2000s, while in the area enclosed by Burgas, the Strandzha Mountains, the Balkan Mountains and the valley of Tundzha, there is almost no information (Figure 5.1). Archaeological research along the lower Maritsa valley was always problematic, because of its strategic geo-political value, standing in-between Bulgaria, Greece and Turkey. The southwestern Black Sea coast is also lacking LBA sites, traditionally explained by the suspected submergence of potential settlements. Work in northern Greece during the 20th century has concentrated more on Chalkidiki and central Macedonia offering well stratified sites and a variety of imported goods, while considerably less attention was paid to Thrace. Furthermore, the militarised protection of national borders has resulted in two wide belts with no archaeological record. More detailed information comes from the publications of the cemeteries at Faia Petra (Valla 2000; 2007), Exohi and Potamoi (Grammenos 1979), Kastri and Kentria on Thasos (Koukouli-Chryssanthaki 1992), as well as a preliminary report on the settlement at Stathmos Aggista (Koukouli-Chryssanthaki 1980), the upper layer at Dikili Tash (Koukouli-Chryssanthaki 2008) and the PhD dissertation of David French (1967).

Figure 5.1. Map of the area with main places mentioned in the text.

5.3. The LBA in Turkish Thrace

An investigation of the availability of sites and material from Turkish Thrace was attempted during 2012 by the author, following the discovery of a large number of archaeological sites during several survey campaigns, conducted during the 1980s and 1990s (see Özdoğan 1993; 2002; 2003). Nothing was previously published in terms of pottery for comparison, apart from the information provided by Mehmet Özdoğan that the 2nd millennium BC is not represented in Turkish Thrace (Özdoğan 2003). Along the Thracian coast of the Marmara Sea there is a homogenous distribution of "Anatolian" type of earlier Bronze Age site formations compared to Troy I and Troy II-V, mostly on the Gelibolu Peninsula, characterised by "small, fortified settlements, the use of potter's wheel, the emergence of an elite ruling class, increased number of status objects, technologically developed metallurgy, etc." (Özdoğan 2003, 108, 111). It seems that there is no visible evidence of occupation along the European Marmara coast all the way until the Bosporus and including the entirety of inner Thrace during the 2nd millennium

BC. This gap seemed strange, given the seemingly artificial break in the LBA on the map caused by modern political boundaries. Therefore, I visited Istanbul University and with the kind collaboration and support of Professor Özdoğan managed to study all the ceramic material discovered during those surveys. As a result, it turned out to be true that not even a single sherd was comparable with the LBA pottery from the rest of (Bulgarian and Greek) Thrace. In the rest of Thrace, there were a number of examples of coarse pottery, which could have belonged to the earlier Bronze Age, LBA or EIA, since the appearance of that pottery type across those periods is quite similar. What could be said, however, is that no finer fabric ceramics could confidently be associated with the Thracian LBA and thus there are no sites that can be included in the analysis presented in this chapter. A possible explanation for this apparent absence will be offered later in the thesis, as a part of a broader regional and micro-regional reconstruction.

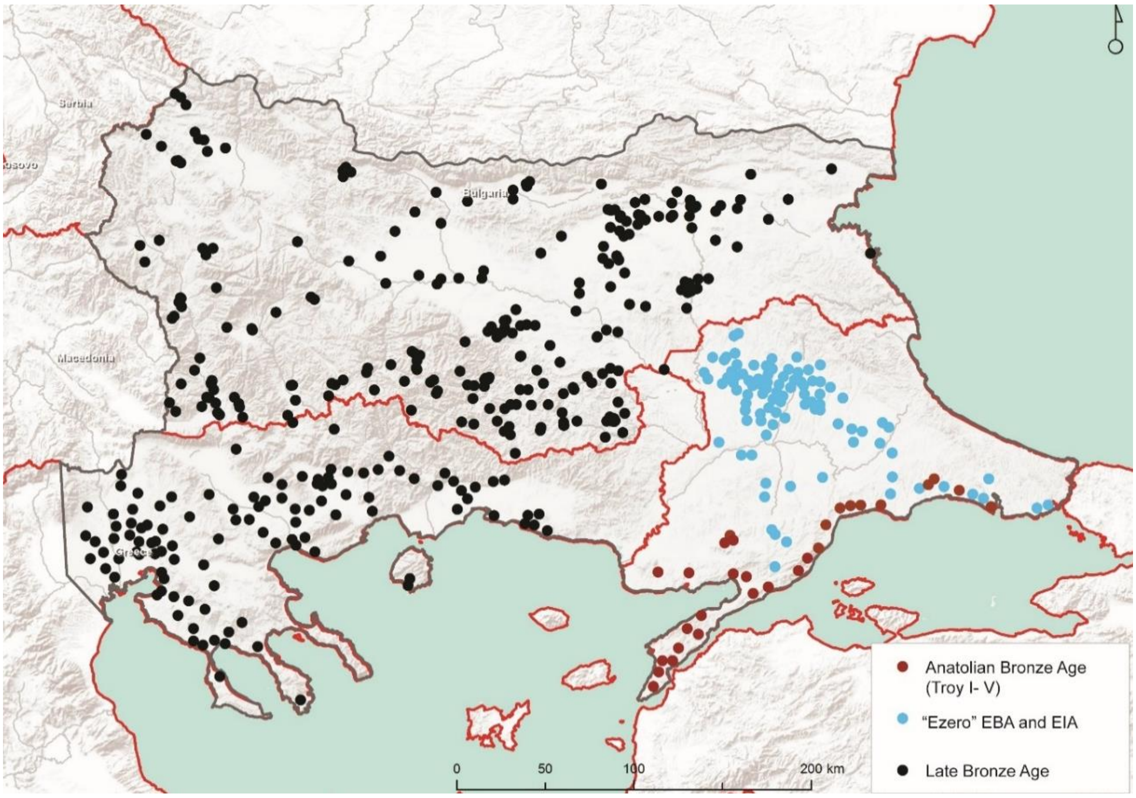


Figure 5.2. Distribution of LBA site in West and North Thrace, and Macedonia in comparison to the distribution of sites in East Thrace.

5.4. Typological characteristics

As part of this research, I have collected, as exhaustively as possible, a record of all known site locations across LBA Thrace. This database consists of 359 sites, of which 249 come from the Bulgarian part of Thrace and 110 from northern Greece. Two distinct site categories predominate: i) settlements (n=222) and ii) cemeteries (n=42), and a third group, known in the Bulgarian literature as 'sanctuaries' (n=36) is also represented. A number of often rare site types are described in section 5.4.4.

5.4.1. Settlements

The study of settlement patterns across various periods in Thrace is almost a century old, but little attention has been paid to LBA sites so far. There is an opinion according to which, during the late stages of the Bronze Age, social stratification became more pronounced with consequences for the development of the settlement system (Popov 2015: 110). Nevertheless, information about the internal structure of settlements is almost non-existent. Unfortunately, therefore, the only possible reading of the settlement system in Thrace during the LBA at the moment largely involves attention to generic types of settlements, and an assessment of micro-regional and possible chronological variation. There are three main categories of settlement from the period that I have identified in Thrace:

i) Settlement mounds, also known as tell sites or *toumbas* (n=76) are multi-layered sites that are usually manifested as a positive 'bump' above ground, which is not a natural geomorphological unit, but an accumulation of anthropogenic debris, especially the residues from mudbrick construction (Figure 5.3, Figure 5.4). Many of these sites typically began life in earlier prehistory, usually with an Early Neolithic component and continuing into the EBA. LBA evidence is sometimes preserved in the upper or topmost levels of such tell sites, typically lacking stratigraphy and often mixed with later material.

ii) Besides tell sites there are also 'open' settlements (n=120). This type of site is traditionally described as a settlement with a shorter life span (usually just one or two phases, but which could also be multi-period), that has not resulted in any positive mound formation. Nevertheless, it is worth noting that not all of the settlements identified as of this type have been excavated. Most are in fact only registered via surface surveys and thus their interpretation as settlements at all is rather uncertain. There is a possibility, for example, that some of these sites are in fact flat cemeteries.

iii) A third type of settlement worth distinguishing are settlements with stone architecture (n=14), which is a kind of material use which is otherwise unusual. The few examples of this type are distributed in one specific region, i.e. along the Struma Valley, and possibly having a different generic function as well as chronological position (see Stefanovich and Bankoff 1998). The uncertainty here is smaller, due to the visibility of the stone walls above ground, even when the site is not excavated (Figure 5.5).

5.4.2. Cemeteries

The characterisation of specific features of burial in both the Bulgarian and the Greek parts of Thrace is a complicated task and the lack of many unlooted burials, which otherwise could provide more detailed information, does not allow one to draw a comprehensive picture. Nevertheless, I will attempt to outline a few tendencies.

LBA cemeteries found across the Thracian region can be classified based on both burial customs, i.e. inhumation or cremation, and physical structure, i.e. grave pits under the ground, defined as a ‘flat’ cemetery, or different structures covered by a mound. The generic types are iv) flat cemeteries (n=8), v) single burial mounds (n=13) and vi) clustered burial mounds (n=21).

The most common type is the burial mound found either on its own in the landscape or one part of a group of several mounds, which presumably accumulated over time.

The construction follows the generic ‘kurgan’ form or ‘tumulus’ (Figure 5.6), with a small pit in the ground covered by an earthen pile. Preserved evidence of ritual indicates mostly cremation in an urn in the tumulus, but inhumations are also known (see Kissyov 1993; 2009). Sometimes burial mounds cover built or dug structures known as ‘dolmens’ or ‘cist-graves’ (Figure 5.7), which constitute a further type of burial, whose earliest use in the area dates to the LBA (n=6). All structures of this type are constructed out of local grey gneiss or schist. Sometimes it is difficult to distinguish between types if the structure was looted and thus the cover or the front stone was destroyed. Although the dolmens in Thrace are mostly dated to the EIA (see a discussion in Nekhrizov 2015), there is an indication that their use started sometime during the LBA. Besides the LBA material associated with some of these structures from the East Rhodopes and Sakar, another indication for their earlier presence is the great similarity with the dolmens in west Europe, dated in the Neolithic and Chalcolithic, but perhaps a more important comparison is with Caucasian Bronze Age megaliths. The possibility of interpreting them confidently is limited, because, as stable and visible constructions, they have been both reused and robbed multiple times throughout the following centuries.

Within the category of flat cemeteries, funerary ritual consists mostly of inhumation and only rarely of cremation. The inhumation ritual is similar to that attested during the EBA. The body is usually laid out in either a crouched or straight position with varying grave orientation. The depth of the pits is between 0.60 and 1.20 m (Kanchev and Kancheva 1990). Besides the concentration of flat cemeteries with inhumations in the Upper Thracian Plain, there is also a flat cemetery with eight excavated inhumations in southwest Bulgaria, beyond the Rhodope Mountains, near Sandanski. On the other hand, in the Upper Thracian Plain there are also a few burial mounds with one or more inhumations in the centre of the tumulus, and in one case, there are three skeletons buried together. Besides these isolated examples, LBA tumuli are mostly associated with cremation. In both inhumation and cremation burials, grave goods are rather rare and consist of a vessel or two (and their contents). In the West Rhodopes, however, most of the burial mounds are exceptionally rich in comparison with the others; they contain some bronze weaponry and gold, silver, bronze or amber jewels.

If there is a construction associated with the grave, this is usually a pile of stones or sometimes a rectangular or circular feature under the mound (Figure 5.8). The main feature, however, is the urn itself, which is usually a ceramic vessel, covered by another ceramic vessel. Sometimes the urn is placed directly on the ground or within stone 'circles'. The mounds are relatively small, from 3 to 10 m in diameter and 0.45 to 1.50 m in height (Kissyov 1989: 43). Usually, the initial layer of the mound consists of small to medium sized cobbles, covered with a mixed layer of soil and pebbles. In a few cases there were stone markers on top of the mounds (Kissyov 1993: 7; Borislavov 1999: 128). Sometimes, there are secondary burials in the same burial mound, but with short spaces in between.

LBA tumuli are the earliest burials of this type in the Rhodope Mountains. They are usually combined in groups, with from 2 to 20 contemporary burial mounds in a single cemetery. It seems also noteworthy that there is a considerable degree of topographic continuity with later periods like the IA and Roman, resulting in the accumulation of tumuli (sometimes up to 200 mounds) in large cemeteries. Furthermore, cremation, which is typical of the LBA, is almost entirely replaced by inhumation at the beginning of the EIA. In Upper Thrace, on the other hand, the opposite trend is observable: LBA inhumation dies out with the end of the period and is replaced by cremation in 'knobbed' urns.

5.4.3. Sanctuaries

A third type of site in Thrace are known as 'sanctuaries' (n=36) and constitutes a category that is full of uncertainty. Even as a fuzzy group, it is clear that they are almost exclusively associated with the area of the Eastern Rhodopes (Figure 5.9).

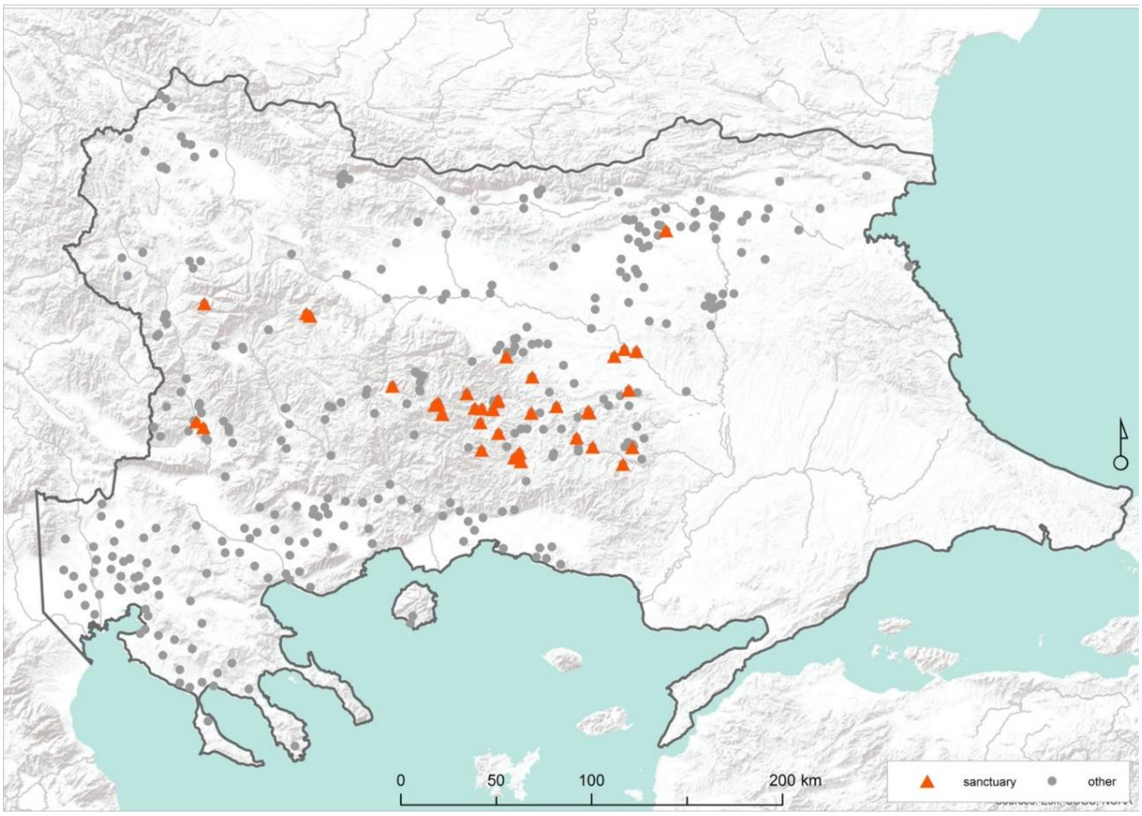


Figure 5.3. Distribution of sanctuaries.

These sites have traditionally been interpreted as ‘sanctuaries’ or ‘peak sanctuaries’ (Domaradzki 1986: 1986a; Kissyov 1990: 64-74; Raduncheva 1998), but sometimes are also considered as habitations (Koukouli-Chryssanthaki 1992: 820). The academic history of this group is that it became popular amongst researchers to designate all peak-top sites in the Thracian region as places of cult practice, and Bulgarian archaeological institutions in particular undertook a number of expeditions to investigate such ‘sanctuaries’ as well as megalithic sites in the Rhodope, Sakar and Strandzha mountains (Delev 1982; 1984; Mikov 1933: 144; Venedikov 1976: 32; Venedikov et al. 1982: 173). Thus their position as a clearly identifiable and distinct category is worth reconsidering. The main reason for their designation as cult sites is the rocky nature of the steep peaks (Figure 5.10, and Figure 5.11) where LBA pottery was found; the living conditions in these spots in the sense of continuous habitation would have been extremely difficult. No objects related to cult practices, however, have been found during excavations, besides an alternative interpretation of the site at Perperikon (Leshtakov 2007). Furthermore, the societies inhabiting the Rhodope Mountains during the LBA have not really been analysed as groups with potential nomadic or other non-sedentary characteristics. Including this probability in the analysis of the settlement system in Thrace as an option might help researchers identify more options for social reconstruction. Nevertheless, although the function of these sites seems problematic, their clustering suggests that they had some value specific to the local LBA communities in the Eastern Rhodopes area.

5.4.4. Other categories

Apart from these three main categories there are also several other problematic sites with LBA material, such as rock niches, enclosure ditches, mines, stone circles and caves. Of these, only two recently discovered mines can be related to actual mining activities. The mine site by Sedefche was used to exploit silver deposits and was working as recently as the 1930s. Some LBA pottery was discovered in front of its entrance, which suggests possible exploitation in the distant past as well. More recently excavated is a gold mine on the northern slope of Ada Tepe in the Eastern Rhodopes where evidence for Bronze Age activity is more clear-cut (Figure 5.12). The site is dated in the 14th to 13th centuries BC (Popov 2011: 136). The excavators of this site set the beginning of its use no later than the mid-2nd millennium BC (Jockenhövel and Popov 2008: 254-257).

Rock niches (Figure 5.13), which sometimes have steps and cup marks are considered to appear first in the LBA (Leshtakov 2002; Christov 2001). They have often been interpreted as sanctuaries and referred to as ‘rock sanctuaries’ (Venedikov 1982; Fol 1980; Christov 2001). However, there is no consensus concerning the time of their cutting and their function, even if in some cases LBA pottery was scattered at the foot of rock outcrops with niches (Bozhinova 2007).

There is also an isolated example of a ditch with LBA pottery that is not clearly related to any other structures (Hristova and Ivanov 2010: 123-126). It was interpreted as a “ritual complex from the 2nd millennium BC” (Hristova and Ivanov 2010: 123). It is an elliptical structure, carved into the bedrock from 3 to 8 m in depth, reminiscent of an enclosure of central European character (Figure 5.14).

During the renewed 'Struma' expedition in 2007, two circular stone structures without clear context or function were associated with LBA pottery. Caves are also environments of uncertain Bronze Age utilisation, and only a limited number contain LBA material. For example, in the karst-rich Western Rhodopes, only two out of some thirty identified caves contain LBA pottery (Yagodinska and Dolna Karanska caves). Those that were exploited in the LBA were probably used as temporary or seasonal settlements (Kissyov 1990), although the religious character of cave use has been emphasised for contemporary contexts in the southern Aegean and should not be excluded as a possibility here either (Rutkowski 1986). No excavations have been undertaken, so it is difficult to offer greater certainty and arguments exist supporting both theories (Gotzev 1995: 49; Rutkowski 1986: 306; Teoklieva and Balabanov 1981: 22). The small sample of these more unusual site categories and our limited ability to characterise them properly precludes including them in any more formal investigation.

5.5. Site distribution and archaeological recovery

The fact that different categories of site differ in number is also due to the uncertainty born of varying investigation in different sub-regions, as well as the deliberate targeting of certain site types by certain researchers (Figure 5.15). For example, in the area of the Western Rhodopes, the most investigated type is the cemetery group due to the concentration of burial mounds visible above ground, which were thus easily targeted by both looters and archaeologists. Preserving the remains of the archaeological record becomes the top priority as soon as looting is identified. In fact, most of the archaeological artefacts from this part of the mountains come from emergency and rescue excavations or chance finds. Similarly, more attention has been paid to the 'visible' tell sites in the Upper Thracian Plain, investigated mostly for their earlier prehistoric periods, such as the Neolithic, Chalcolithic and EBA. A few flat cemeteries and open-air settlements were discovered during various infrastructure initiatives. The burial mounds in this area are usually of later (IA and Roman) or earlier (EBA/MBA) character, but isolated examples of LBA tumuli have been excavated. Similar is the situation in West Thrace, where the material comes almost exclusively from settlement mounds and a few open-air settlements. More regularly investigated is the area of the Eastern Rhodopes, which besides rescue excavations has been the subject of a long-term intensive survey thanks to the efforts of Georgy Nekhrizov and the Archaeological Map of Bulgaria project. More recently, the Valley of Struma is also being surveyed. The results of that survey, which are still largely unavailable, would potentially shed more light on that micro-region.

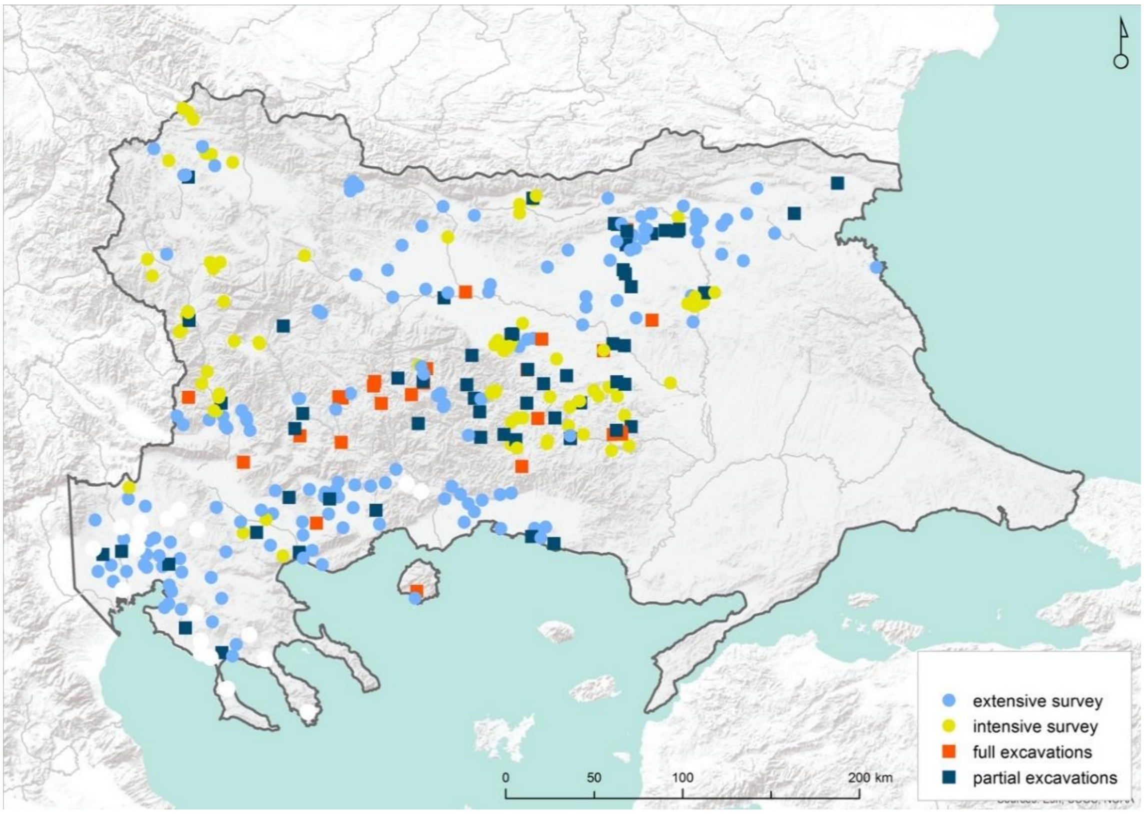


Figure 5.4. Levels of archaeological investigation across the study area.

Taking into account all this uncertainty, the informal spatial distribution of the categories defined above can be described as follows.

The group of open-air settlements appears more commonly between the eastern part of the Upper Thracian Plain, the Eastern Rhodopes and the middle/upper Struma watercourse. The settlement mounds cluster into two groups in the Upper Thracian Plain and the West Thrace, connecting to the toumbas in Chalkidiki and its hinterland (setting aside the large concentration of settlement mounds further in Macedonia), while they are totally absent in this period from the Rhodope Mountains and the Struma Valley.

The physical link between the mounds in the latter two regions is interrupted along the lower Struma river, where almost no sites have been registered. It is questionable whether this area belongs to eastern Macedonia or Thrace, but it is a matter of fact that the lower Struma constitutes a gap between the settlement mounds in the West Thrace and those on the western side of the river. The reasons could be various, but it is quite possible that the perceived ‘depopulation’ of the area might be a result of alluviation processes, caused by variations in the coastal landscape between the 14th and the 11th centuries BC, when a number of gulfs and river estuaries became lagoons and inlets (Orachev 1988: 12). Consequently, this might have caused the displacement of a number of settlements further inland or it could mean that they have been covered up by alluvium. Similar processes might explain the absence of sites along the Black Sea coast and the lower Maritsa watercourse. According to some, earthquakes might have also been a factor that caused the disappearance of at least some settlements along the sea coast in particular (Papageorgiou and Stiros 1991: 263-276, fig.5).

Furthermore, the site distribution in the Upper Thracian Plain appears similar to the distribution across the West Thrace much further south in Greece. The settlements in both cases are settlement mounds (“toumbas”) along with a few open settlements. In fact, during the Bronze Age in Northern Greece, apart from coastal Chalkidiki, the predominant type of site is the steep-sided settlement mound (Andreou 2001: 163; Wardle 1997: 518). On the other hand, sites like Dikili Tash and the rest of the settlements in the West Thrace do not have the characteristics of the LBA from the toumbas in central and eastern Macedonia (Hochstetter 1984; Wardle 1986). As a settlement type they are more like those in the Upper Thracian Plain, founded in early Neolithic and also with a Chalcolithic tradition (Figure 5.16).

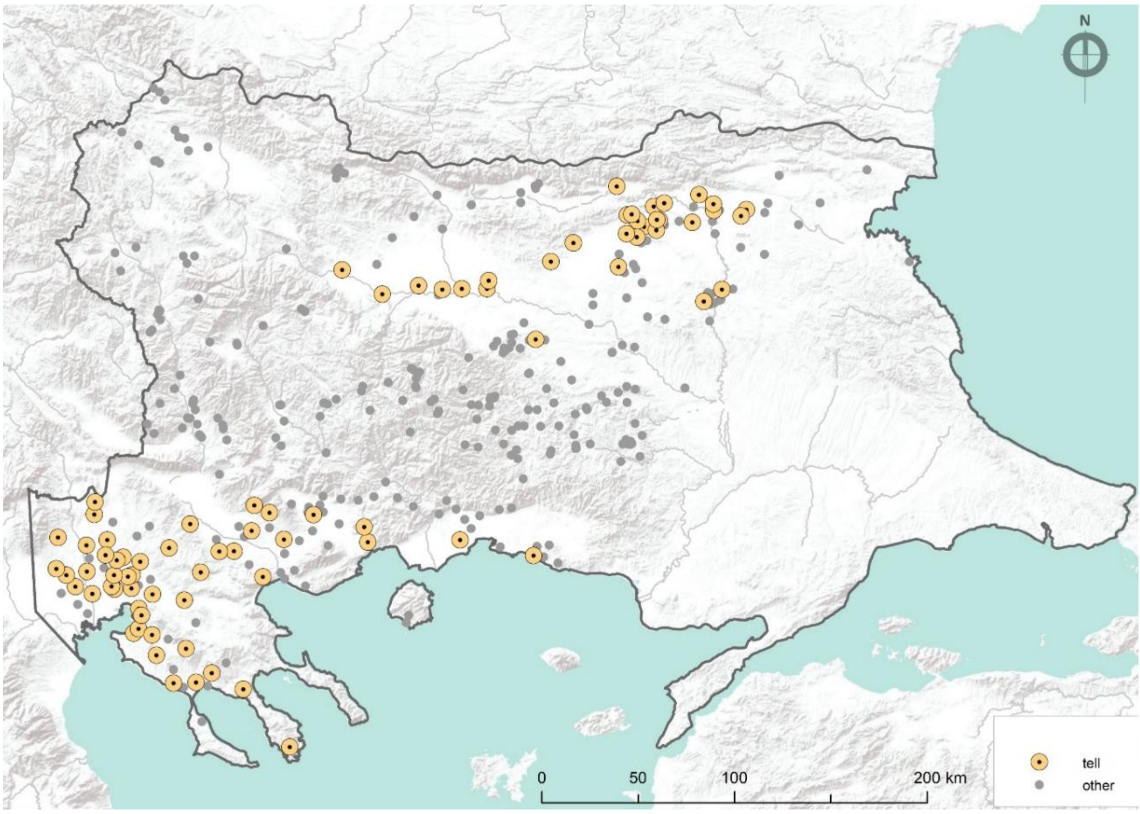


Figure 5.5. Distribution of tell sites across the study area.

The number of settlements with stone architecture is not yet sufficient to be tested formally, but their concentration in the middle Struma and Mesta valleys (and potentially in FYROM) is evident (Figure 5.17).[6] Their dominant position supported by the presence of stone walls with a proposed reconstruction height of up to 5-6 m (Stefanovich and Bankoff 1998: 273-279), as well as the lack of intensive habitation, encouraged interpretation of them as primarily defensive in character (Stefanovich and Bankoff 1998: 273-279).

[6] There is a hypothesis supporting the existence of fortification walls at the top of the mining hill of Ada Tepe. However, the date of the walls seems to be later and they are placed on top of the earlier, LBA habitation. There are various problems with this site in terms of chronology and interpretation, some of which will be discussed below.

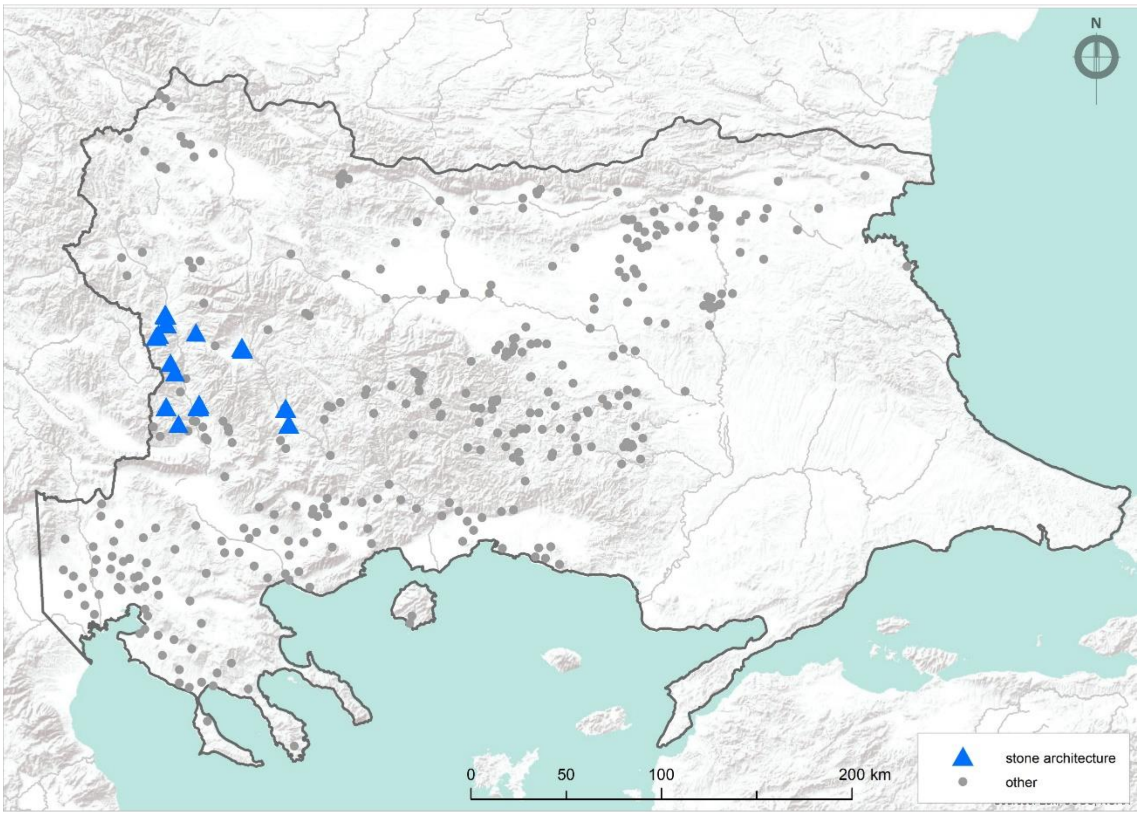


Figure 5.6. Distribution of sites with stone architecture across the study area.

Likewise, still insufficient is the number of known cemeteries. Initially, academic interest in LBA Thracian funerary rites was restricted to the investigation of *dolmen* structures in Sakar and the Eastern Rhodopes (Bonchev 1901: 660-695; Mikov 1942: 19-27; Shkorpil 1926: 10-41). Additionally, during this early period a single burial under Dzendem Tepe was excavated (Detev 1963: 143-144), as well as a mound cemetery near the Batak dam (Tsonchev and Milchev 1970: 153-156), and an open-air cemetery near Dolno Sahrane (Getov 1965: 203-229). This situation changed at the beginning of the 1970s, when investigations took place in different regions and the collection of new data began. The majority of information was collected via rescue excavations and, at the same time, the number of sites registered via surface survey increased (Delev 1982: 398-430; 1986; Gergova-Domaradska 1989: 231-240; Kissyov 1990a: 41-51; 1993). Even so, the number of registered flat cemeteries is significantly smaller, probably because of the low visibility of this type of site. It is still possible, for the first time, to make more precise judgements about the characteristics of the burial rites in the different regions of Thrace. Some basic patterning can be observed in the following way:

i) open-air cemeteries have been discovered almost exclusively in the Upper Thracian Plain;

ii) single burial mounds seem to be investigated mostly in the Eastern Rhodopes area. The burial mounds are low, covered with soil mixed with stones;

iii) the *necropoleis*, consisting of grouped burial mounds, are distributed across the western part of the Rhodope Mountains (Kissyov 1990: 1993) (Figure 5.18).

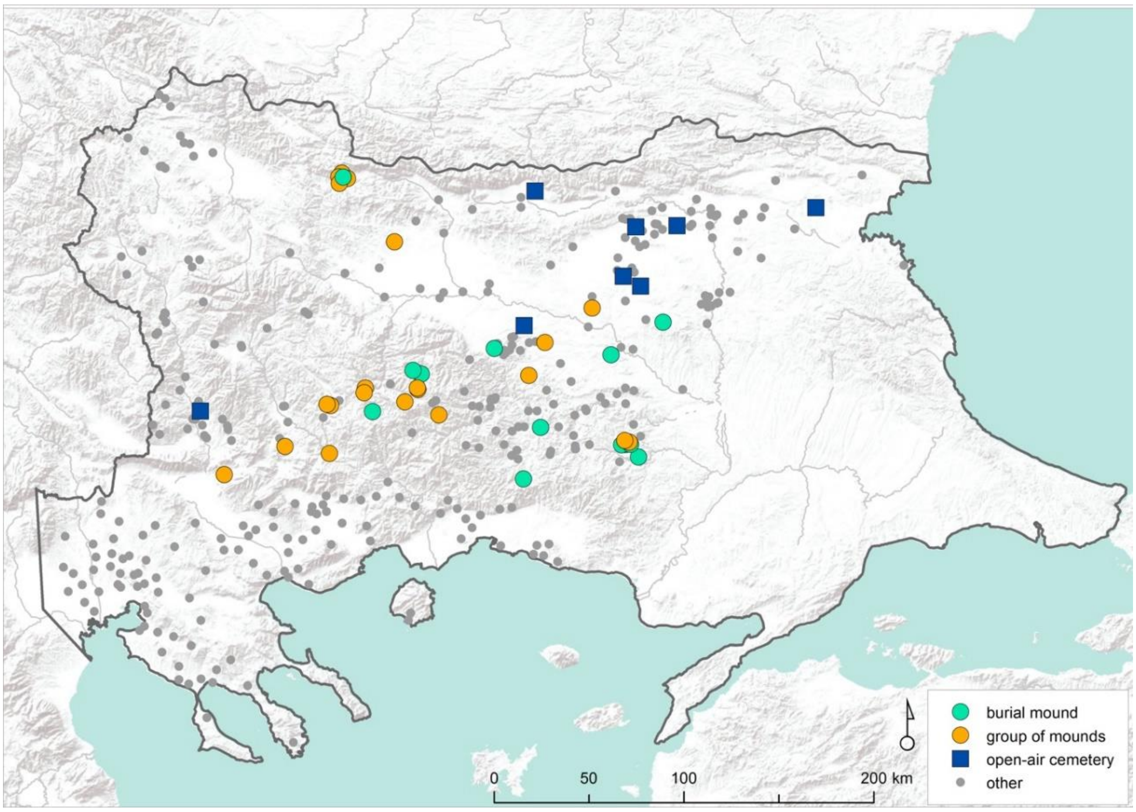


Figure 5.7. Distribution of burial sites across the study area.

In terms of funerary rituals, cremation appears to be associated strictly with cemeteries of grouped mounds and its distribution concentrates in the western part of the Rhodopes. The ashes were collected in urns, which are always of a particular shape. There are very few cases of inhumation present in the eastern and western extremes of the area, but when it does exist, it is usually discovered along burials with cremation (Kissyov 1990: 43). Flat cemeteries are distributed evenly across the area, but low levels of archaeological investigation do not allow me to link them with particular burial customs at present. It is worth reiterating that a number of cemeteries, especially burial mounds, are known because LBA material has been discovered on the surface, but no excavations have taken place.

As mentioned above, there are also some dolmens and cist-graves discovered under low burial mounds in the Eastern Rhodopes and Sakar. There are no dolmens beyond the line Pilashevo–Bezvodno–Zagrazhden–Zlatograd (Venedikov et al. 1982; Kulov 1991), which is usually associated with the division between the Western and Eastern Rhodopes. It is worth clarifying that the overall distribution of prehistoric dolmens across the Thracian region is wider than this and also includes areas in the Strandzha Mountains and the Edirne region (refer to Figure 5.1). Nevertheless, all of those structures are dated to the EIA roughly between the 11th and 8th century BC (Erdoğu 2005; Özdoğan and Akman 1991; Özdoğan 1998; 1999b), and materials relevant to the current study are not present. There is also evidence for certain reuse of dolmens during the Hellenistic-Roman period (Gotsev 1997; Yukmen 2003). They have been compared with and sometimes linked indirectly to Caucasian dolmens, whose dates are spread between 2400-1000 BC (Joussame 1988: 265). There is an hypothesis that the Thracian megalithic tradition in general possibly originates in the LBA (e.g. Leshtakov 2002; also Mehmet Özdoğan pers.comm.) and some have argued it reflects a migration of people from the southern Russian steppes towards the Balkan south (Hoddinott 1981). Furthermore, the LBA dolmens, which were once covered with small mounds, have never been discovered in the same area as the multiple-mound cemeteries. It is unclear if the gaps in between reflect a real pattern or if they are due to the unevenness of research. The monuments involved in the spatial analysis in chapter 9 of this study contain material of identified LBA character, although the question about the origin and the chronology of the dolmens and dolmen-like structures in the area is of significant interest for local archaeology.

Apart from a general exploration of the relative spatial pattern of these different site types with respect to one another, a further task in later chapters will be to understand any possible preferences in regional locational choices. Before going into any details of the analysis, it is worth emphasising again that it is not absolutely clear if all of these sites were actually used simultaneously through the Bronze Age: only more extensive excavations can provide a more detailed chronology. However, using some of the tools of archaeological predictive modelling I aim in what follows to trace signs of further spatial patterning, over a wider period and, with respect to topographic, geomorphological and geological characteristics of the landscape. Before I proceed with that type of analysis, however, the next chapter will focus on characterising the other type of common evidence scattered across the Thracian area: pottery.

Chapter 6. Characterising Thracian LBA Pottery

Pottery is usually the most common find on Neolithic and later archaeological sites in Europe and is thus traditionally a key marker used to define an archaeological culture. It has been of service to the archaeologist in elaborating chronological sequences as well as assigning cultural affiliation, albeit keeping in mind the risks of the culture-historical approach reviewed in chapter 2. Pottery is often finely datable and provides an opportunity of addressing a variety of cultural, social and economic questions, based on analysis of its functional characteristics, design and decoration, as well as some preserved macroscopically observable technological features. Variations in fabric and style may sometimes be indicators of local or foreign production and/or can signal group identity (Morgan and Whitelaw 1991: 79). In this chapter, I present a new overview and typology of the LBA ceramic material from Thrace. The first section will describe technological characteristics and the general function of the identified pottery groups. Thereafter, I will develop a more detailed typology based on morphology, technological features and decoration. The last section will attempt to refine our existing chronology of local LBA ceramics.

6.1. Background

The analysis of Thracian LBA ceramics presented here covers material from 194 archaeological sites across the entire study area, involving a sample of 3094 highly diagnostic specimens,[7] but based also on familiarity with a wider fragmentary record from excavation, museum stores and survey.[8] More precisely, this sample was chosen from a larger set of pottery finds with which I have worked over the last decade in the Bulgarian part of Thrace in particular. During the past five years, I have also studied relevant museum collections from Greece and consulted the existing survey records and excavation material from European Turkey. Part of the chosen sample has also been drawn from the published literature (with examples that I have directly seen in some instances and not in others) in order to illustrate and discuss diagnostic characteristics observed in distinctive pottery shapes and their types, preserved surface treatment

[7] Including fragmented ceramic material as well as whole vessels.
[8] See section 2.2.2.1.

evidence and decoration techniques. Using this sample in what follows, I will present a relatively detailed picture of Bronze Age pottery in the Thracian area by introducing the main technological, typological and chronological characteristics of the local ceramics. This will be the necessary first step towards a spatial-statistical examination of the distribution of identifiably dynamic morphological, technological and stylistic markers in the Thracian LBA ceramics which will follow in chapter 7.

Figure 6.1. Map of the area with the main places mentioned in the text.

6.2. The functions and technology of LBA Thracian ceramics

In the region of northern Greece and specifically Macedonia, the LBA sees the introduction of a technological innovation in pottery production, the potter's wheel. The wheel arrives with imported wares and the potting knowledge to use it from the south Aegean and results in local imitations and the development of the 'matt-painted' pottery style (see Horejs 2007; Kiriatzi and Andreou 2016). Nevertheless, this technological innovation does not reach further north until the 7th century BC. In the lands of Thrace there is only a limited appearance of matt-painted pottery and a small number of south Aegean imports. Local ceramics are handmade and two main groups can be differentiated. They are sometimes called 'cooking' and 'table' ware, but are also referred to as 'coarse' and 'fine' pottery. In fact, neither of these distinctions is entirely accurate. It is true that some ceramics have much coarser fabrics and simple shapes, such as jars and certain basic cup types (Figure 6.2). These have characteristics similar to cooking vessels and usually show traces of a use-related open fire environment on their exterior. The other group, however, although finer cannot really be described as fine. They are more symmetrically shaped and have different technological specifications. Nevertheless, some of the shapes can be considered as storage or transport containers. The number of identifiable drinking vessels is also very small, while the majority of the rest can be considered as pouring shapes. What unites this group of 'finer' vessels is the decorative style. A large amount of this pottery is decorated with incisions, sometimes infilled/encrusted with a white paste. It is difficult to refer specifically to this pottery in Thrace, due to the fact that it has been named either as just 'LBA' pottery or as part of the 'Lower Danube Encrusted Pottery complex'. I find the latter label regionally misleading and, instead, will hereafter refer to this pottery simply as 'incised ware'. To clarify, the term ware will be employed here simply to mean a pottery style. Incised ware (i) can be differentiated not only from (ii) 'coarse ware', but also from another style, i.e. the undecorated finer pottery. This latter style also has its own character as I hope to show successfully below and I will refer to it as simply (iii) 'plain ware'.

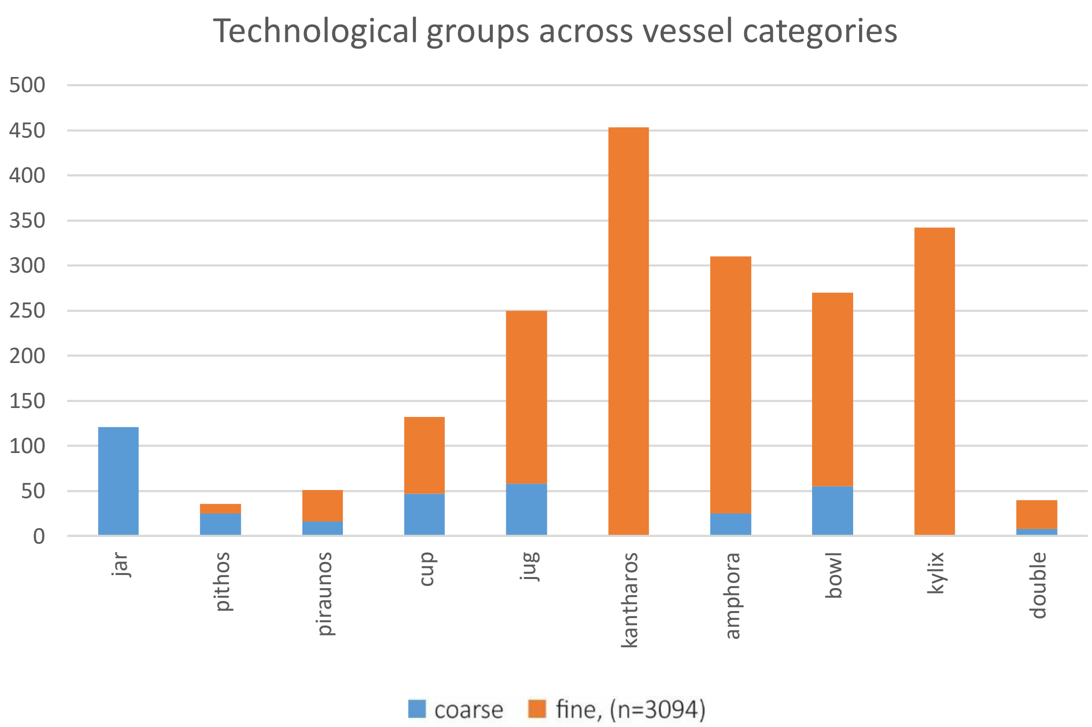


Figure 6.2. Distribution of vessel shapes across the dataset

Although our existing LBA chronological sequence is not very precise and there is not enough radiocarbon evidence to define and support unequivocally a LBA date, the above-described ceramics are usually stratigraphically earlier than layers with fluted and knobbed vessels usually known as ‘Bukelkeramik’ or ‘handmade lustrous ware’ (Blegen 1958: 27; Hnila 2012: 16), which are mostly assigned to the beginning of the EIA. This situation can be seen at the few sites with preserved stratigraphy in Thrace and also relevant material and contexts can be observed in the stratified settlements of Macedonia. To summarise, the three types of pottery either co-exist in regional groupings or sequentially exist, one after the other, in Thrace during the LBA: (i) ‘coarse ware’, (ii) ‘incised ware’ and (iii) ‘plain ware’. A general description of the ware types follows.

6.2.1. Coarse ware

This technological group can be recognised by its macroscopically observable fabric with visible pores and a significant number of mineral and organic inclusions of various sizes (Figure 6.2, and Figure 6.4). The surface, treated before firing, is usually roughly smoothed by hand. On some occasions there is additional surface roughening using a broom-like tool, known from earlier prehistoric studies as ‘besenstrich’ (Leshtakov 2009: 63). This striated finish can be identified by its narrow, parallel grooves, which can occur in groups crossing or hatching. The traces of these processes are easily recognisable with naked eye. The coarse vessels are often fired at low temperature, which causes the sherds to break easily or indeed slowly fall apart when left in water. Multi-coloured traces of irregular clouds are also frequent, although sometimes it is difficult to distinguish between evidence of firing during manufacture, use-related and post-use events.

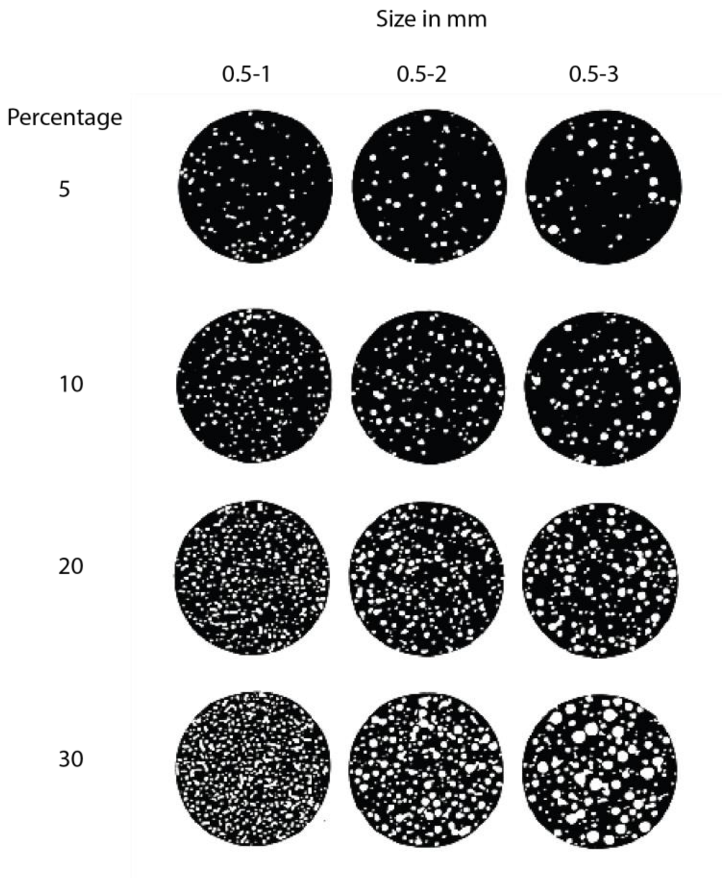


Figure 6.3. Comparative charts for estimating frequency of inclusions ceramics (after Mathew et al. 1991).

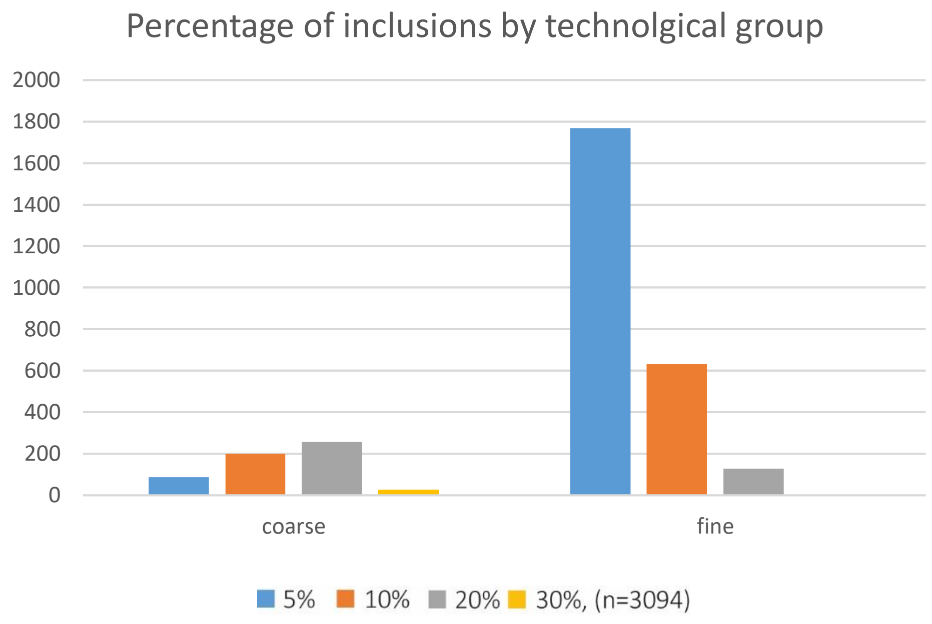


Figure 6.4. Distribution of inclusions (%) across the main technological pottery groups.

This pottery group is rather conservative and changes only slightly throughout the entire Bronze and Early Iron Ages, with minor changes in the shape types and the decoration execution, when present. The shapes are mostly wide-mouthed jars (cooking pots), sometimes jugs and rarely cups and bowls. The main typological differences can be observed mostly with better preserved vessels, rather than highly fragmented material, which is the majority of the studied material (Figure 6.5). Moreover, due to their presumably utilitarian role in the pottery repertoire, which is subject to long term traditions of cuisine, the coarse cooking vessels are very conservative. Their morphological and stylistic elements do not change dramatically in different parts of Thrace and sometimes endure over a long period of time (Horejs 2007: 294). Although various spheres of differing influence can be observed, the majority of this technological group cannot serve the purposes of the current thesis, which aims at tracing spatial variation. Systematic petrographic studies could help to unpack this large group. However, due to the scale of the area under study and a number of practical limitations in terms of access, the need in any case for a representative selection from multiple sites, and the cost involved, such analyses could not be undertaken as part of the current study.

Figure 6.5. Example of the condition and the character of the local coarse ceramics (photographs of pottery from Ada Tepe and Vratitsa; the latter after Hristova 2011).

6.2.2. Fineware

In light of the above, one of the focuses of this study is on the group of finer ceramics, mainly because of its higher level of representativeness in retained assemblages, preservation and variability, which are currently absent within the record of the coarse ware. In the Thracian LBA context as one observes it today, the finer ceramics have the potential to communicate regional behaviour more usefully.

Both the incised and the plain wares exhibit similar technological characteristics (Figure 6.6). The group can be described as ceramics of usually semi-fine to fine fabric, containing often numerous but small mineral inclusions (less than 1 mm). Organic inclusions are only rarely spotted in the break. The surface is sometimes only smoothed, but usually burnished or polished. Examples of smoothed surfaces from this technological group could have been once burnished or polished, but are poorly preserved and sometimes abraded. As a rule of thumb, however, the study sample was selected based on sherds with a good level of preservation. This pottery group also displays signs of macroscopically visible slip or self-slip covering, which results in a rather even, homogenous and flat surface (Horejs 2007: 50). The finer ware is entirely handmade, although sometimes traces from perhaps wheel-fashioning can be spotted on the interior surface of the pots. It seems that these types of vessels have been fired in a relatively controlled atmosphere, which has resulted in the homogeneously coloured ceramic surfaces, a result of both oxidation or reduction. These features suggest a rather specialised production in comparison to the knowledge and practice required for the coarse ceramics.

Figure 6.6. Examples of better preserved finer ceramics (photographs of pottery from burial contexts near Lilovo and Faia Petra (photo of Faia Petra vessel, down right, source: Valla 2007: 367, Figure 13).

The presence or absence of incised decoration is the main difference between the incised and plain wares. Although some identical shapes can be executed as both plain and decorated, this is quite rare. In most cases, some vessel types are characteristic for the group of incised ceramics and others for the plain ones. This is also one of the reasons these two groups are considered here as two different traditions.

Besides the perspective of style and aesthetics, decoration is also part of the technological treatment applied to the surface. The decorative incisions engraved prior to the firing of the vessels are very often filled with white and sometimes yellow or pinkish paste. The combination of both has sometimes resulted in patterns that stand out from the vessel's initially shiny surface. This effect has encouraged some authors to assign this style as belonging to the group of the Lower Danube Encrusted Pottery cultures (see Shalganova 1995).

6.2.3. Technological features

The typological structure presented below, and the spatial analysis to follow in the subsequent chapter, depends to a certain extent on a number of technological characteristics. Different patterns can be seen in the execution of the surface treatment, temper and decoration techniques within the group of the incised ware as well as some observations based on colour variations. Besides their involvement in typological criteria, however, these features can also be considered separately to investigate patterns regardless of shape and type (see Orton et al. 1993).

6.2.3.1. Surface treatment

Surface treatment is an essential element in ceramic technology. The different ways the vessel surface is prepared and finished offer critical information about the potter's knowledge and behaviour. Any changes or failure to execute certain treatments can be an indication of functional or aesthetic priorities in manufacture, social or cultural demands, or even economic necessities. Insights into the function of a vessel can also be discovered in the surface. The degree of effort spent on surface treatment can relate to the utilitarian purpose of the vessel. This is reflected in the final outcome via the use of particular tools and approaches. Along with the degree of firing and the number of inclusions, surface treatment is one of the main criteria used to distinguish finer from coarse ware. Further associations with this characteristic can be observed on a typological level within the group of finer ceramics, when the degree of surface preservation was adequate. Among the studied pottery, five generic types of surface treatment have been differentiated, based on their dominating, usually external surface: A. polished, B. burnished, C. smoothed, D. roughly smoothed, E. rough (Figure 6.7).

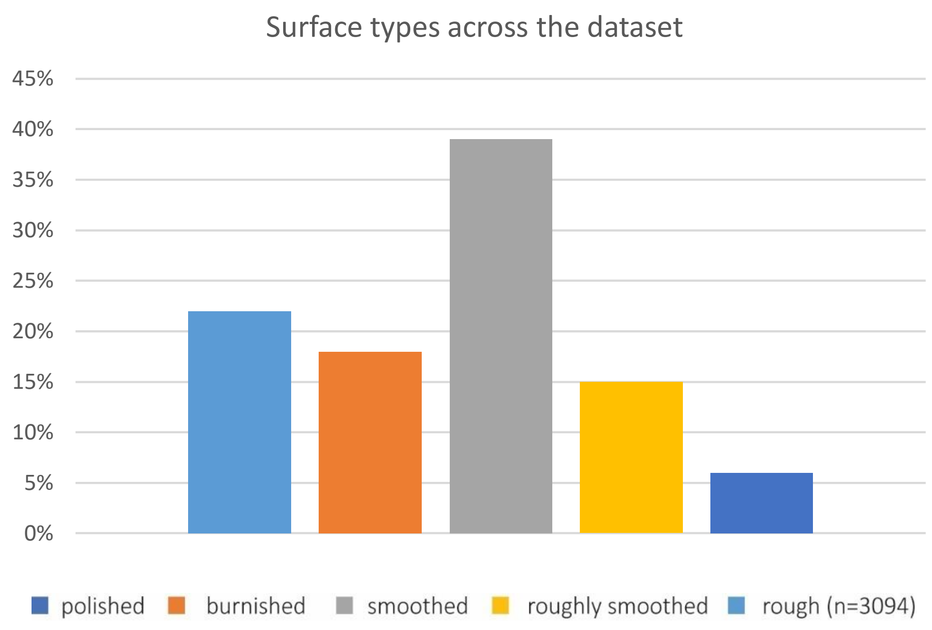


Figure 6.7. Distribution of surface treatment types (%) across the dataset.

Burnished and polished surfaces seem to be expressions of different ceramic traditions. In particular I would like to differentiate the incised or plain burnished handmade class of pottery I am describing here from the class of 'Handmade Burnished Ware' that is more widely known in Aegean archaeology. The term 'burnished' has been used in various contexts to refer to types of handmade ware. A phenomenon called Handmade Burnished Ware (HBW or HMB) has been discussed in various south-Aegean studies as evidence for connections between the Aegean and either the Balkans or the Italian Bronze Age (Bankoff et al. 1996; Bouzek 1985; D'Agata et al. 2012; French 1989; Genz 1997; Hallager 1985; Kilian 1978; Lis 2009; Rutter 1975; 1979; Small 1990; Strack 2007). This HBW pottery, however, is usually roughly made in coarse, cooking and storage shapes and is usually decorated with finger-impressed plastic bands. Although there are some traces resembling burnishing on HBW, what I discuss here as incised or plain burnished ware from Thrace is a much finer handmade ware, whose surface has been smoothed through far more sustained burnishing. (Figure 6.8).

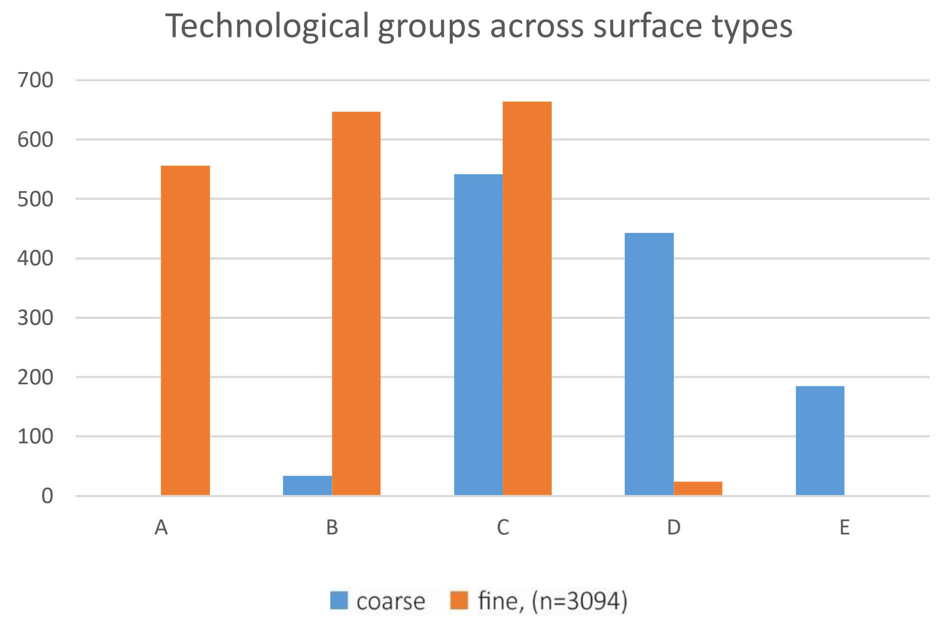


Figure 6.8. Distribution of surface treatment types across the main technological pottery groups (A= polished, B=burnished, C=smoothed, D=roughly smoothed, E=rough).

There is also a certain debate with regard to the terminology used to describe these kinds of surface treatments, although most authors agree on the basic technological classification (Horejs 2007: 55; Schneider 1989: 9; Schreg 1998). There are other positions when it comes to differentiating between burnished and polished surfaces, where burnishing is usually considered a surface treatment done before firing, with a hard, dull object leaving even traces behind (Schneider 1989). It is also sometimes described as evening or smoothing the surface by hand or with leather, without affecting the light reflection off the surface (Bauer et al. 1993). The definition of polishing is similar to Bauer's description, with the main difference being that the polishing typically produces light reflection and a shinier effect. According to some researchers the two terms are used to describe the same type of surface (Noll 1991). Subsequently, there are discrepancies and variations among authors describing and recording the surface of the pots. In the English academic literature one can find burnished, polished, rubbed, smoothed and dry-smoothed. The same adjectives however, are also sometimes used to describe polished ware (Orton et al. 1993: 126, 240; Owen 1991: 97; Tuba Ökse 1999: 27; Shepard 1980: 66 f). More distinctive terms exist in the Greek literature, where burnished is described as στιλβωμένη (Tuba Ökse 1999: 27 Nr. 333; Kiriatzi 2000: 62) and differently smoothed - as λειασμένη (Horejs

2007: 55- 57, Figure12; Kiriatzi 2000: 61). Horejs has summarised different definitions and opinions (Horejs 2007: 55-57, Figure12) and has given two separate definitions accounting for the surface types of the fineware specifically at Agios Mamas.

I will engage with the following definitions. Burnishing will be considered as a smoothing treatment with a hard object (pebble, wood, etc.), which usually leaves elongated traces. Precise burnishing causes a very even surface with relatively thin and regular trails, while rough burnishing results in an uneven surface with irregular trails. The polishing process will be described as smoothing the nearly dry vessel surface with a soft object, leather or cloth, causing a very even and shiny surface without any trails (Horejs 2007: 56).

An additional surface treatment is the deliberate application of slip. Applying a thin loose layer of clay on top of the finished surfaces is often connected to table vessels or vessels that could be related to storage, transport or the pouring of liquids. The slip can also be considered as part of the decoration. There are sherds with traces of an additional layer of graphite that has been applied on the surface and further polished, perhaps in an attempt to resemble a metallic appearance (Kissyov 1993; 1998; Nekhrizov 2006). There are also examples of graphite polishing from the Rhodope Mountains.

6.2.3.2. Colour

Colour and decoration are two other variables often employed to aid technological description. It is widely accepted that the colour of the surface is not supposed to be taken as a main criterion given how variable and subjective its assessment can be (Horejs 2007: 55; Hochstetter 1984: 34-36). It is, however, cautiously recorded as part of this study. There are certain tendencies in colour variation that could be part of the specificities of different ceramic traditions. To minimise uncertainty and to avoid over-complication, I have chosen to work with two main colour groups in ranges. In addition, only a small part of the data has Munsell colour description recorded and thus this type of colour identification cannot be involved in the analysis. Nevertheless, the most perceivable differences are visible within two general colour groups. The first colour group encompasses red, reddish-brown and brown and will be hereafter referred to as 'red'. The second colour scheme includes black, greyish black, and grey and will generally be described as 'black'.

Within the exploratory comparison of criteria, there are indications that different colour ranges were preferred on different types of vessels and there is some correlation between colour and surface treatment (Figure 6.10).

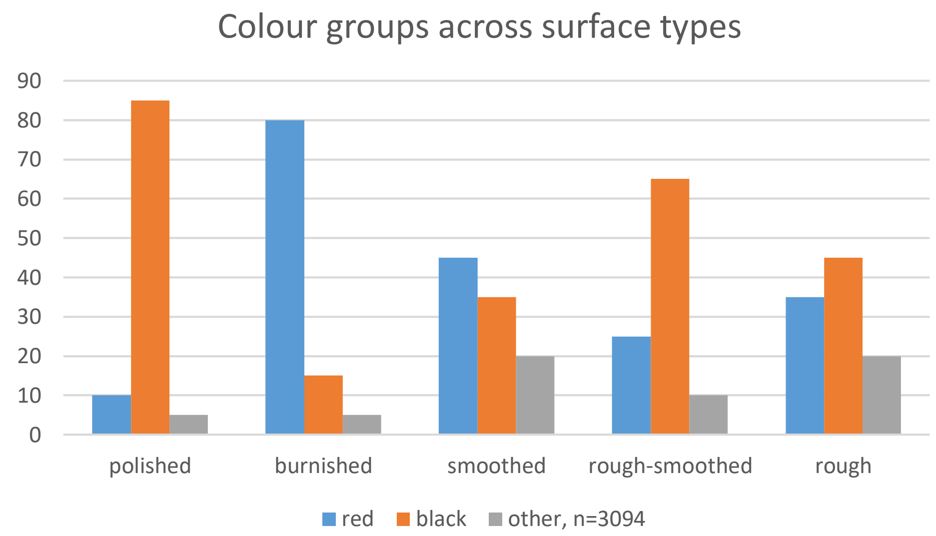


Figure 6.9. Distribution of surface treatment types across the main colour groups.

6.2.3.3. Decoration

Decoration is a feature that has technological as well as stylistic characteristics and could reflect a wide range of social and cultural beliefs and ideas. It contains also spatial definition and offers opportunities to trace and display variations across the Thracian landscape. It could also be referred to as an additional surface treatment (Horejs 2007: 57), often applied prior to firing and thus modifying the surface in its raw condition.

Most significant within the Thracian LBA context is the variation within the techniques used to produce incised decoration. Although it seems self-explanatory, there is a difference in the execution. The label 'incised decoration' covers different types of scratches and grooves, with either V- or U-shaped sections. In both cases the clay is not removed, but rather pushed in, compressing the clay (Horejs 2007: 57). In general, two main techniques used to achieve incised decoration are identified:

1) relatively wide incisions with U-shaped section, which from now on will be referred to as just 'incised' for simplicity's sake (Figure 6.10); and

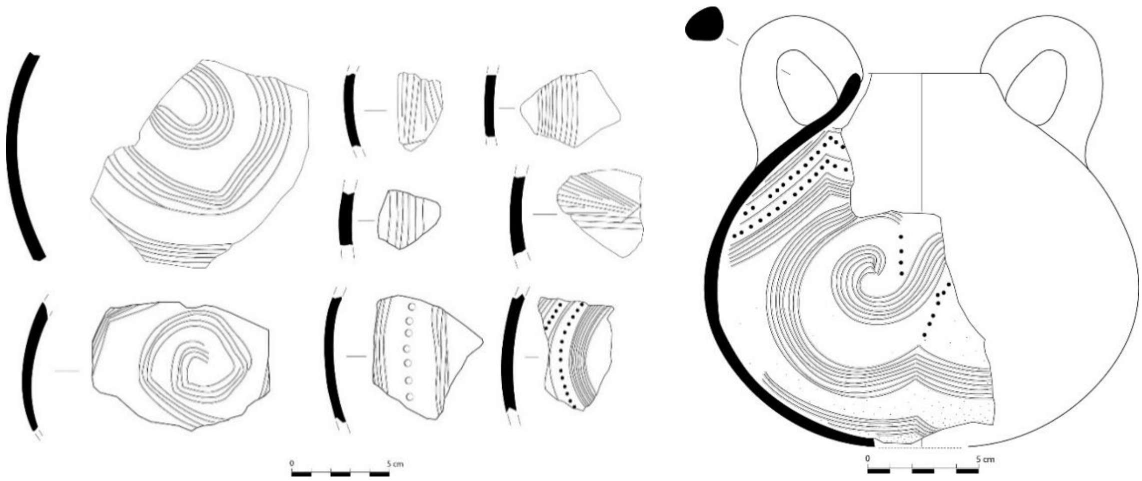


Figure 6.10. Incised decoration.

2) '*furchenstich*' decoration, which stands for 'furrow piercing' or 'pierced line' decoration (Figure 6.11). It typically refers to very thin incisions made with a sharp tool by dragging it and piercing the surface, which leaves trails similar to stitches. These two techniques seem to be products of different workshops or traditions and thus, as discussed in chapter 7, have specific spatial distributions. Very often, indeed almost always, both techniques are associated with encrusted paste inside the incisions. There are differences in the paste's colour, the most common is white, but examples of pink and yellow are also recorded.

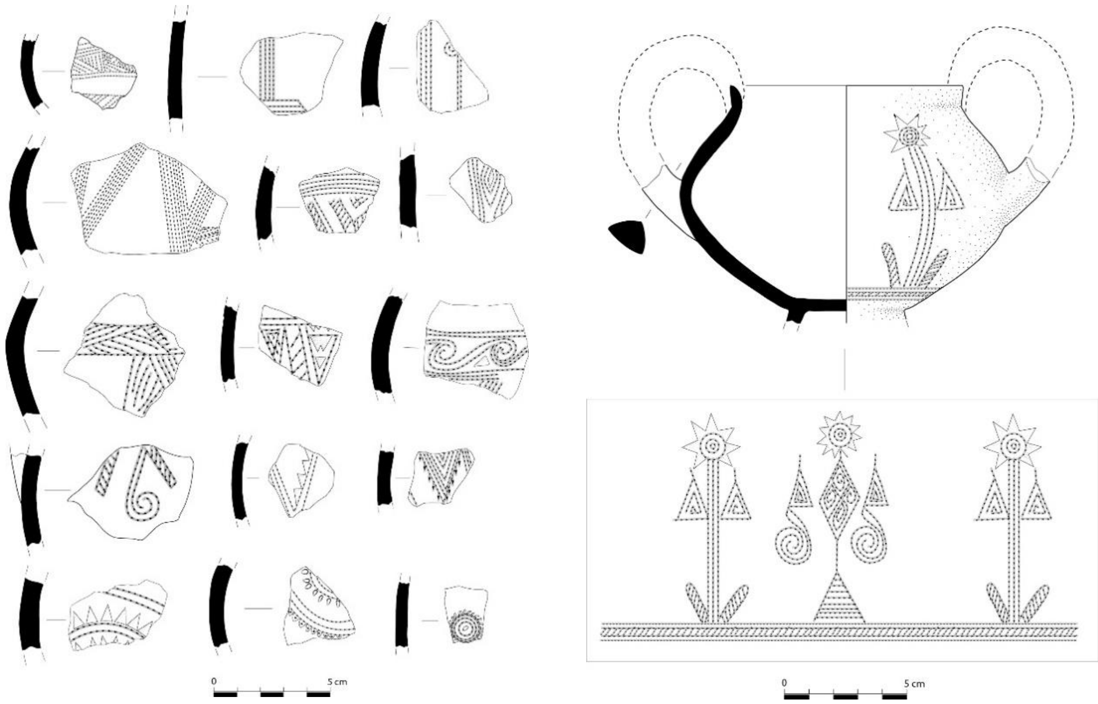


Figure 6.11. Furchenstich decoration.

Besides the incised and the *furchenstich* techniques, there is also plastic decoration. It is not as frequent as the former styles and usually consists of attached plastic bands with or without finger impressions and rough piercings, knobs and lugs. These elements are most associated with plain wares, in the cases of knobs, lugs and plain plastic bands, and with the coarse wares, in the case of finger-impressed plastic bands, but other elements can be seen too.

The range of incised and *furchenstich* motifs is seemingly large, but due to the fragmentary state of the majority of the ceramic material, a very small number can be reconstructed. The dominant style is geometric consisting of parallel lines, crossed or hatched triangles and angles, crosses, circles and different combinations of these. There are also floral, zoomorphic and anthropomorphic illustrations, constructed by single lines also in the geometric tradition.

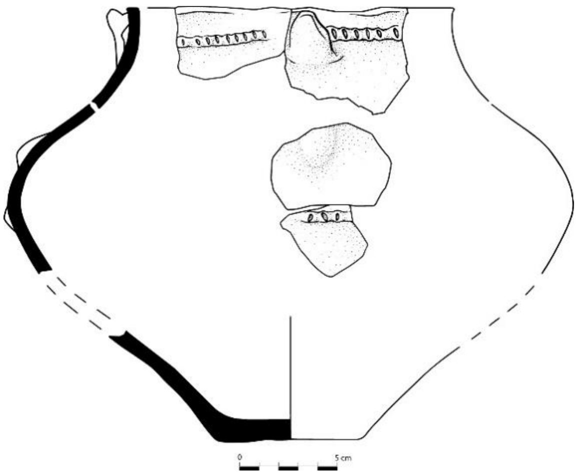
6.3. Vessel forms

6.3.1. Coarse ware

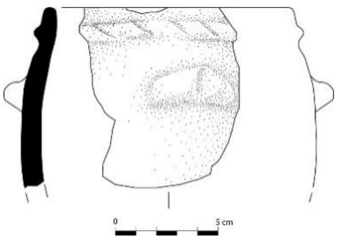
Although the group of the coarse ceramics does not play a central part in the spatial analysis conducted in the next chapter, it is still necessary and useful to describe the identifiable shapes and types. Whether this pottery was exclusively part of the cooking set or whether it involved other functional categories like storage, tableware, or other non-domestic varieties, is at this point unclear and such an investigation would require a more in-depth contextual study. It is certain, however, that this type of ceramic co-occurs alongside the incised and plain pottery at the same sites and as part of the same assemblages. They are not only contemporary, but also belong to the same social contexts. Furthermore, there are only a limited range of forms of vessels identified in this group, which suggests a functional distinction between this and the other local pottery groups.

6.3.1.1. Jars (JA)

The only category that is exclusively coarse is the jars, also often described as cooking pots. Morphologically, these vessels have everted rims and their height is larger than their maximum body diameter. The wall thickness of the vessels is between 0.8 and 1.5 cm. The jars are usually poorly fired under uneven conditions or in an open fire. The colour mostly fluctuates between red and black. The jars can have vertical, horizontal or no handles and are often supplied with impressed plastic band decoration immediately below the rim. The majority of the coarse ware record consists of body sherds, which makes it impossible to distinguish between jars, pyraunoi and sometimes jugs or cups in coarse fabric. A few of the recognised shapes are:

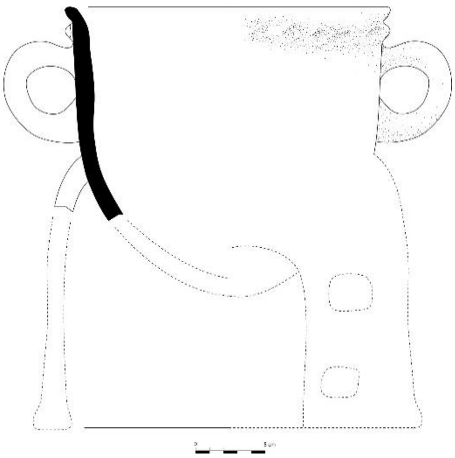


JA1. Jars with S-shaped body in silhouette and sometimes two strap or lug-handles on most pronounced part of the body or attached to the neck, just below the rim. Typical is the decoration of usually horizontal plastic bands with finger impressions or short incisions just below the rim and sometimes on the body.



JA2. Beehive shaped jars with straight vertical walls, no neck and none or two strap or lug-handles attached to the body. Almost always the jars JA2 are decorated with one or more plastic bands with finger impressions or short incisions attached below the rim.

6.3.1.2. Piraunoi (P)



The term *pyraunos* I adopted from Alix Hochstetter, who used it for a particular type of vessel, which could be mostly described as a 'portable hearth' (see Hochstetter 1984). Usually these vessels have their upper body shaped as a jar, which is further joined to a cylindrical stand with several openings (ventilation holes) for air circulation. There are a few examples from inner Thrace, all of which originate from extensively excavated sites in the Upper Thracian Plain (Hristova 2009; 2010; Leshtakov et al. 2010.). Their identification in the field, especially during survey is problematic if a part, consisting of the join between the upper and the lower part of the vessel, or a part of a ventilation hole is not found.

6.3.1.3. Pithoi (PI)

The Late Bronze Age pithoi category is represented by very few examples in Thrace, usually identified by the wall thickness (above 1.5 cm) and the large diameter of the body sherds. There are only a couple of examples of rim and base fragments with no information about the rim diameter or vessel height, which is only enough to prove that such vessels existed. The pithos sherds can be executed in coarse fabric, but there are also some examples in finer plain fabric with organic inclusions. The colour is mostly in the red colour range. The only correlation found in that regard is a preference for red coarse plain ware. There is unfortunately not enough of a record of diagnostic sherds to help define the shapes of the local pithoi from this period.

6.3.2. Fineware

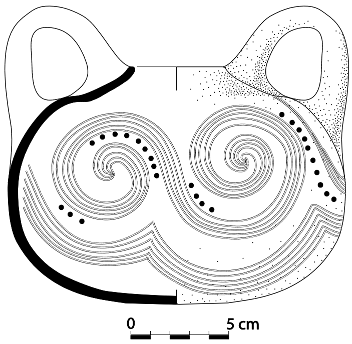
Within the typology of the finer ceramics, both incised and plain ware will be presented. Below are described the following five categories: kantharoi, bowls, kylikes, amphorae, jugs and cups, and double vessels. Not all of them are the subject of detailed typological and spatial analysis, but they are all essential components of the Late Bronze Age ceramic repertoire.

6.3.2.1. Kantharoi (K)

The term *kantharos* is borrowed from the terminology of Greek Classical pottery, defining a type of fine two-handled cup, and is not commonly used to refer to prehistoric forms. However, it became a characteristic term used in Bulgaria and elsewhere for the most common shape of fine handmade Late Bronze Age ware in the Balkans. Morphologically it is a small jar or a bowl with two handles springing from the rim, a globular or semi-globular body, mostly closed but sometimes open shape of the body with a flat base or on a short ring-foot. This type of vessel is relatively thin-walled especially for handmade ware, varying between 0.3 and 0.8 cm. It is one of the most common shapes, usually identified with the distribution of the incised ware. Although it is often decorated with incised or *furchenstich* motifs, filled with white or pinkish paste, plain examples are also common. The shape is known in the literature also as ‘globular jar’ (see Horejs 2007). Here, I will continue to use the term ‘kantharos’ since the term ‘jar’ is usually associated with the coarse-ware type described above.

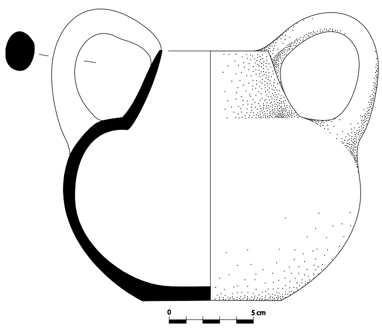
The Late Bronze Age kantharos cannot be defined as a cup, although different opinions exist (see Nekhrizov 2006; Dimitrova 2014). The main reason is that the silhouette and often the size of the vessel would not facilitate drinking. For these reasons, I prefer to use ‘kantharos’ only for morphological distinction. The repeated association between the shape and incised decoration indicates a specialised use and meaning related to the storage, transfer and consumption of small amounts of liquids of unidentified kind (Psaraki 2004: 198-201, 261-262). It has been suggested that the type was adopted from the northern Balkan regions sometime during the Late Bronze Age (Hochstetter 1982; Shalganova 1995). The shape is found also in non-domestic contexts, usually as a grave gift, which might imply some association with a prestigious class of service vessels (Andreou and Psaraki 2007: 408).

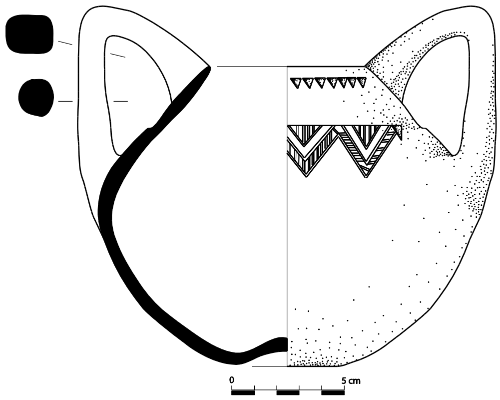
The main characteristics of this type of vessel assist in identifying a large amount of fragmented material. A number of types can be distinguished and their variants are distributed across the area.



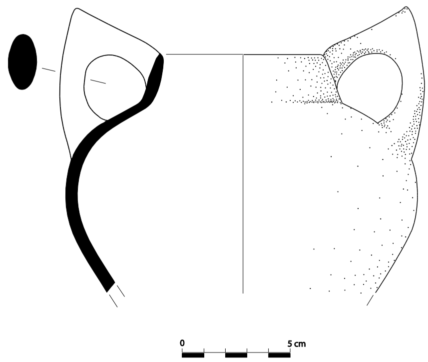
K1. Rim diameter ca. 4 - 7 cm. This type describes the so-called 'globular' kantharos. It has a short conical neck, clearly articulated from a nearly spherical body. The rim is not distinguished from the neck. The base is flat or sometimes slightly concave. It has two handles bridging the lip and the shoulders of the vessel, which are rounded or triangular in cross-section. The type is known mostly with a richly decorated body and sometimes handles, with mostly incised and sometimes *furchenstich* technique. Common ornaments are the spiral and bands of wavy lines, but triangular, rectangular and rhomboid motifs are also known (Appendix 1, Figure A1.1 - A1.4).

K1.1. Rim diameter ca. 4 - 10 cm. This slight variation of K1 is a kantharos with taller, more pronounced conical neck and handles with rounded silhouette, usually elliptical in section. The rim is a straight continuation of the neck. Typical are plain as well as decorated examples. A characteristic feature is a line or a pair of lines of pierced decoration or kerbshnitt triangles just below the line of the lip. The body, when decorated is covered by incised groups of lines, spirals or concentric circles (Appendix 1, Figure A1.5, A1.6).

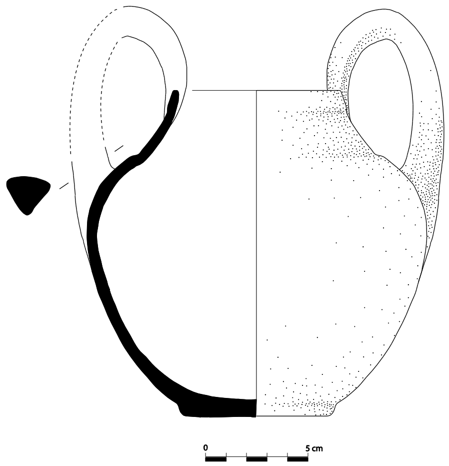




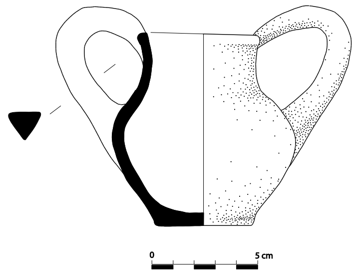
K2. Rim diameter ca. 7 - 10 cm. This type has a spherical or slightly biconical body. The neck is distinct from the shoulders, but following nearly the line of the body profile. Similar to the first two types K2 has no prominent rim. The most characteristic feature is the triangular form of the handles with a vertical outer edge and a pointy upper corner; the cross-section can be triangular or rectangular; the base is flat or concave. The known examples are plain or have a decorated kerbschnitt line below the lip and geometric incised decoration on the shoulders (Appendix 1, Figure A1.7).



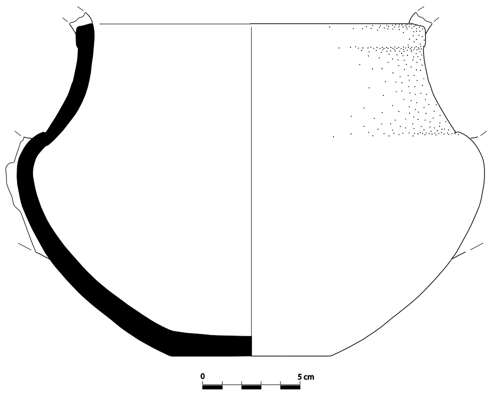
K.2.1. Rim diameter ca. 4 - 10 cm. The pointiness of the handles is even more expressed in this type, sometimes forming a horn-like projection; the cross section is rounded or elliptical. All known examples are plain, undecorated. The neck is short and conical ending with the rim, but divided from the spherical body. The wholly preserved vessels of the type have flat bases (Appendix 1, Figure A1.8).



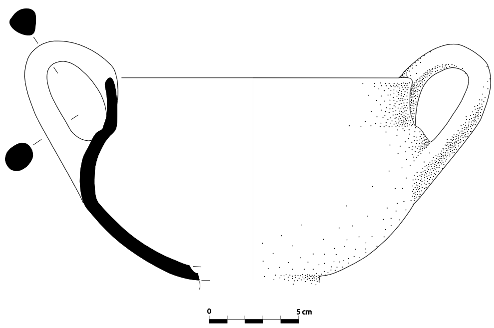
K3. Rim diameter ca. 7 - 13 cm. Type K3 is a non-decorated vessel with a distinctively shaped, slightly everted rim, rounded on top thickened on the outside. The neck has a concave appearance, formed separately from a spherical body. The handles are taller, springing up from the lip and triangular in section; the base, when preserved, is flat. The opening of the rim is a little wider than the described above types (Appendix 1, Figure A1.9).



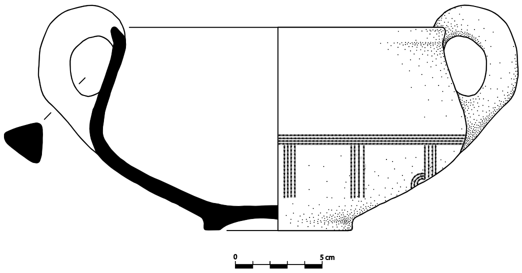
K3.1. Rim diameter ca. 5 - 8 cm. Type K3.1. has similar shape characteristics, but with smaller dimensions, suitable for a cup. The vessels are plain or decorated with *furchenstich* geometric line motifs on the neck and the body. The handles are not as tall as those of type K3, but are distinctively big for the proportions of this tiny vessel; the handles are triangular in section; the base is flat or slightly concave (Appendix 1, Figure A1.10).



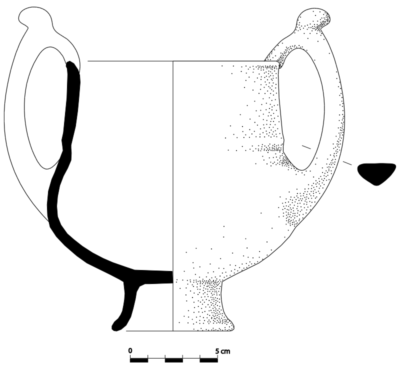
K3.2. Rim diameter ca. 12 – 20 cm. The profile of this type looks like that of K3, but has lower proportions and appears as a rather open shape in comparison to the previously described kantharoi. The neck is slightly conical or cylindrical, distinct from the body; the rim is thickened on the outside with a flat lip and a rectangular section. This vessel has probably a different function, but morphologically can be defined within this category. The handles are almost never fully preserved and thus cannot be described in detail. The base when preserved is flat (Appendix 1, Figure A1.11).



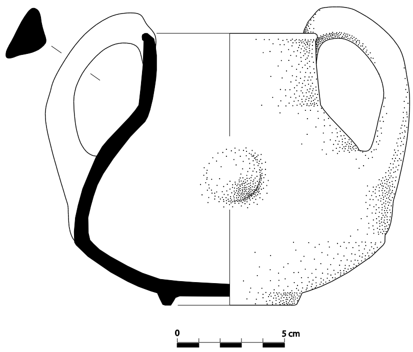
K4. Rim diameter ca. 12 - 20 cm. K4 is an open kantharos shape with a short cylindrical neck, outwards everted lip and no distinguished rim. The body varies among conical, biconical and semi-spherical. The handles are rounded with a triangular section. K4 is usually plain, sometimes with plastic attachments on the lip, but *furchenstich* decorated examples are also known (Appendix 1, Figure A1.12).



K4.1. Rim diameter ca. 10 - 25 cm. Type K4.1. is also an open vessel, even more reminiscent of a bowl, but the position of the handles and the general appearance is similar to the kantharoi category. The type has no neck, short, usually outward everted rim, biconical or rarely semi-spherical body and a small ring-foot as base. The type is decorated all over the body with ornamental or figurative *furchenstich* lines, sometimes forming floral or zoomorphic motifs (Appendix 1, Figure A1.13, A1.14).



K5. Rim diameter ca. 8 - 12 cm. This kantharos has a tall, elongated and elegant silhouette, short outward everted and thinned rim, long cylindrical neck, standing on a small biconical or semi-spherical body attached to a rather tall foot. The handles have a narrow long profile with horn-like projections at the top of the handles; the cross-section is triangular. The known examples of these vessels are undecorated, with relatively small proportions, and based on its general appearance it is likely that this type functioned as a drinking vessel (Appendix 1, Figure A1.15).

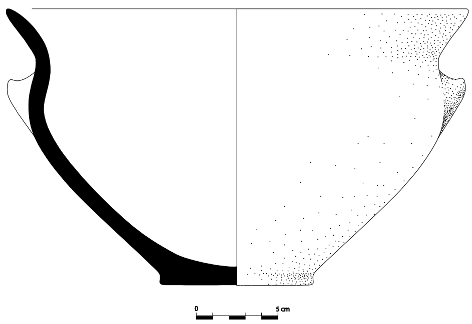


K6. Rim diameter ca. 8 - 12 cm. This is also a small vessel reminiscent of a cup, with a straight cylindrical neck, small everted and rounded rim, or not distinguishable from the neck rim, and elongated handles. The cross-section of the handles varies among rounded, elliptical, triangular or rhomboid. The profile of the base can be a short ring-foot, flat or concave. Small semi-spherical or conical body, sometimes sharply divided from a cylindrical neck are typical for this shape. The type is undecorated, but sometimes there are rounded plastic attachments on the shoulders (Appendix 1, Figure A.1.16).

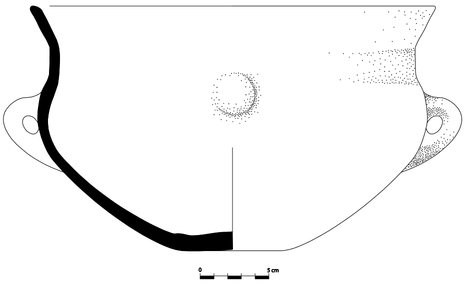
There are also a couple of plain kantharos shapes that are unique for the Thracian Late Bronze Age assemblage (Appendix 1, Figure A1.17). One (Appendix 1, Figure A.1.17 a) probably originates in earlier Bronze Age traditions, while a second (Appendix 1, Figure A1.17 b) might be an imported vessel, judging from some traces of possible wheel marks on the interior, as well as the profile of the rim, atypical for the rest of the Late Bronze Age kantharoi in Thrace.

6.3.2.2. Bowls (B)

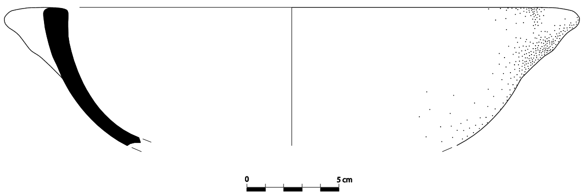
Morphologically, bowls are defined as open vessels with a low silhouette, the ratio between rim diameter and height being at least 1.5:1. The most common shapes are semi-spherical, straight, and conical. The Late Bronze Age bowls from the area exclusively belong to the group of finer ware. There are no recorded examples with characteristics of coarse ceramics. The clay paste contains an average frequency of medium-sized mineral inclusions. Most of the recognised examples also show signs of controlled firing. The more preferred colours in this category are in the reddish-brown range, but occasional darker-coloured examples are also recorded. The surface is mostly burnished or smoothed, and only rarely polished. Based on the variations in their shape, the bowls are divided into six types.



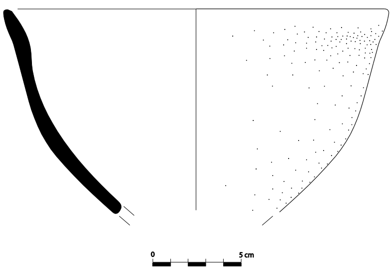
B1. Rim diameter ca. 15-20 cm. This type corresponds to brown or reddish-brown vessels with bi-conical profile, everted rim, no neck, and conical body, flat or slightly concave base. It is usually undecorated or supplied with plastic decoration (typically small knobs) attached to the most pronounced part of the body. No handles have been recorded for this type of bowl (Appendix 1, Figure A1.18).



B2. Rim diameter ca. 25-40 cm. These are large bowls with S-shaped profile, conical or semi-spherical body, everted rim and flat base. The rim is sharply divided from the neck as is the neck from the body; usually there are two vertical (or rarely horizontal) handles attached to the most pronounced part of the body and sometimes small plastic lugs distributed between them. Rarely there is also incised decoration associated with the type (Appendix 1, Figure A1.18, A.1.19).

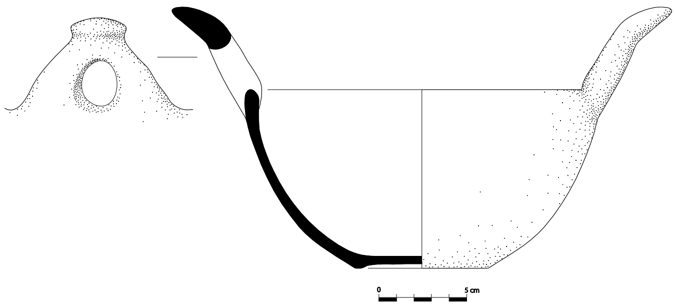


B3. Rim diameter ca. 18-35 cm. Type B3 represents semi-spherical or conical bowls with straight or slightly inward curving lip. There is no information about the type of the base. Characteristic for these vessels are elongated plastic attachments to the rim. Sometimes the attachments are so large that they could have served as handles (Figure A1.20 b), but in most cases they are very small, probably only decorative features. These are generally plain vessels with small plastic lugs or knobs attached to the rim (Appendix 1, Figure A1.20).

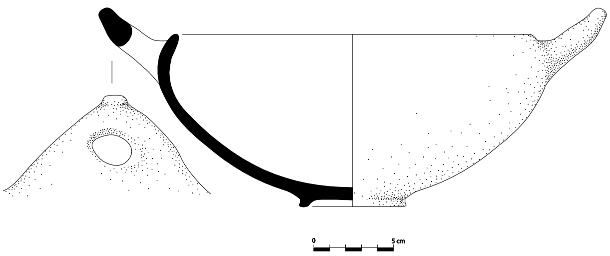


B3.1. Rim diameter ca. 15-25 cm. This bowl has taller proportions with a similar profile to B3. It has a very distinctive shaping of the rim, which is turned outward, but significantly thickened on the inner side of the vessel. There is no information about the base of this type; there is also no recorded decoration associated with it (Appendix 1, Figure A1.21).

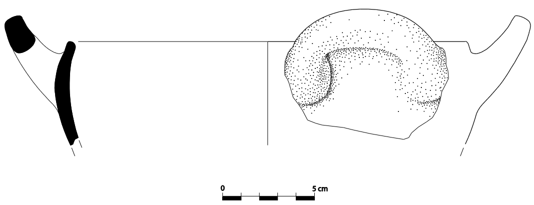
B3.2. Rim diameter ca. 15-30 cm. Type B3.2 resembles closely type B3 not only in terms of the general semi-spherical or conical profile, but also in regard to the rim plastic attachments associated with most of the B3.2. examples. Very typical is the combination of incisions and pierced decoration covering a large portion of the body, starting immediately from or just below the rim (Appendix 1, Figure A1.22).



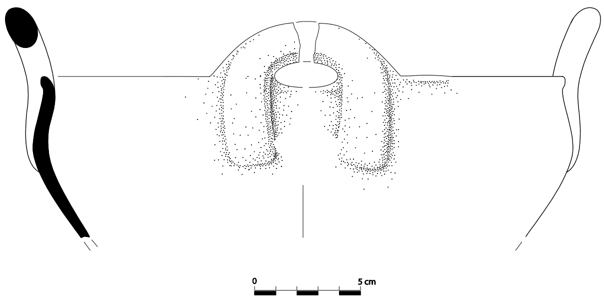
B4. Rim diameter ca. 15-30 cm. Type B4 is semi-spherical or conical bowl with tall wish-bone handles attached to the rim. The rim is usually thickened, straight or inward everted; the base is flat or slightly concave. There is no decoration accompanying this type of bowl (Appendix 1, Figure A1.24).



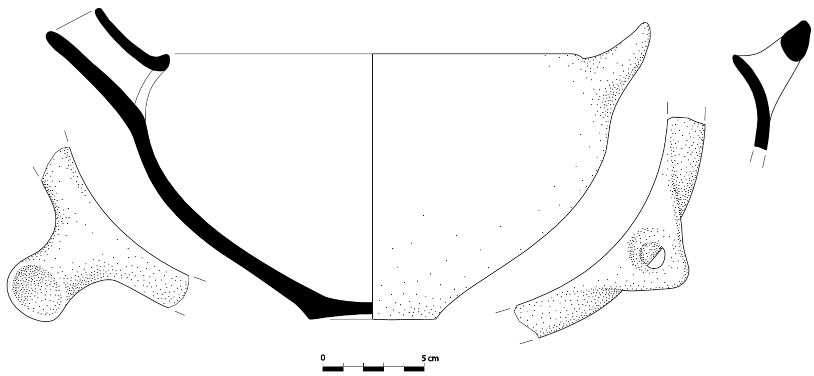
B4.1. Rim diameter ca. 20-30 cm. Type B4.1. is a bowl with shorter proportions, rounded inward curving rim and flat base or a short ring-foot. There are two wish-bone handles attached to the vessel just below the rim; the handles are proportionally smaller in comparison to type B4 and the orientation of the handle position is much lower (Appendix 1, Figure A1.25).



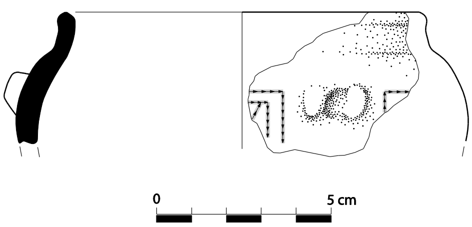
B4.2. Rim diameter ca. 20-25 cm. This bowl has a similar appearance to type B4, but the difference is with the type of the handles, which instead of wish-bone are horizontal handles with circular cross-section or have a nearly horseshoe shape. The vessels of this type are undecorated (Appendix 1, Figure A1.26).



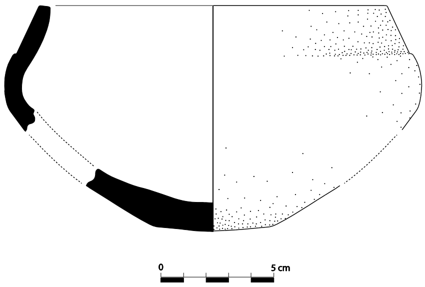
B4.3. Rim diameter ca. 20-25 cm. B4.3 can be generally described as a part of the B4 classification, but it belongs to a different, probably foreign tradition. The vessels are wheel made, relatively thin-walled and the profile of the body is more elaborated. The handles are horseshoe type, springing upward, directly from the rim. The handles sometimes have a plastic attachment at the uppermost point of the handle. This type is also plain, wheel-made and considered an import from Anatolia (see Leshtakov 2009) (Appendix 1, Figure A1.27).



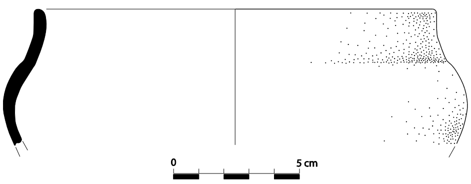
B5. Rim diameter ca. 20-35 cm. Type B5 is a conical or semi-spherical bowl with inward curving rim and flat base. Sometimes there is one vertical strap or wish-bone handle attached to the rim. The main characteristic of this type is the presence of a spout opposite to the handle, when there is one (Appendix 1, Figure A1.28).



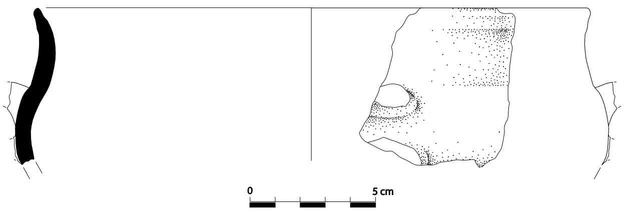
B6. Rim diameter ca. 10-20 cm. B6 includes a variety of small bowls, sometimes plain, but mostly decorated with *furchenstich* motifs. Variant B6.1 has small plastic lugs attached to the most pronounced part of the body (Appendix 1, Figure A1.29).



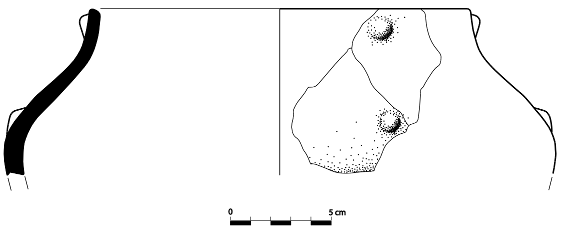
B7. Rim diameter ca. 10-20 cm. B7 has a biconical profile with a neck sharply distinguished from the body. Often this shape is associated with a variety of incised or *furchenstich* decoration organised in bands, but there are also undecorated examples. The only known example preserved to a fuller extent has a flat base (Appendix 1, Figure A1.30).



B8. Rim diameter ca. 15-25 cm. B8 type and its variations represent a type of bowl with nearly S-shaped profile. None of the examples has a preserved lower part of the vessel and because of that it is impossible to define whether the type belongs to the category of the bowls or the kylikes, where the major distinction is the presence of a tall foot. Type B8 has a cylindrical neck, rounded straight or thinned rim and a conical body. The known examples are undecorated (Appendix 1, Figure A1.31).



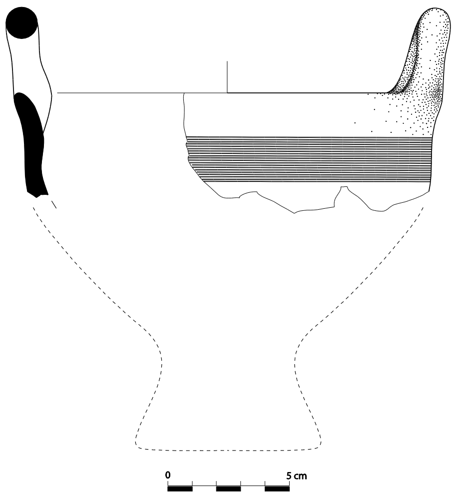
B8.1. Rim diameter ca. 20-30 cm. A variation of the B8 shape is a bowl with a more pronounced profile, where the usually thinned rim is sharply divided from the cylindrical neck as is the neck from the body. Sometimes there is an indication of vertical handles attached to the body. B8.1 is also undecorated (Appendix 1, Figure A1.31).



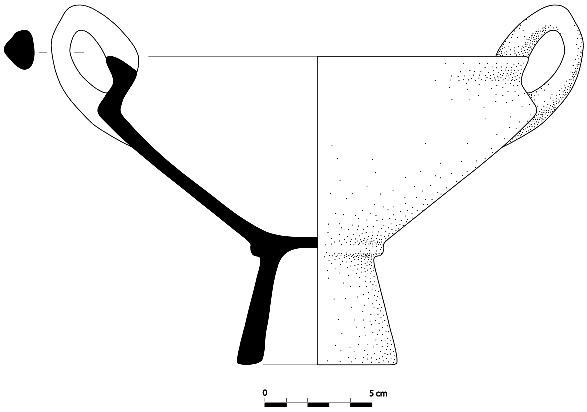
B8.2. Type B8.2 keeps the general S-shaped profile, but the shape is more closed than bowls B8 and B8.1. Similarly, there is no information about the lower part of the body. Another characteristic of B8.2 is that it is usually supplied with multiple small plastic lugs below the rim and on the shoulder of the vessel. The size also varies from very small, cup-like vessels (rim diameter below 10 cm) to larger bowls (rim diameter ca. 20 cm) (Appendix 1, Figure A1.32).

6.3.2.3. Kylikes (KY)

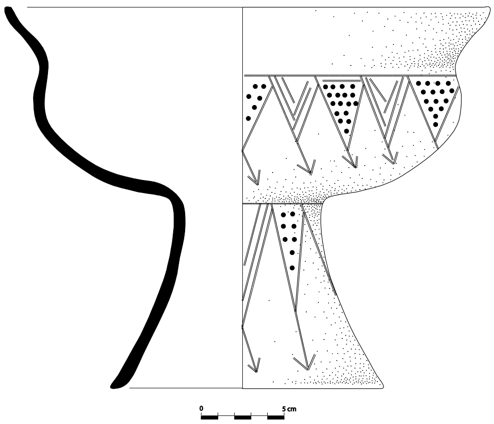
This is a category of vessels that could be described as large bowls supplied with a tall foot-base. The height of the foot is between one-third or a one-half of the total height of the vessel. The name of this type of vessel is also adopted from Classical drinking vessel types. However, the resemblance is only morphological. The kylix in a Classical Greek sense is also a drinking vessel, while the Late Bronze Age vessels are rather large and remind one more of earlier examples of fruit stands. Nevertheless, their function could be associated with either liquid or solid food contents. Types of kylikes were found in domestic, but also in burial contexts. The vessels could be plain, but also decorated with plastic logs or knobs, incised or *furchenstich* decoration. They could have no handles or be supplied with two or four handles. Six specific types are identifiable.



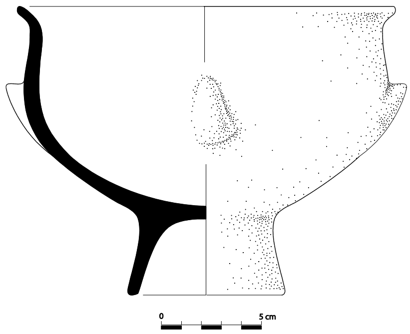
KY1. Rim diameter ca. 15-20 cm. This type is associated with a variety of rim types like thickened outward everted, straight thickened or straight rounded lip. There are two characteristic features of this type, which are the vertically orientated horseshoe-shaped handles springing from the rim and the incised band decoration, sometimes complemented by kerbschnitt triangles starting from below the rim (Appendix 1, Figure A1.33).



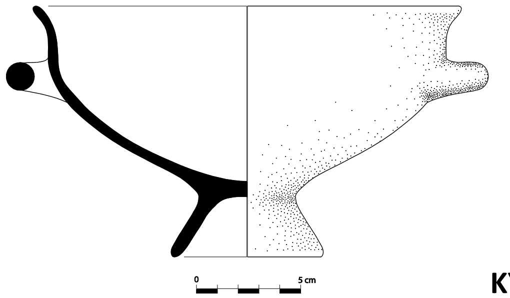
KY2. Rim diameter ca. 15-30 cm. Type KY2 has a biconical profile with an angled offset rim. The body is attached to a tall conical foot. Sometimes there are two vertical handles with triangular section attached bridging the lip and the body. In other cases, instead of handles there are two or four plastic lug attachments on the most pronounced part of the body (Appendix 1, Figure A1.34).



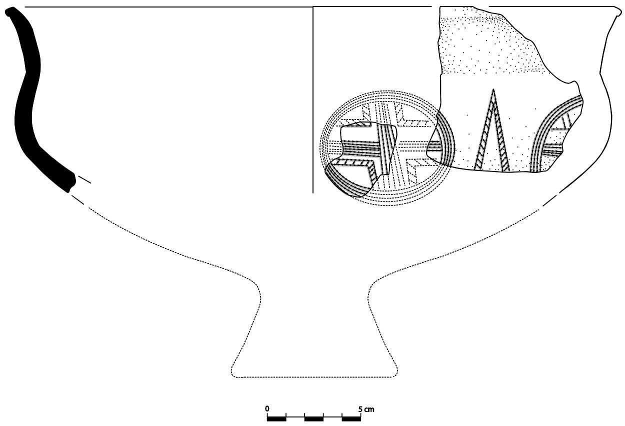
KY3. Rim diameter ca. 25-40 cm. These are larger vessels with a longer offset rim and a less angular conical body. The main difference is the massiveness of the conical foot, which is usually taller than 10 cm and has a base diameter of ca. 10-18 cm. The type is plain or decorated with incised geometrical motives and pierced dots. Sometimes there is also linear decoration on top of the lip (Appendix 1, Figure A1.35 and A1.36).



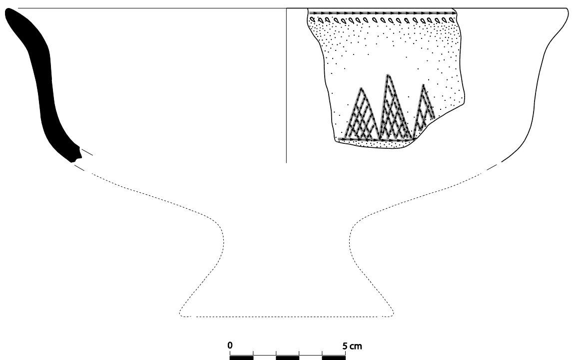
KY4. Rim diameter ca. 15-20 cm. Type KY4 is a smaller kylix with semi-spherical body and significantly shorter (ca. 5 cm) foot. Sometimes there are two or four vertical handles or plastic lugs attached to the most pronounced part of the body, which is otherwise undecorated (Appendix 1, Figure A1. 37).



KY5. Rim diameter ca. 20-35 cm. These vessels have shorter proportions, conical body and slightly offset rim, sometimes thickened rim and average-height foot. Two horizontal handles with rounded section are attached to the main part of the body. The foot is short, usually less than 5 cm in height. There are no decorated known examples of this type (Appendix 1, Figure A1.38).

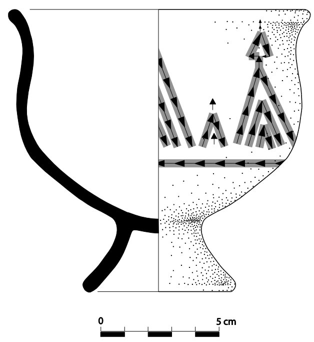


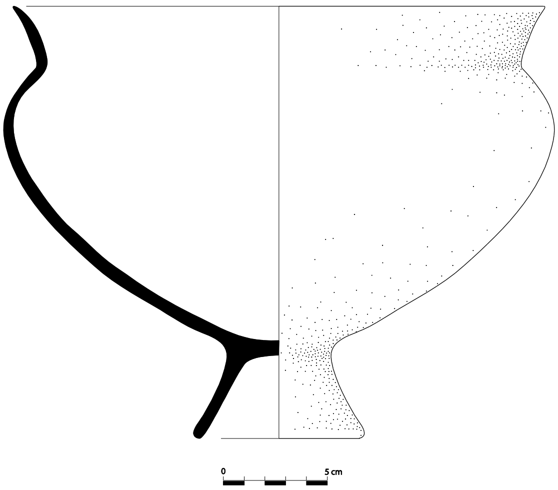
KY6. KY6 has a nearly S-shaped profile, but rather disjointed transition between the body and the rim. There is no fully preserved example with a foot, but there are several indications that these vessels stood on foot, although 'footless' versions similar to bowls are also to be considered. Often, there are two or four vertical handles with triangular section bridging the rim and the body. The type is often decorated with geometric *furchenstich* motifs (Appendix 1, Figure A1.39).



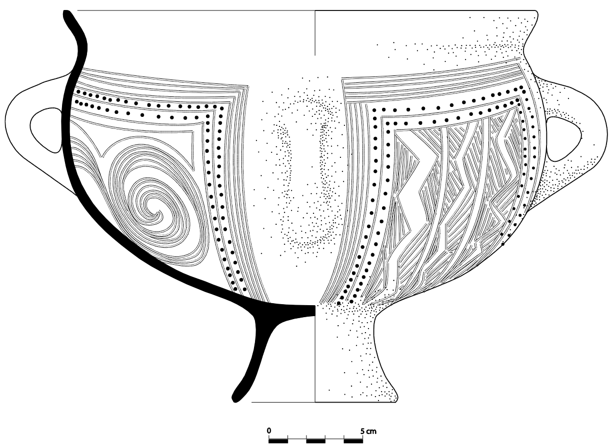
KY6.1. Rim diameter ca. 18-25 cm. KY6.1 has a softer S-shaped transition between the body and the rim. The vessels are usually smaller, with some indications that they were attached to a foot. The profile of the vessel leaning outward would also make it rather unstable if profile is not balanced on a foot. This type is also usually decorated with *furchenstich* motifs. There are no handles associated with KY6.1, but there are almost no complete vessels to confirm this as a feature of the type (Appendix 1, Figure A1.40).

KY6.2. Rim diameter ca. 12-18 cm. KY6.2 is even smaller and can have a softer or more disjointed S-shaped transition between the body and the rim. Although these vessels are smaller, they tend to be attached to a proportionally taller foot. This type is usually decorated with *furchenstich* motifs. Similarly, to KY6.1, there are no handles associated with KY6, but there are almost no complete vessels to confirm this as a feature of the type (Appendix 1, Figure A1.41).

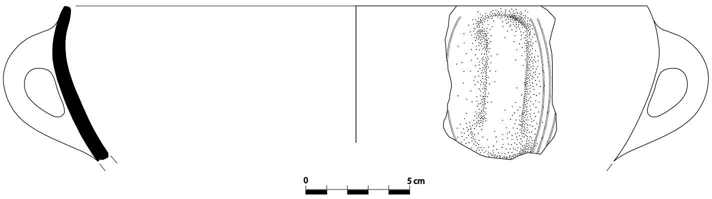




KY7. Rim diameter ca. 25-40 cm. KY7 has a sharp S-shaped transition between the body and an offset rim. The vessels are large with a relatively short, but proportionate foot. The profile of the body is rather spherical than conical, although both are recorded. Sometimes there is a set of lugs attached to the body. Typically, these vessels are undecorated and there are also no handles associated with the type (Appendix 1, Figure A1.42, A1.43).



KY7.1. Rim diameter ca. 20-35 cm. KY7.1 is slight variation of KY7 with even more rounded body and rich incised and pierced geometric decoration covering most of the body between the shoulders and the top of the foot. There are also two or four vertical handles attached to the middle part of the body (Appendix 1, Figure A1.44).



KY8. Rim diameter ca. 25-35 cm. KY8 has a conical body with slightly inward curved rim. It has vertical strap handles attached to the body, just below the rim; sometimes there is also incised decoration associated with KY8. However, there are only fragments defining this type and no further information can be extracted for this vessel shape (Appendix 1, Figure A1.44).

6.3.2.4. Amphorae (A)

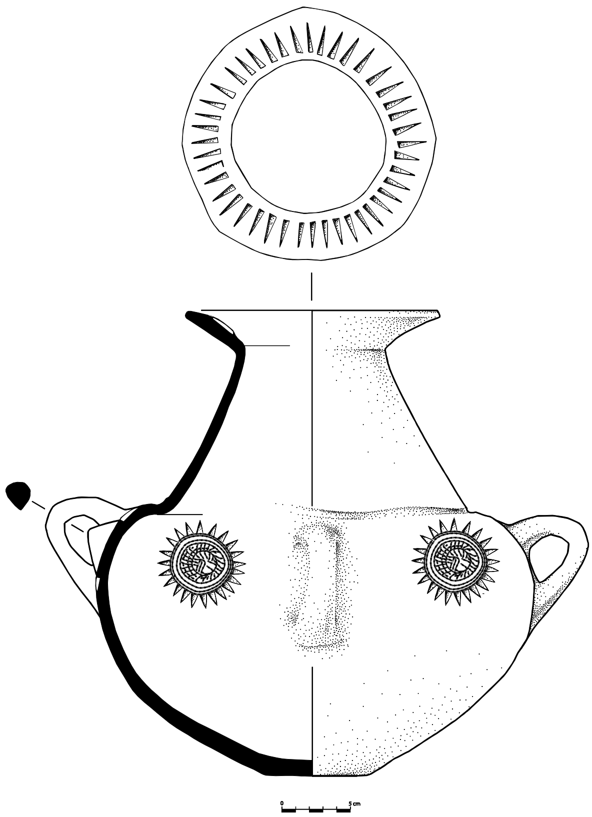
There is a debate in the local literature about the name *amphora* being used in an earlier than Classical context; this debate is more robust than in the case of other categories which have borrowed Classical terms. By traditional definition, the term implies that the vessel has functioned exclusively for storage or transport of liquids like wine or oil (Hochstetter 1984: 48), which is the characterisation of the Classical and later vessels of the type. Nevertheless, this type of container is recorded in earlier periods. Transport containers are well known from the Mediterranean Bronze Age, moving different types of commodities in considerable quantities (Bevan 2014: 388). One of the reasons for these quantities is the increased cargo capacity of galleys and sailing ships (rather than earlier paddled canoes). Nevertheless, the earliest examples of specialised transport containers are linked to societies in Mesopotamia and Egypt, involving at least as much emphasis on river as on sea travel. One of the main characteristics of the specialised 'cargo' is the appearance of plain, similarly sized vessels.

Despite the typical functional implications of this vessel category for most Mediterranean researchers, there are also examples of another use of the word amphora that does not imply maritime transport or transport in general. For example, the 'Global Amphora Culture' that precedes the 'Corded Ware Culture' in eastern and northern Europe refers to the characteristic pottery represented by globular-shaped pots with two or four handles. Based on a similar terrestrial tradition, the term has entered use for the Balkan Bronze Age and refers to similarly designed vessels, with variation in the silhouette (see Hänsel 1976; Hochstetter 1984; Koukouli-Chrysantaki 1992).

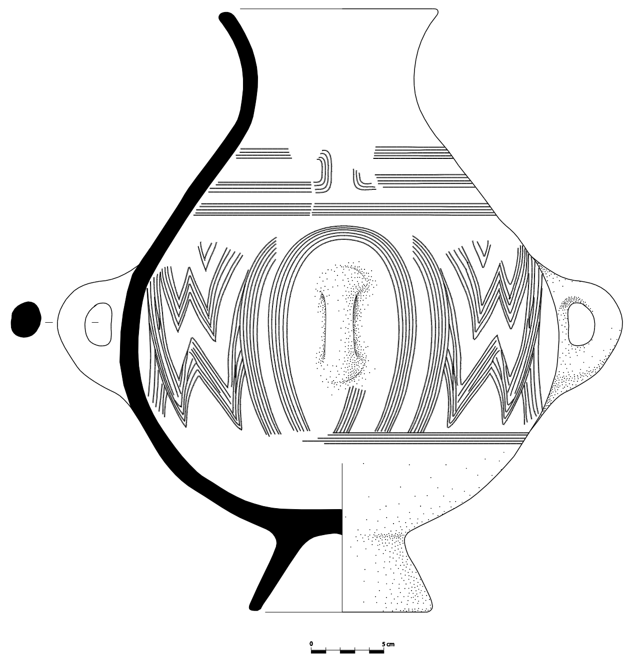
It is difficult to assume at this point that the Thracian Late Bronze Age vessels described as amphorae functioned as specialised riverine or maritime transport containers, but it is certainly a possibility. Some of the amphorae have a tall silhouette, narrow base, average volume of 20 to 40 litres and mostly plain, well-burnished and sometimes polished surfaces. The interior of these vessels is often covered with slip, which indicates possible liquid contents. The mostly narrow neck and mouth also implies the storage of liquids rather than grain, wheat or other type of solid food resources. When transport is considered within the Thracian Late Bronze Age context that does not necessarily imply trade. The possibilities of transport of commodities along with population movement is also to be considered. On the other hand, the occurrence of some amphora types in burial contexts gives some authors a reason to refer to these vessels as 'urns'. Although they have ended their functional life as a container for human remains, it is quite possible that they were manufactured initially for a different purpose and then 'recycled' in the grave. Support for the latter hypothesis is that identical shapes are also found in domestic contexts (Alexandrov 2002).

The vessels from this category are often medium sized to large, manufactured from medium-fine clay with small to medium organic and inorganic inclusions. The variation in the shape types is relatively large and significant, but the category in general is not very well represented and distributed.

The vessels described as amphorae have the characteristics of a relatively tall vase with rather neat silhouette. The ratio between their body height and maximum diameter is close to 2:1. The shape could be described as having a conical or cylindrical neck, everted rim and somewhat globular body, and two or four handles on the most pronounced part of the vessel. The handles are usually vertical and only exceptionally horizontal. The thickness of the wall varies mostly between 0.7 and 1.2 cm. The range of rim diameter is between 8 and 18 cm. There are five recognisable types of amphorae distributed across the area.

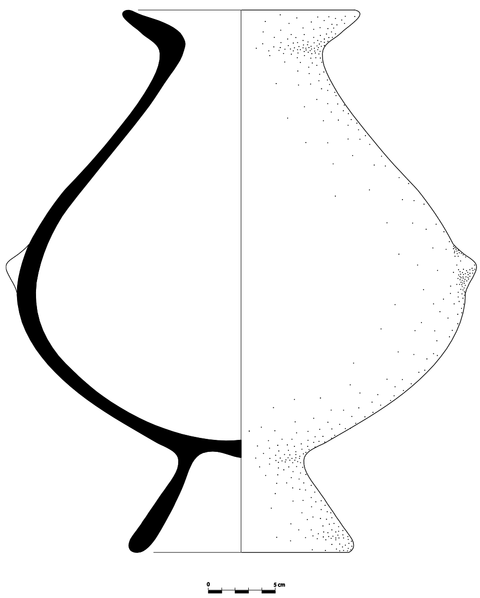


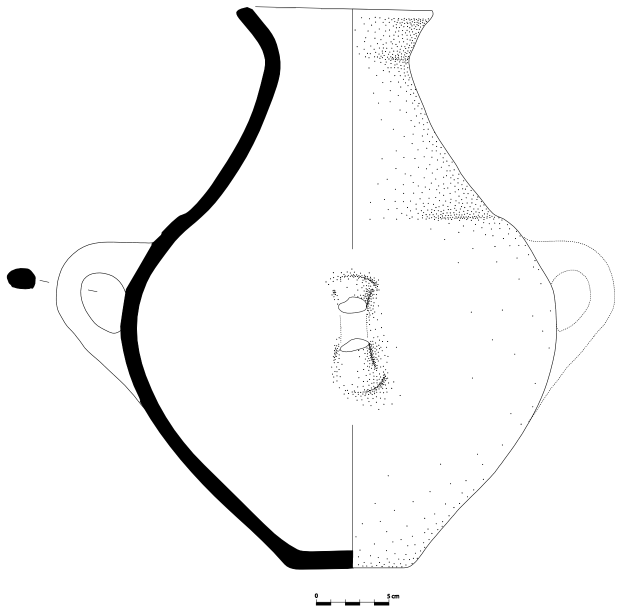
A1. Rim diameter ca. 8-18 cm. This type has a conical neck, everted rim, sharply divided from the neck, rounded or semi-spherical body divided from the neck with a sharp thickened line, usually attached to a foot base. All main parts – rim, neck, body and foot – have been formed separately and then joined together. The handles are placed on the shoulders of the vessel; there is a triangular cross-section of the handle. The type is rarely decorated. The only known decorated example has plastic attachments on the body between the four handles, on top of which there are geometrically incised and pierced solar/floral motifs. The top of the rim is also pierced or incised with kerbschnitt triangles (Appendix 1, Figure A1.46 and A1.47).



A1.1. Rim diameter ca. 10 - 15 cm. Globular body, cylindrical neck, smoothly everted and rounded rim, smooth transition between the body parts, short foot base. The type is either plain or richly decorated with incised motifs. There are either two or four handles placed on the most pronounced part of the body; the cross-sections is rounded or triangular. The foot and the elaborate decoration of this type suggest intention for display. This type of amphora can be considered as 'table amphoras', functioning as pouring vessels or in-house storage containers. They are mostly associated with burial contexts, but domestic examples are also known (Appendix 1, Figure A1.48 and A1.49).

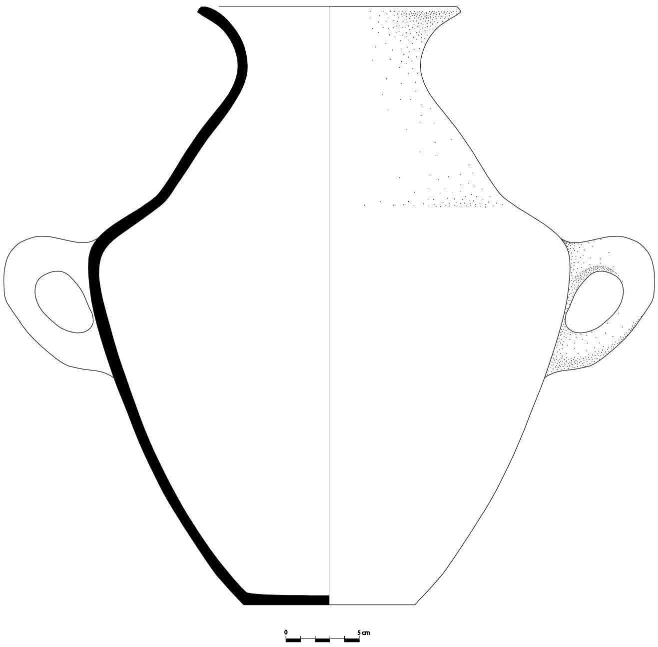
A1.2. Rim diameter ca. 12 - 15 cm. This is a similar shape A1.1, but the forming of the rim is closer to type A1. There is no incised decoration or handles associated with A1.2. Instead there are small plastic lugs attached to the most pronounced part of the body (Appendix 1, Figure A1.50) .

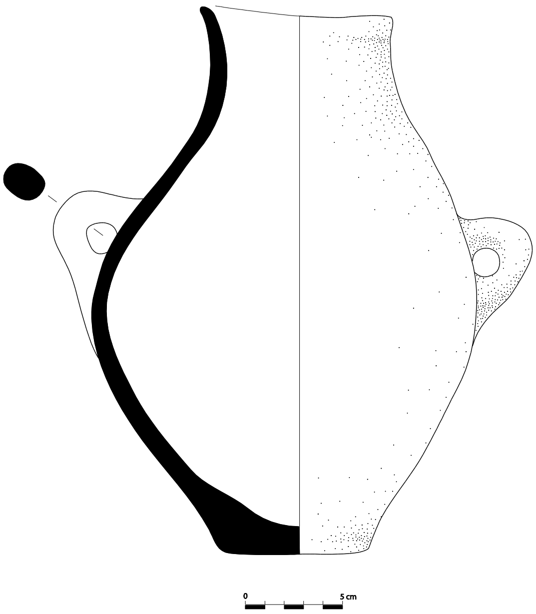




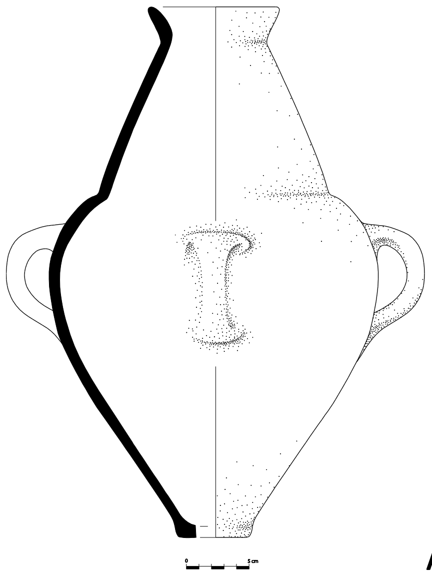
A2. Rim diameter ca. 10 - 15 cm. This type has a conical neck, everted rim, sharply distinguished from the neck, rounded or semi-spherical body divided from the neck with a sharp thickened line, usually narrow flat base. All three main parts – rim, neck and body – have been formed separately and then joined together. The vertical handles (two or four) are placed on the shoulders of the vessel; there is a triangular or oval cross-section of the handle. The type can be either plain or richly decorated with geometric incisions (Appendix 1, Figure A1.51).

A2.1. Rim diameter ca. 12 - 18 cm. Type A2.1 has a similar general shape to A2, but the transitions between the body parts are smoother. The body has instead of globular, a biconical appearance. The vertical handles (two or four) are attached to the most pronounced part of the body. The base is flat. The type is plain and the few examples known are poorly fired and found only in burial contexts (Appendix 1, Figure A1.52).

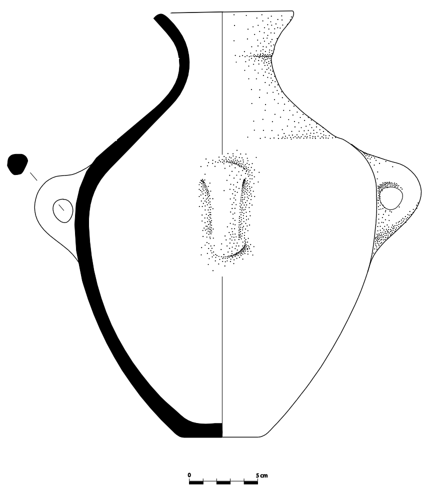




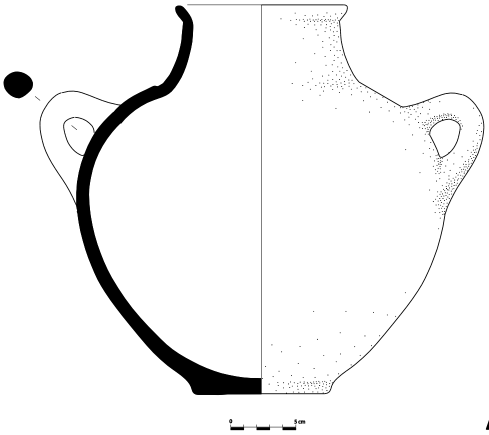
A3. Rim diameter ca. 8 - 12 cm. Type A3 has a globular body, conical neck, slightly everted rim, smooth transition between the body parts, massive flat base. The type is usually undecorated. The handles are placed on the most pronounced part of the body; the section of the handles is triangular or rounded. It is usually visibly asymmetrically shaped. There is no decoration (Appendix 1, Figure A1.53).



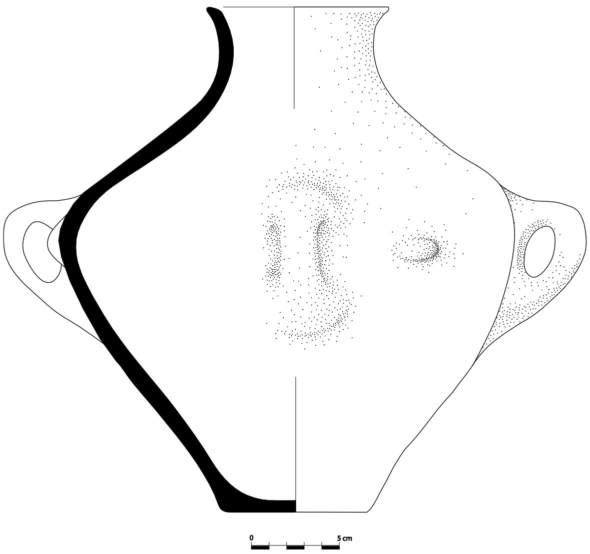
A4. Rim diameter ca. 8 - 12 cm. This type has a tall conical neck, everted rim, sharply divided from the neck, rounded or semi-spherical body with an elongated lower part, divided from the neck with a sharp thickened line, and a very narrow flat base. All three main parts – rim, neck and body – have been formed separately and then joined together. The handles are placed on the shoulders of the vessel. The type is not decorated and usually asymmetrically shaped. The simpler execution of amphora A4 along with its narrow base, and elongated silhouette makes it one of the candidates to be a container storing or transporting large quantities of goods (Appendix 1, Figure 1.54).



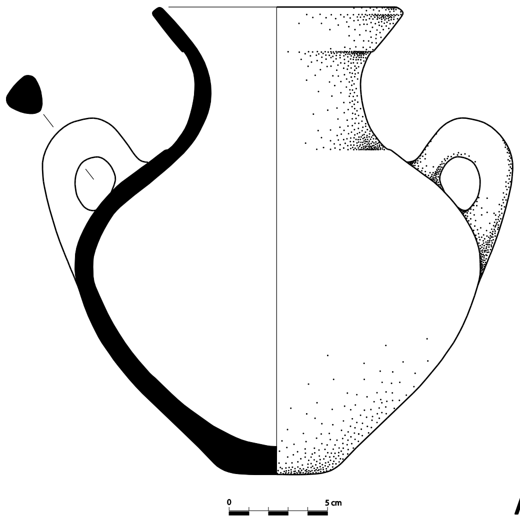
A4.1. Rim diameter ca. 8 - 12 cm. There is also a version of this type with a similar profile, but it is smaller and has slightly shorter proportions. The neck is shorter and sometimes more concave, the body is rather rounded and very asymmetrical; the base is flat and proportionally larger in comparison to A4. There is no decoration associated with this type (Appendix 1, Figure A1.55).



A5. Rim diameter ca. 10 - 15 cm. Type A5 has a spherical body, short conical or cylindrical neck, short outward everted rim. There are two or four handles attached to the body; triangular in cross-section. The base is flat or shaped as a short foot. The ratio between body height and maximum diameter of the vessel is close to 1:1 (Appendix 1, Figure A1.56).



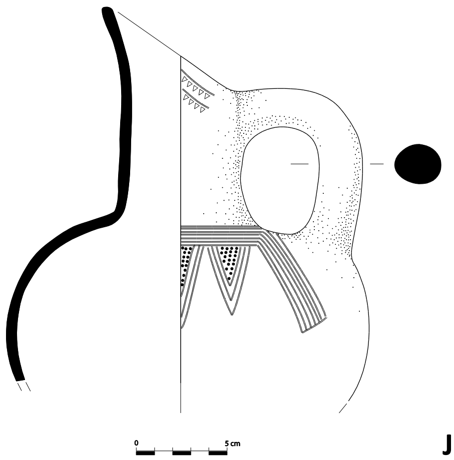
A6. Rim diameter ca. 8 - 13 cm. A6 has a rather different silhouette from all of the above-described shapes. It has an S-shaped silhouette, cylindrical or slightly conical neck, everted rim, smoothly formed or pronounced bi-conical body, flat narrow base. The body transitions are smooth. Often, there are small plastic lugs attached to the shoulders or to the most pronounced part of the body, which is the only decoration associated with this type of amphora. There are vertical handles with triangular section or small strap handles attached to the maximum diameter of the vessel. This type could be associated with either transport or storage and it is also found in burials (Appendix 1, Figure A1.57 and A1.58).



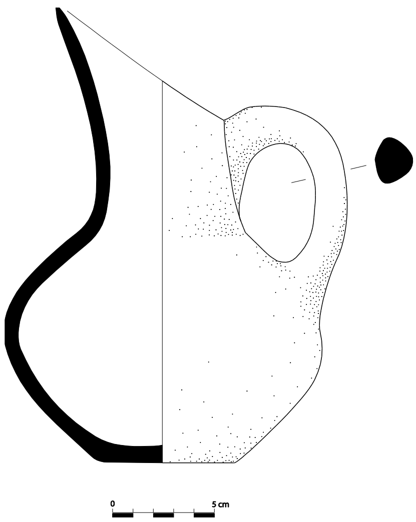
A6.1. Rim diameter ca. 10 - 15 cm. A 6.1 is a smaller S-shaped vessel with sharp transitions between the body parts. The Neck is cylindrical and slightly concave, the rim turns outward and the body has a globular appearance; the base of the only whole example found is flat. There are two handles with triangular section attached the shoulders or the most pronounced body part. Sometimes there are plain plastic bands 'masking' the body part transitions as well as a set of small plastic lugs on the shoulders. The type is undecorated (Appendix 1, Figure A1.59).

6.3.2.5. Jugs (J)

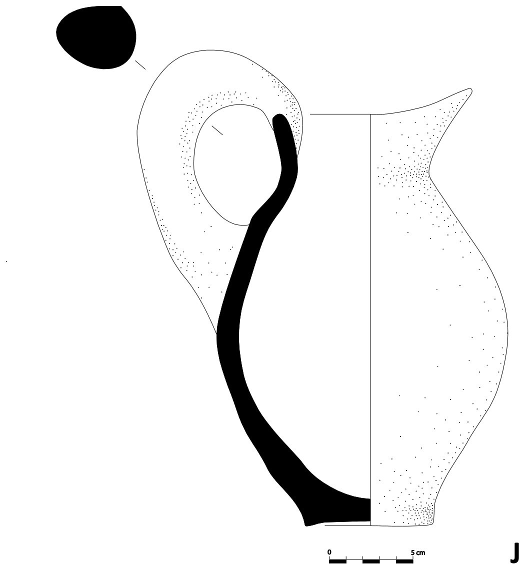
The jugs from the area are usually medium-sized vessels with elongated, globular or short profile, one handle and usually canted rim. The wide variation in the shape is justified by the functionality of this vessel category, whose use is most likely for pouring a variety of liquids. It is considered as a fine, tableware shape, although sometimes the execution is quite rough and it can be poorly fired. Late Bronze Age jugs could be decorated with incised or *furchenstich* motifs, but could be also plain. Rarely, there are plastic attachments on the shoulders or the most pronounced part of the body, and mostly on examples of the coarse-ware jugs. There is some distinction in the technological characteristics of the different types.



J1. Rim diameter ca. 4 - 7 cm. J1 has an elongated, tall silhouette, cylindrical neck, canted rim, spherical or slightly bi-conical body, flat base, one tall strap handle or a handle with circular or triangular cross-section. The vessels are often covered with incised or *furchenstich* decoration, but there are also plain examples. Typical is also the set of two kerbschnitt rows underneath the canted rim, starting from both sides of the handle (Appendix 1, Figure A1.60).

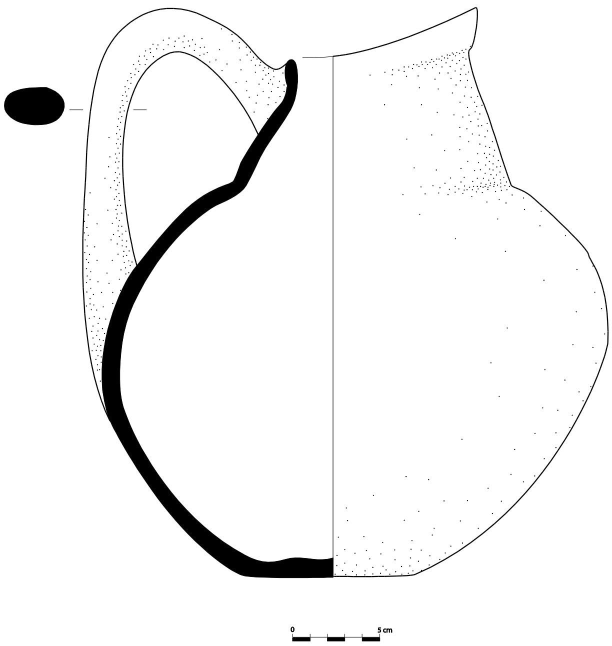


J1.1. Rim diameter ca. 5 - 8 cm. Type J1.1 has an elongated, tall silhouette, but smaller dimensions. The neck is tall, merging with the thinned rim; sometimes there is a sharp transition between the neck and the body, which is nearly spherical; The base is flat. There is one tall vertical handle with rounded cross-section bridging the lip and the shoulder of the body. The type is undecorated and the dimensions vary from small 'personal' jugs to larger pouring vessels (Appendix 1, Figure A1.61).



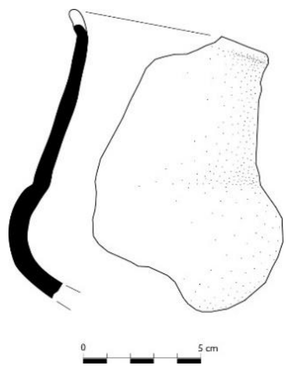
J2. Rim diameter ca. 8 - 12 cm. This type is asymmetrically shaped and has a profile with conical neck, everted, sometimes sharply distinguished rim, shorter globular or taller conical body, flat or slightly concave base and no decoration. The handle is massive for the proportions of the vessel and has a triangular or rounded cross-section. These vessels are roughly shaped and not decorated (Appendix 1, Figure A1.62).

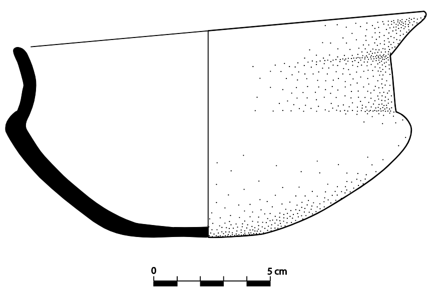
J3. Rim diameter ca. 9 - 15 cm. J3 has a pronounced rounded, spherical body, conical neck, canted rim with a rounded lip, one handle with triangular section, and flat or small ring-base. The profile reminds one of kantharos type K2. The type is carefully executed and has an obvious sharp transition between the neck and the body. There is complex geometric *furchenstich* decoration on the body and sometimes on the neck (Appendix 1, Figure A1.63).



J3.1. Rim diameter ca. 9 - 15 cm. J3.1 has a very similar profile to J3, with a rounded, spherical body, conical neck, canted rim, one handle with triangular or rounded section, and flat base. However, it has taller proportions and the rim is sharply divided from the neck. There is no decoration associated with this type (Appendix 1, Figure A1.64).

J4. Rim diameter ca. 8 - 12 cm. Type J4 is a small jug with tall conical neck and short rounded body and no decoration. There are no complete examples of this type and therefore, no further details can be assigned to the shape (Appendix 1, Figure A1.65).





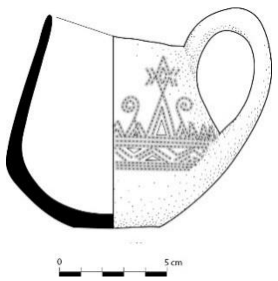
J5. Rim diameter ca. 15 - 25 cm. These are open vessels with small proportions and a very disjointed conical profile. The rounded rim is turned outward, the body is conical, the base is flat. The reason this type belongs to this category, instead of to the one of the bowl form is the very pronounced canted rim, which assumes pouring of liquids. The vessels are plain and only sometimes there are plastic attachments on the shoulders of the body. No handles have been identified so far (Appendix 1, Figure A1.66).

There is also a unique type of jug, reminiscent of the appearance of amphora A1, but with one tall handle and canted rim. It has a conical neck, thickened rounded rim, and a semi-spherical body attached to a tall foot-base; The handle is triangular in cross-section; the body and the lower half of the handle are heavily decorated with incised geometric and perhaps floral decoration. The base is pierced with a small opening towards the foot and the foot itself is pierced with multiple holes, forming a triangle on one side; a large triangular opening is formed on the other. Based on these openings, it is likely that the jug has been prepared for libations, but involvement of fire is also possible. It has been found as a apart of a burial complex, but without any known context (Appendix 1, Figure A1.67).[9]

6.3.2.6. Cups (C)

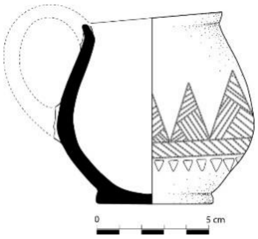
The cups from the area are small-sized vessels with a variety of profiles. Very often they are unique or rare and thus their inclusion in the spatial analysis in the next chapter is irrelevant. The wide variation in the shape is justified by the functionality of this vessel category, by definition used for drinking. The large variety of cups in comparison to the small number of identified vessels probably has to do with their 'personalised' appearance. Some small jugs (cups with canted rim) are also included within this category based on their size, assuming also 'personal' use.

The cups can be either plain with sometimes plastic attachments or heavily decorated with incised or *furchenstich* motifs. There are a few examples in coarse ware. The rest belong to the fine 'table' category. The colours vary, but most recorded examples have a polished surface within the grey-black range.

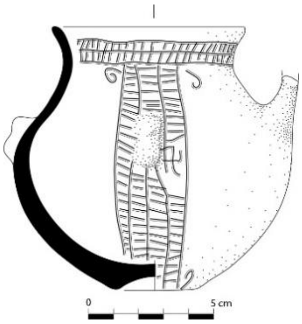


C1. Rim diameter ca. 6 - 10 cm. This is a cup with a biconical body, with no distinguished rim and rounded lip. It has one tall handle and flat base. The body is richly decorated with linear *furchenstich* motifs. The rim is canted and thus the type could be also described as a small jug (Appendix 1, Figure A1.68, a, b).

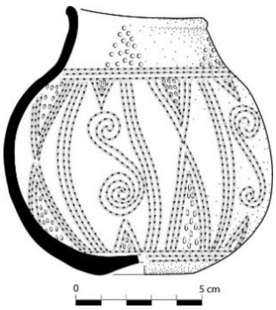
[9] The vessel was bought from a local looter, who showed us also the destroyed burial mound where he found it. Although with some serious uncertainty related to the discovery of the find, the remaining material at the tumulus also suggesting belong to the local LBA.



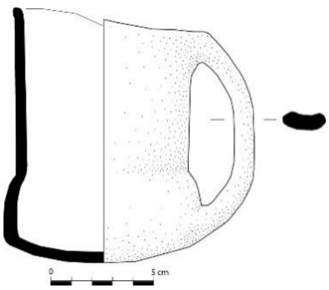
C1.1. Rim diameter 6 cm. This type has a similar appearance, but more rounded body and slightly everted rim. The rim is canted and thus the type can be also described as a small jug. The only vessel has no preserved handles, but there is a little scar at the place where the handle used to be. Triangular incised motifs and a row of kerbschnitt triangles are decoration the body (Appendix 1, Figure A1.68, c).



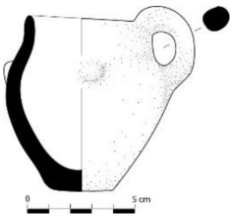
C2. Rim diameter ca. 8 - 12 cm. These are slightly larger cups with cylindrical neck and everted rim. An example with a canted rim is also known. The only preserved example with a base has a concave base. The bodies are decorated with linear or geometric incised decoration and sometimes irregular plastic attachments on the shoulders. There is no information about the type of handle (Appendix 1, Figure A1.68, d-f).



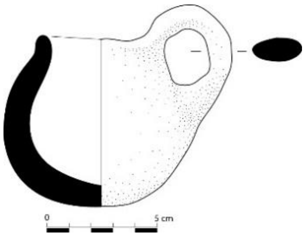
C3. Rim diameter ca. 5 - 10 cm. Type C3 is a vessel with globular body, reminiscent of the appearance of kantharos K1 and K3.1. The vessels of this type generally have a conical neck, straight or slightly outward turned rounded or even thickened rim, which is also canted like types C1 and C1.1. There is one tall handle with triangular section bridging the rim and the body. The base is flat or concave. The body is heavily decorated with *furchenstich* or incised linear decoration sometimes accompanied by kerbschnitt (Appendix 1, Figure A1.69).



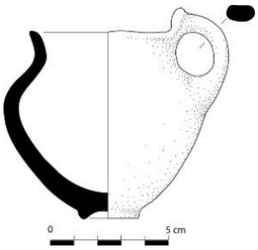
C4. Rim diameter ca. 8 - 12 cm. Type C4 has a tall or shorter, cylindrical appearance with cylindrical neck and a very short conical body, sharply divided from the neck. The lip is slightly thinned and turned outwards. There is one strap handle bridging the rim and the body; the rim can be flat or canted. All known examples are undecorated (Appendix 1, Figure A1.70).



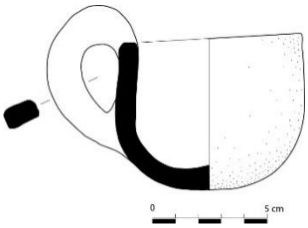
C5. Rim diameter ca. 5 - 12 cm. These are very small coarse cups with a light S-shaped profile and plastic attachments on the shoulders. The handle is rectangular or rounded in cross-section and sometimes a horn-like projection on top . The base is flat or slightly concave. The rim is flat (Appendix 1, Figure A.1.71 a, b).



C6. Rim diameter ca. 4 - 8 cm. Type C6 and its variants are very small course plain cups. C6 is a cup with rounded body and one tall strap handle, with flat or slightly rounded base. The rim is short, straight and rounded; there is no neck. There is no decoration associated with this type (Appendix 1, Figure A.1.71 c, d).



C6.1. Rim diameter ca. 5 - 9 cm. A slight variation of this type has a small ring-base or a rounded one which prevents an independent standing position. There is a short cylindrical neck and an everted rounded rim. The handle is tall with rectangular cross-section and a plastic horn-like projection on top. No other decoration is recorded for this type (Appendix 1, Figure A.1.71e-g).



C6.2. Rim diameter ca. 4 - 8 cm. The last sub-type is a very basic globular or cylindrical shape with straight or outward turned rounded rim and one massive strap handle. The base is flat or rounded. There is no decoration associated with type C6.2 (Appendix 1, Figure A.1.72 h, i).

6.3.2.7. Double vessels (D)

There is another category of vessel, typical for the Late Bronze Age in Thrace, but extremely difficult to classify. The so-called double-vessels are rare, but often present in domestic or ritual contexts. This could be because their identification is possible only when the handle or the join between the two vessels is discovered. The recorded types are representatives of fineware, with dark, greyish to black surface, fired under high temperature, with or without incised decoration, which assigns them to the group of finer ware. Nevertheless, isolated examples in coarse fabric are also recorded. Further typological distinction is not possible at this stage, but their existence and identification within the Late Bronze Age is significant. Most of the sherds have polished or well-smoothed surface with slip. The category continues within the first phase of the local EIA too.

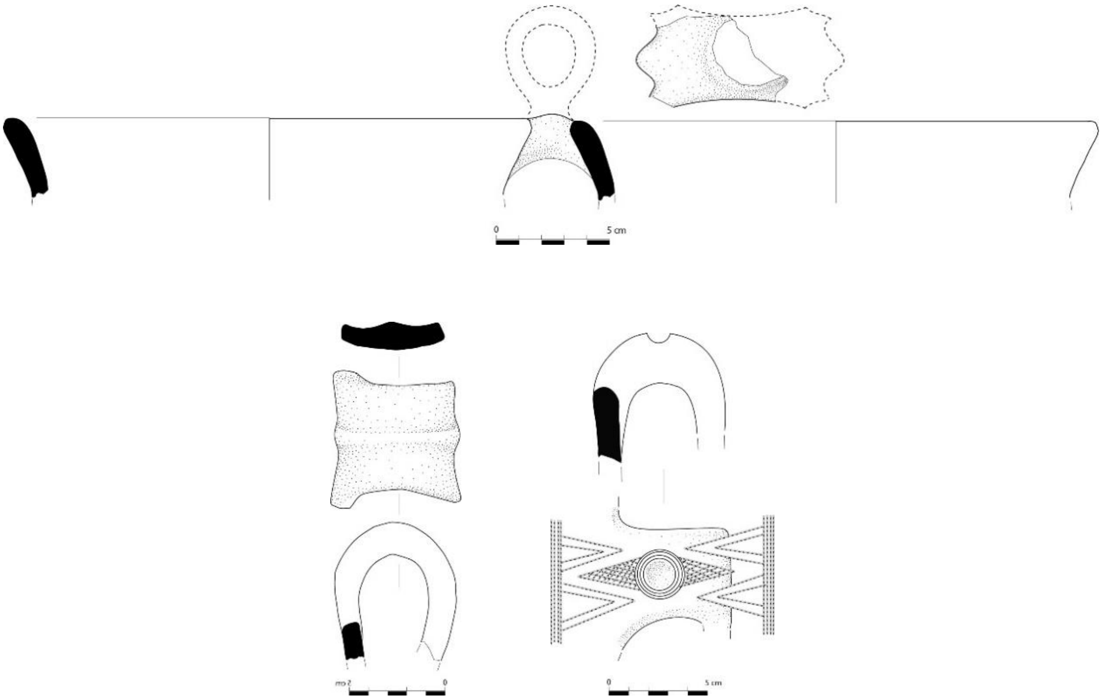


Figure 6.12. Examples of double-vessels from LBA contexts in Thrace

The classification of pottery shapes offered in this chapter will provide a useful framework to address regional trends in ceramic distribution. The next chapter therefore considers the spatial distribution of these types. Thereafter, we will be in a better position to reconsider the issues and problems of local Late Bronze Age chronologies and to analyse possible temporal discrepancies in the record. A successful combination of both spatial and chronological analysis will hopefully, with due caution, then help to answer some questions related to the existence and the circulation of some LBA pottery groups across Thrace.

Chapter 7. Spatial analysis of ceramic distributions

This chapter is dedicated to the spatial analysis of selected pottery elements, based on the typology developed in the previous chapter. I will also make a start in approaching critically the existing association with the construction of cultural groups in order to create a comparative platform for interpretation. A preliminary stage of exploratory analysis will define suitable spatial zones of similar behaviour in the overall pottery sample. At the end, the results will be described and interpreted, based on a combinations of factors.

7.1. LBA pottery complexes

One of the difficulties with past approaches to the Thracian LBA is the fact that researchers have been keen to construct culture-historical groups according to models from Romania and the central European Bronze Age (see Childe 1929; Fokkens and Harding 2013; Hänsel 1976; Kimmig 1964; Müller-Karpe 1959). This terminology corresponds to an established consensus, but rarely reflects the past reality in any real sense (Aurenche and Kozlowski 2011: 286). In fact, the general drive seems to be for the recognition of human groups differentiated by their material culture (Riede 2011: 245). One of the main problems that arises, however, is with the definition of a cultural group, as the latter forces the consolidation of large areas into a single category, with the presumption of similar material culture in an environment lacking a sufficiently detailed archaeological record to justify it. Furthermore, there is a tendency under such a model to assign newly discovered sites automatically to an existing group, on account of geographic proximity and the need to 'belong' to a common pre-existing entity that weakens any research motivation to identify more local; or complex cultural transformations. Furthermore, especially in Bulgarian archaeology, research suffers from the consequences of conservative assumptions in the adopted culture-historical approach, addressing migration and invasion based only on formal typologies (Bailey 1998: 97).

7.1.1. The Cherkovna group

As a result, a number of cultural groups have so far been generated to describe the LBA period in Thrace, mainly for the area of present-day Bulgaria. For example, the cultural horizon ‘Zimnicea-Plovdiv’, also known as the ‘Cherkovna’ group, came into life as a result of the systematic work of Bernhard Hänsel at a time when little evidence was available, especially from the territory of southern Bulgaria (Hänsel 1976). Hänsel managed to assemble the existing data from Bulgaria and Romania and to plot pottery distributions based on morphological and stylistic similarities that were in agreement with the already identified cultural groups in Romania (Hänsel 1970; 1976; 1982). The so-called Cherkovna group, on the other hand, was assembled after the discovery of only two well-finds. The find that gave the name to the group consisted of eight vessels. The second find was of fifty-eight vessels discovered in the centre of the modern town of Plovdiv in an identical well context.[10] Rumen Katincharov analysed the finds from Plovdiv and found enough grounds to suggest a pattern of internal cultural development in Thrace, independent of the Aegean, Anatolia or central Europe, which he assumed started sometime during the MBA (Katincharov 1975: 3; Katincharov 1981: 120). Similar ceramic material came from a cemetery on the northern bank of the Danube at Zimnicea in Romania. This gave Sebastian Morintz and Nita Angelescu a motive to define a cultural and chronological complex they called Zimnicea-Plovdiv (Morintz and Angelescu 1970). Thereafter, Bernhard Hänsel and other researchers working in Bulgaria at the time also argued that the existence of two ‘collective finds’ (deposits) allowed for the alignment of a cultural horizon that marks the end of the Bronze Age (Hänsel 1976: 53, 77; Chickikova 1968; Nikolov 1974: 75, Figure11.13). Zimnicea-Plovdiv became a popular culture-historical construct and was used for a long time to define nearly the entire LBA culture in today’s Bulgaria and beyond. It was dated by Petar Detev and Bernhard Hansel to the very end of the LBA or the Transitional Period between the Late Bronze and the EIA. Hänsel also assumed that the centre of distribution of the culture was Cherkovna and preferred to name the same group after the eponymous site (Figure 7.1., Hansel 1976: 77).

[10] When I recorded the find from Plovdiv in 2003 only 16 of the vessels were found in the storage of the Plovdiv Archaeological Museum. The information I was given was that some of the vessels did not survive a historical flood, when the museum storage was entirely under water.

Figure 7.1. Map of the area with the main places mentioned in the text.

It is important to note that the Cherkovna group was formally meant to be based only on decorative style rather than shape similarities in the ceramic repertoire. This should come as a surprise, however, since most of the vessels from the Cherkovna finds are undecorated and the actual connection lies in the close analogies between the shapes as well as the similarity in the assemblages taken as a whole (see Hänsel 176: Figure 9-11, 344). The only decoration is on some kantharos types, variations of which can be seen distributed all over the Balkans. Furthermore, Hänsel pointed out that all the finds come from two well-deposits and a cemetery and that a potential settlement repertoire from the same group might conceivably be of a different character (Hänsel 1976: 80). The author also associated the Cherkovna group initially with North and Central Bulgaria, with a centre somewhere north of the Balkan Mountains. Later, though, he connected the culture on both sides of the Balkan Mountains and thus covered the entire Bulgarian territory including Thrace. Eventually, the Cherkovna group became equivalent to the Bulgarian LBA and was based on and associated with the distribution of the LBA kantharos. However, Hänsel suggested that there might be some cultural differences on both sides of the mountains, but does not elaborate the grounds for that.

7.1.2. Lower Danube Encrusted Pottery (Razkopanitsa VII-Asenovets)

In a similar way, the established goal of identifying culture-historical groups in the region led to the construction of the 'Lower Danube Encrusted Pottery Culture' (LDEPC) also known as the Cirna-Gârla Mare/Dubovac-Zuto Brdo/Baley-Orsoya group according to the countries of discovery (Shalaganova 1995; Dzhanfezova 2010: 6). This 'chain' name speaks to the distribution of this cultural group in Serbia, Romania and Bulgaria, along both sides of the Danube River, as well as to the fact that this group needs a new, shorter name for reference. Some stylistic similarities associated with a variety of pottery shapes and types across a large part of the Balkans inspired identification of a number of incised ware finds with the LDEPC. This led to the direct labelling of pottery with incised decoration and encrusted with white paste from south Bulgaria and north Greece under the name of Cherkovna or Zimnicea-Plovdiv, and the LDEPC culture.

Although this direct connection seems unrealistic, the similarity in the decorative technique used in both areas is evident. Beyond that, however, the differences between the Lower Danube ceramics and those from south of the Balkan Mountains had already been identified. Some authors have suggested that south Bulgaria, and specifically the Eastern Rhodopes, supported remote connections with the Lower Danube area and the Noua and Tei culture areas in Romania (Nekhrizov 1995: 323).

A further attempt to group the limited archaeological record south of the Balkan Mountains was the connection between the tell site of Razkopanitsa and the open-air settlement of Asenovets. Excavations at Razkopanitsa began in the 1940s and for a long-time this was the eponymous site used to label the entire LBA culture in southern Bulgaria (Detev 1950), although the stratigraphy was compromised and a large number of the finds were later dated to the EBA. A hypothetical horizon called Razkopanitsa VII-Asenovets (Leshtakov 2006: 189; 2009: 58) became the image of the southern Bulgarian LBA, lacking any real observations about the nature of the archaeological evidence, the identified cultural features (if any), as well as comprehensive publication of either the site or the finds.

7.1.3. The distinct character of the Eastern Rhodopes

From the 1970s onwards, the first systematic survey campaigns and excavations took place in the Rhodope mountains (Kissyov 1990; 1990a; 1993, 1998; Kulov 1991: 73; Panayotov 1981), Sakar (Aladzhov and Balabanyan 1984: 185-235; Venedikov et al. 1982: 37-43), the Strandzha range and along the Black Sea coast (Orachev 1990: 353-362). This work led to the realisation that the Rhodope mountains exhibited their own particular character (Nekhrizov 1995: 309), and both bipartite and tripartite sub-regional divisions of the mountain area were proposed (Kissyov 1990: 21-23; Borislavov 1999; Nekhrizov 1995). Nevertheless, the differentiation was not based on much observed material variation, but was mostly associated with regionalism in modern institutional research. The archaeological sites from the East Rhodopes discovered during that time were mostly megaliths of the 'rock niches' type. Their subsequent linkage to the Late Bronze Age was largely based on assumptions rather than any direct evidence.

The specific character of the Late Bronze Age pottery in the Eastern Rhodopes was first suggested in 1995, when Georgy Nekhrizov, on the basis of comparisons with the stratigraphy of the Macedonian toumbas, recognised that, despite the limited amount of material found in the Eastern Rhodopes, incised decorated sherds were a dominant feature. Nekhrizov considered that this similarity must be a result of close relations between Macedonia and western Thrace and suggested that both sides of the Rhodope Mountains, east and west, exhibit similarities in pottery production and cultural developments. He also identified ceramic shapes in the western Rhodopes that did not find analogies in the eastern part of the mountains (Nekhrizov 1995). The author then considered that the western Rhodopean ceramics seemed much more similar to the Macedonian examples (Nekhrizov 1995: 322). Some connections as well as differences have also been proposed between the pottery from the Eastern Rhodopes and that from the Upper Thracian Plain. The main difference Nekhrizov saw was in the simpler decoration exhibited by the Upper Thracian Plain ceramics, but strengthened his opinion that the East Rhodopes has a unique character. This tendency to emphasise the specific character of this micro-region can be seen even today, with the construction of the pottery type ‘Perperikon C’ by Krassimir Leshtakov, which he argues is exclusive to the Transitional Period between the Late Bronze Age and the EIA only in the area of the Eastern Rhodopes (Leshtakov 2008).

Leshtakov also made a few attempts to define Bronze Age culture in the Upper Thracian Plain and to some extent in the Rhodope Mountains, although his main focus was on the chronological subdivision of the Late Bronze Age and identification of potential Middle Bronze Age material (Leshtakov 2002; 2006). An unpublished PhD dissertation addressed the Transitional Period from the Late Bronze Age to EIA and identified some of the specifics of the Late Bronze Age culture around Sakar Mountain, but less attention was paid to ceramics (Borislavov 1999). More recently, Leshtakov divided the Late Bronze Age regions of Bulgaria into northwest, northeast, southwest and southeast, according to a literature review of the subject; he acknowledged other opinions exist which consolidate central-north Bulgaria and the division between the East/West Rhodope Mountains (Leshtakov et al. 2010: 31; Krauss 2006: 16-20). In an early article the same author also proposed a tripartite division for the Late Bronze Age in Bulgaria (Leshtakov 2006: 152), although he followed an initial proposal by Tatyana Shalganova, based mostly on materials from Baley on the Danube coast in northeast Bulgaria. Shalganova promoted the idea that the earliest period of the Late Bronze Age documented in Baley is not represented in the rest of Bulgaria at all (Shalganova 1995: 294-303). Nevertheless, it has already become clear that this difference is not chronological. The material from Baley, representative of LDEPC, is too different from the Thracian pottery and the lands of southern Bulgaria both stylistically and morphologically, so that it would be a misconception to assign Baley-Orsoya and Thrace to the same culture on the basis of the existence of types of ‘encrusted ware’.

An important observation made by Krassimir Leshtakov was that the settlement pattern in Upper Thrace follows the distribution of the earlier tell sites, which, according to him, had already been abandoned for a few centuries and re-inhabited sometime before the end of the Late Bronze Age. He also mentioned that during this period that human activity was visible, not only at tell sites, but also on isolated peaks and hills as well, and that in the lower mountainous regions a separate type of site, identified as 'sanctuaries', was established (Leshtakov 2006: 167). Another opinion concerning the settlement tradition in the study area focused on the possibility that in the Eastern Rhodope, Sakar and Strandzha mountains the existing gold and silver ore deposits were exploited at some point during the Bronze Age, around which a network of settlements and cemeteries developed. This hypothesis was recently supported by the excavated gold mine from the Late Bronze Age in the Eastern Rhodopes (Popov and Jockenhövel 2011). Although neither of these ideas seem necessarily wrong, the lack of a sufficient number of detected settlements in the East Rhodopes and the prevailing number of sites of the 'sanctuary' type, could be a sign of a type of semi-nomadic or seasonal life style at least until the beginning of the IA.

7.1.4. West Thrace and Macedonia

The sites on the southern side of the Rhodope Mountains in West Thrace were traditionally compared and culturally linked to the Macedonian toumbas. More recently, some connections were also suggested with either or both the Zimnicea-Plovdiv and LDEPC groups (Horejs 2007). The region of Macedonia per se was always considered to hold a key position in the search for communication between the south Aegean and central Europe (Horejs 2007: 293). Connections and routes were sought between the Danube and central Greece (Hochstetter 1982; Koukouli-Chryssanthaki 1992: 463). The incised pottery in the Bronze Age toumbas was often described as an example of 'encrusted ware' (Horejs 2007: 74), which was considered characteristic for the central- and east-Macedonian Late Bronze Age. Alix Hochstetter saw Macedonia as part of the "groups with encrusted ware" (Hochstetter 1982: 114), whose origins have been periodically discussed. The connection with east European cultural groups (mainly the lower Danube complex) was based mostly on the similarity of some decorative motifs. A direct connection between the regions could not be established, because of the serious gaps in archaeological research or the existence of at least one other nation state in between. On the one hand, Hochstetter described Macedonia as a part of the south European cultural circle, which consisted of other groups with encrusted ware.

On the other, Horejs pointed out that the only similarity can be seen with the Cherkovna group in south Bulgaria (Horejs 2007: 74).

The connection between LBA pottery in west Thrace and east Macedonia with the lower Danube and other cultures in Romania is very vague and suggests a certain level of contact, rather than belonging to the same cultural group. Although sometimes given as parallels (Koukouli-Chryssanthaki 1992: 492 f) the cultural groups Tei IV-V, Coslogeni, Verbicioara, Govora and Cirna-Gârla Mare/Dubovac-Zuto Brdo/Baley-Orsoya reveal different decorative motifs from both Kastanas and Thasos. Other researchers have found a connection between Macedonia and the cultural development of the middle and eastern Balkans, based on the distribution of the globular kantharos, which seemed alien to the rest of the Balkan groups (see Garašanin 1999: 52). There is a possibility that various traditions of encrusted pottery existed in the region between the north Aegean, the lower Danube and the Morava valley, maintaining a certain level of interaction. Nevertheless, the existence of encrusted pottery in Macedonia was seen often as an 'intrusive phenomenon' (Horejs 2007: 74), which implies the external origin of the type in the area.

In summary, existing research has taken two main directions. On the one hand, a number of European scholars have tried to connect the Aegean with central Europe, while referring to cumulative constructs of pre-defined cultural groups or horizons along the way, due to the lack of a more comprehensive definition and identification of the local cultures (Hochstetter 1982; Horejs 2007: 341). On the other, some local scholars examining mostly the character and the distribution of the EIA evidence, also tried to identify similar traits and patterns in the Late Bronze Age distribution, while waiting for a well-stratified Late Bronze Age site to be discovered. The main outcome was arguably a series of misconceptions about the local Late Bronze Age. More recent investigations in Bulgaria and Greece avoid engaging with either of the existing cultural definitions, limiting their interpretation to simply describing the contents of Late Bronze Age layers or related material. There is more research orientated towards the collection of ceramic evidence via survey as well as excavations, and attempts to date more precisely typical forms and decorative techniques.

7.2. Pottery distributions revisited. Spatial analysis of diagnostic ceramic features

7.2.1. Pottery as an element of the social landscape

An important branch of the research presented in this and previous chapters is the identification and assessment of the spatial distribution of dynamic elements in the pottery repertoire recorded across Thrace. The location of places with specific characteristics might shed some light on the character of the LBA culture in the area. In this respect, it is worth considering a well-established debate about the dialectical relationship between people and places, which can be seen to connect through the creation of collective material identities. What matters in this dissertation is the possibility of defining a series of places and clusters across the landscape, returning at a later stage to the question of what such groupings mean culturally or historically.[11] Place-making requires the assertion of social or cultural values on the one hand and a role for environmental values on the other, both being potentially indicators of collective identity.

One of the main tasks of this chapter is to suggest the scale and shape of different Thracian social landscapes by looking at multiple pottery variables and cultural assemblages. Landscapes are considered social structures when assigned meaning by groups of people. Such landscapes are recognisable when the social structures are cohesive enough to leave traces of material culture. In this sense, a specific value would also apply to the avoidance of a place, thus creating gaps in the social landscape. If an element of the inhabited landscape is visible, that means that this element is 'permanent' or it is an established feature (Chapman 2013: 183-185). How broadly those elements spread and the extent of diffusion or replacement by other elements depends on the degree of mobility of the population. Reconstruction of the LBA social landscape in Thrace can be approached via the examination of the ceramic material as the only collective permanent feature we have consistently available to us at present.

[11] The term 'place' is used in a sense, where 'empty' spaces are given identities via their use by people and communities; the place receives meaning and value through the process of social colonisation (Tuan 1977; Chapman 1988; 2013).

Many years of research in the Thracian area have resulted in the accumulation of numerous ceramics. The stratified tell sites of Assiros and Kastanas have often been used as chronological markers for comparing pottery types that could be observed more widely within both Thrace and Macedonia. The comparison between regions, however, has not been completed in the sense that it is not clear whether the material under study is synchronous in date in both regions, and whether it shows signs of exchange or cultural expansion from one region to another.

The ceramic material from Thrace is scarce but widespread and without much preserved stratigraphy. The archaeological techniques and investigative methods by which it was recovered are more or less the same across sub-periods of the Bronze Age and different regions so such biases cannot be used as an explanation for observed spatial variability. The bias with a clear modern character is a belt, which follows strictly the border between Bulgaria and Greece, where almost no archaeological research has taken place. An even larger gap exists along the lower Maritsa course, where Bulgaria, Greece and Turkey meet. Leaving aside these artificial gaps in the ancient social landscape, the rest of the area has been explored in a pretty comparable way across all prehistoric periods. Consequently, it seems inappropriate to keep waiting for the appearance of a large stratified LBA site, which would potentially bring long-awaited solutions, as such a site might not actually exist. The analysis of LBA presence in Thracian lands must lie somewhere else. A further challenge is that the vast majority of the discovered pots are not only broken, but also without complete profiles and, consequently, are hard to reconstruct functionally. This highly fragmented condition of the majority of the ceramic material, the lack of clear stratigraphy or stable existing chronological framework, and the perceived gaps in the archaeological landscape, all inhibit thorough statistical analysis.

That said, however, there is a significant body of accumulated material and, insofar as pottery features are an indicator of a cultural community, it is possible to trace pottery production and distribution patterns within specific regions. For example, the regional zoning suggested by the site-type distribution can be compared with the observed spatial variability of the pottery repertoire. One approach is to examine the distribution of different ceramic features across the study area via ‘relative risk’ surfaces (Bevan 2012) identifying the extent to which different types are spatially correlated and whether their combined distribution forms clusters of preferred pottery shapes (see chapter 2, section 2.2.2.3). The study includes the most common pottery groups and types that can be traced throughout different parts of the area. The applied pottery quantification was based on presence and absence of distinguished pottery types rather than on percentage of each type within each assemblage. The quantification of the amount (count, weight or percentage) was avoided due to the highly fragmentary condition of the majority of the material and the predominating shortage of secure contexts. Thus, it would be hard to assess whether non-joining sherds belong to the same vessel or to the same type. Further bias could be introduced by the large variation of investigation methods and techniques and the extents of data collection. Uncertainty was also measured based on surface and size preservation, presence or absence of highly distinctive features, clearly identifiable decoration techniques, etc. The ceramic fragments with uncertainty higher than 60% were excluded from the analysis.

The general distribution pattern of each pottery shape seems to cover the study area in a relatively even way. There is some deviation within the distribution of the jug category, which does not mean that there is a shortage of this shape throughout the period, but rather that it is difficult to identify the type only from fragmented material, where the only recognisable feature might be a cut-away rim fragment or distinctive neck/body transition. This is also why it is important to examine the cumulative distribution of different, seemingly unrelated pottery types in order to estimate whether there is any spatial variation of each type across the area. The idea with this approach is not only to plot and combine find spots, but to detect areas with high risk of the potential appearance of each particular pottery type.

7.2.2. Amphora types

One of the most common categories of fineware is the amphora shape, described here in five main types. The variety of amphora types recorded in the area clearly exhibit spatial patterns. The relative risk surfaces built for each sub-type of the typological scheme indicate different accumulation areas. Not all of the shapes circulate or are produced in distinct zones, but types A1, A3, A4 and A6 have a clear spatial character, where A1 seems to be preferred in the North-Aegean costal periphery (Figure 7.2). Amphora type A2 is distributed in the southwestern part of the area and it is popular in Macedonia (Figure 7.3), while A4 appears almost exclusively in the Struma Valley (Figure 7.5). A3 appears mostly distributed in the Upper Thracian Plain (Figure 7.4), while A6 is nearly isolated in the area of the Eastern Rhodopes and Sakar (Figure 7.6). An exception is an amphora from the cemetery at Sandanski (Figure A1.58, c; Alexandrov 2007).

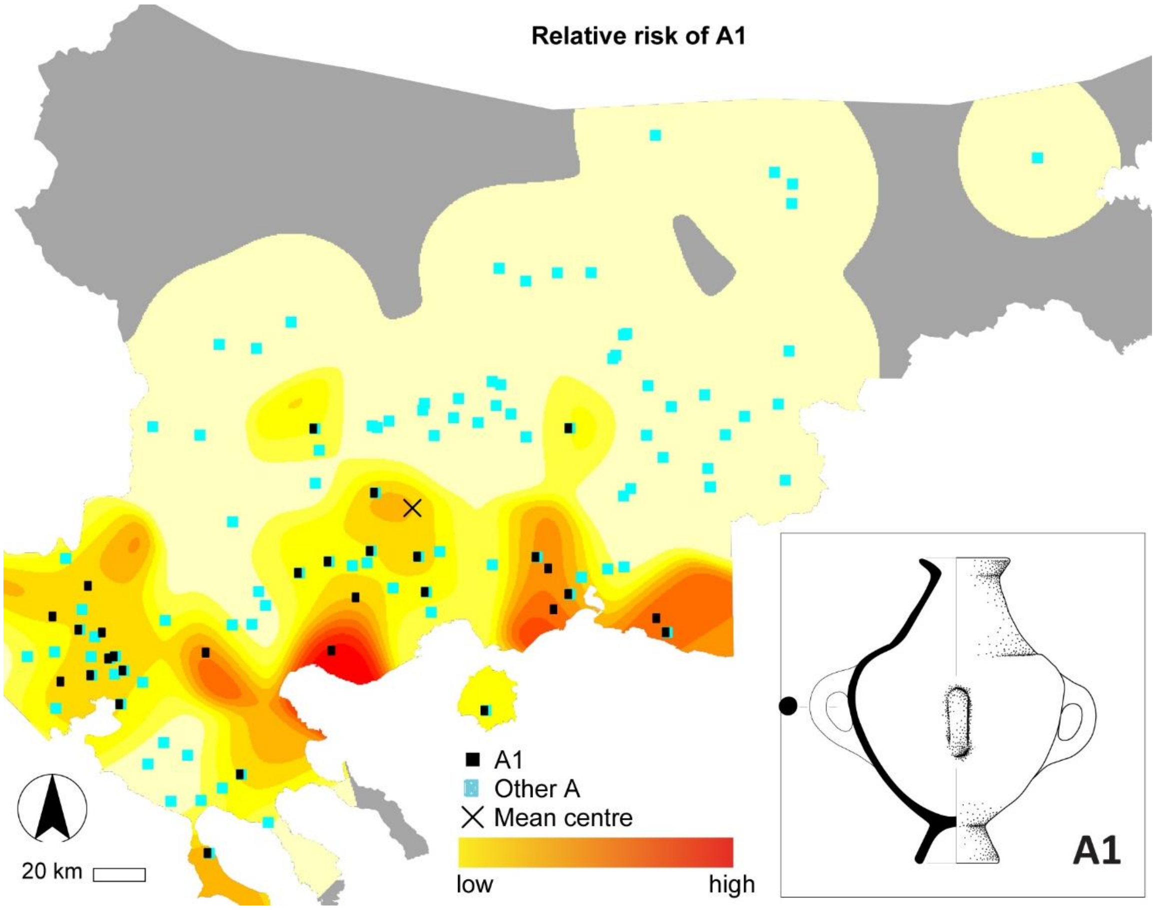


Figure 7.2. Relative risk surface of amphora A1. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

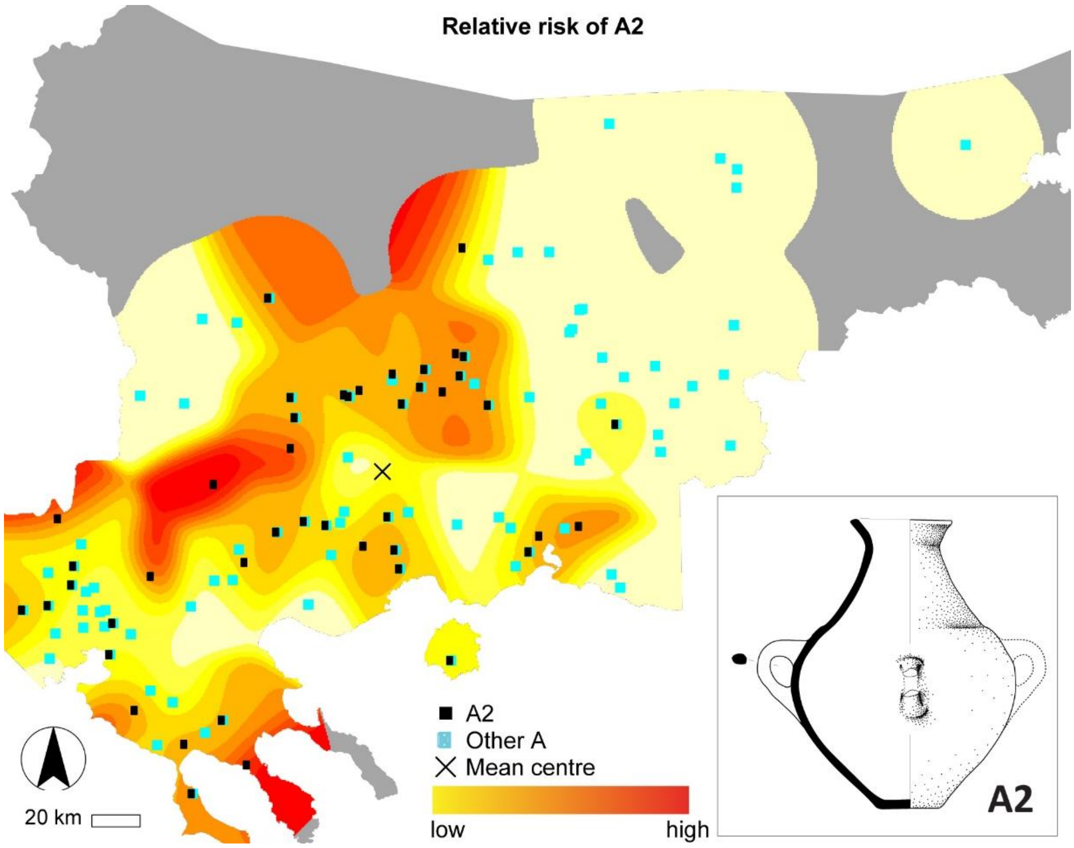


Figure 7.3. Relative risk surface of amphora A2. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

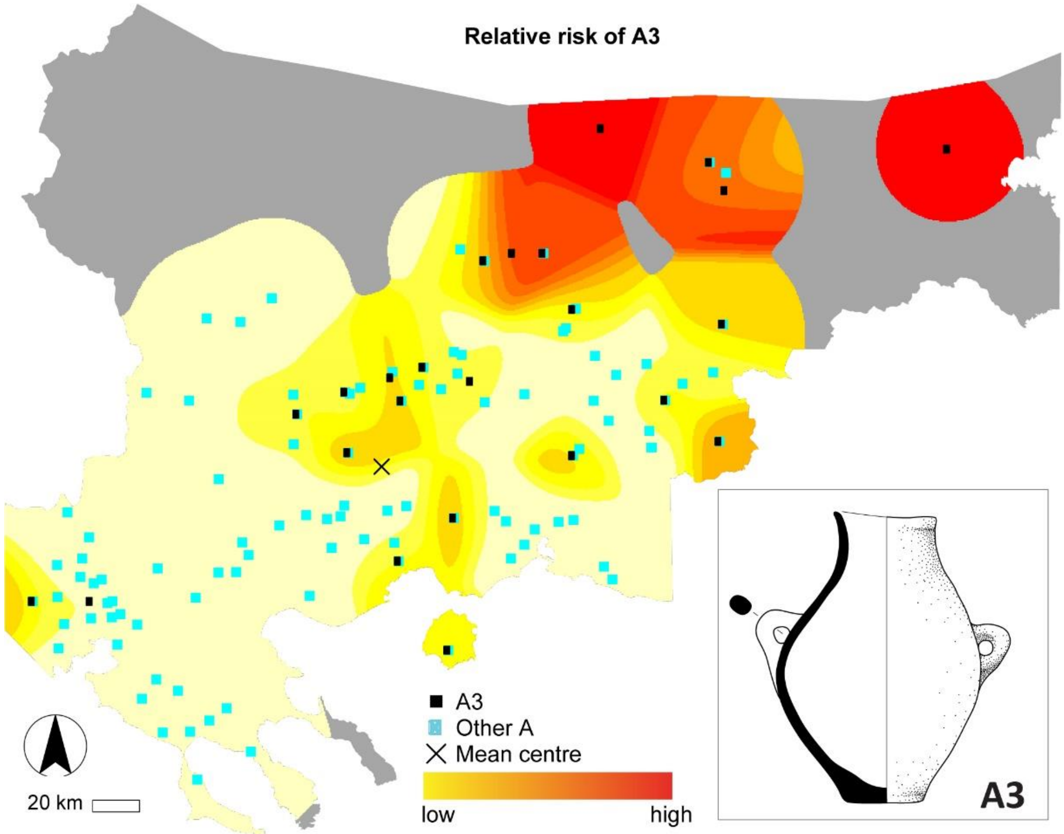


Figure 7.4. Relative risk surface of amphora A3. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

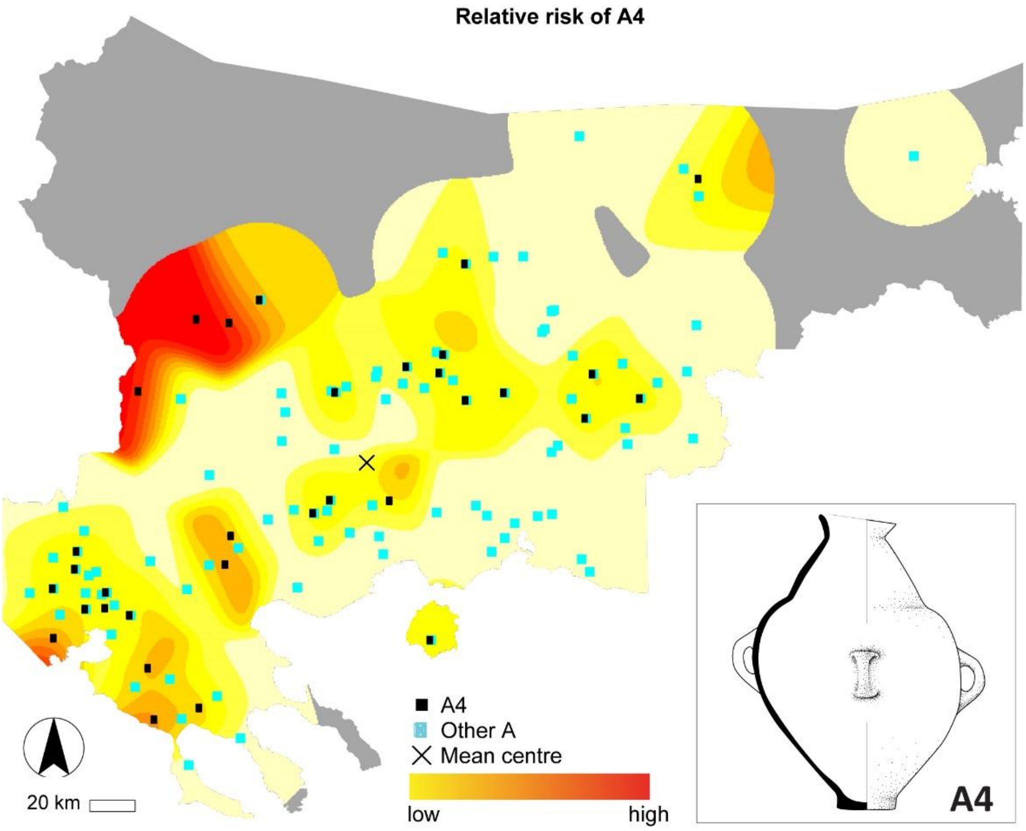


Figure 7.5. Relative risk surface of amphora A4. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

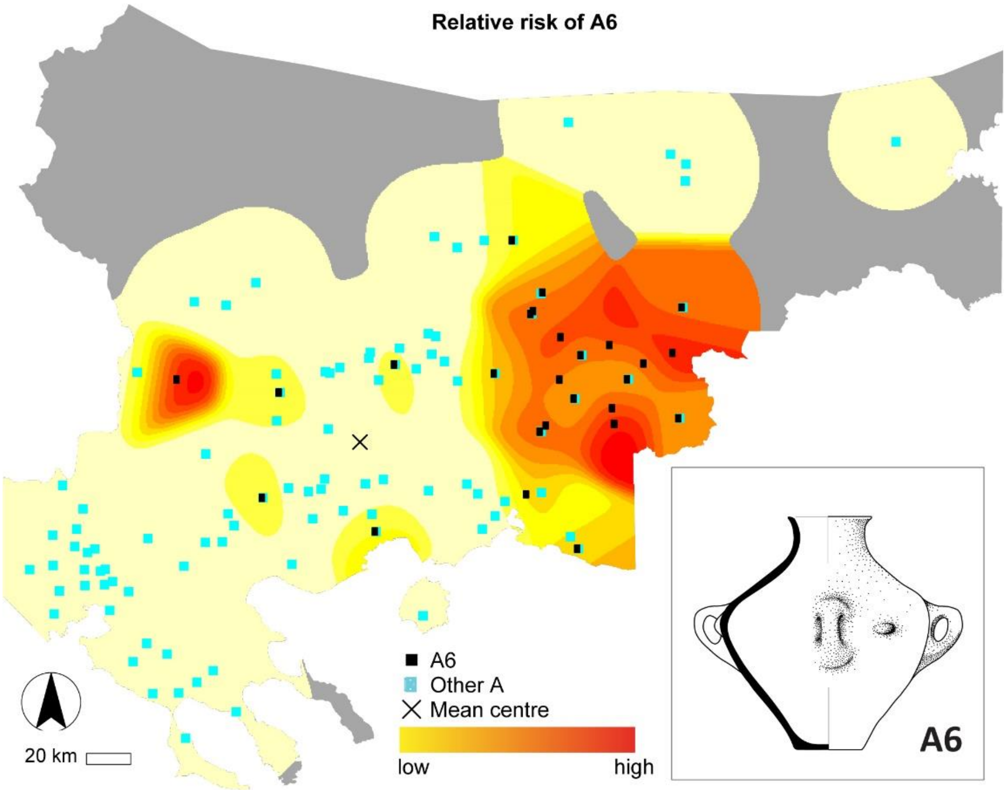


Figure 7.6. Relative risk surface of amphora A6. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

7.2.3. Kantharos types

The kantharos vessels in their variation were very popular during the LBA and are considered widespread within a larger Balkan context, but can be observed with variations across the entire study area and beyond (see Grammenos 1979: 94, Figure 2:KB; Domaradski 1986: Figure 5b; Hochstetter 1984: 2, Figure 8.7, 13.4, 24.3; Koukouli-Chryssanthaki 1982b: 240, Pl.14; Detev 1964; Kanchev and Kancheva 1990: 10, Figure 9f, 13; Hansel 1976: Figure 20.6, 35.1, 36.5). Besides the generic distribution of this particular kantharos type, there are other vessels with two handles that morphologically belong to the same category, but could have functioned differently. The relative risk surface of K1 and its variations suggests that this vessel type must have served a particular, perhaps very specific purpose throughout a large area (Figure 7.7) and probably over an extended period of time within the LBA (Andreou and Psaraki 2007: 408). There is, however, a pronounced preference for the kantharos type K4 and its variants (Figure A1.13 and A1.14) in the area of the Eastern Rhodopes and partially Upper Thrace and a lesser accommodation of K1 (Figure 7.8).

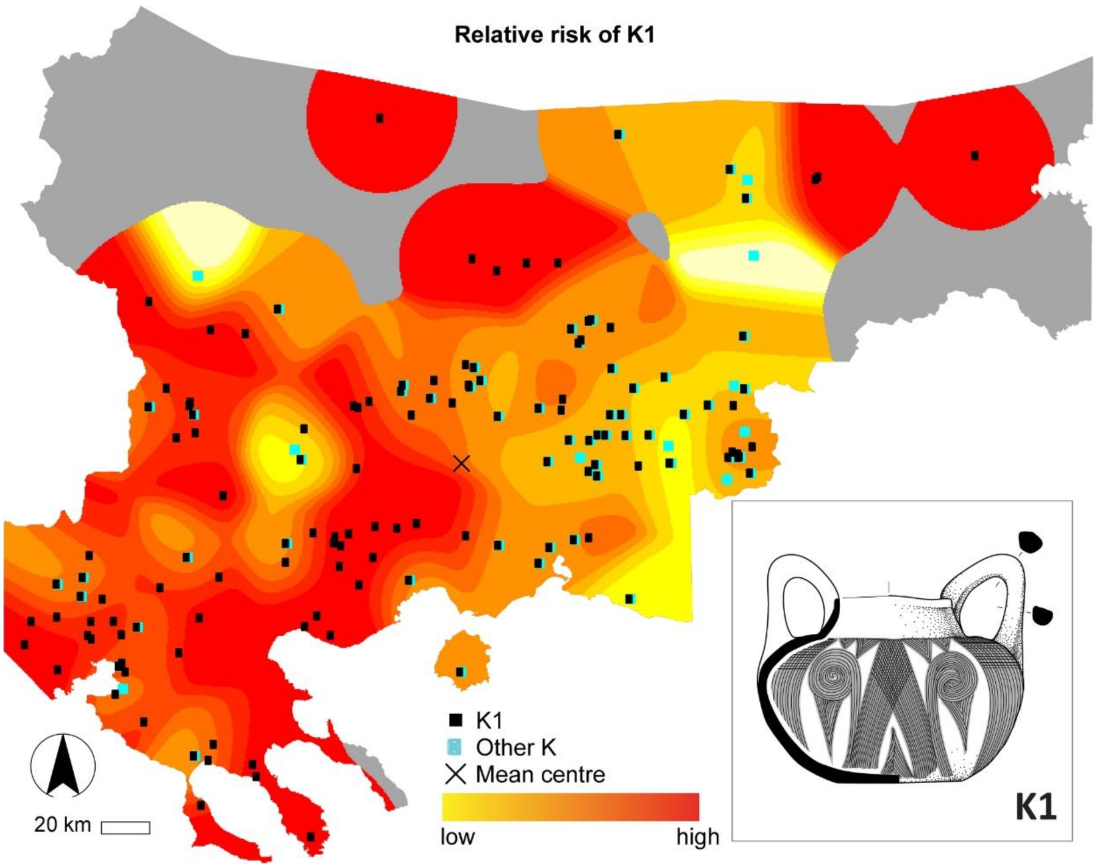


Figure 7.7. Relative risk surface of kantharos K1. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

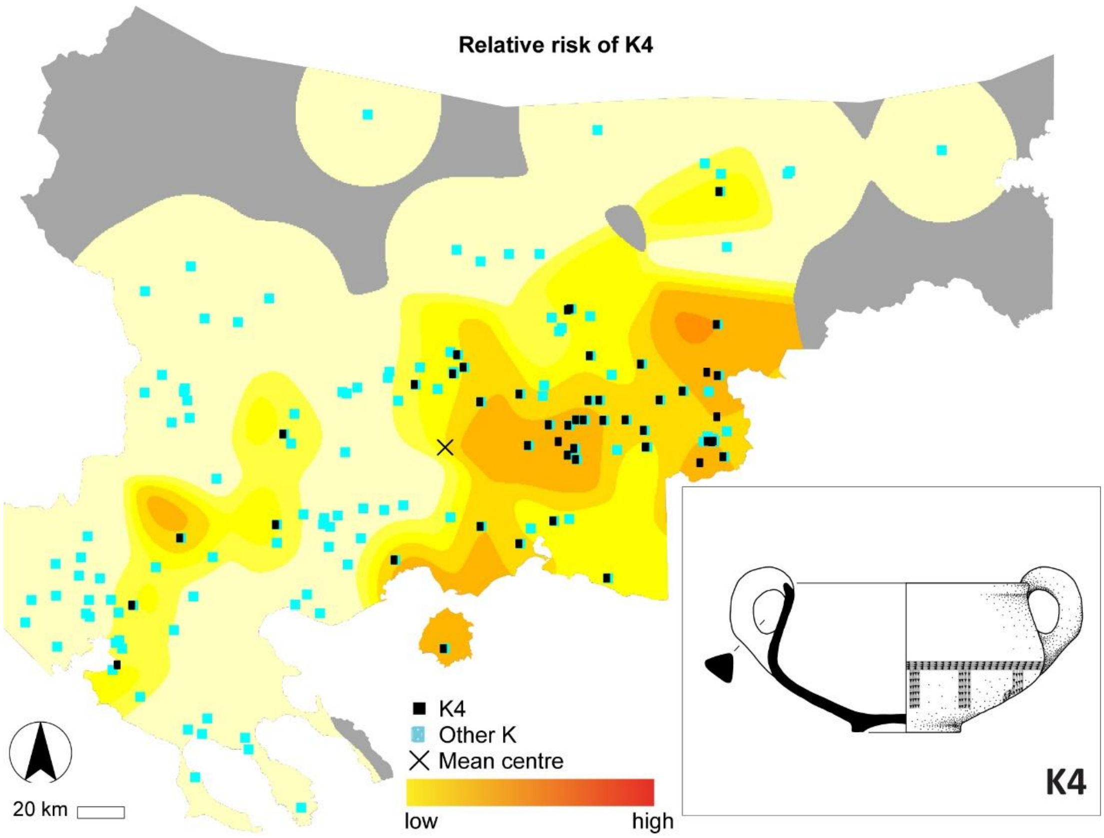


Figure 7.8. Relative risk surface of kantharos K4. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

Although there are very few examples of type K2, at least some of them gravitate towards the western part of the study area (Figure 7.9), which could be related to the distribution of a similar type from the Ulanci group in F.Y.R.O.M. (see Mitervski 2007).

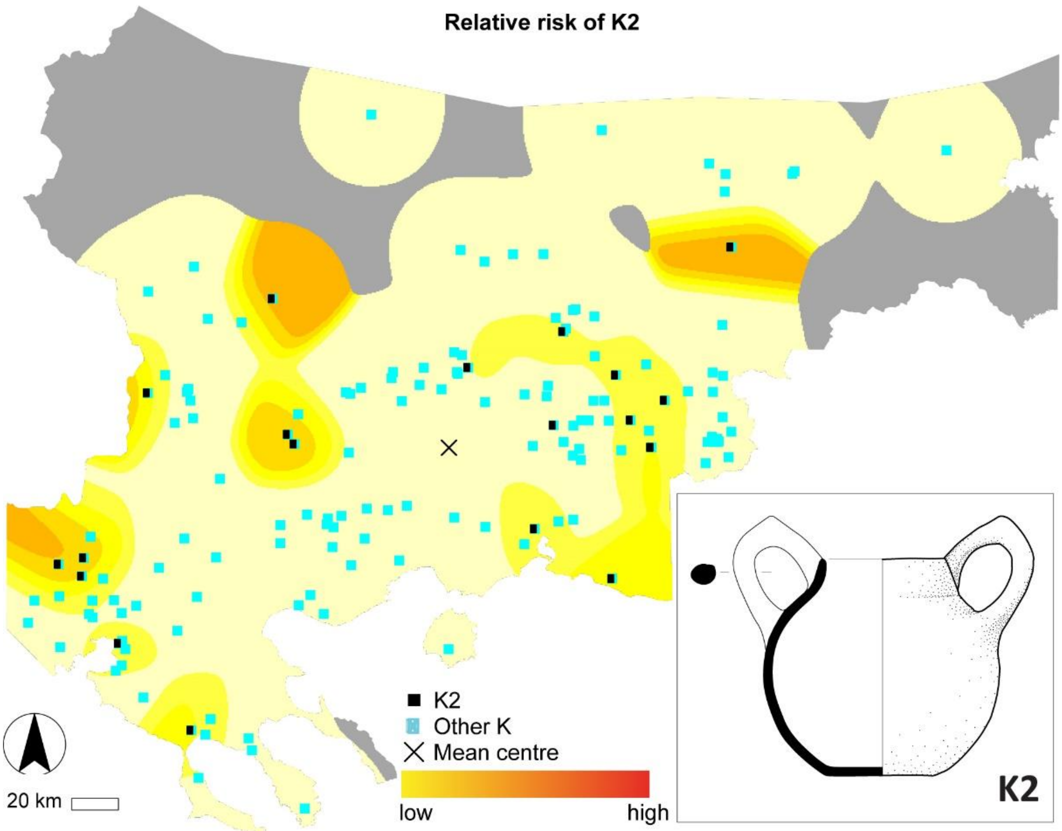


Figure 7.9. Relative risk surface of kantharos K2. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

7.2.4. Bowl types

The characteristics of most bowl shapes are not easily recognisable. The fragmentary condition of the material prevents reconstruction of full shapes in most cases. This is why one of the main elements indicating the presence of a bowl is the existence of wish-bone handles, which are also a typical element in the Macedonian Bronze Age (Horejs 2007: 103-108.). Thus the significant factor is not their detailed typology, but rather addressing their existence or lack thereof in Thrace, and how their potential distribution related to the Macedonian wish-bone-handled bowls.

On the relative risk surface, the presence of bowl B4 and its variants (Figure A1.23-A1.25) is obvious in Macedonia and west Thrace and the distribution continues or reappears again in the Upper Thracian Plain (Figure 7.12). The wish-bone handles, however, are almost non-existent in the Rhodope Mountains and the Struma Valley. Instead there is a strong 'preference' towards the bi-conical bowl B1 along the Struma

(Figure 7.10) and a development of open bowls with S-shaped profile, type B8, in the Eastern Rhodopes and partially in the Upper Thracian Plain (Figure 7.13). Bowl B3 and its variants (Figure A1.20 – A1.22) follow the pattern of bowl B4 in Macedonia, west Thrace and the Upper Thracian Plain (Figure 7.11); in this area the only known examples of the spouted bowl B5 (Figure A1.28 – A1.29) are distributed ((Figure A1.7)).

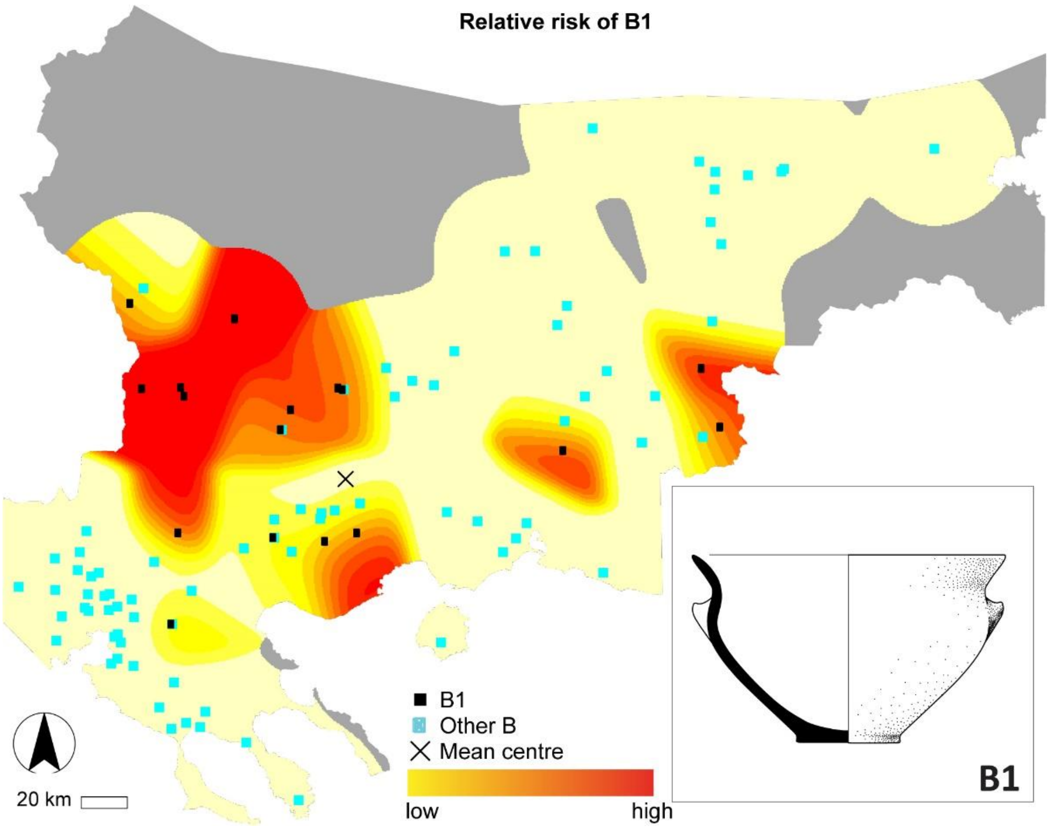


Figure 7.10. Relative risk surface of bowl B1. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

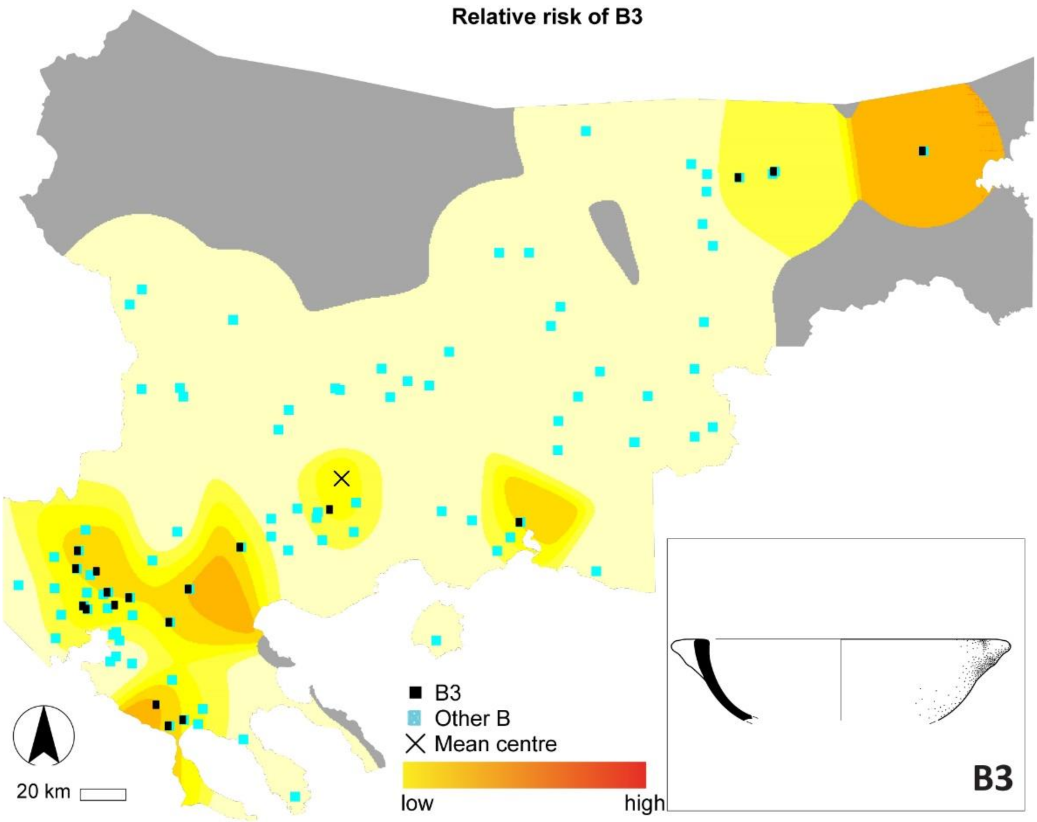


Figure 7.11. Relative risk surface of bowl B3. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

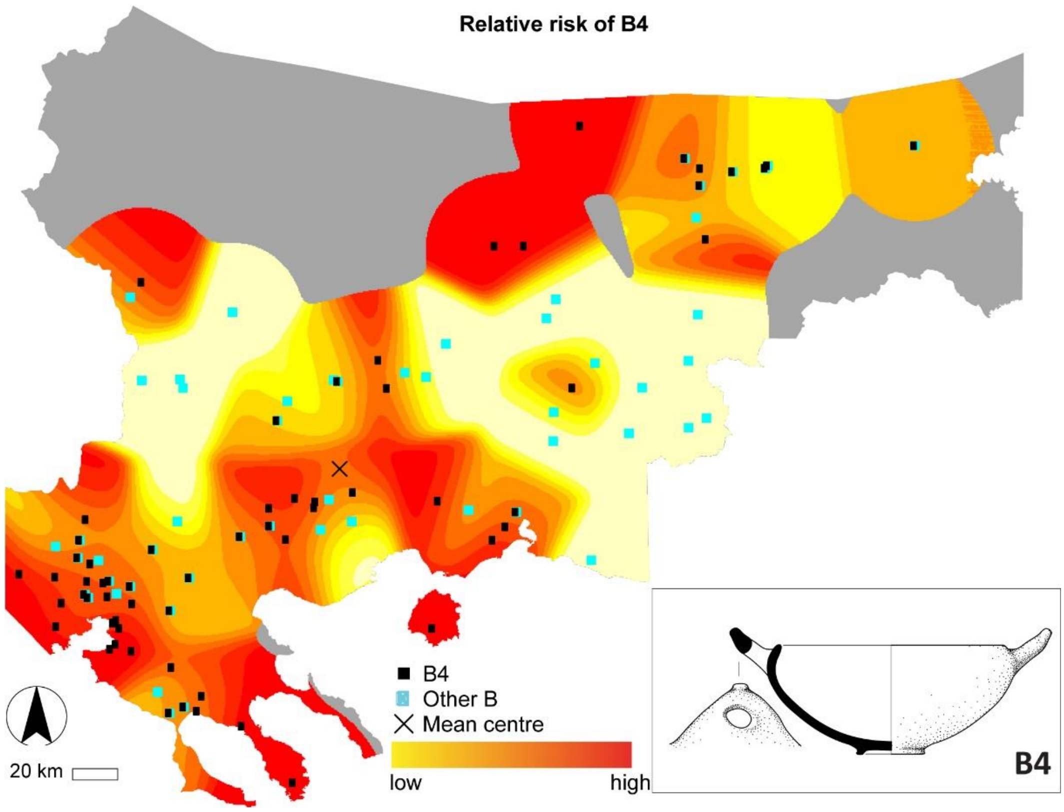


Figure 7.12. Relative risk surface of bowl B4. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

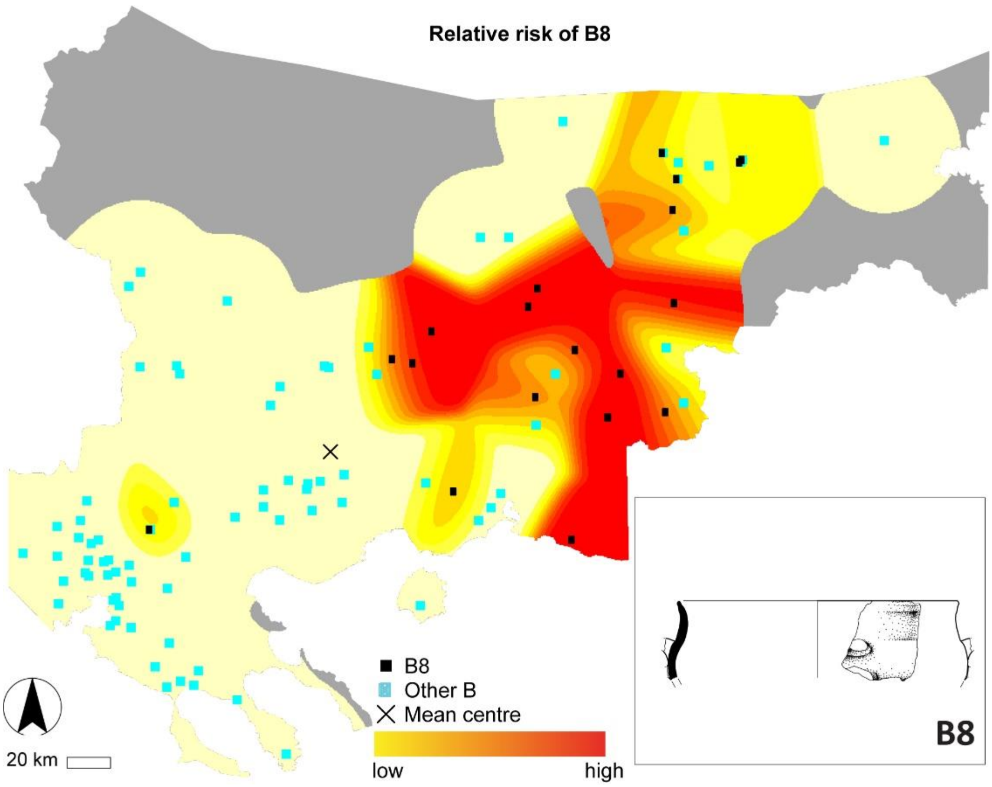


Figure 7.13. Relative risk surface of bowl B8. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

7.2.5. Jug types

The distribution of jugs is difficult to construct, since it is hard to identify this category from the fragmented material. In most cases a jug is recorded only by the cutting or the curve of the rim, but the shape cannot be easily distinguished. Thus the distribution of jugs is possible to trace only through whole vessels or largely preserved fragments. This, however, is not enough to reconstruct a full picture, but it can signal some suggestions in order to shed more light on the pattern suggested by other pottery characteristics. It becomes evident from the relative risk surfaces that this type of material is very limited, but it also reveals a few patterns. Jug J1 and its variants (Figure A1.61, A1.62) is the most recorded type of this category and it seems to surround the Rhodopes area (Figure 7.14). Jug J2 (Figure A1.63) circulates around the Western Rhodopes area and Upper Thrace and partially in the Eastern Rhodopes (Figure 7.15), while type J3 (Figure A1.64) is typical only for the Upper Thracian Plain and the Eastern Rhodopes (Figure 7.16).

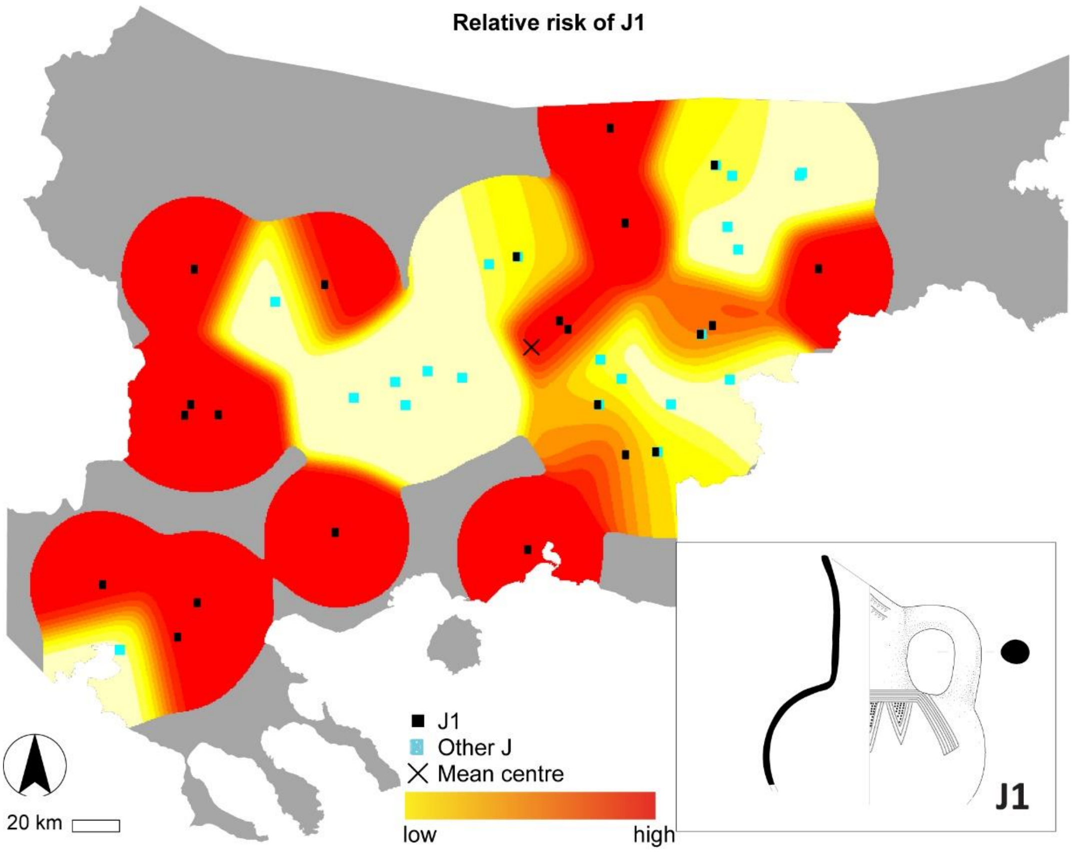


Figure 7.14. Relative risk surface of jug J1. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

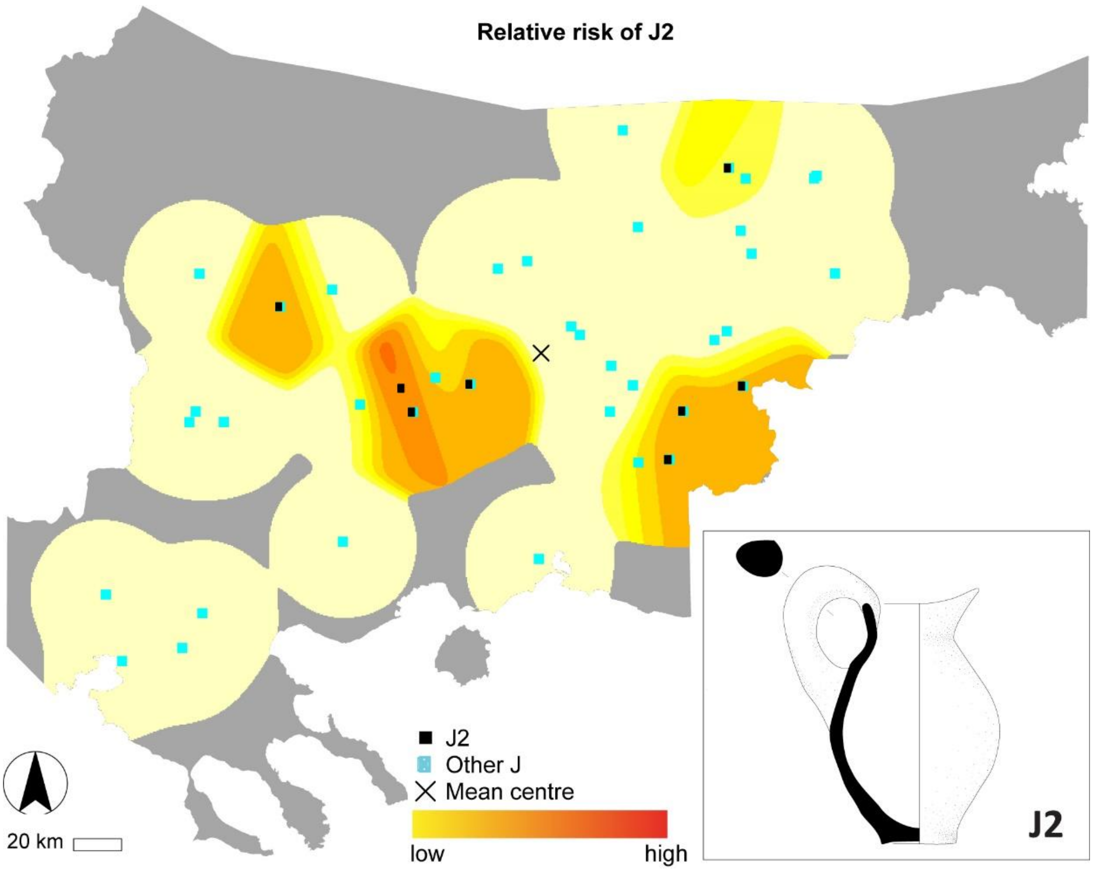


Figure 7.15. Relative risk surface of jug J2. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

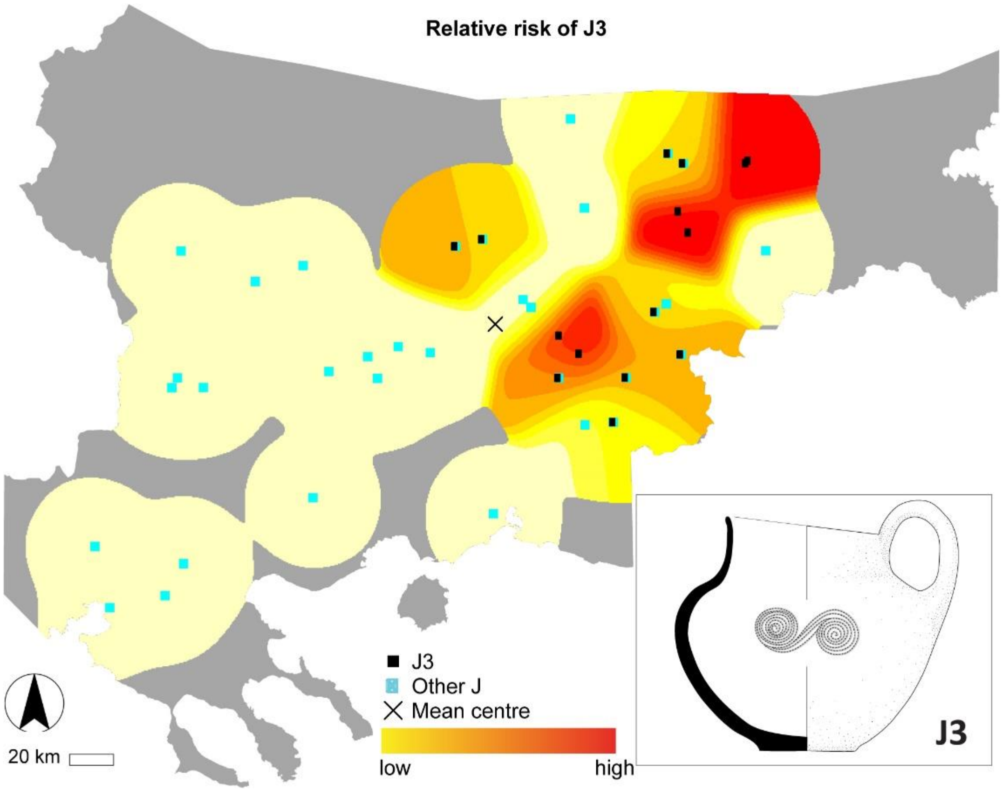


Figure 7.16. Relative risk surface of jug J3. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

7.2.6. Kylix types

The identification of kylikes is also problematic. It requires the preservation of the foot, since otherwise the vessel could be classified as a bowl. Therefore, mostly securely identified, largely preserved vessels were used for this analysis. Only for shape KY6 (Figure A1.40 – A1.42) is it uncertain whether or not it belongs to the kylix category. It is a specific shape, however, which deserves to be considered separately. It is not close enough to any of the bowl shapes and the profile, with the suggested proportions, indicates the necessity for a foot to assure the stability of the vessel. Its concentration in the Eastern Rhodopes, visible from the relative risk surface (Figure 7.20), is another indication of the particular character of this type. Instead, KY3 (Figure A1.36, A1.37) is well represented in the Western Rhodopes (Figure 7.18), KY2 (Figure A1.35) along the Struma Valley (Figure 7.17). Type KY5 (Figure A1.39) with horizontal handles on the body has been traced to an isolated area within western Thrace and Macedonia (Figure 7.19).

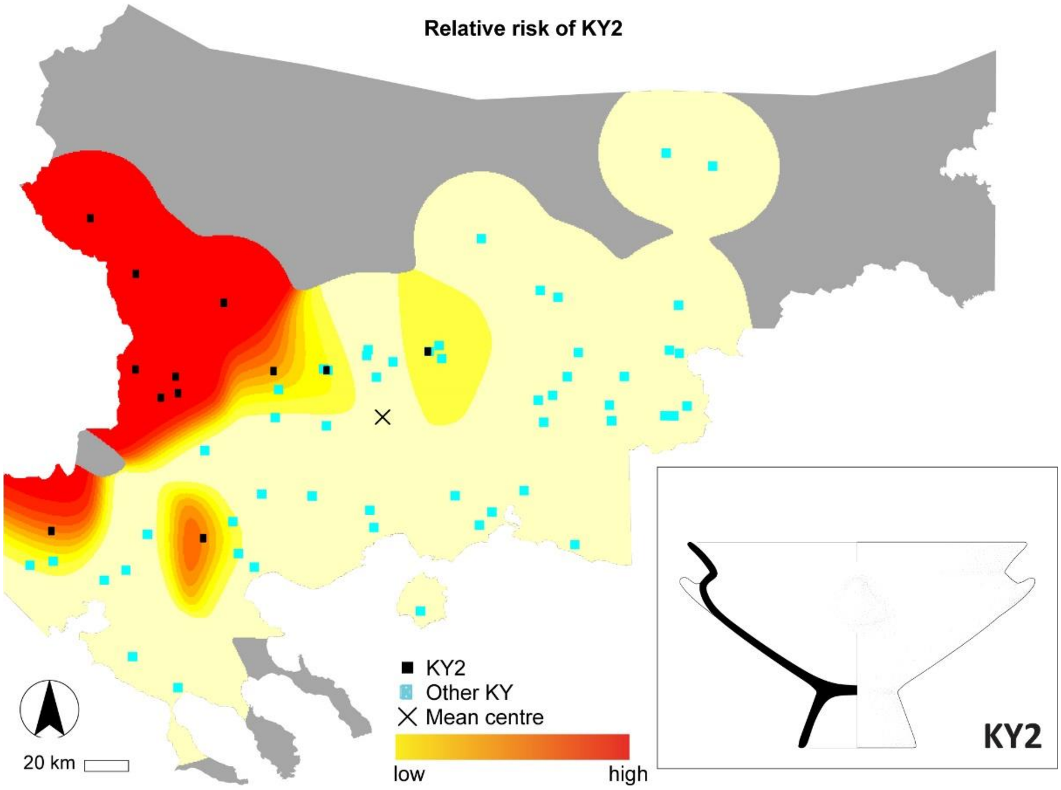


Figure 7.17. Relative risk surface of kylix KY2. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

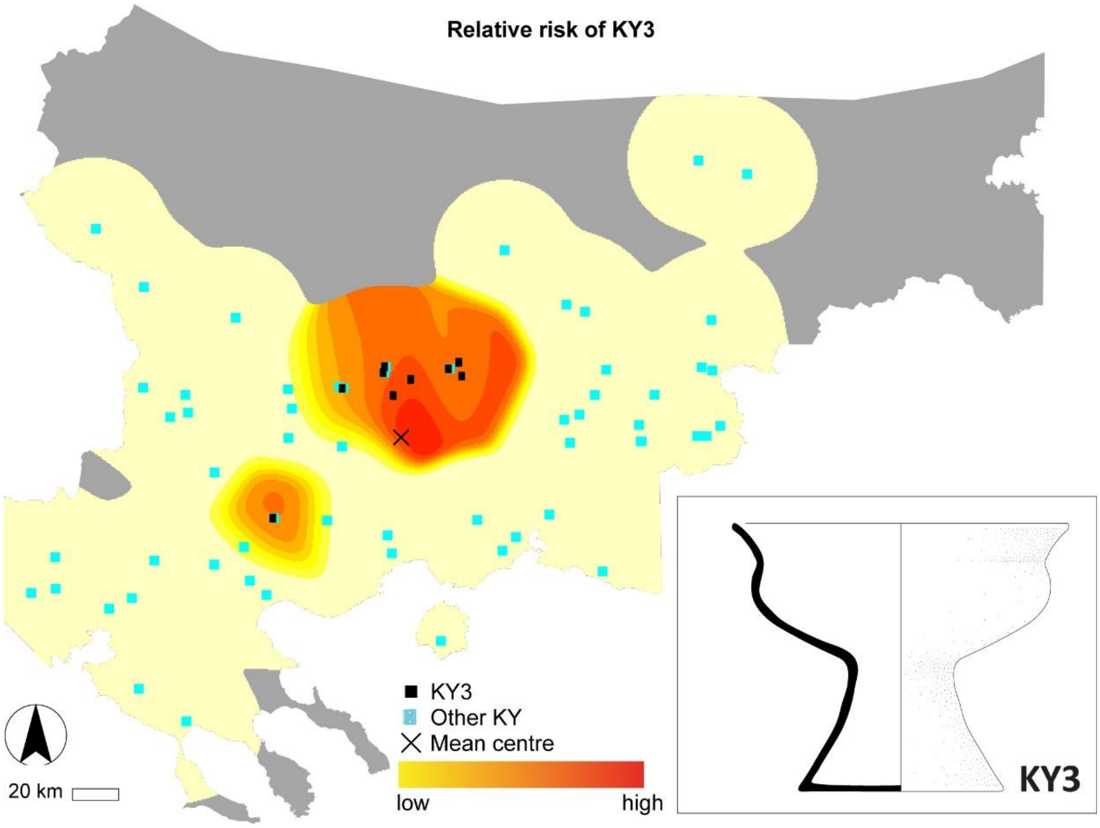


Figure 7.18. Relative risk surface of kylix KY3. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

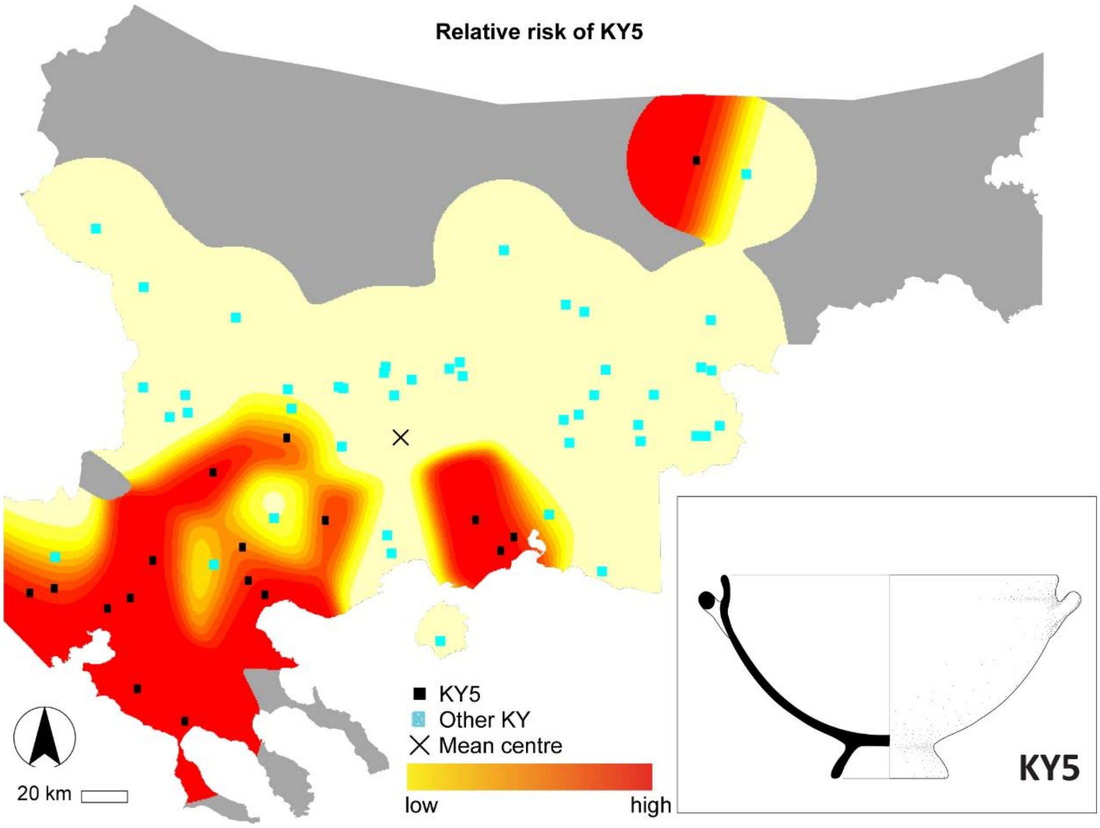


Figure 7.19. Relative risk surface of kylix KY5. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

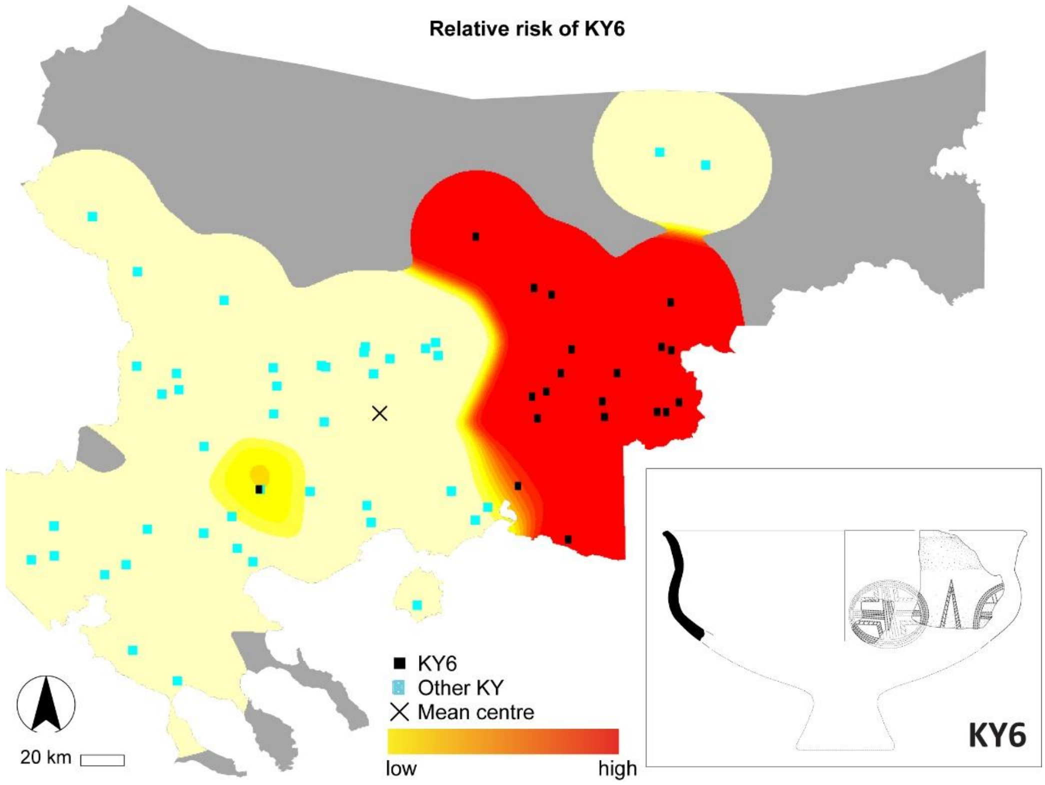


Figure 7.20. Relative risk surface of kylix KY6. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

7.2.7. Decoration techniques

In this research, pottery decoration has been examined with an eye to one key difference in decoration technique: while some vessels are treated with simple incisions, others are executed with the technique known as *furchenstich*, as described in chapter 6. There is a record of considerable variety in decorative style beyond this distinction, but the fragmentary condition of the majority of the material does not allow for easy interpretation at this stage. In an early article, Krassimir Leshtakov isolated the area of the Eastern Rhodopes on the basis of decoration and described the pottery as extremely rich in ornaments and motifs, without the fragmentary condition of the pottery allowing full reconstruction of these motifs (Leshtakov 1990: 12). Leshtakov also pointed out the strong similarities in the pottery between different LBA sites in the Eastern Rhodopes, while making the remark that the Upper Thracian Plain pottery decoration is much simpler and that other highly decorated ceramics can be observed in the Central Rhodopes, west Thrace and east Macedonia (Leshtakov 1990: 13). Although he compared the incised pottery to the closest stratified site, Kastanas, he stressed that the latter is too far away to be reliable for direct analogies (Leshtakov 1990: 15).

The generic incised decoration can be further divided into types. For example, there are some wide and shallow 'incisions', reminiscent of flutes or channels, which can have both regional as well as chronological significance. This type is not reliably recorded, however, and cannot be used in the spatial analysis at this stage. The two main types, on the other hand, *furchenstich* and pure incised lines suggest spatial variations. The latter is more evenly distributed with a slight preference towards the west and the north, while the *furchenstich* incisions are clearly preferred in the east and the southeast corner of the study area.

The fact that there is no matt-painted pottery beyond the West Thrace is an indicator of the local, Macedonian origin of this type of ware, probably as a consequence of the spread of the Mycenaean-style imports from the south, supported also by the overlap of the two types (see Horejs 2007 and Hochstetter 1984). Actual Aegean imports also reached the inland part of Thrace as valuable objects, while there is no evidence of matt-painted pottery in northern Thrace. The very limited number of imports, however, isolates the inland region from the area of regular circulation of goods in exchange with the south Aegean and clearly splits the area in two spheres of southern influence somewhere northeast of the Macedonian toumbas. No matter how small the flow was, it clearly indicates the route of distribution, which must have been through the mountain passes of the Western Rhodopes.

It is rather difficult to observe any pattern within the distribution of the incised decoration technique on the one hand and the *furchenstich* stitches on the other. Nevertheless, the relative risk surfaces display the clear preference of the latter in the eastern part of the Rhodope Mountains and Sakar (Figure 7.21), while the pure incised decoration is more widely distributed, typical for the Upper Thracian Plain, the entire western part of Thrace, as well as Macedonia (Figure 7.22).

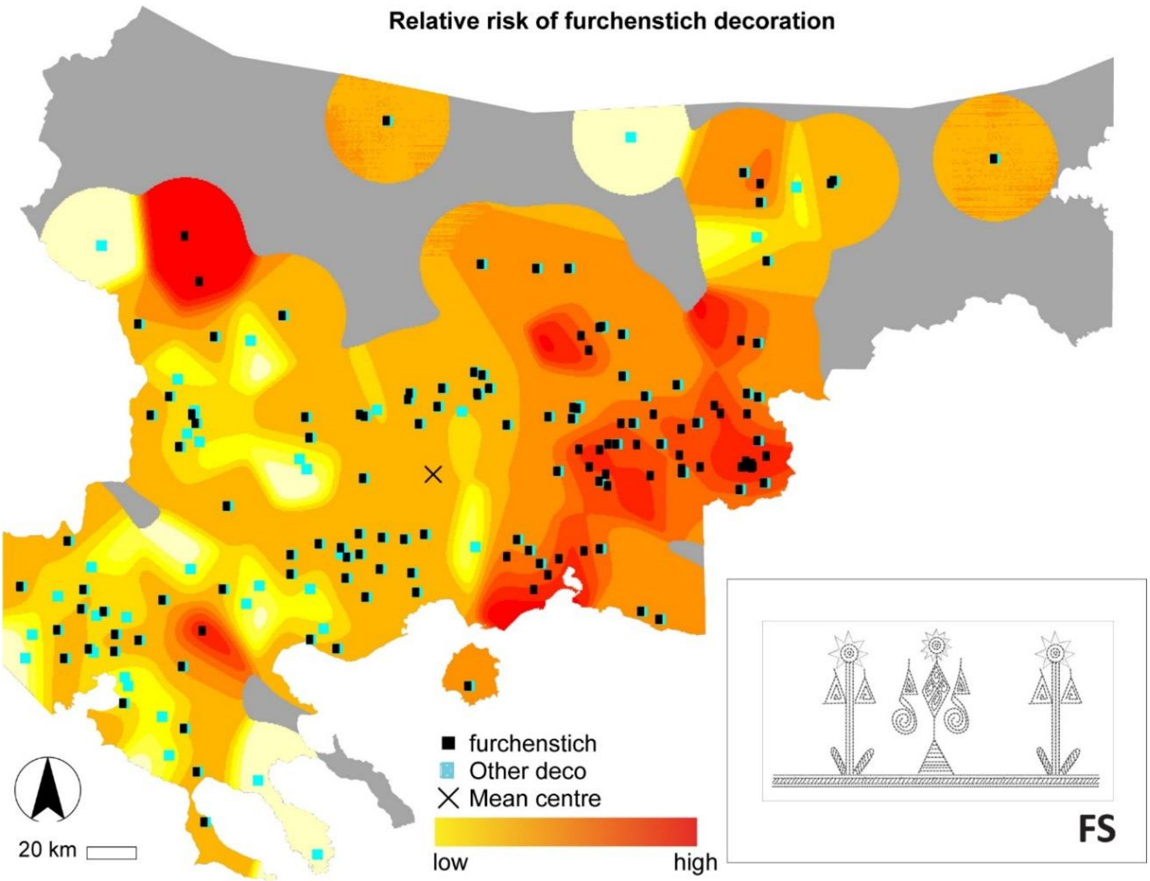


Figure 7.21. Relative risk surface of *furchenstich* decoration. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

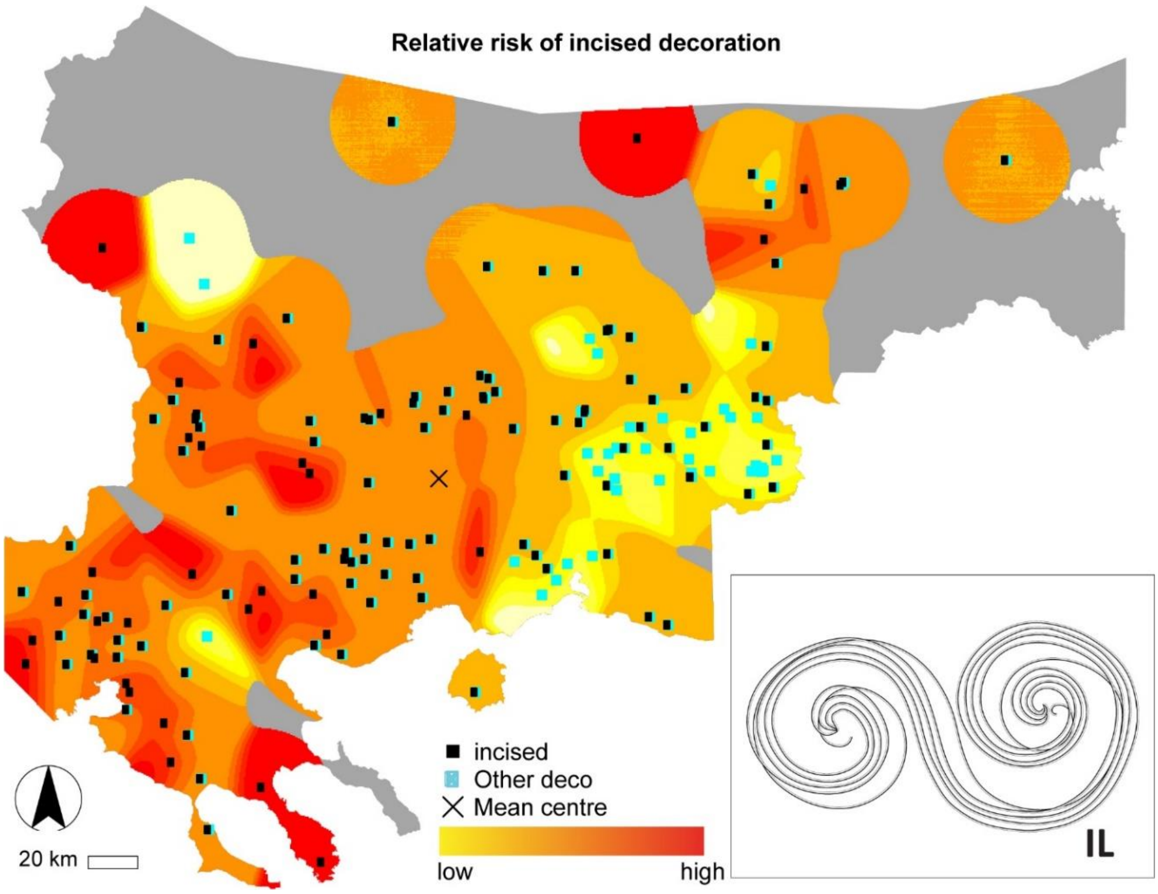


Figure 7.22. Relative risk surface of incised decoration. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

7.2.8. Unsupervised clustering of relative risk surfaces

On the basis of the selected features and their relative risk surfaces, I applied an unsupervised clustering technique using the Random Forest algorithm, which stacked the relative risk surfaces of all ceramic features used, as if they were a multi-band image and then classified each pixel across these different bands (see chapter 2, section 2.2.2.3). The resulting figure proposes six geographic zones which are potentially internally more consistent, whilst externally emphasising different ceramics during the LBA. Area 1 covers the Eastern Rhodopes, Sakar and parts of the Upper Thracian Plain; area 2 embraces western Thrace and a bit of eastern Macedonia; area 3 covers the sites in the Upper Thracian Plain, while area 4 is mostly the western part of the Rhodope Mountains; area 5 marks Central Macedonia itself, and area 6 follows the sites from the middle course of the Struma Valley (Figure 7.23).

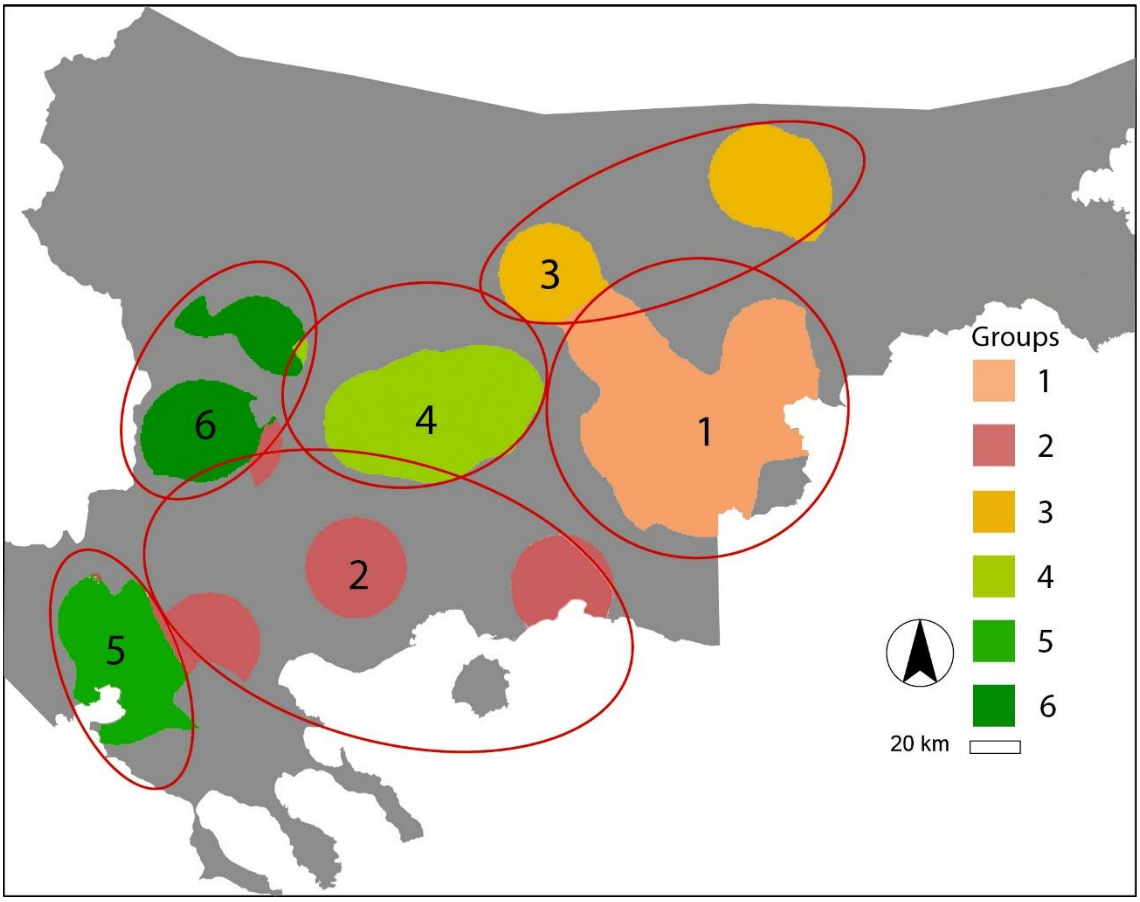


Figure 7.23. Arbitrary regions defined on the basis of unsupervised clustering combining the relative risk surfaces of all pottery types. Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

The dissimilarities in the ceramic material among the different areas argues for a variety of processes occurring in Thrace in the second half of the 2nd millennium BC. A comparison between the pottery accumulation zones an equivalent classification of the settlement types suggests a similar pattern (Figure 7.24). The main differences between the suggested clusters and groupings of sites are visible in the size of zone 3, the Upper Thracian Plain. This discrepancy on the one hand comes from the fact that in this region more than others, there are more sites identified than there are relevant pottery assemblages available for study. The area of the Western Rhodopes on the other hand seems to be better defined through pottery. The last difference is that there is no clear distinction between east Macedonia and Thrace based on settlement patterns only. The resulting picture, nevertheless, should be taken with a grain of salt, originating from the interpretation of many of the site types mostly on the basis of survey collections. It is easy to identify tell sites and burial mounds, but much more difficult to distinguish between an open-air settlement and a necropolis. There must be some truth in this proposed reconstruction, however, since it would otherwise be difficult to replicate the same pattern based on two different types of raw data (site types and pottery types).

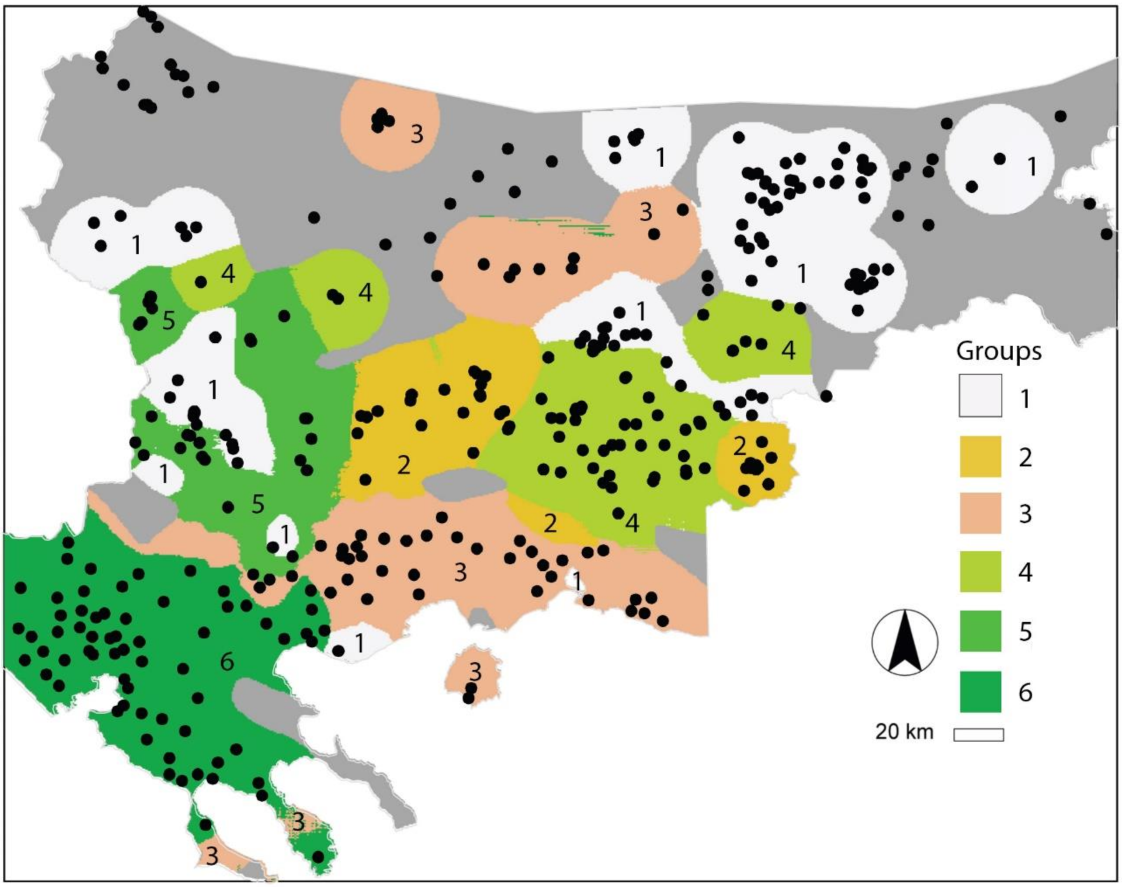


Figure 7.24. Arbitrary regions defined on the basis of unsupervised clustering combining the relative risk surfaces of the main site types (black dots). Grey areas of the map indicate zones with such low sample size that a relative risk has not been calculated.

7.3. Pottery characterisation within the identified micro-regions

A number of sub-regional configurations can be proposed as a result of the spatial analysis of pottery characteristics, alongside the basic evidence of settlement patterns and the preceding preliminary discussion. Below I therefore address the character each of series of sub-regions in turn.

7.3.1. Area 1. The Eastern Rhodopes and Sakar

This zone encompasses the Eastern Rhodopes and parts of the Sakar Mountain, intersecting partially with the Upper Thracian Plain. The low mountainous character of the Eastern Rhodopes connects it naturally to the low Sakar Mountain rather than to the high mountainous region of the Western Rhodopes, which is well illustrated by the pottery material as well as the settlement pattern. In terms of pottery, area 1 is characterized by pronounced neater S-shaped forms, as representatives of the categories ‘bowl’, ‘amphora’ and ‘kylix’. Besides the more common globular kantharos, here the open-shape kantharos is also very popular. It is possible that this form replaced the use of the globular kantharos over time; it is also possible that this shape served a different purpose. Regardless, it exists almost exclusively in this area, with a few exceptions in the Western Rhodopes and the lower Struma valley (Figure 7.25).

The globular kantharos on the other hand, is much rarer compared to other areas and also has its peculiarities. The common form here is distinguished as kantharos type K4 (Appendix 1, Figure A1.12). This type is usually undecorated and probably follows a different developmental path from the conventional globular kantharos of type K1 (Appendix 1, Figure A1.1 - A1.8). Some fragments belonging to shape K3 (Figure 7.25, e; Appendix 1, Figure A1.10, A1.11) have representatives in the deposit from Plovdiv, based on which the cultural horizon Zimnicea-Plovdiv was created. We see this kantharos not only in Zimnicea (Hänsel 1976: Figure 11, 8), but also in several places just north of the Balkan Mountains (Hänsel 1976: Figure 34, 2-6). Part of the same overall zone is jug type J4; a decorated version of it is known from both the Eastern Rhodopes and the Upper Thracian Plain.

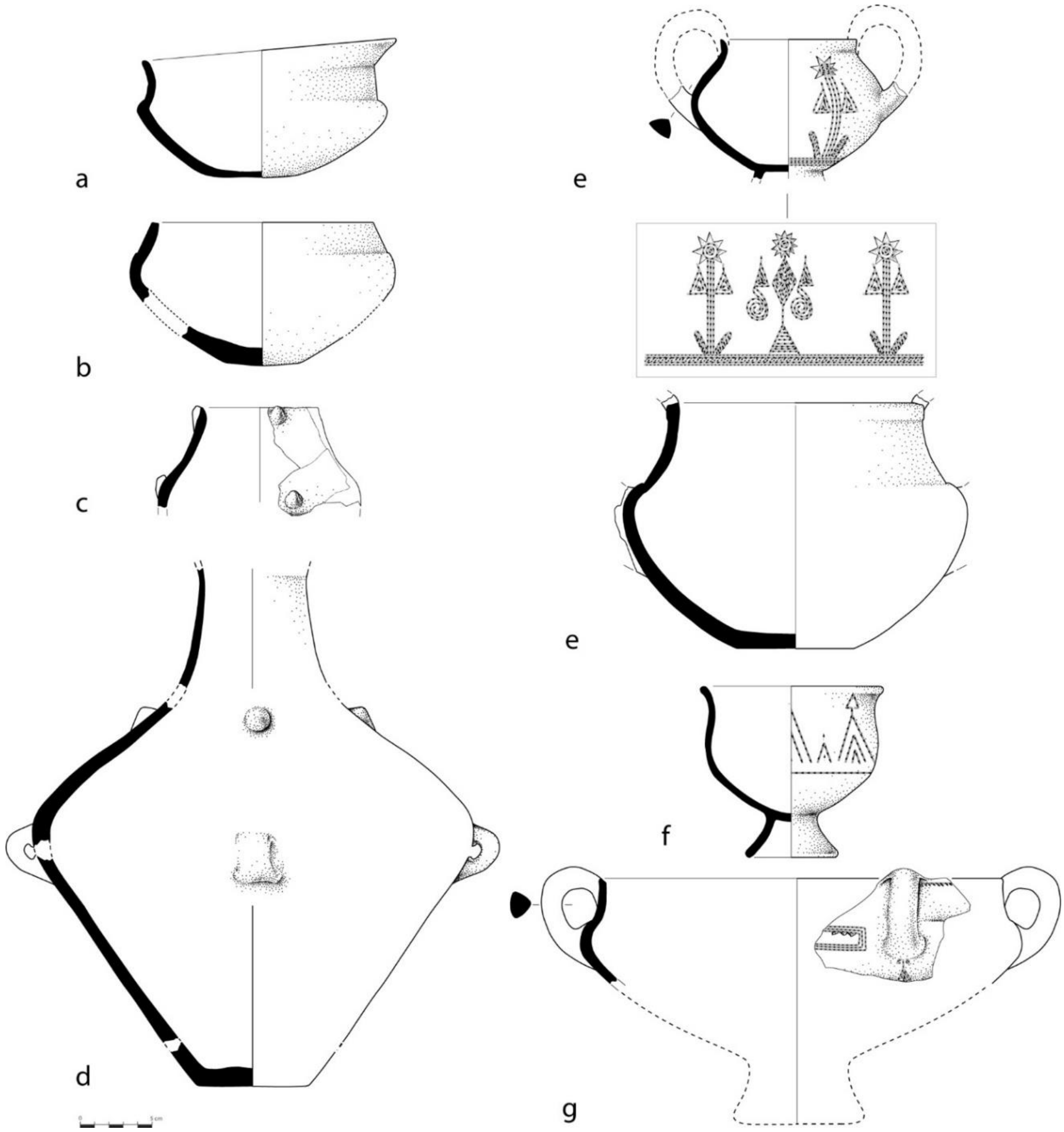


Figure 7.25. Some of the main shapes and types from the East Rhodopes.

As researchers have already pointed out, this micro-region is notable for the richness of its ceramic decoration (Leshtakov 1999: 10; 2007: 88; Nekhrizov 1995: 317). The majority of the fine pottery found here is typically heavily decorated, commonly with *furchenstich* technique (Appendix 1, Figure A1.72 – A1.76). It seems that this micro-region is the core area of this decorative technique. In addition, the locally distributed fineware has a predominantly smoothed and polished surface with dark brown, grey and black colour tones.

Nekhrizov has already suggested that the pottery production undoubtedly changed throughout the LBA in the area (Nekhrizov 1995: 323). In relation to the dissimilarities he found with adjacent areas like the Western Rhodopes, the Upper Thracian Plain, Aegean Thrace, eastern and central Macedonia and others, in imported vessels, local imitations, graphite surface treatment and a rich repertoire of forms, Nekhrizov suggested that there were contact zones of intensive exchange where the limits of the individual pottery groups were diffuse. He also argued that the absence of stratified settlements from the Late Bronze and EIA is probably one of the characteristics of Thracian culture in the Eastern Rhodopes. The distinct character of the area is also implied by the existence of the so-called 'peak' or 'rock sanctuaries', found mostly here, along with the fact that there are only a few discovered settlements; most of these also have very thin cultural layers with stratigraphically imprecise positions (Nekhrizov 2010).

The discovery of quantities of LBA pottery at some dolmen burial sites and cist graves suggests the use of those sites during the LBA (Nekhrizov 2010: 93), although they are usually treated as IA monuments. The multiple reuse and robbery of these sites does not offer the opportunity to date these structures precisely, but the existence of LBA pottery suggests a potential early date for at least some of the dolmens in the Eastern Rhodopes and probably also Sakar (Özdoğan 1998). The difference in construction between the Eastern Rhodopean dolmens and the IA ones excavated mostly in the Strandzha mountains (Delev 1982: 398-400; 1984: 19; Mikov 1933: 144; Nekhrizov 2010: 92, 93; Özdoğan 1998; 37; Venedikov 1976) also may support a chronologically different reading.

The relatively recent discovery and investigations of gold mining activity within the LBA at the site of Ada Tepe, along with the related settlement and maybe also a sanctuary suggests a particular focus for the societies in the Eastern Rhodopean region at least during one phase of the LBA. The region is well-known for its silver and gold ores, but evidence for their exploitation had not been found before the excavations at Ada Tepe (Nekhrizov 2005; 2007; 2008; 2008a; Jockenhövel and Popov 2008; Popov 2007; Popov and Jockenhövel 2011; Popov et al. 2011). There is a second mine in the area, near Sedefche, with suspected Bronze Age activities, but the site has not been investigated yet.

7.3.2. Area 2. West Thrace and parts of Macedonia

This area is poorly investigated, the majority of the material comes from field survey and only a few sites have been partially excavated. There is a body of ceramic material that has been gathered over the years, however, which allows me provisionally to classify it as a distinct entity. Although it is close to Macedonia, it seems naturally and culturally divided somewhere along the lower Struma Valley. It seems also that it exhibits close relations with the Rhodope area, both the east and the west part. The coastal character of this zone already suggests its specific character, which would explain the occasional infiltration of south Aegean and other imports, but in general western Thrace seems to be outside the zone of Mycenaean influence in the backyard of Macedonia. Instead, it is more closely related to some of the Thracian areas in terms of pottery repertoire. The amalgamation of pottery types consists of the shared kantharos K1 (Figure 7.26, a), which is well represented and most probably best recognized from the fragmentary material. Besides that, there are some examples of bowl B1 (Appendix 1, Figure A1.18), otherwise typical for the middle Struma Valley. As Horejs described, the spread of wish-bone handles, generally bowl B4 (Appendix 1, Figure A1.24), also peters out east of Macedonia (Horejs 2007: 339). Jug J1 (Appendix 1, Figure A1.60) is scattered all over this area together with kylix types KY4 (Appendix 1, Figure A1.37) and KY5 (Appendix 1, Figure A1.38). On the other hand, although in small quantities this is the area of concentration of kylix type KY1 (Figure 7.26, d) and amphora type A1 (Figure 7.26, e).

Although relatively similar to the incised ware in Central Macedonia, what separates West Thrace and East Macedonia is the matt-painted pottery, which exists, but is very rare in comparison to its presence in Macedonia and arguably incised decoration in this area replaces its decorative function. Amphorae of the same shape bear matt-painted decoration in Macedonia and incised decoration in western Thrace (Horejs 2007: 339).

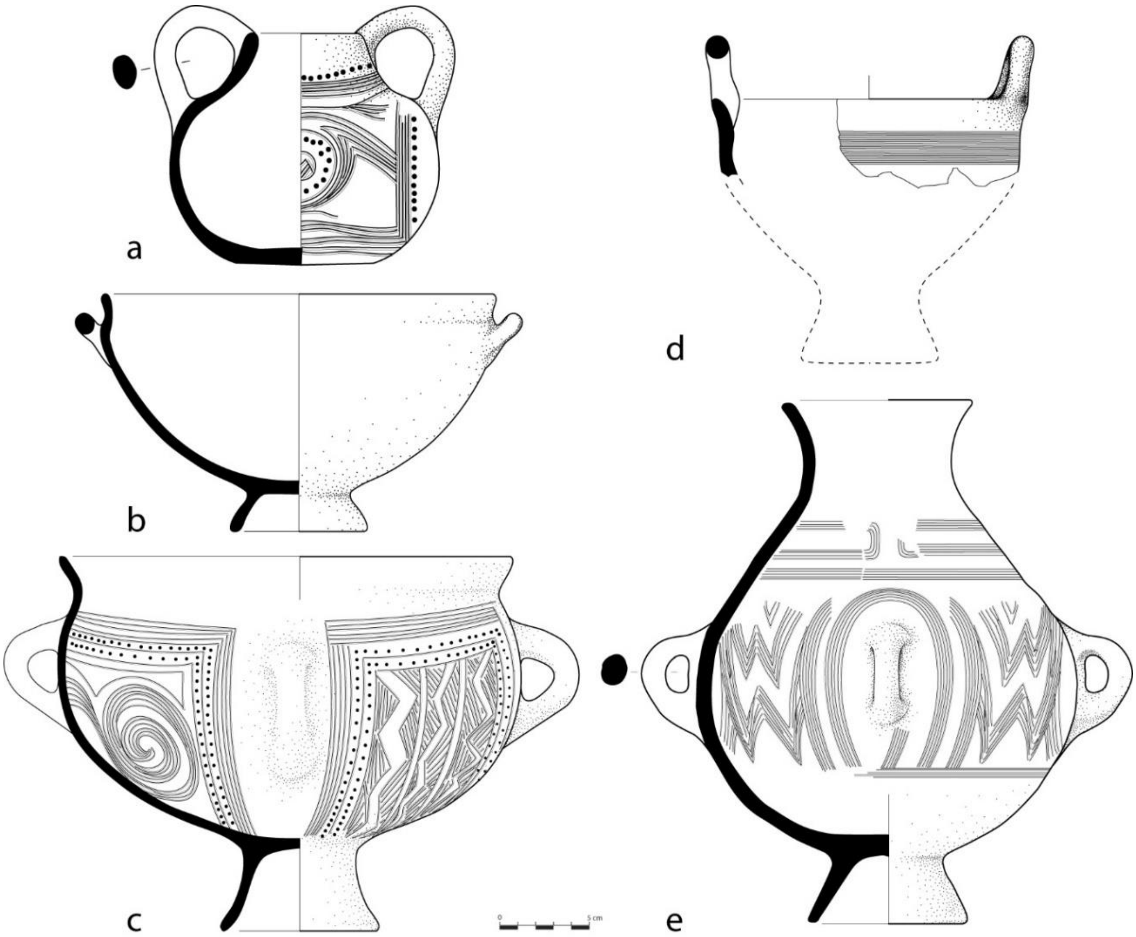


Figure 7.26. Some of the main shapes and types from West Thrace.

In terms of settlement patterns, settlement mounds have mainly been identified, some of which could be natural landforms rather than culturally stratified toumbas. All of these sites were interpreted as settlements, although only a few of them were actually excavated. There are also some open settlements and a number of undefined sites. In general, the settlement pattern possibly follows to a certain extent the Macedonian one.

7.3.3. Area 3. The Upper Thracian Plain

The situation in the Upper Thracian Plain also has its own character. The pottery assemblage can be divided into two main groups. The first consists of brown and brown-reddish burnished ware with almost no decoration, i.e. plain. The represented shapes are bowls of types B3 (Figure 7.27, e), B4 (Figure 7.27, d) and B5 (Figure 7.27, a), stressing the presence of wish-bone handles. Jug J4 (Appendix 1, Figure A1.65) and kantharos K5 (Figure 7.27, c) are also typical for this area.

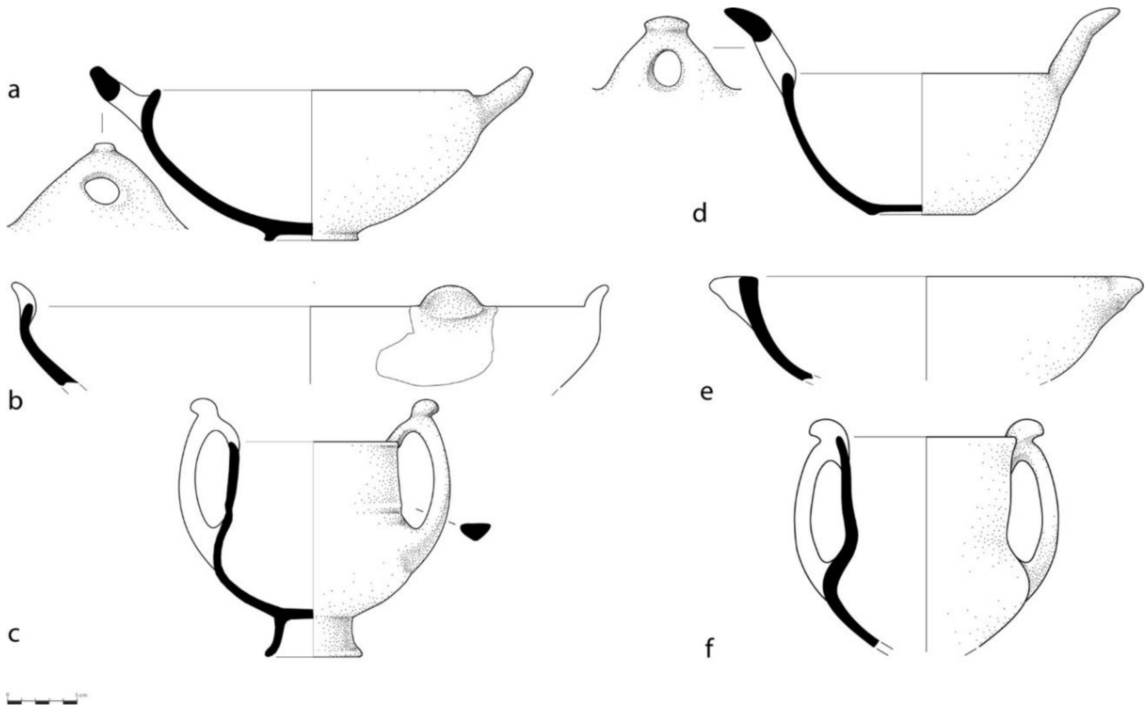


Figure 7.27. Some of the main shapes and types in the plain ware from the Upper Thracian Plain.

Also plain but perhaps belonging to a separate pottery tradition as I will describe in chapter eight, are amphora shapes A3 (Figure 7.28, d) and A5 (Figure 7.28, e), kantharoi K3 ((Figure 7.28, c) and jug J3 (Figure 7.28, a).

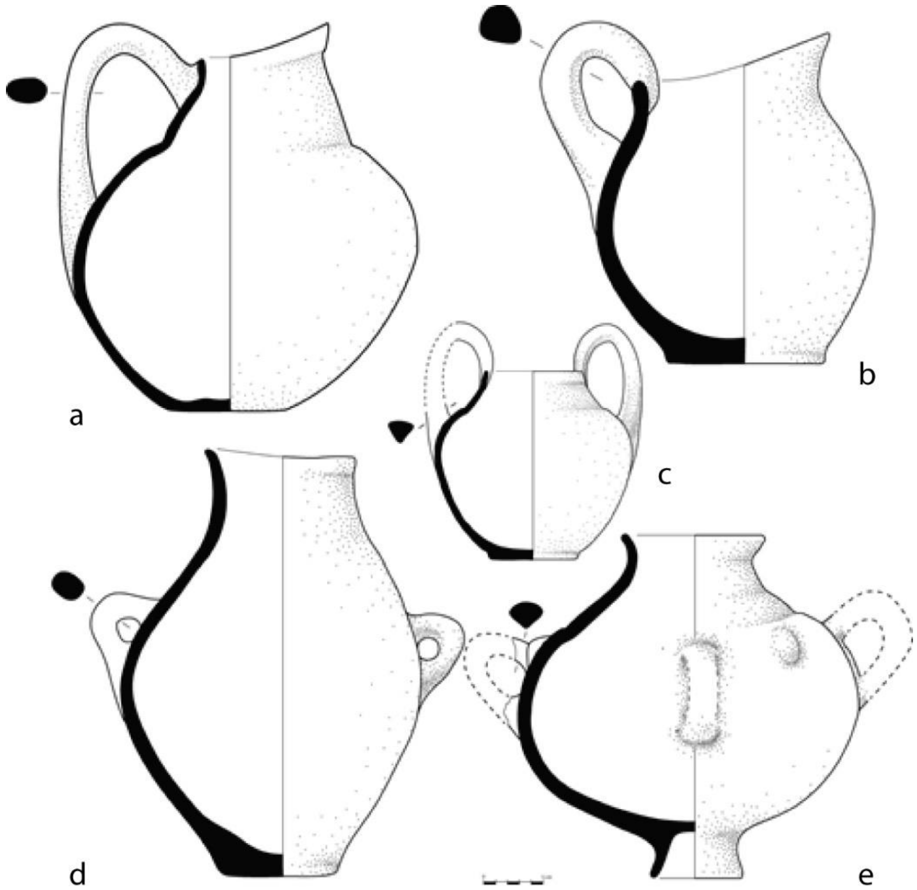


Figure 7.28. Other shapes and types in the plain ware from the Upper Thracian Plain.

The second group has mostly grey-black and dark-brown smoothed and sometimes polished surfaces decorated with incised, but mostly *furchenstich* motifs. The main shapes are kantharoi K1 (Appendix 1, Figure A1.1 – A1.7) and K2 (Appendix 1, Figure A1.8), jugs J1 (Appendix 1, Figure A1.60 – A1-61) and J3 (Appendix 1, Figure A1.63 – A1.64), and sometimes amphorae A6 (Appendix 1, Figure A1.57 – A1.58). There are a few sites, and in particular the site near Vratitsa, that suggests chronological difference between the plain groups described above and the incised ware of the area. Furthermore, the ceramic repertoire of the current group is rather similar to that from the Eastern Rhodopes area. Tanya Hristova specified also that one of the characteristics of the earlier pottery from Vratitsa (group one) is the sharp transition between the different body parts, while in the later phase (group two) the same transition is much smoother and neater (Hristova 2010: 58). This trend could be considered as a chronological differentiation in the pottery style. Separate phases were also identified in the settlement of Asenovets, and similar ones were suggested for Razkopanitsa.

Unfortunately the material from both settlements is unpublished and not available for study.[12]

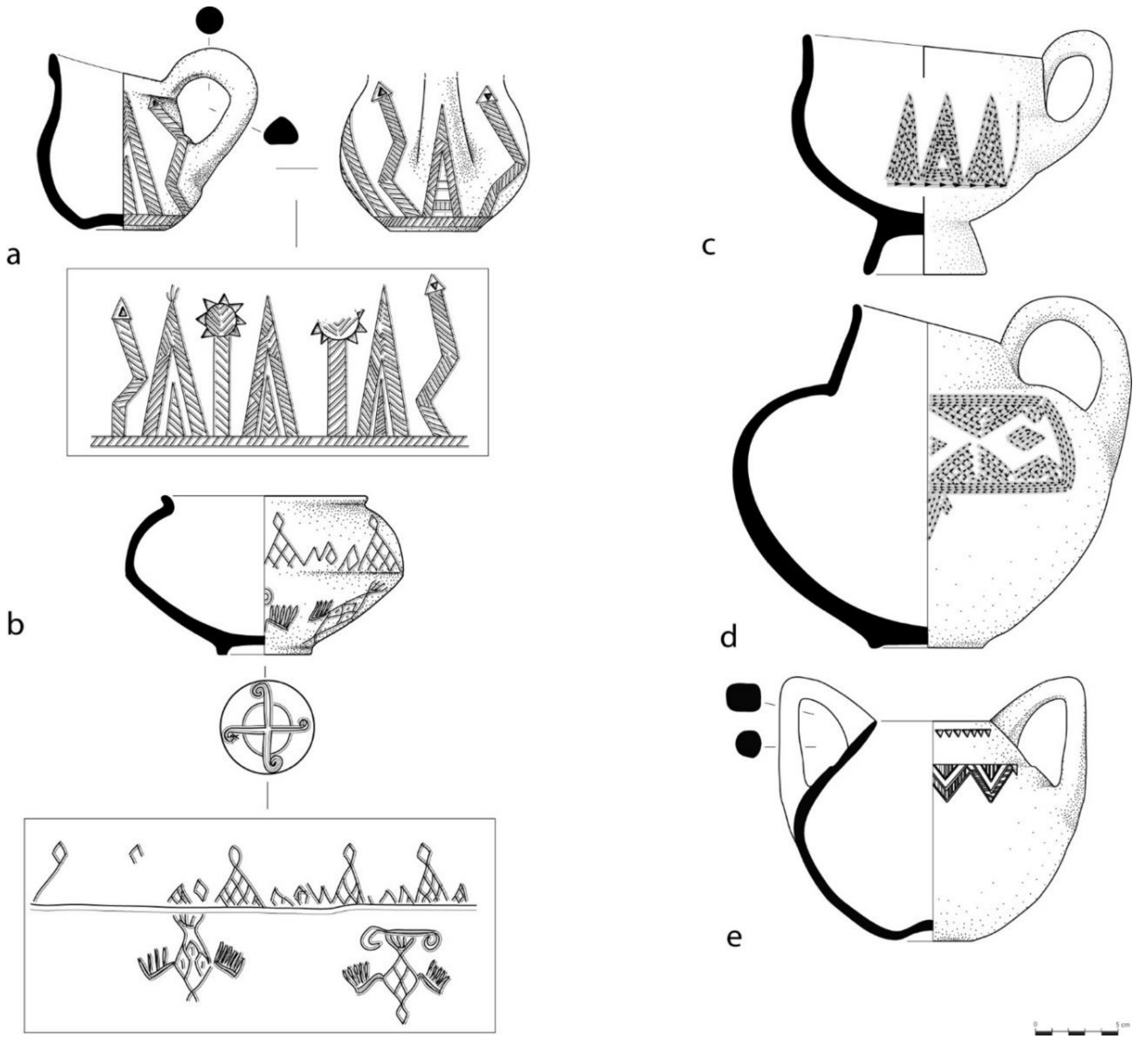


Figure 7.29. Main shapes and types in the incised ware from the Upper Thracian Plain.

Specifically characteristic for this area are the earlier settlement mounds (tell sites) occupied in the Neolithic, Chalcolithic and the EBA and briefly inhabited during the LBA. The LBA layers are usually on the surface of the mounds, which is one of the reasons we find them mostly destroyed by ploughing and other agricultural activities. However, on top of most of those settlement mounds, there is a record of LBA pottery. Besides the

[12] The pottery from these two sites is known to be mixed and partially lost due to floods in the museum of Stara Zagora. The remains have no stratigraphic information and the study of the remaining material is not possible.

tell sites, there are also open-air settlements such as Asenovets. This site contained a quantity of wish-bone handles, described in the Bulgarian literature as 'handles type Asenovets'.

Another specific element in the Upper Thracian Plain is the existence of flat cemeteries with inhumations. The excavated examples are related to the first pottery group described above (Hristova 2010). The only necropolis of this type in Thrace outside of area three was discovered just outside of the Rhodopes, by the town of Sandanski. It is possible that both pottery groups belonged to the same cultural tradition, but it is more likely that there is a chronological difference and development under a different type of influence.

7.3.4. Area 4. The Western Rhodopes.

Within the Western Rhodopes zone the pottery types are also quite distinctive. Although several authors have tried to find a close connection between the west and the east parts of the mountains (Nekhrizov 1995: 322; Leshtakov 1999: 13), and it is true that in general the differences are not very big, since there is some connection between the societies on both sides of the mountain. However, it seems that there is nevertheless a slight chronological or cultural distinction. For example, almost all of the discovered sites in the western Rhodopes are burial mounds with cremations and no real settlements. The few sites identified as settlements were only discovered during terrain survey and have not been excavated even with test-pits. Moreover, the majority of the settlements in the area are usually associated with the EIA or with the Transitional Period between the LBA and the EIA (Gotsev 2010). The pottery from this area comes mostly from these burial sites and thus represents strictly funerary assemblages. The vessel types chosen as or prepared for urns are strictly amphora types A1 (Figure 7.30, a; Appendix 1, Figure A1.46 – A1.50) and A2 (Appendix 1, Figure A1.51 – A1.52). They are found in burial contexts, almost always covered by or associated with a kylix of type KY3 (Figure 7.30, e; Appendix 1, Figure A1.35 – A1.36) or KY7 (Appendix 1, Figure A1.42 – A1.43) and rarely KY4 (Appendix 1, Figure A1.37). As grave inventory or 'gifts' (containers with specific contents) there were kantharoi of type K1 (Figure 7.30, d) and K4 (Figure 7.30, c).

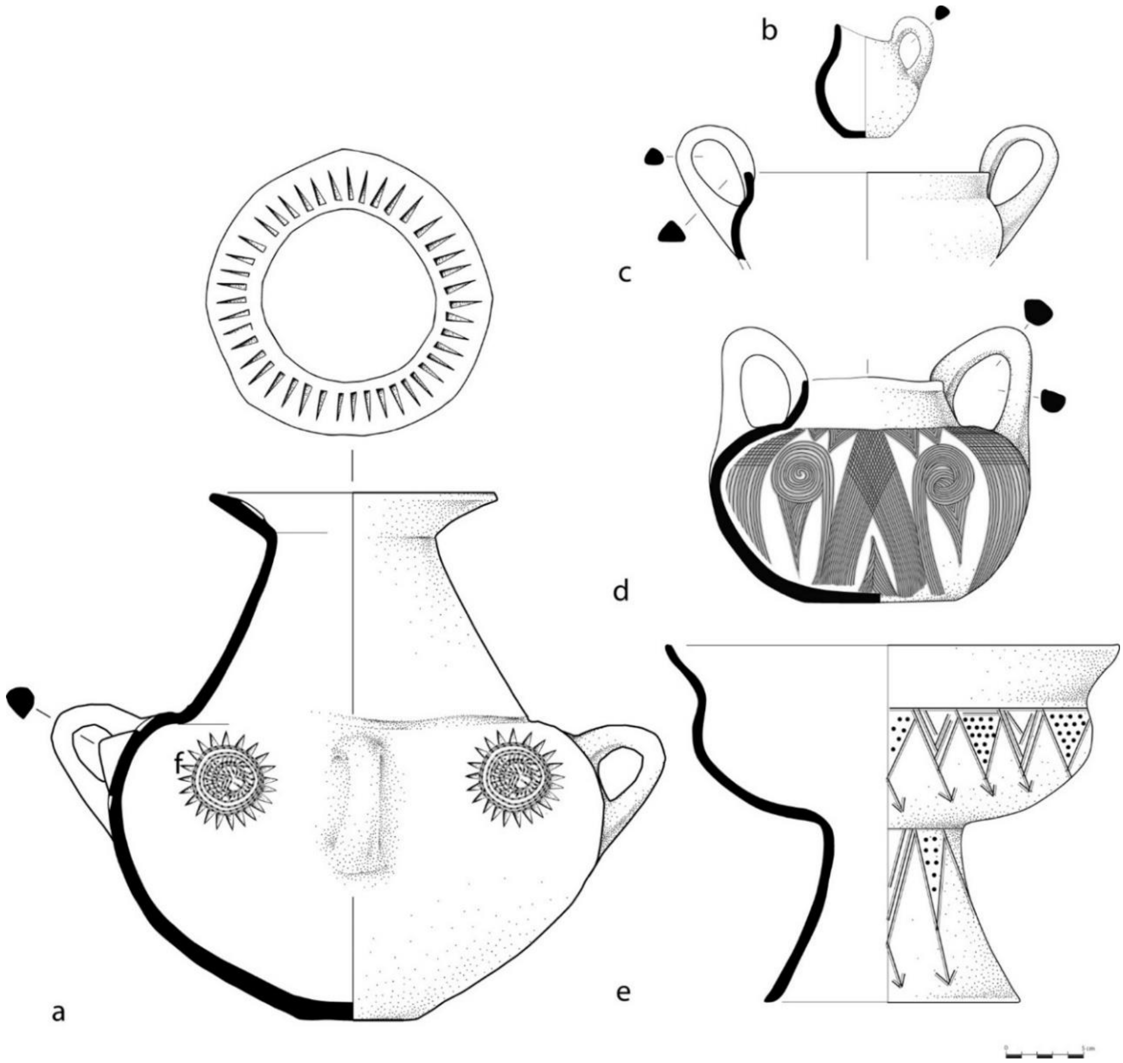


Figure 7.30. Main shapes and types in the incised ware from the West Rhodopes.

The richest LBA graves come also from this area. In general this kind of burial has been discovered only in the Western Rhodopes area including its southwestern slopes (i.e. the burial mounds at Exohi and Potamoi) and is not known from any other areas in Thrace. Sometimes they contain bronze weaponry (Figure 7.31) including double-axes, daggers, knives, rapiers and swords, gold and bronze jewellery as well as amber beads and a bronze 'mechanical toy' (Leshtakov 2008: 69). Most of the burials have been partially looted, so we do not know the entire set of contents. A unique type of jug also comes from one of these graves (Appendix 1, Figure A1.68). Its silhouette and decoration resembles the amphora type A1, which is also known from the area and can be described as characteristic for the Western Rhodopes. The vessel shape is unique, covered with a dense *furchenstich* decoration and geometric motifs. As a technique the *furchenstich* is common in the western part of the Rhodope Mountains but pure incisions are also popular, as well as the plain, undecorated versions of amphora, kylix and kantharos shapes. In fact, one of the kantharoi from the Lilovo burials is covered with ‘bands’ of fine incisions, which is reminiscent of similar examples from Macedonia, where the incisions are filled with white encrustation. The lines are so rough and imprecise that it reminds one of the Macedonian incisions, which are prepared to support wide bands of white paste – something atypical for Thrace (Psaraki 2004).

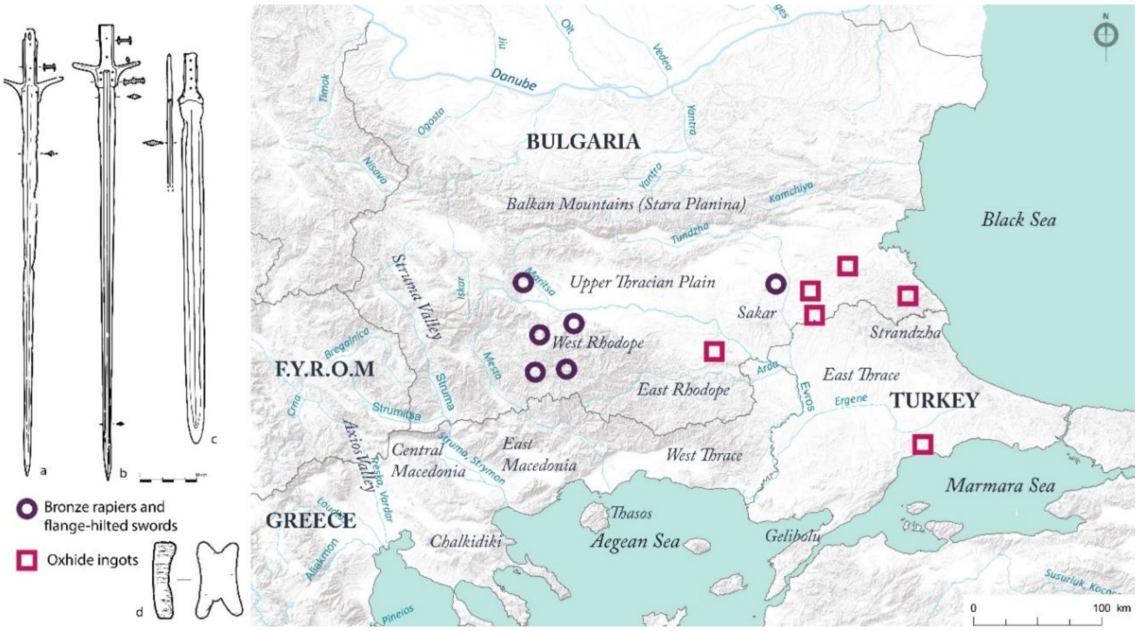


Figure 7.31. Distribution of bronze rapiers and oxhide ingots: a) Perushtitsa, b) Dolno Levski, c) Pavelsko, and d) Yabalkovo.

Figure 7.32. Bronze and amber neckless from Lilovo.

Bowls and jugs are much rarer than the other forms. In terms of colours and surface treatment, the situation is similar to that in the Eastern Rhodopes, but the colours are more often brownish-red, rather than greyish-black and occasionally there are burnished vessels. There is also information about graphite covering of the vessels, possibly to replicate a metallic appearance by strengthening the effect of reflective polished surfaces.

7.3.5. Area 5. The Struma Valley

The area along the middle course of the Struma Valley also exhibits different features. The pottery is more in the grey-black, dark-brown spectrum and smoothed to a polished surface; shapes like bowls and kylikes have conical silhouettes represented by types B1 (Figure 7.33, e) and K2 (Appendix 1, Figure A1.7) respectively. This ‘pointy’ outline is expressed also in a few representatives of kantharos K2.1 (Figure 7.33, a; Appendix 1, Figure A1.8), with spikey edges on the upper part of the handles. Amphora type A4 (Figure 7.33, b) is also concentrated in this area as well as jug types J1 (Appendix 1, Figure A1.60) and J1.1 (Figure 7.33, c). The vessels are mostly undecorated, besides a few globular kantharoi with patterns of incised motifs.

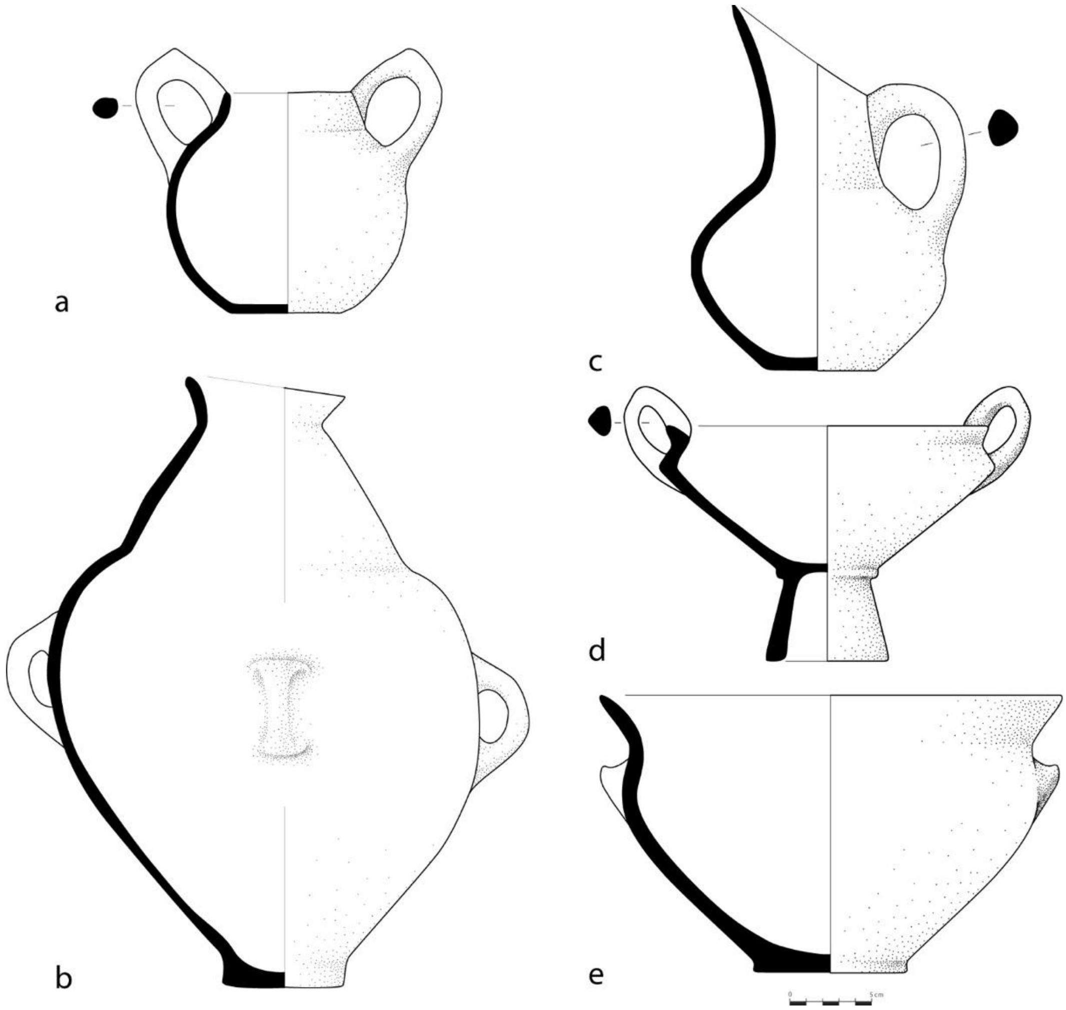


Figure 7.33. Main shapes and types of pottery from the Struma Valley.

In this micro-region is the settlement at Kamenska Chuka. This is the only case in Thrace where large stone fortification walls have been discovered and excavated. More recently similar structures have been identified also at the nearby settlement of 'Bresto'. There are also a few other similar structures, or at least remains of stone architecture on the slopes surrounding the river of Struma, which have not been recognised elsewhere in Thrace. One cannot simply assume the fortified character of all these sites, but the distinctive character of the area is evident also through this feature. Furthermore, there is an accumulation of bronze weaponry, swords and rapiers, mostly chance finds, following the same trajectory, including a large number of bronze arrowheads from the interior area of Kamenska Chuka. Consequently, it seems logical to suggest a defensive character for sites in this micro-region. Furthermore, these western parts of the study area were in close contact with northern Macedonian societies, which is noticeable through the similarity between the pottery in area six and the ceramic types of the Ulanci group (see Mitrevski 2007). The weaponry found in the area, on the other hand, is often associated with southern Aegean imports. However, no provenance analysis has been undertaken and thus the origin and the date of these finds remains uncertain. In general, the distribution of some of the weapon types across the Balkans is wide enough to suggest a number of contact zones, not implying trade or a direct origin from the production centres.

The lowlands of the lower Struma, according to the pottery record, seem to behave in a slightly different way. Represented by the burials at Faia Petra (Valla 2000; 2007), this area connects the societies of western Thrace with those in area four. This also seems to be the line of separation between Macedonian communities and western Thrace. In relation to Area 6 below, I also consider the inhumation cemetery at Sandanski (Alexandrov et al. 2007) whose pottery repertoire almost entirely replicates the types recorded at the settlement of Kamenska Chuka.

7.3.6. Area 6. Macedonia

Macedonia on its own has a lot to offer. Nevertheless, it is not the core subject of the current dissertation and has been used here only as a spatial marker to identify the southern and south-western limits of Thracian cultural regionalism. Thus the particularities of Macedonian pottery will not be discussed here.

Only from the spread of the Mycenaean-style imports and the production of local matt-painted pottery is it clear that different processes affected the areas beyond the lower Struma valley. The presence of incised ware in Macedonia and burnished ware in Thrace, however, deserves consideration. The red, reddish-brown burnished ware is considered typical for Macedonian region already at the end of the MBA, when it becomes the main pottery style at the large toumbas (Horejs 2007; Hochstetter 1984; Heurtley 1939). Similar pottery, though, appears in the Upper Thracian Plain and it is rather foreign for the rest of the Thracian region. The same phenomenon can be observed in the spread of wish-bone handled bowls and spouted bowls (types B4 and B5; Horejs 2007: 339, Abb.52-53). The bowls with wish-bone handles in the Macedonian ceramic repertoire (see Figure 7.34) are many and cannot be related exactly to Thrace. As I mentioned above, the wish-bone handle on its own is considered a feature. Moreover, although there are no large stratified LBA toumbas in Upper Thrace, there are large tell sites from earlier prehistory that were occupied in the LBA. There are other tell sites in the rest of Thrace, but only the ones in the Upper Thracian Plain seem to be re-occupied even for a short term in the LBA.

The incised pottery appears in central and east Macedonia at a point when the burnished ware is already established. The globular kantharos types K1 (Figure 7.34, b; Appendix 1, Figure A1.1 – A1.4), K1.1 (Appendix 1, Figure A1.5 – A1.6) and K2.1 (Appendix 1, Figure A1.8) are the main forms, but also heavily decorated amphorae type A1 (Appendix 1, Figure A1.46- A1.47), undecorated A1.2 (Figure 7.34, e) A4 (Appendix 1, Figure A1.54) , and kylikes KY1 (Appendix 1, Figure A1.33), KY4 (Appendix 1, Figure A1.37) and KY5 (Appendix 1, Figure A1.38) are present as well as jugs J1, and bowls B3 (Appendix 1, Figure A1.21- A1.22) and B4 (Figure 7.34, d). All these shapes, besides the kylikes, have their relatives along the Struma Valley, but also around Plovdiv, just north of the Rhodope Mountains. The appearance of the incised ware displays pure incisions and is distributed mostly in the eastern areas of Macedonia (Horejs 2007: 331; Hochstetter 1984: 198-211). The incisions were mainly used in groups in order to support wide bands of white paste, perhaps imitating painted pottery (Psaraki 2004). The white, pink or sometimes yellow paste is almost always associated with the incisions. As mentioned above, similar suggestions of incrusted bands in Thrace are only known from a couple of sites in the Western Rhodopes and one example comes from the site of Dragoyna near Plovdiv.

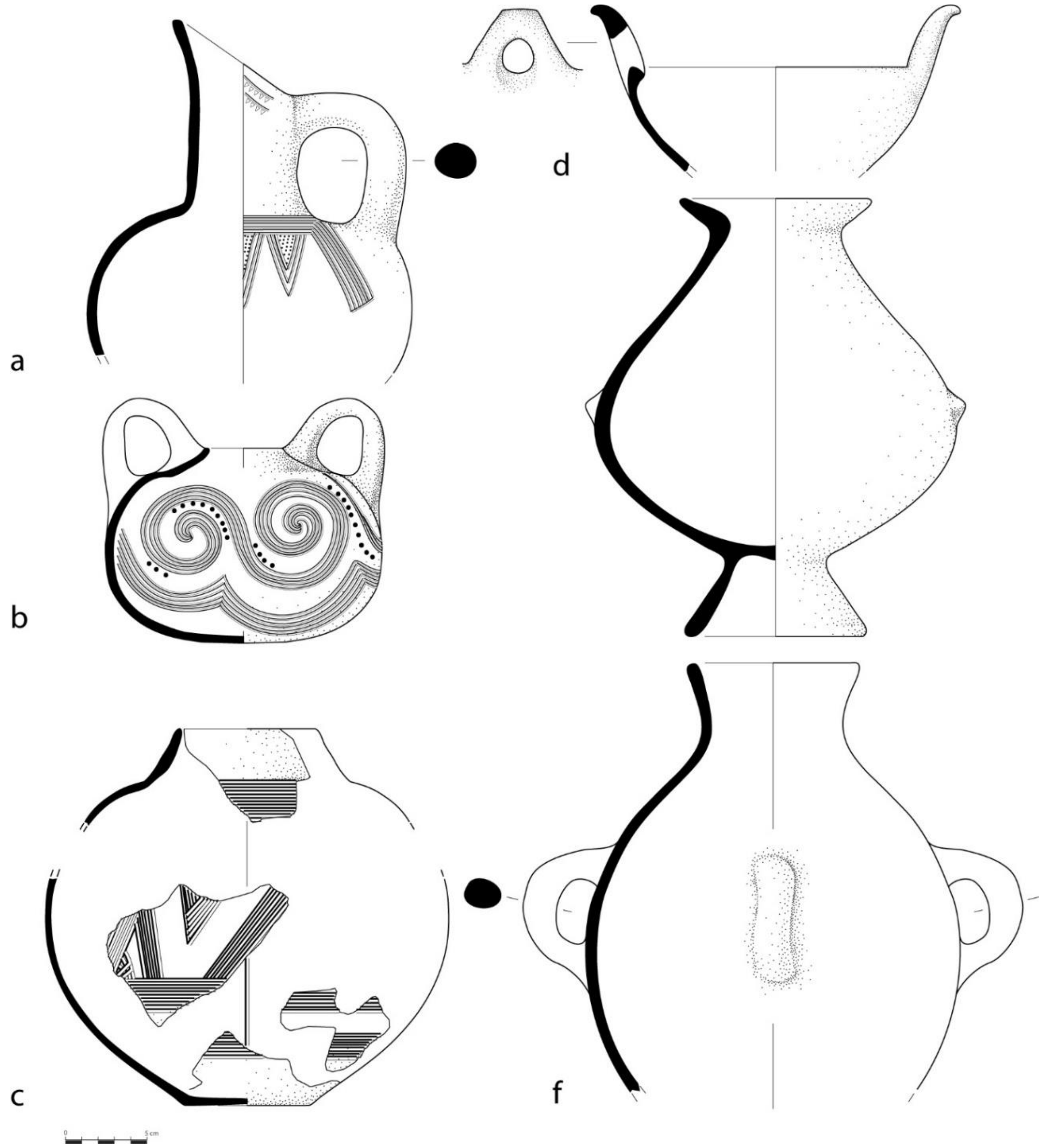


Figure 7.34. Main shapes and types of pottery from Macedonia.

7.4. Summary

In conclusion, spatial analyses of Thracian LBA pottery finds suggest that any easy overall aggregation of culture south of the Balkan Mountains is probably no longer valid. The so-called Zimnicea-Plovdiv horizon is perhaps not the most appropriate term to describe LBA material culture groups in Thrace. There might be influence from the north, reaching the region of Plovdiv and touching the Eastern Rhodopes, but this is most certainly not the primary affiliation suggested by the material culture of the area. The often-made excuse that we do not have enough data to propose a hypothesis about the situation in the second half of the 2nd millennium is no longer valid. Some 359 sites and 3049 better-preserved diagnostic pottery vessels provide a good platform for renewed discussion. The zonal differentiation of Thrace proposed in this chapter is of course tentative, and an especially useful angle would be provided by greater attention to provenance analysis of local ceramics from different areas in Thrace as well as a comparison with a number of incised and burnished examples from Macedonia. It becomes clear that the Macedonian sites are of rather different nature and cannot be used as direct chronological or cultural markers, especially when it comes to the sites in the Eastern Rhodopes. The lack of stratigraphy does not allow us to pinpoint particular event horizons and does not make the analysis of shorter term chronological events straightforward. However, some discussion of the possibilities will follow in subsequent chapters. From the spatial analysis of pottery distributions and the revised chronology, it already seems clear that some of the regional differences might also be due to chronological discrepancies.

Chapter 8. Regional Patterning and a Revised Chronology for LBA Thrace

This chapter will revisit the issue of LBA chronology in Thrace. This part of the discussion deliberately follows after the analysis of pottery distributions, in an attempt to trace not only regional, but also chronological variations in the record, with the intention that treating these two issues together will potentially improve our understanding of the historical sequence. With this in mind, I will first present some terminological and interpretational problems with the existing LBA dataset and, thereafter, will review the existing chronological evidence by region. Separate sections are further dedicated to the beginning and the end of the LBA. The final discussion in this chapter proposes a new chronological sequence, based on a combination of pottery, site synchronisation and new radiocarbon evidence.

8.1. Terminological problems within the local Bronze Age chronology

One of the main problems hampering research into the Thracian LBA is the absence of a reliable chronological framework. Most of the archaeological sites dated to the LBA were identified as such on the basis of incised and encrusted pottery decoration, related to stratified contexts in Macedonia and the lower Danube region. As the material accumulated over time, more attempts were made to narrow the date of some of the emblematic pottery styles, but the problems of chronology and periodisation remained mostly unsolved. Furthermore, there were only a few archaeological assemblages available for comparison. Most analogies were made with the stratified Bronze Age toumbas in Macedonia – routinely Kastanas and Assiros (Figure 8.1, Borislavov 1999; Leshtakov 1990; Nekhrizov 1995; Stefanovich and Bankoff 1988) – and some attempts were made to link ceramic material with Troy (Bonev 1988; 1995; Chichikova 1968; Dimitrov 1968; Leshtakov 2008; 2009).

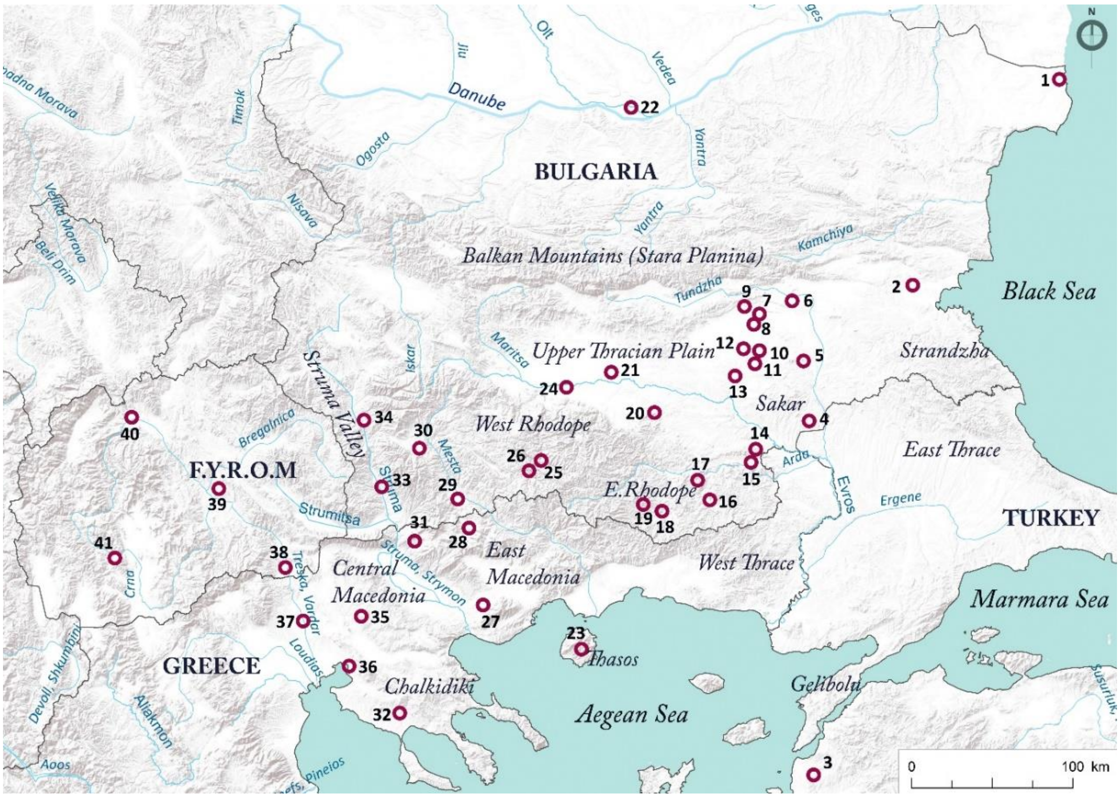


Figure 8.1. Map of the area with the main places mentioned in the text: 1. Durankulak; 2. Vratitsa; 3. Troy; 4. Mihalich; 5. Drama (Merdzhumekya); 6. Chokoba; 7. Nova Zagora; 8. Asenovets; 9. Ezero; 10. Kovachevo; 11. Polski Gradets; 12. Radnevo; 13. Galabovo; 14. Kush Kaya; 15. Gluhite Kamani; 16. Ada Tepe; 17. Tatul; 18. Stomantsi; 19. Alada; 20. Dragoyna; 21. Razkopanitsa; 22. Zimnicea; 23. Kastri; 24. Plovdiv; 25. Lilovo; 26. Borino; 27. Aggista; 28. Nevrokopi (Exohi and Potamoi); 29. Koprivlen; 30. Razlog; 31. Faia Petra; 32. Olynthus; 33. Sandanski; 34. Kamenska Chuka; 35. Assiros; 36. Toumba Thessaloniki; 37. Kastanas; 38. Gevgelija; 39. Ulanci; 40. Skopje; 41. Vardino.

In the history of Thracian LBA research, the first efforts to link parts of the Balkan peninsula with Asia Minor were carried out by Gavril Katsarov at the beginning of the 20th century (Katsarov 1914). During the 1920s and 1930s some attention was paid to the cultural connections between the Balkans, Troy and Mycenaean Greece, which gradually led to the chronological formation of generic prehistoric periods, mostly in Bulgaria (Heurtley 1939; Katsarov 1914; Mikov 1933; 1952). After World War II, more archaeological sites were excavated in Thrace, which forced further chronological revisions by adopting established chronological schemes from Anatolia and the Aegean. For example, after the 1950s, Bulgarian archaeologists accepted the division of the

Bronze Age into early, middle and late, following analogies from Crete, continental Greece and the Cyclades (Bonev 1988; Georgiev 1961; Katincharov 1974; 1975; Mikov 1952; 1966; Panayotov 1978; 1980; 1995). A tripartite division of the entire Bronze Age and in particular for the LBA was then assumed and deliberately pursued.

In order to address the local LBA, an understanding of the broader regional Bronze Age is necessary. Sometime during the Late Chalcolithic, Anatolia and the south Aegean underwent a phase of transformation, laying the foundations of EBA societies. At the same time a different phenomenon known as the Gumelnitsa-Cucuteni or Cucuterni-Tripolie culture (see Ellis 1984; Mantu 2000; Todorova 1995) is visible archaeologically in the eastern part of the Balkans, representing a high point in the development of local prehistoric societies, with some well-known 'mega-sites' (albeit of uncertain seasonality and permanence). By the beginning of the EBA, the eastern Balkans became peripheral to an area of distinctive Bronze Age urban development established already in central Anatolia, while stone architecture, more complex defensive systems, wheel-made pottery, objects representing intensive trade were all absent from Thrace. It seems as if the cultural impact of western Anatolian communities was restricted to the coastal areas of Thrace and the northern part of the area was represented by the Ezero group (Leshtakov 1992; Özdoğan 2003). This condition also stimulated the formation of local entities separated by the Balkan Mountains – a pattern which seems to have continued throughout the 2nd millennium BC. After a strong growth of contacts between Thrace and Anatolia during 2500-2200 BC, these contacts seem to have gradually faded away until about 1800 BC (Leshtakov 1992).

One of the challenges arising from these changes was how to interpret the MBA period in Thrace. Most of the prehistoric tell sites excavated in the first half of the 20th century ended with the EBA3 phase around 2000 BC (Leshtakov 2002), before they were reoccupied again during the latter part the Bronze Age around 1600 BC. The resulting systematic habitation gap of more than 300 years was rather difficult to explain. More recently, during the last twenty years of research, some Anatolian wheel-made imports associated with the Anatolian MBA were found together with handmade pottery, resembling late EBA3 traditions (see Leshtakov 2002). This discovery allowed for the first time the identification of a local MBA and the description of its ceramics as a simplified version of the earlier period in terms of shapes and decoration, carrying the late EBA tradition into the 19th and 18th centuries BC. It is, however, still difficult to explain the major absence of MBA settlements.

To summarise, the chronology of the Bronze Age, and particularly in Thrace, is mostly plagued by uncertainty to do with: i) the end of the EBA; ii) the identification and the date of the MBA; iii) the beginning and the end of the LBA and its hypothetical subdivisions; iv) synchronising local sequences with those from Anatolia and the southern Aegean. Besides this general nature of chronological assignment, some authors attempted to define their sites by absolute dates. Below, I offer a review of the existing chronological positions of a number of archaeologists and a number of anchors that have the potential to act as chronological markers.

8.1.1. Traditional chronological framework

The LBA in Thrace and more specifically in the Upper Thracian Plain was traditionally loosely placed between 1600-1100 BC (Mikov 1971: 55), 1500-1200 BC (Georgiev 1982), or 1600/1500 to 1200/1100 BC (Table 8.1; Katinchrov 1984; Panayotov 1989; 1995). The settlement near Nova Zagora, located in the Upper Thracian Plain, was originally dated to the 15th and 14th centuries BC (Kanchev 1982). Following the same chronological scheme, a nearby cemetery was dated to the 14th and 13th centuries BC (Kanchev and Kancheva 1990). The excavators of an eponymous site from this micro-region, tell Razkopanitsa, distinguished three LBA layers V, VI and VII, which gave some archaeologists a reason to suspect a tripartite division within the LBA itself. Nevertheless, the publication and the unavailability of the diagnostic material today does not allow for confirmation of this sub-division or for further investigation of the character of this site. Similarly, stratigraphy has also been noted from the open-air settlement by Asenovets, with another three horizons dated to the 14th to 12th centuries BC (Kanchev 1982). The first LBA layer was described as a continuation of the tradition from the previous period, referring to an earlier Bronze Age. Ivan Panayotov, on the other hand, saw the transition between the MBA and the LBA to be clearly traceable at Nova Zagora and Razkopanitsa, but did not provide material evidence to support this hypothesis (Panayotov 1975: 20-26). Eventually he dated the LBA period between the 16th and 12th centuries BC (Panayotov 1989: 95-96; 1995) and divided the entire Bronze Age into six periods, i.e. 1. Ezero, 2. Mikhalich, 3. Sveti Kirilovo, 4. Galabovo, 5. Razkopanitsa-Asenovets, and 6. Plovdiv-Zimnicea, where the first three belong to the EBA and the last three together cover the MBA and the LBA (Panayotov 1995). In other publications the so-called 'Zimnicea-Plovdiv' horizon was linked to the 14th and 13th centuries BC, although it is repeatedly referred to as a marker for the end of the period (Bonev 1988: 55).

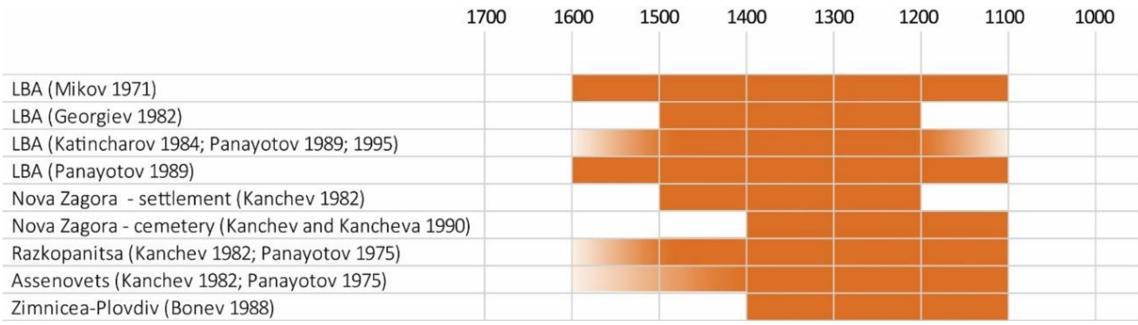


Table 8.1. Traditional chronology of the LBA in Thrace.

8.1.2. Chronology based on synchronisation with neighbouring areas

The absolute chronology of the Thracian LBA is a further challenge. For large parts of northern Greece and the eastern Balkans, there is no regionally and temporally extensive radiocarbon chronology, which might otherwise enable the re-evaluation and refinement of existing chronological schemes (Jung and Weninger 2004: 209). Until very recently there were no LBA radiocarbon dates from what is now Bulgaria, besides an isolated sample from Durnakulak in northeast Bulgaria; the only reliable comparative dates from the region were those from the toumbas at Assiros and Kastanas (see Wardle 2005; Wardle et al. 2007; Wardle and Wardle 2007; Wardle 2014; Hochstetter 1984; Jung 2002; 2003; 2004; 2006) and from Toumba Thessalonikis (Andreou 2001; 2009; Andreou and Psaraki 2007), adjoining the study region to the southwest. Therefore, a large proportion of the Thracian LBA chronology is based on dates from Macedonian sites. In this way, Radnevo-Staroto Selishte was dated 15th – 12th centuries BC (Savatinov 1995: 148/2), the site near Kovachevo was placed in the 14th and 13th centuries BC

(Kanchev 1974: 51-53), while Karaburun was dated to 14th – 12th centuries BC (Borislavov and Doumanov 2007: 142)[13]. The cemetery near Polski Gradets containing twelve inhumation burials was generally dated to the LBA, but three of the burials with preserved grave goods were dated by Krassimir Nikov to the early phase of LHIIIC or the first half of the 12th century BC (Nikov, in press). An inhumation burial discovered near Drama, Yambol district, contained three imported grave goods, i.e. a fragment of a jug and two fragments of jars (Lichardus et al. 1996: 101-102, Figure27, 36.1), which were identified as Mycenaean style pottery and thus the site was synchronised with MHIII–LHI (Lichardus et al. 1996: 103). The discovery of several imported sherds, dated to LHIIIA and a grey-ware fragment with identified Anatolian origin contributed to the chronology of the settlement of Dragoyna (Kissyov and Bozhinova 2006; Bozhinova 2007: 84; Bozhinova and Andonova 2008; 2009; 2010).

Farther south, in the Rhodope Mountains area, the LBA chronology was conventionally related to the Upper Thracian Plain and the material often referred to as a part of the Zimnicea-Plovdiv horizon, although the distinctive character of the area was also emphasised (Kissyov 1990; 1990a; 1993; Leshtakov 1990; 2007; Nekhrizov 1995). Material from the published cemeteries in the Western Rhodopes is generically dated to the end of the LBA, based on comparison with some vessels from Thasos (Kissyov 1993: 2), and can be considered at least partially synchronous with the beginning of the Thasos Ib period (LHIIIC – early) (see Koukouli-Chryssanthaki 1992: 419, sh. 110). Phase Ia is associated with local handmade pottery of both plain and incised types, typical for the region between the Axios and the Nestos Valley (Koukouli-Chryssanthaki 1992: 659). There are also multiple similarities with Kastanas, layers 15, 14a and 14b (LHIIIB/LHIIIC-early) Assiros, phases 8-7 (LHIIIB/LHIIIC) and Toumba Thessalonikis, phase 4 (LHIIIC) (Figure 8.5; see also Wardle 1997: 455, Figure 3).

Another site where attempts to establish more in-depth dating based on material synchronisation have been made, is the settlement at Koprivlen, which has two consecutive horizons. Stephan Alexandrov defines the earlier between 1600 and 1500

[13] Later Borislav Borislavov, in his PhD dissertation, argued that some of the pottery from Kovachevo might be earlier (Borislavov 1999).

BC, and the later between 1340 and 1180 BC. According to him, however, the first imports to the site can be identified as of LHIIIA2 and mostly LHIIIB date (Alexandrov 2002: 78,79), which corresponds with the situation described at Toumba and with the other better-dated pottery imports from Upper Thrace (Bozhinova 2007: Figure 1, 2). Therefore, there is not enough evidence to place the material from horizon I as early as Alexandrov initially suggested.

Earlier dates originate from the peak sanctuary of Tatul in the Eastern Rhodopes. The lowest part of that layer has handmade pottery parallels at the MBA site of Galabovo (phase Ia-II), located in the Upper Thracian Plain, i.e. as early as the 18^{th} or even 19^{th} centuries BC and was synchronised dated by Krassimir Leshtakov via Anatolian imports (Leshtakov 2009: 62, 63). The type of handmade pottery associated with these sites is of a different character, much closer to EBA shapes and types in comparison to the typical LBA variety (Leshtakov 2009). The later material from Tatul was described as "mass-pottery production typical for the Upper Thrace and East-Rhodopes" and was dated roughly between the 15^{th} and 11^{th} centuries BC. (Leshtakov 2009: 63), although the author mentions some pottery characteristics of the transition between the Bronze and Iron Age (Leshtakov 2009: 62; 2007a).

In the Greek parts of Thrace, dates are provided for the partially excavated settlement at Stathmos Aggista. The stratum was dated with material from central Macedonia, "where very similar local hand-made pottery as well as Mycenaean imported and local pottery has been found" (Koukouli-Chryssanthaki 1978: 255). Based mostly on the material from Aggista, Koukouli-Chryssanthaki divided the Bronze Age in Macedonia in two parts. LBAI was described as mostly having local handmade pottery with no Mycenaean imports. During LBAII, the local handmade pottery still dominates, but there are also imported Mycenaean and local imitations of Mycenaean-style ceramics. For the beginning of LBAI, Koukouli-Chryssanthaki found it reasonable to trace links with the MBA, while its end according to her could be aligned with the appearance of Mycenaean imports. The next phase, which is "well testified in Eastern Macedonia", unlike the previous period, "begins with the introduction of the Mycenaean LHIIIA2-LHIIIB, as it happens in Central Macedonia too" (Koukouli-Chryssanthaki 1978: 255).

The end of LBAII Koukouli-Chryssanthaki identifies with the appearance of lustrous ware. The evidence she provides is that the settlement at Aggista was destroyed by fire sometime during LHIIIC, according to synchronisation based on Mycenaean imports and local imitations. Furthermore, there is no lustrous pottery found at Aggista at all. Similar is the situation at the burials from Exohi and Potamoi on the southern slopes of the Rhodope Mountains. At Thasos, the layers with lustrous ceramics are separated from those containing Mycenaean-style pottery. At the cemetery near Kastri, there are burials with inhumation and lustrous pottery on top of inhumations with Mycenaean as well as incised ware. She describes this as a clear *terminus post quem* for the appearance of lustrous pottery on the site (Koukouli-Chryssanthaki 1978: 255).

Besides the conclusions she drew from this analysis, Koukouli-Chryssanthaki still acknowledged that it is difficult to provide a clear date based on imports alone. Nevertheless, according to her, the presence of LHIIIB shapes along with LHIIIC decoration cannot date the sites “much later than LHIIIC – if there are any later” (1978: 255). She also makes an important observation: the local pottery is plain and coarse, not incised, but also not grooved, which could be defined either as the original Bronze Age tradition or as a sign of the Transitional Period between the Bronze and Iron Ages in terms of pottery production, which should not be later than the beginning of the 11th century BC (Koukouli-Chryssanthaki 1978: 255).

Demetrios Grammenos compared the incised ware from Exohi and Potamoi with the finds from Aggista and stressed that there are no imports to use for more precise dating, while the similarities in the handmade pottery must give a date within the LHIIIC period (Grammenos 1979: 58). He also compared this pottery with the lower Danube cultures of Girla Mare, Verbicoara and Tei, whose latest horizons have been dated within 1300-1200 BC. Based on the difference in dates, Grammenos assumes that this type of pottery must have originated somewhere in central Europe and that it could have brought the ‘Geometric’ style to Attica from the Danube area (Grammenos 1979: 60).

This general picture, although seemingly loose, highlights some important points. The initially wider chronological framework seems to bracket a number of different phases. The earliest one is identified in the Upper Thracian Plain and in the Eastern Rhodopes, and may have also included parts of the MBA. The second and more common phase seems to have been repeatedly synchronised with LHIIIB and the beginning of LHIIIC and is identified in most sub-regions of Thrace. There is also a third one, mostly linked with a larger part of the LHIIIC, which seems to represent the transition between the LBA and the EIA. More recent radiocarbon evidence presented below has the potential to clarify some of these observations.

8.1.3. Radiocarbon evidence

While the potential early phase remains without chronological evidence in terms of absolute dates, a number of recent radiocarbon samples are able to throw some light on the chronology of the developed and the final phases of the LBA. During the last two decades there was a limited re-evaluation of conventional LBA chronology, based on a small number of radiocarbon samples from Bulgarian sites and a few Aegean imports of LHIII style (Bozhinova 2008: fig.1, fig.2). However, much of the framework still depends on the chronological sequences established at sites such as Kentria, Assiros, Kastanas and Toumba Thessalonikis. Radiocarbon dates are currently published only from Kamenska Chuka and supplemented by an archaeomagnetic date of 1230–1160 BC (Jordanova and Kovaceva 1998: 341; Kulov and Stefanovich 2001; Stefanovich and Bankoff 1998). According to the excavators, the settlement underwent two construction phases: the first around 1350 BC and the second around 1250 BC, after which it was severely damaged by an earthquake. The site was finally destroyed around 1200 BC and never rebuilt (Todorova 2003: 301). Ceramic imports of Mycenaean style were found only at the sites of Dragoyna, LHIIIA2 (Bozhinova 2008); Drama, LHIIIB (Lichardus 2003; 2004); Koprivlen, LHIIIB (Alexandrov 2002; 2007); and Faia Petra, LHIIIB1 (Valla 2000, 2007). While the pots from Dragoyna come from redeposited contexts, those from Koprivlen were found in phase II of the settlement and dated to 1340-1180 BC (Alexandrov 2002).

The stratigraphic sequences from Ada Tepe, Gluhite Kamani and Stambolovo, all located in the Eastern Rhodopes, allowed the dating of two different types of contexts. The first context covers the LBA assemblages, recognisable mostly by the presence of incised ware. The dates associated with that fill in the span between the 15th and the end of the 13th century BC. The second context addresses a layer, sealed between the LBA and a context with EIA pottery and covers most of the 12th century BC, synchronous with LHIIIC in the Aegean (Nekhrizov and Tsvetkova). Hristo Popov and Albrecht Jockenhövel detected earlier phases at the mine settlement at Ada Tepe, which they placed in the mid-2nd millennium BC[14] (Popov and Jochenhövel 2011: 269); they also align this date with the beginning of the LBA in Bulgaria. Nevertheless, the bulk of the material from the site was compared with pottery from the Upper Thracian Plain and dated to the 13th and 12th centuries BC. Furthermore, two bronze double-axes from the region, one of which came also from Ada Tepe, were compared with 14th and 13th century examples from the southern Aegean (Popov and Jochenhövel 2011: 273).

More recent and still unpublished data from this micro-region can shed some light on the absolute chronology of this part of Thrace. The first set of radiocarbon samples comes from Gluhite Kamani and dates to 1430-1300 BC (see Table 8.2 for uncalibrated data). These results for the first time set the appearance of the LBA in the Eastern Rhodopes as early as the 15th century BC. However, the site was only recently excavated and the associated material has not been published yet. The rest of the samples come from two settlements in the area, Ada Tepe and Stambolovo, which mostly span the 13th and 12th centuries BC (Nekhrizov and Tsvetkova, in press). Whilst the contexts associated with the 14th and the 13th centuries BC consist of ‘pure’ LBA material, the ones dated in the 12th century contain elements of the Transitional Period between the Bronze Age and the Iron Age. The same period is also attested at the site of Gluhite Kamani covering a span of about seventy years during the 12th century BC. The modelled age, based on wiggle matching analysis of the dates falls within 1184-1100 BC (Nekhrizov and Tsvetkova, in press).

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[14] According to Popov, the earliest unpublished radiocarbon dates from the mine Ada Tepe fall in the 16th century BC (personal communication with the author).

LabID	Date	Error	Material	Site name
SUERC-38871 (GU25528)	2935	30	bone	Gluhite Kamani
Beta-311891	2940	30	seed	Gluhite Kamani
SUERC-38870 (GU25527)	2945	30	bone	Gluhite Kamani
Beta-311890	2950	30	seed	Gluhite Kamani
SUERC-38874 (GU25531)	2955	30	bone	Gluhite Kamani
SUERC-38873 (GU25530)	2970	30	bone	Gluhite Kamani
SUERC-38876 (GU25533)	2970	30	bone	Gluhite Kamani
SUERC-38875 (GU25532)	2995	30	bone	Gluhite Kamani
Beta-291561	3000	40	charcoal	Gluhite Kamani
SUERC-38872 (GU25529)	3050	30	bone	Gluhite Kamani
Beta-291562	3120	40	charcoal	Gluhite Kamani
Bln-1245	3217	100	charcoal/seed	Tell Nova Zagora
Bln-1152	3358	100	seed	Tell Nova Zagora
Bln-1155	3040	100	charcoal	Ezero (Tell Dipsis)
Bln-4322	3135	50	charcoal	Plovdiv-Nebet Tepe
Bln-2570	2960	50	charcoal	Durankulak
Beta-65858	2960	50	charcoal	Kamenska Chuka
Beta-670133	3040	60	charcoal	Kamenska Chuka
Beta-67012	3140	90	charcoal	Kamenska Chuka
SUERC-37405 (GU25482)	2940	30	bone	Ada Tepe
SUERC-37396 (GU25476)	2945	30	bone	Ada Tepe
SUERC-37403 (GU25527)	2945	30	bone	Ada Tepe
SUERC-37394 (GU25473)	2955	30	bone	Ada Tepe
SUERC-37395 (GU25474)	2980	30	bone	Ada Tepe

Table 8.2. Uncalibrated radiocarbon site dates from Thrace.

Although offering a significantly better situation than before, the recent radiocarbon evidence remains scarce and generally insufficient to create any finer chronological structure within the LBA. However, the combination of synchronized pottery datasets and new radiocarbon data provides a degree of certainty that allows us to argue for at least three phases in the second half of the 2nd millennium BC, and to state that possibly the most widespread of them was contemporary with Aegean LHIIIB and LHIIIC-early. The transition to the Iron Age was also observed and documented within the pottery repertoire and confirmed by the recent radiocarbon dates covering the last LHIIIC phase. The indeterminate position of the beginning of the EIA creates further uncertainty for the interpretation of this transitional period, but it provides a substantial foundation for further analysis. Furthermore, it seems that this period has been detected only in the Eastern Rhodopes and perhaps along the middle Struma Valley and, more generally, it seems that not all periods have been represented in this micro-region. As a next step, it will be essential to trace any chronological variations with respect to pottery distribution and to add them to the regional deviations identified in chapter 7.

8.2. Chronological sequences based on pottery variations

8.2.1. The earlier LBA

One of the main problems causing uncertainty in the chronology of pottery styles and the Thracian LBA more generally is the lack of clear stratigraphic sequences. A large amount of data comes from survey projects and surface collections, whilst the number of chance finds is also significant. Thus the majority of the ceramic material from Thrace is traditionally stratigraphically less well defined but is compared with the material from better stratified tell sites in Macedonia. Nevertheless, in the light of the analyses presented in chapters 6 and 7 and the chronological framework outlined above, there are some potential chronological variations in the pottery distribution that need to be considered.

The settlement near Asenovets was one of the first LBA sites identified in the Upper Thracian Plain and was also for a long time associated with the character of the LBA in Thrace. The wish-bone handles, which were discovered for the first time there, became known in the Bulgarian archaeological literature as 'Asenovets' handles (Kanchev 1974: 65-76; 1982: 259-269; 1984: 134-159; Georgiev et al. 1979:11). The partial destruction of the LBA layer at this site did not allow further interpretation and the material could not be re-examined.[15] With the accumulation of excavated and surveyed sites, the wish-bone handles became known also at other sites in the Upper Thracian Plain, and sporadically in the Eastern Rhodopes, and were associated with the earlier strata in Vratitsa and Chokoba (Katincharov 1974; Leshtakov 2006). Leshtakov described Vratitsa as "the unique site in Bulgaria with true imports from Northwestern Anatolia, but also with imitations besides prevailing local hand-made pottery production" and dates the early material in the 17th and 16th centuries BC, based on parallels within the style of Troy VI (Leshtakov 2009: 61, 62). Very similar wish-bone handled bowls in Central Macedonian toumbas appeared already at the end of the MBA and are very common in

[15] The ceramic material is considered to have been lost sometime in the 1980s.

the early periods of the LBA in that area, although the type of vessel does not disappear until nearly the end of the Bronze Age (Horejs 2007: 95, 106). Wish-bone-handle bowls are also documented in some EBA3 sites from Upper Thrace as a part of the Ezero culture (Katincharov 1974). Other vessels coming from these early strata are the spouted-bowl type defined in chapter 6 as type B5 and some plain ware cups and small jugs (Leshtakov 2009; Leshtakov et al. 2010: 130), also with traditions in MBA and possibly EBA 3 (Figure 8.2). While in Galabovo there is occasional incised decoration associate with the MBA ceramics, at the early strata in Vratitsa and Chokoba, it is very uncommon (Figure 8.3). Plastic knob- and horn-like attachments to the body and the handles of the vessels are also typical for this early phase, signifying the very beginning of the LBA or the end of the MBA.

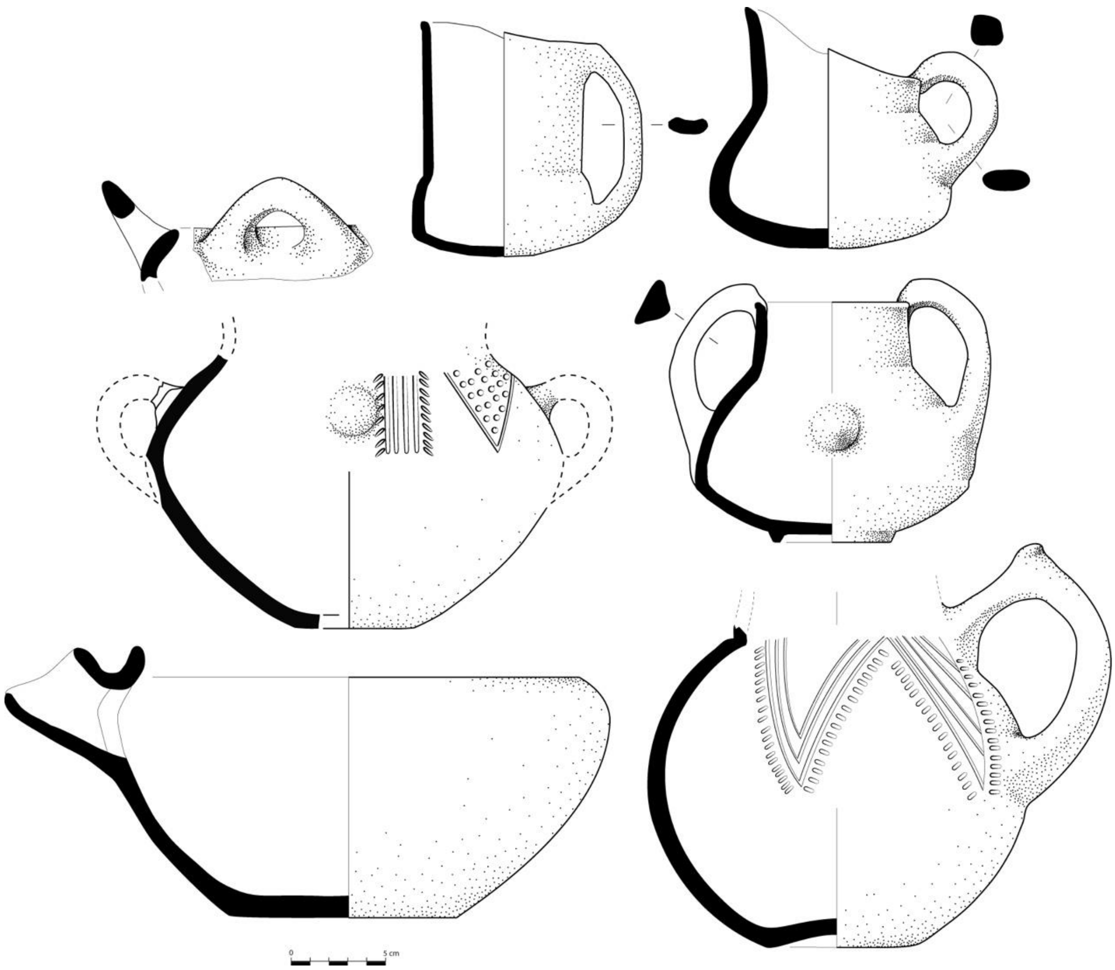

Figure 8.2. Typical vessels, MBA1 (19th - 18th centuries BC, phase Galabovo).

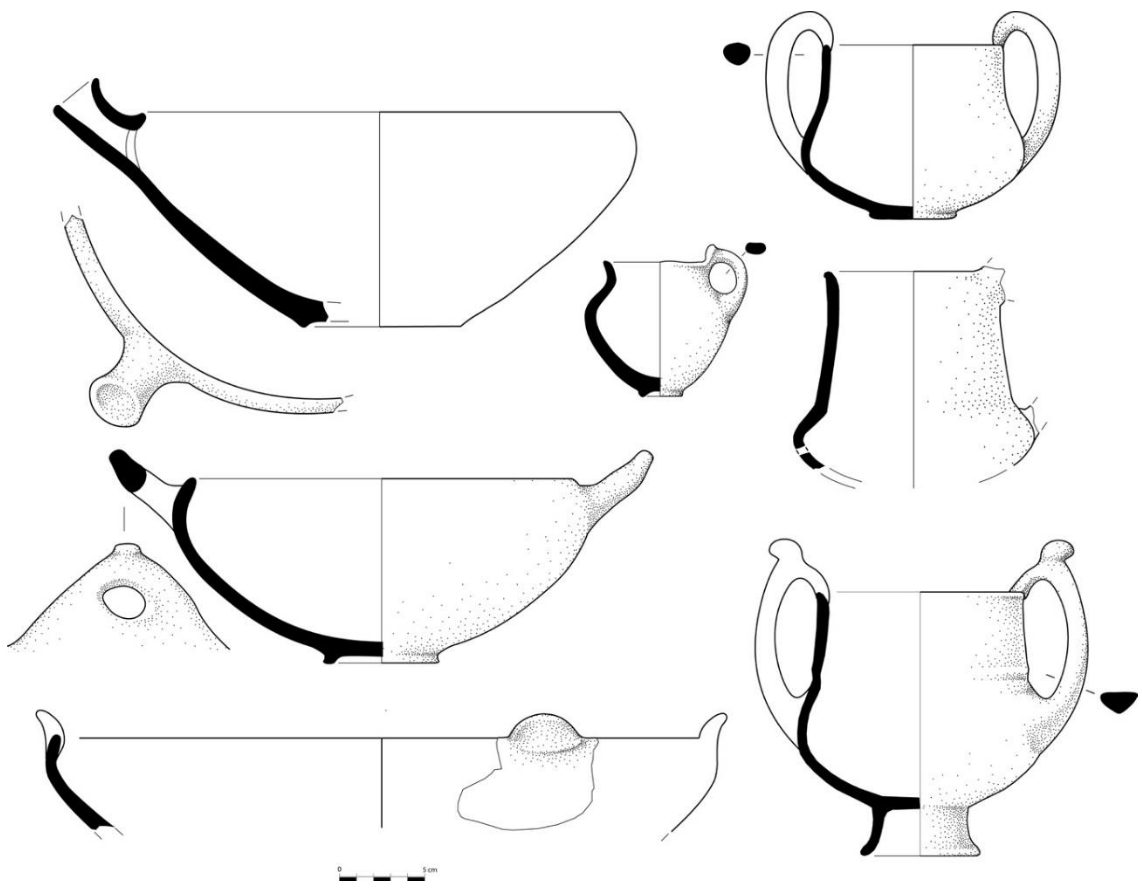

Figure 8.3. Typical vessels, MBA2 (17th – 16th centuries BC, phase Vratitsa).

Tatul might be the only site, and especially in the Rhodope Mountains, that suggests the existence of a final phase of the MBA, and it also provides a *terminus post quem* for the local LBA. Although the site is interpreted as a sanctuary and is considered as having a long life-span, the earliest conventional LBA pottery can be compared with Kastanas phases III and IV. In terms of shapes and decoration some similarities can be seen with horizons 19-18, but there are also parallels within horizons 15 and 14b, which are dated through Mycenaean imports and imitations to LHIIIB (Table 8.3).

Kantharos type K5 can also be associated with early LBA contexts. Examples have been discovered at Tatul, Nova Zagora and a stratigraphically fixed specimen was found in layer 13 at Olynthos (Horejs 2007: 289, Taf.16). The vessel was compared with examples from the early phase of the Vatin culture (Garašanin 1983; 1999) and dated between the 18th and 16th centuries BC or MHIIIB/LHI (Horejs 2007: 289). Consequently, this date was given to the entirety of layer 13 from Olynthus. The ceramic assemblage from this layer is similar to the Upper Thracian Plain early pottery strata described above in the lack of incised decoration, mostly burnished surface within the red/brown colours as well as shapes reminiscent of the EBA tradition, like wish-bone-handled bowls and spouted vessels of different shapes (see Horejs 2007: Figure 8).

8.2.2. The appearance of incised ware in Thrace

One key question related to the character of the LBA in Thrace concerns the first appearance of incised ware in that area. Several points lead towards a possible answer. First, there are only very limited examples of incised decoration in earlier MBA/LBA contexts associated with the period from the 18th to 16th centuries BC, which could be considered an extended EBA3/MBA tradition identified at tell Galabovo and elsewhere (Leshtakov 2002). A new decorative style appears in the Eastern Rhodopes and the Upper Thracian Plain for the first time no later than the early 15th century BC, based on dates from Ada Tepe and Stambolovo. A new incision technique, the so-called *furchenstich*, also appeared along with this pottery. In addition, at Toumba Thessalonikis in Central Macedonia, the earliest incised vessels of similar style appear in phase 7, which in absolute dates was placed in the first half of the 15th century BC (Figure 8.5; Andreou 2009, 18). The local ceramics there follow a tradition from the Macedonian MBA and consist of burnished plain ware with reddish, light brown and beige colours. After its introduction, incised pottery coexisted with plain burnished ware, but remained in relatively small quantities, unlike the incised material from the developed LBA in Upper Thrace and the Eastern Rhodopes, which is mostly comparable with Kastanas 14a and 14b (late 13th century BC). Therefore, one can consider the foreign character of the incised ware in Macedonia, where different styles co-existed, while at least in some sub-regions of Thrace the incised ware became the main pottery type once it was introduced. The strongest presence of incised vessels in Toumba Thessalonikis occurred in phases V and IV (LHIIIB and LHIIIC-early) or during the entire 13th century BC and disappeared after the beginning of the 12th century BC (Andreou and Psaraki 2007: 400, Figure 3, 401). As a part of the better dated sites like Ada Tepe, Tatul, Vratitsa, etc., its existence in Thrace can be placed within the period between the second half of the 16th and the first half of the 12th centuries BC, with a possible peak during the 13th century BC.

The distribution of the LBA pottery from the East Rhodopes ends with the beginning of the 12th century BC, and consists of highly decorated ceramics mostly with *furchenstich* motifs of geometric types. The *furchenstich* technique seems to be very well represented in the area as Georgy Nekhrizov has documented (Figure 8.5; Nekhrizov 1995). There are also a few shapes typical for this area, which may also have chronological variations. The open S-shaped kylikes KY6.1 (Figure 8.4, f) are also common in the sites from the Eastern Rhodopes synchronised with LHIIIB/C. Decorated open kantharoi of type K4 (Figure 8.4, e) along with closed, decorated and undecorated kantharoi type K3 (Figure 8.4, b) seem to have had a longer life and were found in both the mature LBA and the Transitional Period to the EIA. The fragments of amphoras type A1 and A2 (Figure 8.4, a) belong to earlier contexts, while the later period is associated mostly with the S-shaped type A6 (Figure 8.4, c).

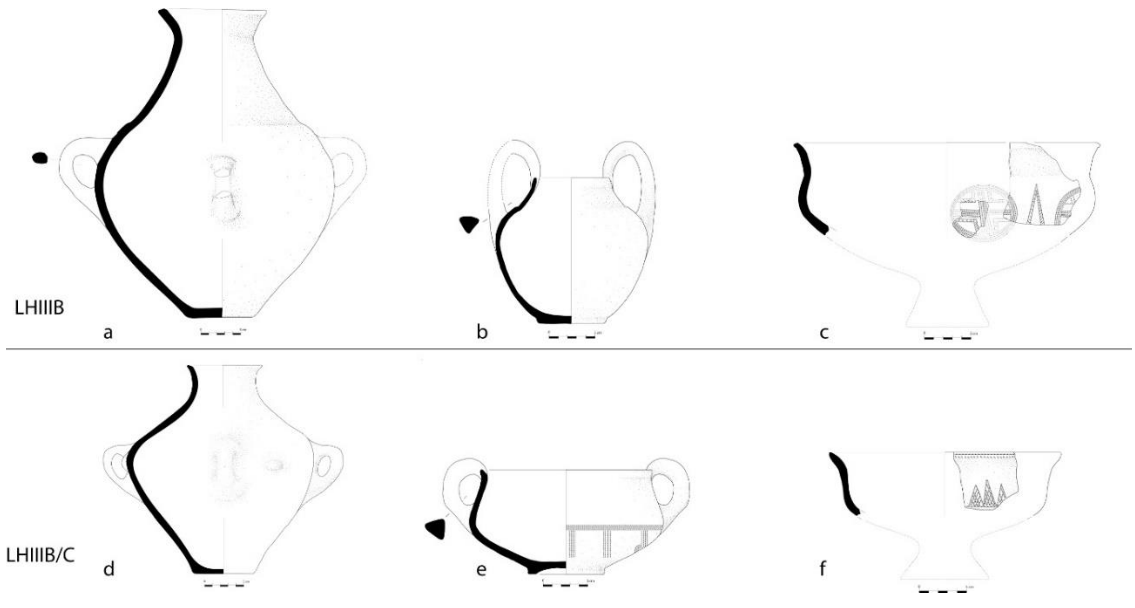

Figure 8.4. Some of the typical LBA vessels from the Eastern Rhodopes, synchronised with LHIIIB (a-c) and LHIIIB/ LHIIIC (d-f).

Alix Hochstetter (1984) has described the development of the amphoras in neighbouring Macedonia. She identified that abruptly divided vessel parts of the amphora shape during the developed phase of the LBA sometimes have unusually large dimensions, comparable to pithos sizes. Based on the material from Kastanas, the author concludes that towards the end of the LBA the profile of the vessels becomes more softly curved and S-shaped (Hochstetter 1984: 48). The same pattern seems to be recognisable also in the Eastern Rhodopean LBA. However, the number of recognised amphora shapes from the Eastern Rhodopes and the Upper Thracian Plain remain very small in comparison with the areas to the west and southwest. Identified decorated amphora fragments of type A1 are well represented at the tumuli burials near Nevrokopi, were found at Pchelarovo, Stomantsi, and Alada in the Eastern Rhodopes (see Leshtakov 1990: 3, Figure 8; Nekhrizov 1995: Figure 2-9, 17, Figure 3-29-34).

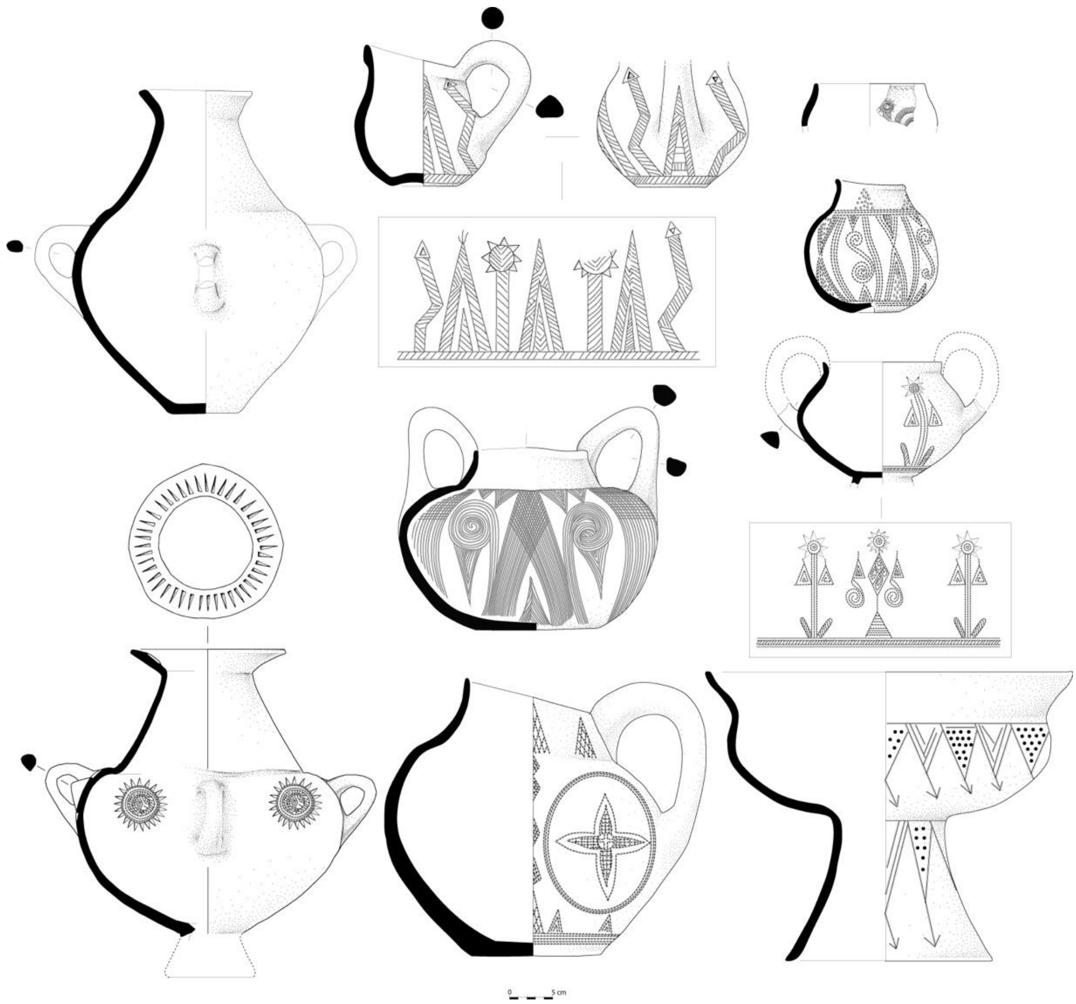

Figure 8.5. Typical vessels, LBA1 (end of 16th – 14th centuries BC, phase Ada Tepe).

To the Transitional Period belong also bowls B2 found at Ada Tepe, which can be considered as a prototype of some EIA amphora shapes (Nekhrizov 2006). In relation to the pottery from the Transitional Period, the stratigraphic layer 'ATIa' from Ada Tepe contains the most comprehensive sample.[16] The majority of the pottery has the characteristics of finer plain ware with well-polished black and greyish-black surfaces. The most important characteristic of that material is the contemporary existence of roughly executed channelled (fluted) decoration, which would become common in the EIA (Nekhrizov 2006), along with *furchenstich* and incised motifs typical of the LBA. There is also evidence for the co-existence of kantharos type K3 and some EIA kantharos shapes with channelled decoration. The examples of K3 are mostly undecorated and only rarely decorated with *furchenstich* and encrusted with white paste.[17] In addition, some of the main decoration types during this period are plain plastic bands on fineware, small lugs and small 'proto-knobs'.

Layer ATIa, very well conserved underneath a later IA stone wall, is clearly distinguished from the later ATIb layer, which contains pottery with characteristics of the very beginning of the EIA. It is also stratigraphically distinct from the amalgamation of the LBA evidence assigned to ATI. This stratigraphic 'sandwich', along with the character of the pottery described above, defines ATIa as an example of the Transitional Period between the Bronze Age and the Iron Age identified through the material culture. Furthermore, it offers an answer to another difficult question concerning the date of the *furchenstich* decoration. We do not know with certainty where and when this type of technique appeared, but it seems clear that it survived until the very end of the Bronze Age and declined throughout the Transitional Period at least in the Eastern Rhodopes. Some of the motifs (mostly different types of triangles) continued also in the EIA, but were replaced with fine, very thin incisions. Unfortunately, layer ATIa is very

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[16] The layer was excavated and defined by the author of this dissertation, under the supervision of Georgy Nekhrizov (Bulgarian Academy of Sciences). The direct observations of the appearance and the stratigraphic position of the material gives me some certainty in describing its characteristics and relying on its significance.

[17] As another characteristic of the Transitional Period, it is important to note that the encrustation with white paste continues to be practiced in the EIA.

thin and the amount of pottery discovered within is not enough to provide a solid basis for comparison with other contexts in the area.

Although developed LBA material was documented within the ATI stratum, it seems that the main settlement was located on the upper slopes of the same hill, Ada Tepe. More recent excavations of the slopes uncovered a settlement associated with gold mining activities along with certain proof that those mines were exploited in the LBA (Popov and Jockenhövel 2011). The pottery from that settlement has the characteristics of the *furchenstich* decorated East Rhodopean material described above.

Incised decoration of developed type is also common in the Western Rhodopes in its local variations. The pottery from the Western Rhodopean cemeteries consists of amphora types A1 and A2, kantharoi K1 and K4.1, kylikes KY3, 4, and 5 and bowls B3. The burial artefacts are commonly an amphora, functioning as an urn and sometimes covered with a kylix or a large bowl, and a kantharos or two as grave gifts. To this burial group belongs the tumulus at Faia Petra. The proportions and the decorative style of the amphora from Faia Petra (Valla 2007: 367, Figure 12) are close to those found in burial mounds in Exohi and Potami in the Drama region (Grammenos 1979). In general, and according to the shape repertoire and rich decoration, the two pottery assemblages are similar and strictly follow Western Rhodopean burial customs. Other common elements are the burial mound they were covered by as well as the practice of cremation. Furthermore, Faia Petra contains something that none of the others do: two Aegean-type stirrup jars. As Magda Valla suggested, these two vessels along with a plain cut-away jug seem extraneous to the entire burial assemblage, but are much closer to, and even typical of, central Macedonian sites (Valla 2007: 369). On this basis, the cemetery was dated to the end of LHIIIB or the beginning of LHIIIC. A similar date was also assigned to the burials near Nevrokopi (Grammenos 1979; Koukouli-Chryssanthaki 1982) and the rest of the tumuli in the Western Rhodopes (Kissyov 2009).

There are a few remarks to be made in relation to this type of burial site. First, there is a new ritual introduced to the area during this period – cremation. The ritual of burying the remains in an amphora-shaped urn, covered with a bowl or a kylix, under a small earthen mound, is typical for the tumulus culture, but more closely related to the group Donja Brnjica–Gornja Stražava. The latter is associated with the late phase of the LBA and traditionally dated between 1300 and 1100 BC (Garašanin 1983: 727–735; 1999: 51), which corresponds with the date given to most Rhodopean burials (see Kissyov 2009; Leshtakov 2008). If the ritual spread from the area of distribution of Donja Brnjica–Gornja Stražava, which is generally the Morava valley in Serbia, then the *terminus post quem* for the appearance of the tradition in the Western Rhodopes must be around 1300 BC. Thus, the corresponding end of LHIIIB and the beginning of LHIIIC associated with the southernmost examples, such as Faia Petra, should be an acceptable date.

One of the LBA cemeteries from the Western Rhodopes distribution shows slightly different characteristics. The pottery from the burial at Turlata is different from those around it. Close parallels can be found with the cist graves from Elaphotopos and Mazaraki in Epirus (see Wardle 1977: 185, 186, Figure12). One of the vessels from Mazaraki has a distinct neck with offset shoulder and a vertical handle placed on the side, which is also similar to a cup from Borino (Kissyov 1993: 4, Figure5, e). Wardle does not engage with a more precise date, but assumes that these types of vessels must be contemporary with "later Mycenaean pottery". He also suggests that the same material must have been in use "prior to the arrival of the first Mycenaean imports" (Wardle 1977: 182). The ladle-cup from Progled must be considered as possessing a similar origin (Kissyov 1993: 3, Figure3), since these types of shapes are not common among the Thracian ceramic repertoire and must belong to a different ceramic tradition.

To recap, it seems like incised ware did not occur evenly throughout the LBA and across the region. In Thrace it appeared at the end of the 16th or the beginning of the 15th century BC, approximately at the same time it appeared in Central Macedonia (prior to the appearance of Mycenaean style pottery). Its distribution can be traced in the Upper Thracian Plain and the Eastern Rhodopes in this early phase and probably it spread later towards the Western Rhodopes, and probably Western Thrace. Furthermore, the earliest LBA (or final MBA) does not contain incised ceramics, but rather plain burnished vessels of less variety, comparable with the earlier ceramic assemblages in Central Macedonia. The incised ware also seems to disappear towards the end of the period and in particular during the Transitional Period (12th century BC) to be replaced or to partially co-exist with another, plain ware tradition.

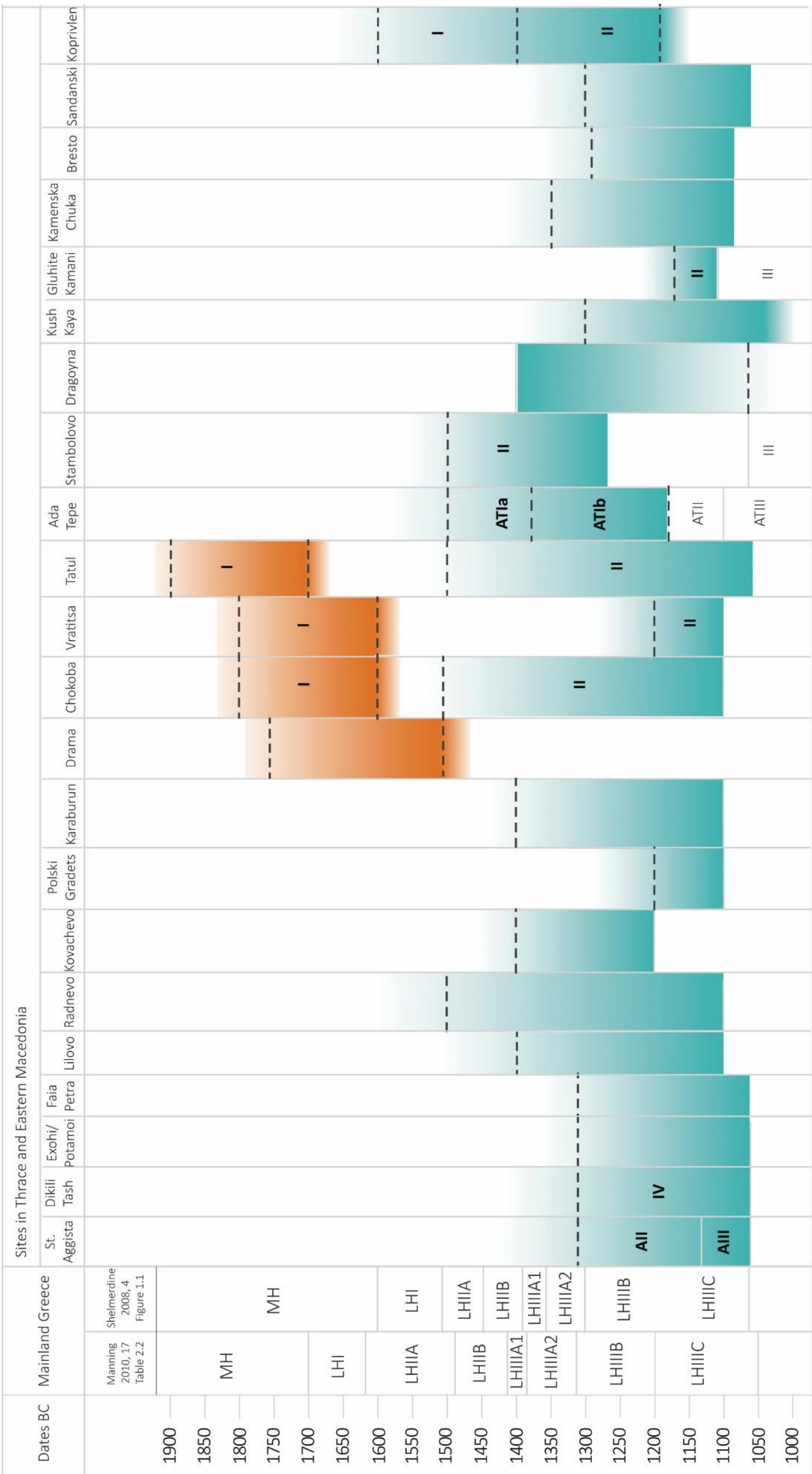


Table 8.2. Table of Thracian sites with provisional dates compared with Aegean absolute and relative chronology.

8.2.3. The end of the Bronze Age

North from Toumba Thessalonikis, just outside Macedonia, there is the LBA settlement of Kamenska Chuka, excavated between 1993 and 1998 (Stefanovich and Bankoff 1988). The site consists of a settlement and a mound, located above the middle course of the Struma River. The settlement was the first with preserved defensive stone architecture discovered in Upper Thrace. The site was provisionally dated 1400-1100 BC (Stefanovich and Bankoff 1988: 268). Archaeomagnetic evidence, however, gave a much shorter date range for the destruction of the site between 1230 and 1160 BC (Jordanova and Kovacheva 2007), where the thickness of the archaeological layer does not suggest an extended occupation prior to that. The ceramic material from this site mostly consists of plain ware, with a dark-brown, grey or blackish surface, amphoras type A4, kylikes type KY2, bowls type B1 and kantharoi K1 and K1.1. Bi-conical silhouettes and sharp body transitions dominate (Figure 8.6). A comparable assemblage was discovered at the burial site at Sandanski. If the date from Kamenska Chuka is acceptable also for Sandanski, that means that towards the end of the 13th and the beginning of the 12th centuries an S-shaped amphora with knobs and open kantharos type K4.1 appear, which are comparable to the Eastern Rhodopean examples from the Transitional Period. This material is also comparable with the necropolis at Ulanci in today's F.Y.R.O.M., dated between the end of the 14th and the beginning of the 12th century BC (Mitrevski 1997: 26-70; 2007: 443).

The appearance of little knobs and horn-like projections on some kantharoi from Sandanski and Kamenska Chuka are considered later elements, originating in the Bronze Age, but well developed in the EIA (Alexandrov et al. 2007: 379). A comparison was made with horn-like projections found in Thasos grave T1-II, which is placed in phase 1B of the necropolis (Koukouli-Chryssanthaki 1992: 566-567, Table 62.41).

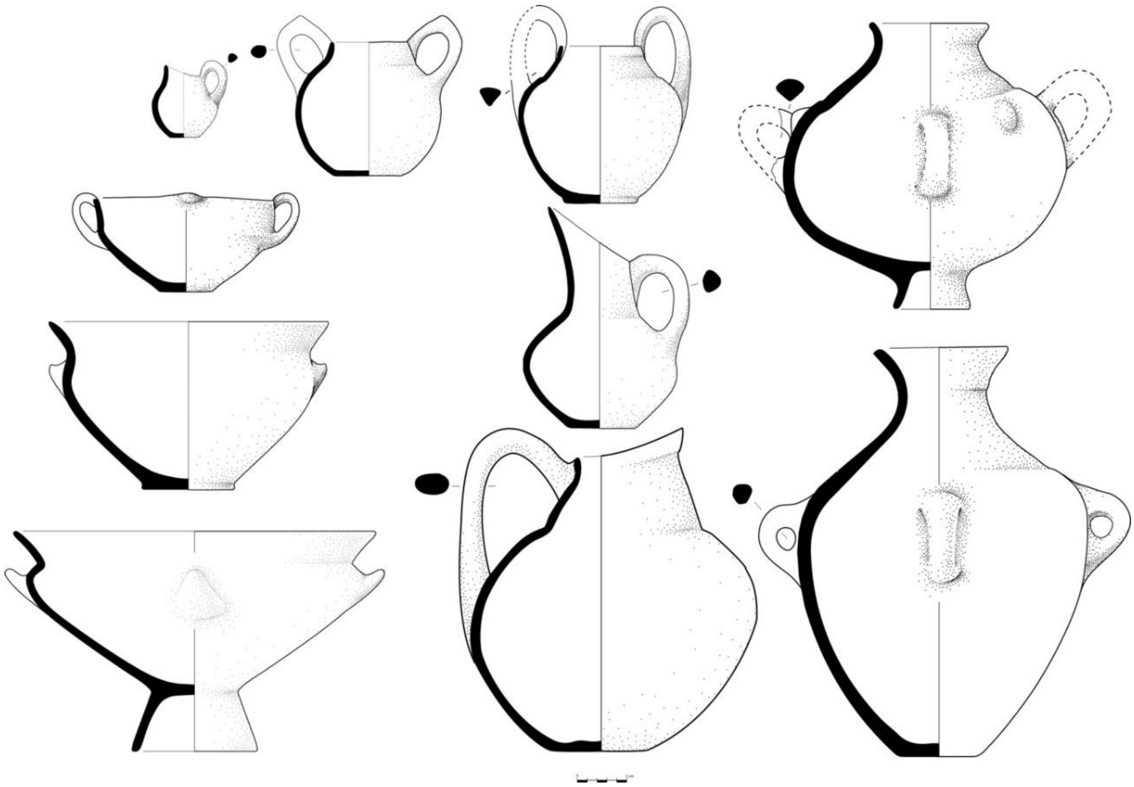


Figure 8.6. Typical vessels, LBA2 (13^{th} - early 12^{th} centuries BC).

Similar vessels and general similarities within the entire pottery repertoire can be seen in the necropoleis at Ulanci, Klucka-Hippodrome, and other sites from the Brnjica group. A typical element is that these ceramics are rarely decorated and only some have a few knobs or plastic bands as in the case of Sandanski and Kamenska Chuka (Alexandrov 2007: 377). Parallels to the horn-like projections can also be seen at Klujcka-Hippodrome and other cemeteries of the Brnjica type (Jovanovich 1999). This not only speaks of a cultural 'proximity' of the middle Struma Valley and the Western Rhodopes with Brnjica, but it also supports the general date of this pottery in both micro-regions in LHIIIB and the first half of LHIIIC. However, the incised decoration on the pottery from the sites in the Struma valley area is very rare, which can either 'push' the distribution of the Struma ceramic material towards the very end of the period or it can imply that slightly different ceramic traditions existed, despite their 'bond' with Brnjica.

When addressing the end of the LBA, Dragi Mitrevski considers the necropolis at Klujcka-Hippodrome in Skopje (Mitrevski 1994; Savopoulou 1987; 1988), as a site associated with new arrivals from the north, who brought cremation in urns covered by tumuli. According to Mitrevski that arrival happens during the 12th or the very beginning of the 11th century BC. A similar situation can be observed in Kastanas, layers 12 and 11. The burnt layers in the Lower Vardar settlements of Kastanas and Vardaroftsa Vardino have witnessed destructions coinciding with that period and a significant change in the material culture. The settlement of the Ulanci Necropolis was also burned and never rebuilt. The population of the LBA settlement at Vardarski Rid in Gevgelija seems to have relocated to a position at the nearby hill of 'Kofilak'. It seems like the processes related to these destruction events seem to have ended the LBA in the Struma Valley area as well as on various sites in F.Y.R.O.M. and Central Macedonia.

8.2.4. The appearance of Handmade Lustrous ('Knobbed') Ware

Determining the end of the LBA depends largely on two factors: 1) the date and the definition of a suggested Transitional Period, and 2) the beginning of the EIA. Whether or not the former can be clearly identified as yet, the beginning of the IA must set a definitive *terminus ante quem* for the end of the Thracian Bronze Age. Although new radiocarbon dates from Thrace have appeared recently, the very beginning of the period remains hard to define due to a lack of conclusive stratigraphic evidence linking it with the previous period. However, there is another type of evidence that can potentially clarify some aspects of the topic.

The appearance of 'knobbed ware' at Troy can be interpreted as a chronological marker for the end of the Thracian Bronze Age (Aslan and Hnila 2015: 189; Blegen et al. 1958: 158; Hnila 2012; Hänsel 2008: 60, 1; Koppenhöfer 1997: 337–47; 2002; Pieniążek−Sikora 2002; 2003: 33). The surface of this new class of handmade pottery, that appears in Troy for the first time in phase VIIb2, is almost always carefully polished and lustrous, actually more often decorated with channelling (also known as 'fluted ware') and incisions than with knobs. Knobs are in fact fairly rare, despite the name. Accordingly, hereafter I will employ the term 'handmade lustrous ware' or simply 'lustrous ware' when discussing the contemporary knobbed and fluted pottery types. The discrepancies in the dates of the Thracian LBA and EIA created confusion in relation to the date of this pottery and how it refers to the local, both Balkan and Anatolian, chronological schemes. It is, however, important to postulate that lustrous ware in Thrace has a definite higher stratigraphic position than the incised ware described above. All the material addressed in this dissertation is in fact earlier than the lustrous ceramics, although certain overlaps are observed within contexts of the suggested Transitional Period. Material evidence from a number of sites validates the impression that the lustrous ware partly follows the distribution of incised ware. The record of several layers in the Eastern Rhodopes, which display signs of transitional elements in the pottery, can justify the relative chronological position of both pottery styles or document their partial coexistence. It is not entirely clear whether elements from Thracian LBA pottery can be related to the 'Barbarian' ware of Troy VIIb1, but there is no doubt that when the knobbed ware arrived in Troy as a developed style, the existence of incised ware must have been already terminated in Thrace. Thus the beginning date of Troy VIIb2 must be also the *terminus ante quem* for the end of the LBA incised ware in Thrace.

The material culture of Troy VIIb2 (in the range of 1100-1000 BC according to Weninger 2010, 150, Figure 13) has been compared with that from multiple sites in Thrace and the Balkans as well as the Lower Danube region (Blegen et al. 1958: 144–5; Bonev 1988: 12; Chichikova 1968; Dimitrov 1979; Hänsel 2008: 61–75; Koppenhöfer 1997: 337–47; 2002; Pieniążek−Sikora 2002: 2003, 33). This type of pottery, mostly represented by table or storage vessels, is associated with the beginning of the EIA (Hänsel 1976:, 237). The cooking ware is usually coarse jars with finger impressed plastic band decorations and sometimes lug handles. The appearance of handmade coarse ware, however, happens sometime during Troy VIIb1, which can be related to the end of the Bronze Age. This fact is not surprising, since this type of cooking pottery happens to be conservative and does not change much between the Bronze Age and the Iron Age in Thrace. Thus the first appearance of this pottery type could have happened a little earlier than the beginning of the EIA and on a much smaller scale, mostly covering some of the basic cooking shapes.

Once the determination has been made that Troy VIIb2 corresponds to the beginning of the EIA in Thrace, Troy VIIb1 can then be aligned with the majority of Thracian LBA sites; the date, according to Mountjoy, appears to be Transitional LHIIIB2-LHIIIC Early and the LHIIIC Middle Phase (Aslan and Hnila 2015: 188; Mountjoy 1999: 323–4).

When defining the beginning of the EIA in a broader context, there are some discrepancies which cause certain terminological misconceptions. For example, in central Anatolia the period is considered to begin immediately after the collapse of the Hittite Empire (Genz 2006); while in Thrace, due to the absence of recorded significant events such as this, it is associated with the appearance of lustrous pottery (Hänsel 1976: 237). In Aegean archaeology, the beginning of the IA traditionally corresponds to the early Protogeometric phase (Dickinson 2006: Figure 1.1). Thus the definition of the sub-phases of Troy VII as belonging to either the Bronze Age or the IA according to an Aegean, Anatolian or Balkan framework became a terminological problem (Hnila 2012: 13). Despite that inconsistency an alignment exists when comparing the material culture. In this sense, Troy VIIb2 Handmade Lustrous Ware belongs to the same group of pottery as the Thracian 'channelled' ware. If the pottery style came from or moved through Thrace as a tradition before it appeared in Anatolia, that means that the date given to Troy VIIb2 must be a *terminus ante quem* for the lustrous pottery in Thrace and the end of the Bronze Age.

To determine a narrower regional chronology, Mountjoy linked Troy VIIb1 with Transitional LHIIIB2-LHIIIC Early and probably LHIIIC Middle. She also determined that Troy VIIb2 follows immediately on from late LHIIIC Middle and LHIIIC Late pottery, but no pieces of Submycenaean were found with Handmade Lustrous Ware (Mountjoy 1999: 333). In terms of absolute dates, the *terminus ante quem* could be defined with caution as the appearance of Protogeometric pottery which, according to Catling, falls between 1025 and 950 BC (Catling 1998). Relatively new data from Assiros based on dendrochronological radiocarbon wiggle-matching data suggested a date of 1070 BC or even 1100 BC for the beginning of the Protogeometric period in Macedonia, significantly earlier than previously thought (Newton et al. 2003). Consequently Troy VIIb2 would start sometime at the end of the 12th century BC (Wardle et al. 2007: Figure 7). There is also the question of correlation between the Aegean and the Anatolian LHIIIC and Protogeometric material, but in general terms this means that the EIA in Thrace could have not started later than the second half of the 12th century BC.

The absolute dates from Ada Tepe from the earliest stratum with channelled pottery, non-decorated pottery and pottery decorated with plastic bands also covers the majority of the 12th century BC according to the most recent radiocarbon dates (Nekhrizov and Tsvetkova: Table 5) Sample AT 08 dates a layer of almost entirely non-decorated pottery with the appearance of stamped circle motifs and a small amphora shape, having close parallels in Troy VIIb2 (Blegen et al. 1958: Figure 265, 32). A similar example (Blegen et al. 1958: Figure 265, 37) resembles a slightly earlier prototype from Sandanski, which also supports the date of the cemetery during the first half of the 12th century BC.

Since it is accepted that knobbed ware in Thrace is associated with the early phase of the EIA, one can conclude that the main phenomena we refer to as LBA in Thrace must have ended before Troy VIIb2 or before the end of the 12th century BC. Whether or not Troy VIIb1 can be synchronized with the late phase of the LBA in Thrace is a matter for further investigation. The fact that Balkan elements reached Anatolia sometime prior to the beginning of the EIA is important enough to imply that some movements of temporary or more permanent character were already happening in the area during at least the final phases of the LBA.

8.2.5. Conclusion

The character of the LBA pottery from Thrace described above and in preceding chapters has already suggested that there are not only regional, but also chronological variations in the ceramic dataset. Considering the existing record of local chronology, synchronisation with stratified sites in Central Macedonia and recent radiocarbon evidence, a few key insights can be drawn from the analysis conducted so far:

i) There are two distinguishable periods, supported by radiocarbon dates and material evidence within the LBA: i) late 16th-14th centuries BC, and ii) 13th – early 12th centuries BC.
ii) A third, Transitional Period (12th century BC) can be identified in the Eastern Rhodopes and along the Middle Struma valley.
iii) An earlier LBA connecting to the MBA (17th – 16th centuries BC) can also be detected in the Upper Thracian Plain and the Eastern Rhodopes.
iii) Incised ware appears before the beginning of the 15th century BC in Thrace and does not decline until the beginning of the 12th century BC.
iv) There are chronological as well as regional differences in the distribution of types of ceramic material.

Accordingly and in light of the exploratory analysis as well as the spatial analysis conducted above, I will propose the following chronological scheme for the LBA in Thrace, based on pottery sequence and supported by radiocarbon and some dendrochronological evidence. After the end of the Chalcolithic, the earliest identified material in the Eastern Rhodopes dates to the 19th and the 18th centuries BC (Leshtakov 2009) and is analogous to that found in Galabovo Ia-II (MBA). Both together can be defined as the earliest identified MBA phase in Thrace. This material is stylistically connected to the late EBA Ezero tradition. The material defined as Razkopanitsa VII-Asenovets, however, typical for the Upper Thracian Plain and traditionally considered as the first phase of the LBA in the area, has much closer connections with the MBA pottery, where documented, consisting of wish-bone-handled and spouted bowls, with reddish-brown burnished and mostly undecorated surfaces. Thereafter, new pottery shapes, decoration and styles appear no later than the beginning of the 15th century BC according to available data. Thereafter, the LBA can be roughly divided into further two phases. The first phase probably occupies the majority of the 14th century BC, but it could also have begun towards the end of the 15th century BC. The entire ceramic assemblage is not well defined in details yet, but seems to be attested mostly in the Rhodope Mountains. During the 13th century BC, LBA material described as the Zimnicea-Plovdiv horizon is visible across other parts of Thrace too. There is also a phase, observable at Ada Tepe, Sandanski and Kamenska Chuka, which possibly dates to the very end of the Bronze Age or the Transitional Period between the Bronze and the IA, placed by archaeomagnetic data and radiocarbon evidence sometime between 1250 and 1150 BC.

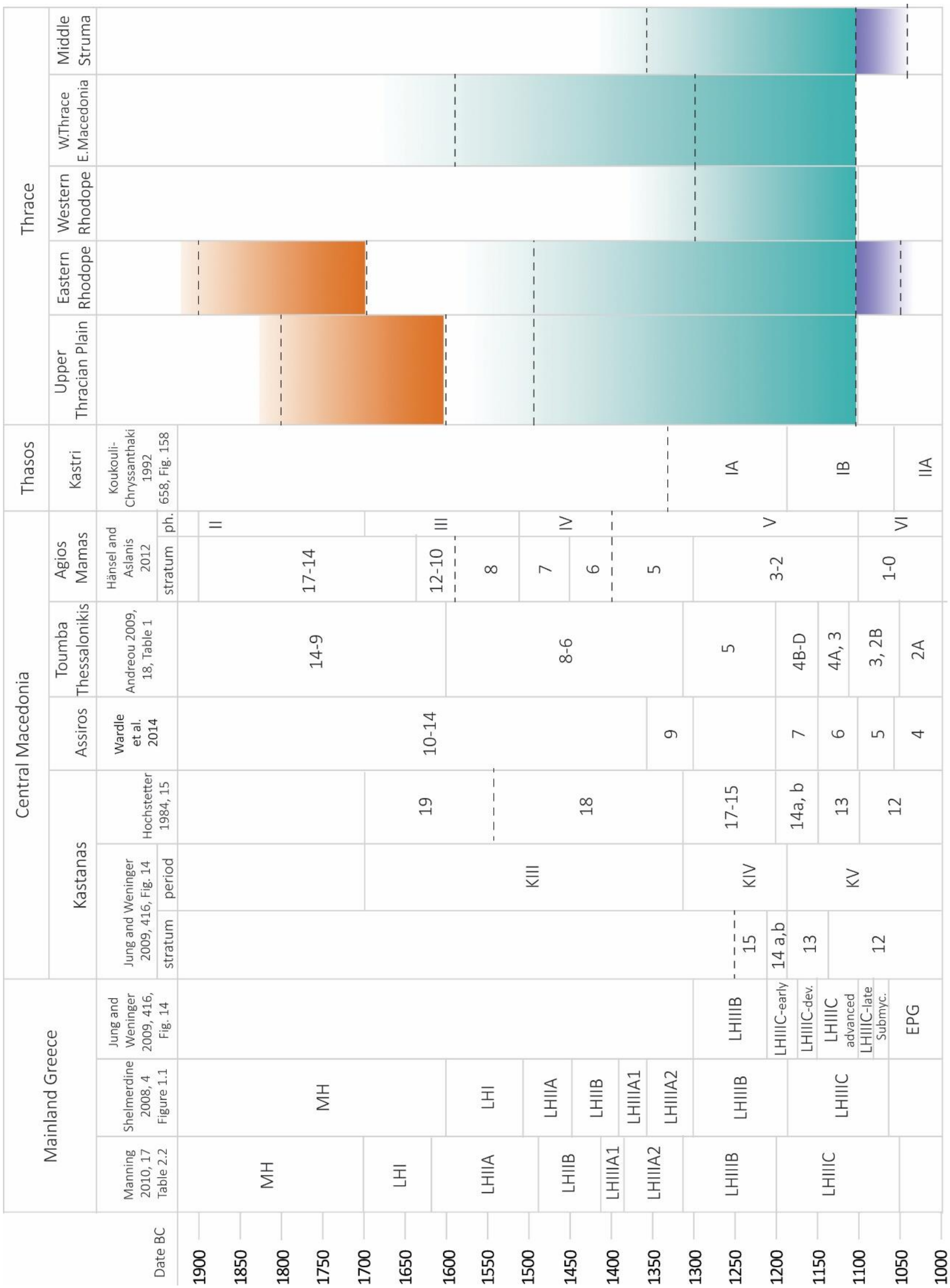


Table 8.3. Chronological table defining five Thracian micro-regions compared with Aegean and Central Macedonian relative and absolute chronology.

To summarise, the chronological evidence from Thrace is patchy and still full of uncertainty. Nevertheless, new scientific data and systematic consideration of the ceramics and those of neighbouring regions allow us to set some chronological markers at different spots in Thrace, although careful consideration is needed when comparing different regional periodisation schemes during the 2nd millennium BC. With these concerns in mind, I will hereafter refer to the following periods when addressing issues of chronology: MBA 1 (1900-1700 BC), MBA 2 (1700-1500 BC), LBA 1 (1500-1300), LBA 2 (1300-1200) and Transitional Period (first half of the 12th century BC).

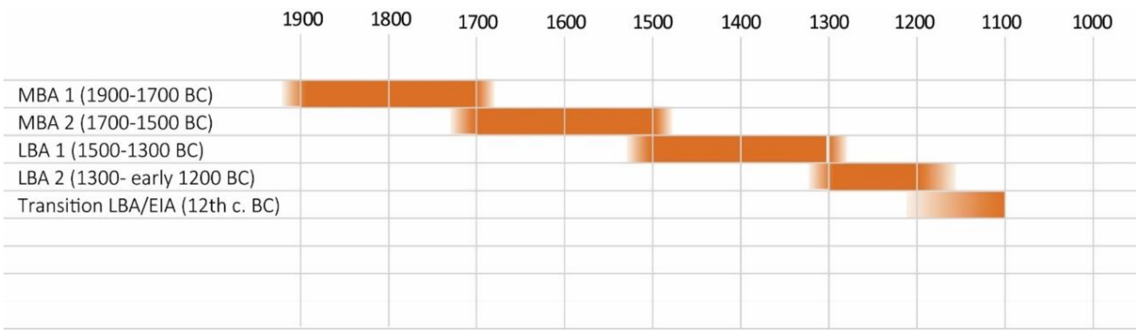


Table 8.4. Suggested new periodisation of the MBA and LBA.

The dates given here are based on a limited number of recent samples. Although a more elegant chronological scheme needs to be developed as new data comes to light, the one suggested here will serve as a foundation for further observations and analysis in the next two chapters.

Chapter 9. Quantifying site distributions

As a last step in the spatial analysis included in this study I will propose an approach to understanding site-level data. The separate areas that were clustered as a result of the relative risk analysis of pottery types will now be used as a starting point for identifying other patterns in the landscape at the site scale. Using a methodology adapted from what is often known as archaeological 'predictive modelling', I will explore associations between site locations and various environmental and topographic features. In order to address some of the problems arising from the strict definition of areal boundaries, I will propose further zonal divisions, sometimes combining two or more of the ceramic-defined micro-areas and a set of final regions will be interpreted for what they say about different local LBA settlement strategies. Furthermore, a separate last section will be dedicated to a finer–scale case study, which models a unique, better-surveyed area in the Eastern Rhodopes.

9.1. Site Location Modelling

Although it is common sense that a community's choice of a place to live is often dependent on cultural, economic and political criteria, the location of a site is often also influenced by the geomorphology and general environmental affordances of a region (Perakis 2000; Perakis and Moysiadis 2010). As described in chapter 3, Thrace has a rather diverse topography, local climate differences and natural distribution of resources (Figure 9.1), which must have in one way or another influenced decision-making about occupation or choices about land use. However, any seemingly obvious relationship between site locations and the landscape can obscure different local and chronologically varying strategies. In this respect and before I continue further with the analysis, it is necessary to stress that the correlations revealed in what follows need to be considered with caution, since they do not necessarily imply a direct cause-effect relationship and potentially underemphasise the role of other factors (Kohler and Parker 1986: 400, 401). Correlations, however, can still help us think about the factors influencing people's past beliefs, behaviour and choices, and how sites of different character are patterned across the landscape.

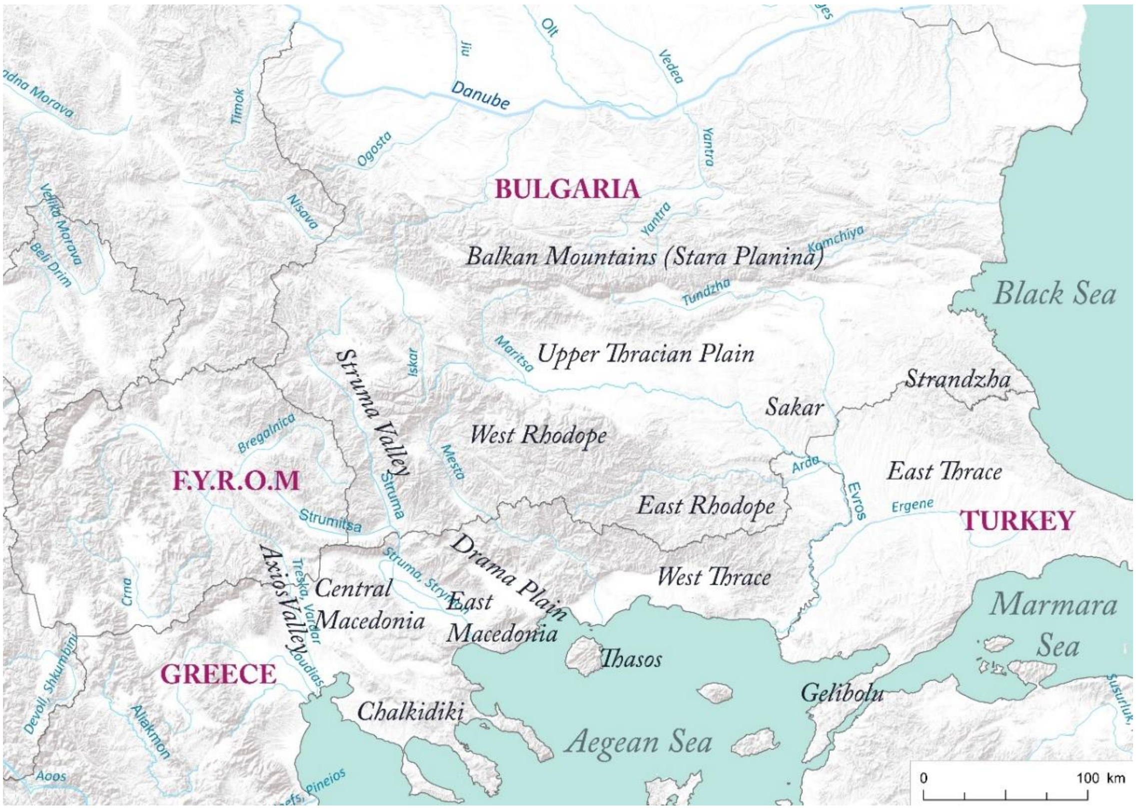


Figure 9.1. Map of the area with places mentioned in the text.

Ignoring the importance of scale and its complexities risks misrepresentation of the past (Lock and Molyneaux 2006: 1). The essence of the problem lies in comparing the relationships identified at two or more different scales (Haggett 1965: 164). In the social sciences, the challenge of scale forces us to think hard about whether an observed pattern is most relevant to an individual, a group, a community or a wider ‘society’ (Mathieu and Scott 2004: 2). Besides, choosing a study area, archaeologists often ignore the existence of the scalar trap sometimes called the ‘ecological fallacy’ and related spatial statistical issues such as spatial heterogeneity and spatial non-stationarity. Simply, this means that the choice of a study area shape and size can influence the outcome of an analysis (Heywood et al. 2002: 8). Nevertheless, there is no uniform recipe for how to define the study area in order to avoid misleading results. Most areal units are modifiable and depend on the individual research questions and the researcher’s preconceptions (Openshaw 1983).

An understanding of scale is crucial to interpreting archaeological spatial patterns. Important questions involve: how to define the appropriate scale, how consistent the results will be if we change it, whether the patterning is robust and to what degree it matters if we have recognised the right scale. One pitfall is either to lump areas that are better off being treated separately or to split others that show no real sign of different behaviours. Accordingly, one of the tasks of the spatial analysis in this research is to explore the influence of scale in the study area and to acknowledge possible significant relationships that require different interpretations for different sub-regions. So while one of the main tasks in this study is to offer a 'unified' archaeological synthesis of Thrace as a place otherwise torn apart by modern political divisions, it would be rather illogical to assume a continuous, consistent distribution within the physical limits of the area as defined in chapter 3. The site-type distribution described in chapter 5 already implies a certain level of regionalism, as do the pottery distributions in chapters 6 and 7, and I will explore it further below.

9.1.1. Analysis and results

According to the methodology described in chapter two, my main statistical framework consists of location modelling based on multivariate logistic regression. Accordingly, I will build a number of models, which I will compare to identify the most significant combination of predictors for each area. In total, nine alternative micro-regions will be explored (Table 9.1). Some of the areas overlap and thus the sum of the number of sites from all areas does not amount to the total number of sites in the study area (n=359). The definition of these exploratory zones was first based on the patterns detected in the pottery distributions, combined with the distribution of site types. Overall, there are four main areas of interest – the Upper Thracian Plain, the Rhodope Mountains, the valley of the Struma, the West Thrace and, as an external area, the Chalkidiki peninsula and its hinterland. Although this division seems logical overall, there remain areas where zones overlap or could be sub-divided. For example, the Upper Thracian Plain can be taken as a whole, but also its eastern part with the highest density of archaeological sites can be examined individually. The Rhodope Mountains, traditionally divided into west and east, deserve to be tested both together and divided in two. Different scales emerging from such exploration will be tested and the results compared (Figure 9.2 and Figure 9.3).

Zone	*Area (sq.km)*	*Number of sites*	*Location*
1	5170	43	Eastern part of the Upper Thracian Plain
2	18445	72	Upper Thracian Plain
3	15954	109	The Rhodope Mountains
4	8317	30	Western Rhodopes
5	9881	79	Eastern Rhodopes
6	12587	92	Eastern Rhodopes and Sakar
7	8227	51	West Thrace and East Macedonia
8	6171	41	Upper and Middle Struma Valley
9	11644	59	Chalkidiki and its hinterland

Table 9.1. Table presenting the analyical zones to be modelled and compared.

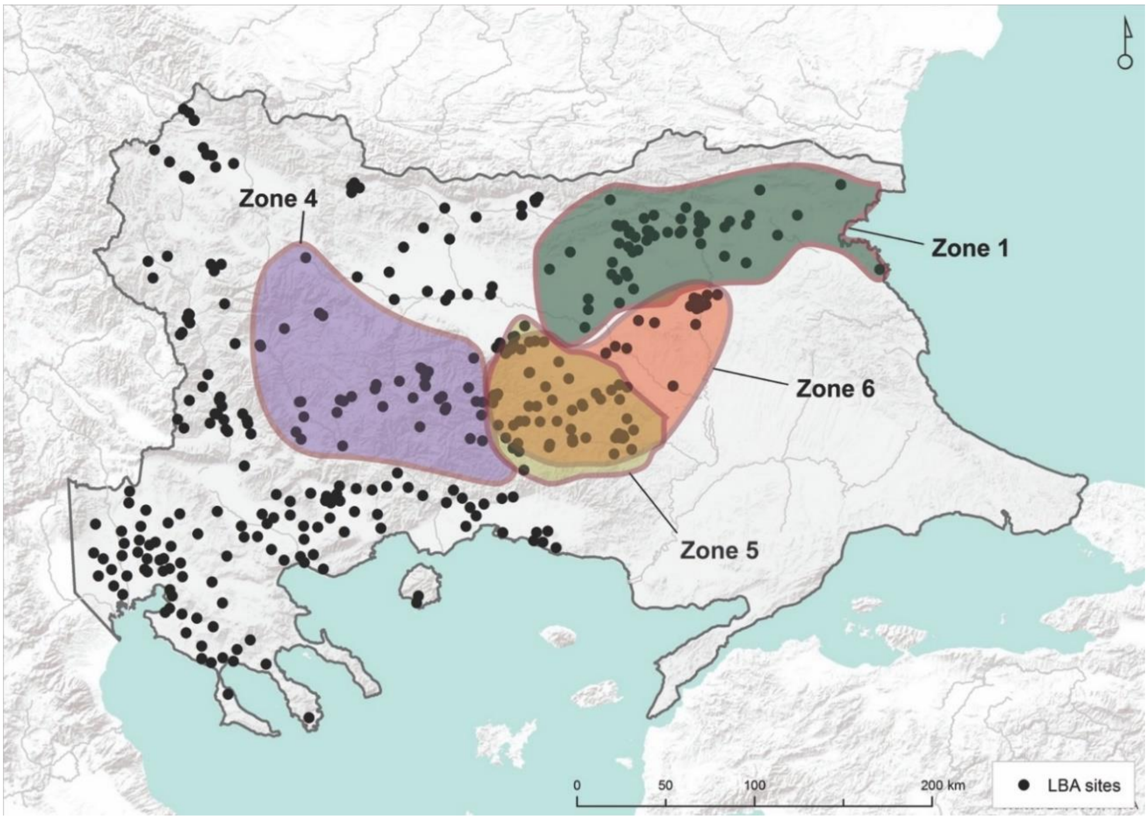


Figure 9.2. Map of Thrace showing proposed zones 1, 4, 5 and 6.

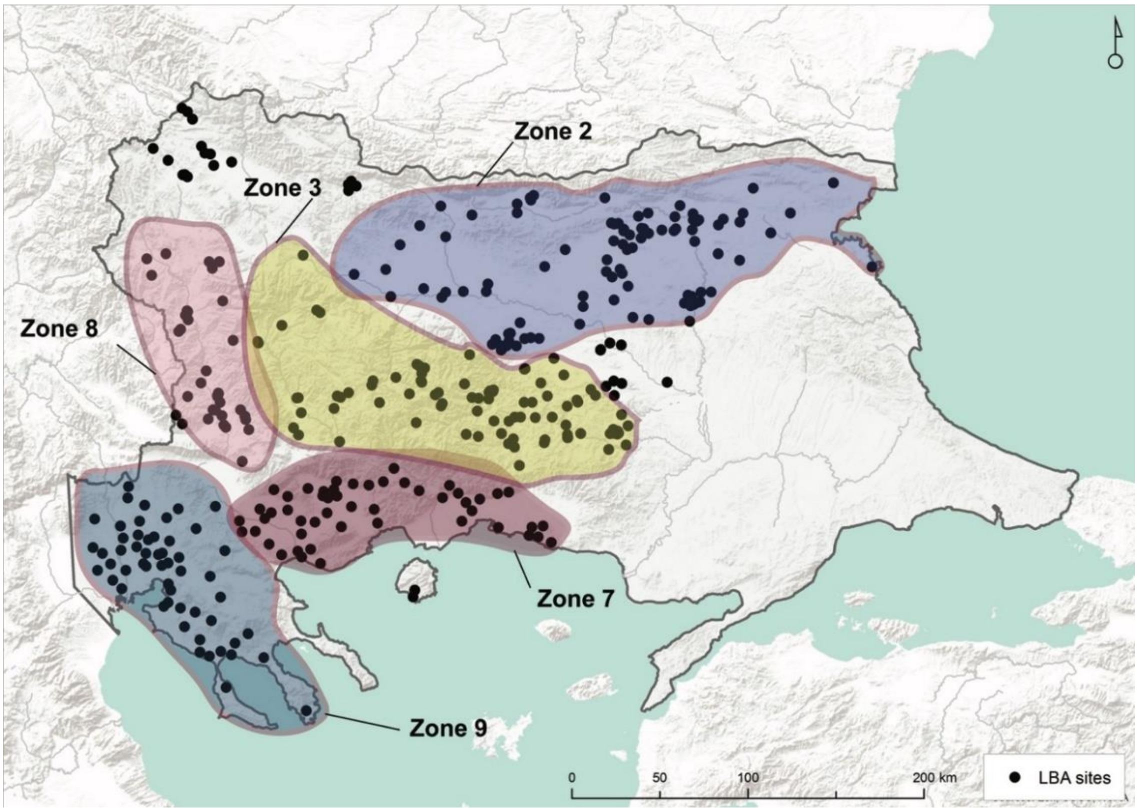


Figure 9.3. Map of Thrace showing proposed zones 2, 3, 7, 8, and 9.

9.1.2. Selection of model covariates

When confronted with the question of where archaeological sites might be located in the landscape, it is not difficult to suggest the kinds of environmental characteristics traditionally considered important. Whether sedentary or nomadic, societies need access to drinking water and in one way or another, sometimes favour protected kinds of landform (e.g. hilltops or valleys) with respect to climatic challenges, social challenges or both. Communities with specific economic needs might have also paid attention to different factors such as transport arteries and access to specific raw materials. The most common and seemingly important geological types in the Thracian area consist of soft limestone, marble and conglomerate as well as gneiss and schist deposits and alluvium formations. It is largely from these different basic criteria that a set of independent variables or covariates was created. There are two main data sources upon which all analysis is based: an elevation model (Appendix 2, Figure A2.46) and a geological map(Appendix 2, Figure A2.47) of the area. From the elevation model, some essential further information about the terrain was derived, such as slope and aspect. A map of rainfall was not included, because there is not enough observable variation in precipitation across the region to justify its use.

Proximity analyses are common in prehistoric archaeology, especially when it comes to measuring the distance between different resources and site location. Proximity to water sources is an assumed objective when choosing a settlement location. According to the specifics of the area, two main types of water sources with relevance to human activities can be separated: i) small–medium-sized watercourses characterized by modest hydrographic regimes, possibly targeted mostly for domestic needs, and ii) large river bodies and riverine resources able to serve domestic needs, but often navigable and thus also of use as transport arteries. Instead of regular Euclidean distance, I have used a rough estimate of the cumulative cost of travelling through each cell (using ArcGIS' isotropic cost distance method). This was necessary because of Thrace's diverse terrain and areas of rugged relief, such as in the Rhodope Mountains and along the Struma valley, where straight line Euclidean distance does not capture whether a point will be easily accessible. This is often true for locations such as peaks or hilltops. Furthermore, particular landforms, such as ridges, peaks or plains give the impression of defining different settlement strategies. Location on ridges was defined using fuzzy membership classes where is 0 is a not a ridge and 1 is a definite ridge with fractional probability in-between. A value is assigned to each pixel on the resulted grid with spatial resolution 30 m. As a result, the final set of predictors is defined as follows: 1. Elevation; 2. Slope; 3. Aspect; 4. Distance to small- and medium-sized water sources; 5. Distance to large river bodies; 6. Distance to alluvium; 7. Distance to conglomerate; 8. Distance to limestone; 9. Distance to marble; 10. Distance to gneiss and schist; 11. Location on ridges; 12. Location on peaks (Figure 9.4). More complex variables such as viewsheds and composite accessibility maps seem unwarranted given the large scale of much of the analysis and the patchy nature of the data. A slightly finer-scale sub-regional study will follow in section 9.2 of this chapter for an unusually well-surveyed region in the Eastern Rhodopes.

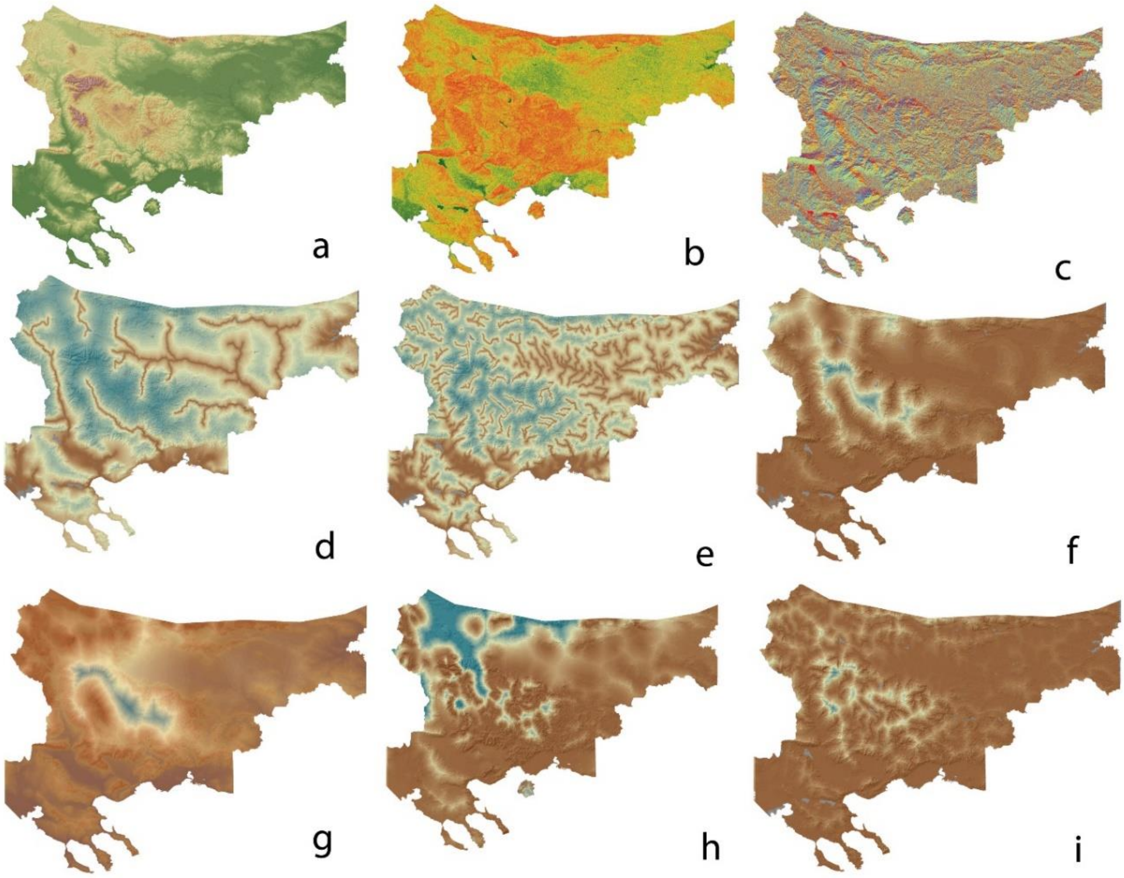
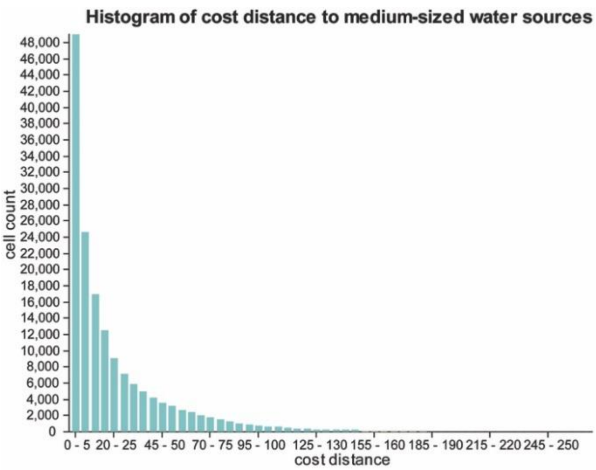


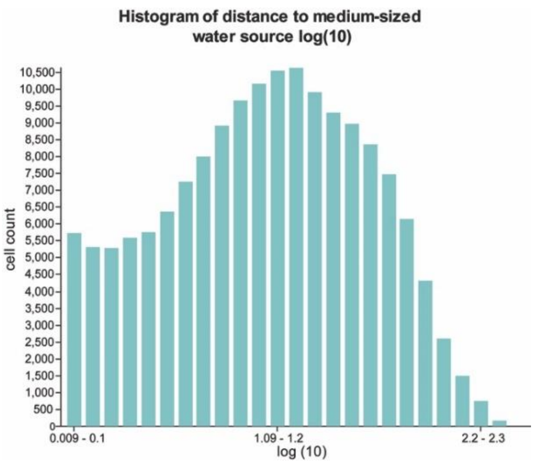
Figure 9.4. Regional characteristics: a) Elevation, b) Slope, c) Aspect, d) Distance to large river bodies e) Distance to small- and medium-sized water sources, f) Distance to marble, g) Distance to limestone, h) Distance to conglomerate, i) Distance to alluvium.

In accordance with the logistic multivariate regression method used here, the dependent variable is dichotomous, made up of both site presences and absences. The former consists of known archaeological locations, while the site absence category should ideally consist of directly confirmed non-site locations. However, in this particular study, not all regions have been explicitly surveyed and the non-site sample is created using a random sampling method, with non-site locations generated in each zone separately in order to match the exact number of the sites in that zone. Thus, each zonal dataset contains a dependent variable (DV) classified in sites (1) and non-sites (0). The uncertainty of non-site locations is a challenge and a regression model built on one random non-site set may differ from another. A more robust, bootstrapped technique was introduced by Bevan and Conolly (2013, 268-270). Following the logic of their argument in slightly modified form, I have included two additional samples of locations absent of registered archaeological sites, including respectively 100 and 500 data points, which are tested against the observed number of archaeological site locations for each zone to explore how sensitive the results are to such changes.

For most predictive modelling, analysis begins by overlaying known site and non-site locations on top of a set of landscape layers and extracting the values of the layers at these locations so that each point location type has a complete set of independent environmental variables (IVs). Before the initial multivariate model is generated, questions of interdependence and significance amongst the possible predictor variables also need to be addressed via diagnostic tests. Due to the varying shape of the frequency distribution of each covariate, an exploratory graphical device (Q-Q plot) comparing the observed and the expected value for each data point, is employed to check the validity of the normal distribution assumption. A significant skewing impact on the results can also come from potential outliers in the site and non-site locations, so I applied a Boniferonni's t-test to calculate a probability value for the extreme observation and calculated a Cook's distance to identify statistically influential data points. Log transformation is also applied when necessary to each independent covariate in an attempt to change the shape of skewed distributions so that they meet the assumptions of parametric statistical tests (Figure 9.5). As a guide to the consistency of the conclusions all models were built with both raw and the log-transformed datasets for comparison.



a)



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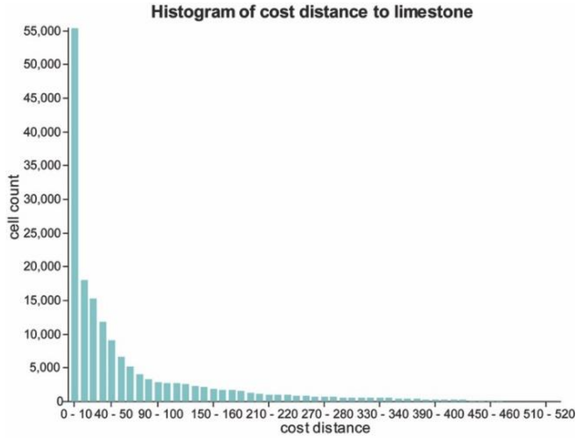
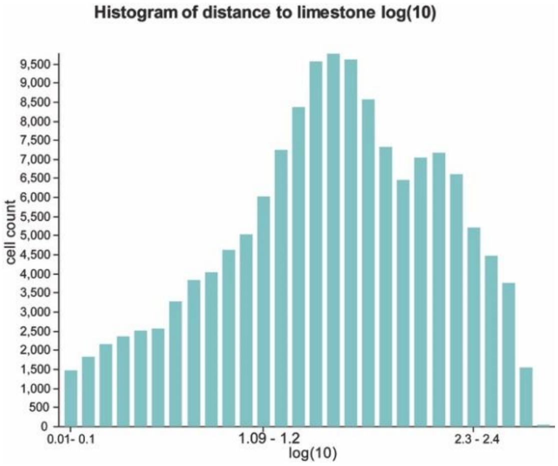


c)



d)

Figure 9.5. Histograms of independent variables showing raw and log-transformed distributions.

Due to the relatively large number of possible predictor variables, I will explore certain key candidate variables in a univariate way first, and then the significant ones will be combined via stepwise model selection using an Akaike Information Criterion (AIC), in order to minimise the loss of information and to detect which model best approximates the observed data. In this case, AIC is applied as a second option after the general fitted model is produced, to assist in evaluating statistically redundant variables. Therefore, and due to issues of interdependence in the predictors, which can confuse the interpretation and compromise the model itself, I also tested the data using variance inflation factor (VIF) and correlation matrixes. While correlation matrixes compare each pair of variables, VIF quantifies the inflation of the standard errors of the estimated coefficients and is able to detect linear dependence among three or more variables. Finally, and as an alternative approach, I applied analysis of covariance (ANCOVA), evaluating whether the means of the dependent variable is equal across the set of independent variables. This is a way to address the same dataset using a different approach and use it as a 'second opinion' where necessary. At the end, an interpretation concerning site location decisions is suggested based on comparison of the user-defined global model, the stepwise AIC model, and the analysis of covariance (both for raw and log-transformed data). Confidence intervals (CI) are also taken into account as a part of the hypothesis testing. In addition to the single point estimate (the most likely value), confidence intervals comprise the margin of error or the amount of uncertainty around that value. When CIs are reported one can assess the precision of the point estimate in the sense that a narrower interval around the sample estimate suggests a more precise estimate.

I will discuss the first proposed zone (Zone 1) in more detail to explain the analytical process, and will then summarise the results for each of the remaining zones. Figures and tables containing the full set of results are provided in Appendix 2.

9.1.2.1. Zone one: eastern part of the Upper Thracian Plain

Based on site type and pottery distribution, the Upper Thracian Plain forms a separate unit in the study area. There are a few possibilities, however, to sub-divide it. The smallest scale embraces the eastern part of the plain, where one can observe a higher density of archaeological sites, albeit still not many. An initial statistical analysis consists of just 86 locations, both sites and non-sites.

In terms of statistical diagnostics, Bonferonni's t-test shows no studentized residuals with Bonferonni $p < 0.05$, meaning that there are no statistically influential data points, which may skew the results. The unexcavated site Voynika was identified as the largest studentized residual or the most deviant point in the distribution. According to the Cook' distance plots there are a few unusual places like Tvarditsa (32), Voynika (35) and one random location (72) from the raw dataset (Figure 9.6) and only non-site locations (51, 72, 84) from the log-transformed data (Figure 9.7). The log-function significantly helped the standardization of the data in this case (Figure 9.8). Multicollinearity was detected only between elevation and distance to alluvium, which was not a problem once the log transformed variables were used (Table 9.3).

Non-constant Variance Score Test	*Chi-square*	*Df*	*p-value*	*Suggested power transformation*
Raw data	0.006332173	1	0.9365753	n/a
Lognormal data	0.8031157	1	0.3701635	n/a

Table 9.2. Non-constant variance score test

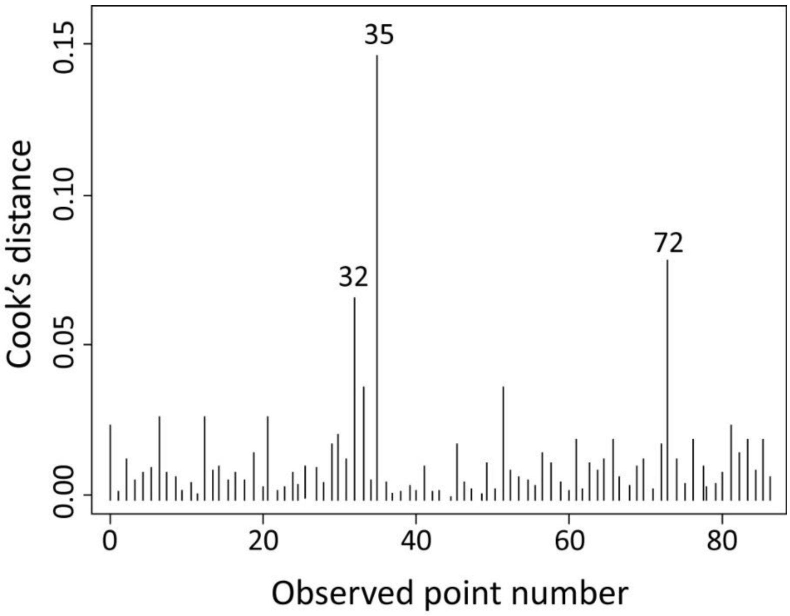


Figure 9.6. Cook's distance plots of raw data

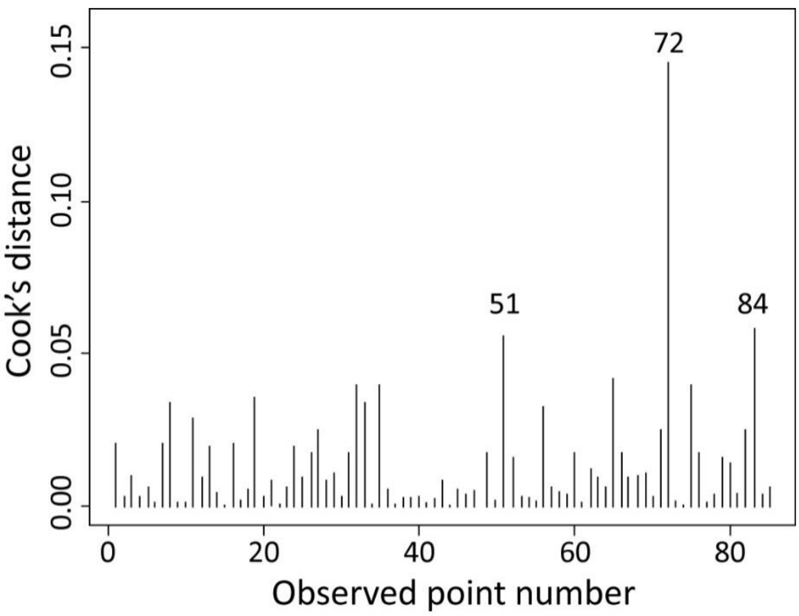
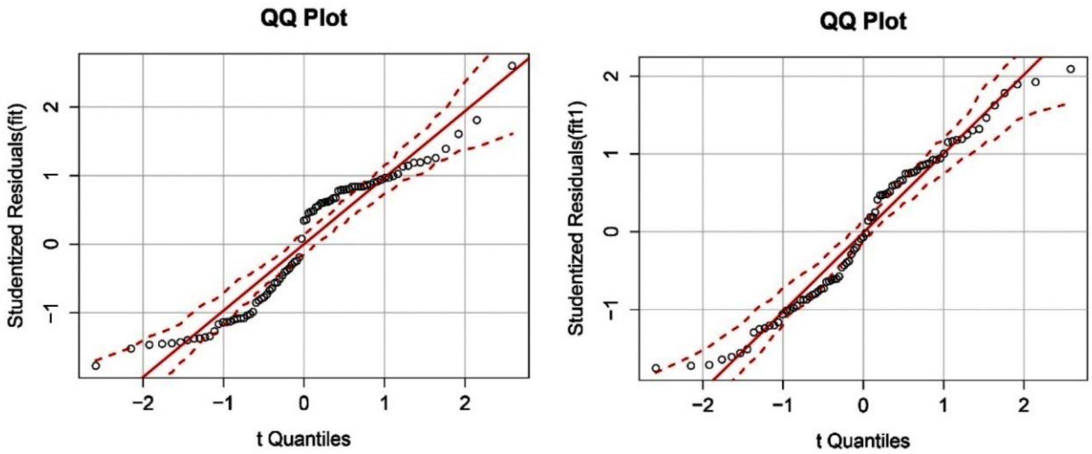


Figure 9.7. Cook's distance plots log-transformed data



a) b)

Figure 9.8. Q-Q plots of a) raw data and b) log-transformed data

Variable	*Raw data*	*Lognormal data*
Elevation	**4.771479**	2.874772
Slope	1.254656	1.118062
Aspect	1.155097	1.247493
Distance to small rivers	2.603030	2.045746
Distance to large rivers	2.101384	1.559503
Distance to alluvium	**4.027594**	1.630512
Distance to conglomerate	2.811273	1.816994
Distance to limestone	3.852132	1.543017
Distance to marble	1.755323	1.363010
Distance to gneiss/schist	1.478034	1.203116
Location on ridges	1.064558	1.194441
Location on peaks	1.089946	1.209934

Table 9.3. Variance inflation factor test for multicollinearity.

In this area, the raw data model based on multivariate regression of the raw data suggests that the only good predictor of the distribution of sites across the landscape is a negative correlation with distance to alluvium at $p<0.05$ (Table 9.4). According to this model, the other variables do not have significant correlations with the site locations. The variance explained by the model is relatively low (R^2 = 17.3%) and it is not statistically significant ($p > 0.1$). However, the model of the log-transformed data increased the variance explained by the model to 25.3% (at $p < 0.05$) and detected distance to large rivers as a second strong predictor with $p < 0.05$ (Table 9.4, 9.5).

	Estimate	*Std. Error*	*t value*	*Pr(>|t|)*
(Intercept)	0.5620804	0.2843574	1.977	0.0519 .
Elevation	0.0009371	0.0016664	0.562	0.5756
Slope	-0.0014277	0.0037760	-0.378	0.7065
Aspect	0.0013863	0.0011330	1.224	0.2251
Distance to small rivers	-0.0149831	0.0161601	-0.927	0.3569
Distance to large rivers	-0.0008983	0.0087252	-0.103	0.9183
Distance to alluvium	**-0.0242899**	**0.0097833**	**-2.483**	**0.0154 ***
Distance to conglomerate	-0.0127956	0.0149913	-0.854	0.3962
Distance to limestone	0.0148801	0.0089769	1.658	0.1017
Distance to marble	0.0027666	0.0050775	0.545	0.5875
Distance to gneiss/schist	-0.0039147	0.0043124	-0.908	0.3670
Location on ridges	0.1460309	0.1440992	1.013	0.3143
Location on peaks	0.0011577	0.0020650	0.561	0.5768

Residual std error on 72 df	0.4937
Multiple R-squared:	**0.1739**
Adjusted R-squared:	0.0362
F-statistic on 12 and 72 df:	1.263
p-value:	**0.2595**

Table 9.4. Linear model of raw data (where *** p<0.001, ** p<0.01, * p<0.05, . p<0.1).

	Estimate	*Std. Error*	*t value*	*Pr(>|t|)*
(Intercept)	-0.77019	1.03547	-0.744	0.45941
Elevation	0.84236	0.50976	1.652	0.10280
Slope	0.19163	0.22504	0.852	0.39729
Aspect	-0.09477	0.12718	-0.745	0.45860
Distance to small rivers	-0.27626	0.21602	-1.279	0.20504
Distance to large rivers	**-0.37500**	**0.17960**	**-2.088**	**0.04034 ***
Distance to alluvium	**-0.39471**	**0.11746**	**-3.360**	**0.00125 ****
Distance to conglomerate	-0.15868	0.15636	-1.015	0.31359
Distance to limestone	0.26415	0.17695	1.493	0.13987
Distance to marble	0.13460	0.15280	0.881	0.38131
Distance to gneiss/schist	-0.14970	0.18840	-0.795	0.42947
Location on ridges	0.39350	0.23159	1.699	0.09362 .
Location on peaks	0.07238	0.10041	0.721	0.47336

Residual std error on 72 df	4694
Multiple R-squared:	**0.2534**
Adjusted R-squared:	0.1289
F-statistic on 12 and 72 df:	2.036
p-value:	**0.03288**

Table 9.5. Linear model of log-transformed data (where *** p<0.001, ** p<0.01, * p<0.05, . p<0.1).

As a next step of the multivariate regression, a stepwise AIC comparison was involved to select the best combination of predictors. As a result, the previously identified significant predictor was now not identified by the stepwise model based on the raw data (Table 9.6). However, the stepwise model of the log data confirms the combination of distance to alluvium and large rivers suggested by the log data model (Table 9.5). The variance explained by this model is about 17%, where p = 0.001633 (Table 9.7). The same combination of predictors for the site locations is supported also by the ancova model of the log data (Table 9.9) and by the narrow confidence intervals around the regression values of the relationships between each of these two predictors and the site locations (Table 9.11).

	Estimate	*Std. Error*	*t value*	*Pr(>|t|)*
(Intercept)	0.671513	0.131869	5.092	2.22e-06 ***
Distance to small rivers	-0.016247	0.010006	-1.624	0.108
Distance to gneiss/schist	0.001897	0.003685	-0.515	0.608

Residual std error on 82 df	0.4993
Multiple R-squared:	**0.03803**
Adjusted R-squared:	0.01457
F-statistic on 2 and 82 df:	1.621
p-value:	**0.204**

Table 9.6. Stepwise Akaike model of raw data (where *** p<0.001, ** p<0.01, * p<0.05, . p<0.1).

	Estimate	*Std. Error*	*t value*	*Pr(>|t|)*
(Intercept)	-0.08814	0.71085	-0.124	0.90163
Elevation	0.53782	0.35796	1.502	0.13687
Distance to large rivers	**-0.38250**	**0.16731**	**-2.286**	**0.02486 ***
Distance to alluvium	**-0.30907**	**0.09503**	**-3.252**	**0.00167 ****

Residual std error on 81 df	0.4665
Multiple R-squared:	**0.1704**
Adjusted R-squared:	0.1397
F-statistic on 3 and 81 df:	5.547
p-value:	**0.001633**

Table 9.7. Stepwise Akaike model of log-transformed data (where *** p<0.001, ** p<0.01, * p<0.05, . p<0.1).

	Df	*Sum Sq*	*Mean Sq*	*F value*	*Pr(>F)*
Elevation	1	0.394	0.3943	1.617	0.2075
Slope	1	0.002	0.0018	0.007	0.9319
Aspect	1	0.429	0.4288	1.759	0.1890
Distance to small rivers	1	0.258	0.2575	1.056	0.3075
Distance to large rivers	1	0.481	0.4815	1.975	0.1642
Distance to alluvium	1	0.953	0.9533	3.910	0.0518 .
Distance to conglomerate	1	0.037	0.0366	0.150	0.6995
Distance to limestone	1	0.748	0.7478	3.068	0.0841 .
Distance to marble	1	0.033	0.0328	0.134	0.7150
Distance to gneiss/schist	1	0.072	0.0725	0.297	0.5873
Location on ridges	1	0.279	0.2792	1.145	0.2881
Location on peaks	1	0.008	0.0085	0.035	0.8526

Residuals df	72
Residuals Sum sq	**17.553**
Residuals Mean Sq	0.2438

Table 9.8. Ancova model raw data (where *** p<0.001, ** p<0.01, * p<0.05, . p<0.1).

	Df	*Sum Sq*	*Mean Sq*	*F value*	*Pr(>F)*
Elevation	1	0.055	0.0553	0.251	0.6178
Slope	1	0.008	0.0081	0.037	0.8486
Aspect	1	0.060	0.0599	0.272	0.6035
Distance to small rivers	1	0.533	0.5325	2.417	0.1244
Distance to large rivers	**1**	**1.416**	**1.4163**	**6.428**	**0.0134 ***
Distance to alluvium	**1**	**1.949**	**1.9487**	**8.844**	**0.0040 ******
Distance to conglomerate	1	0.171	0.1707	0.775	0.3817
Distance to limestone	1	0.211	0.2110	0.957	0.3311
Distance to marble	1	0.014	0.0142	0.064	0.8004
Distance to gneiss/schist	1	0.103	0.1027	0.466	0.4969
Location on ridges	1	0.749	0.7492	3.400	0.0693 .
Location on peaks	1	0.114	0.1145	0.520	0.4734

Residuals df	72
Residuals Sum sq	**15.864**
Residuals Mean Sq	0.2203

Table 9.9. Ancova model of log-transformed data (where *** p<0.001, ** p<0.01, * p<0.05, . p<0.1).

Variable/ Pr(>|t|)	Raw data	Lognormal data	Raw AIC	Lognormal AIC	Ancova	0.6178
Elevation	0.0519 .	0.10280		0.13687	0.2075	0.8486
Slope	0.5756	0.39729			0.9319	0.6035
Aspect	0.7065	0.45860			0.1890	0.1244
Distance to small rivers	0.2251	0.20504	0.108		0.3075	0.0134 *
Distance to large rivers	0.3569	**0.04034 ***		**0.02486 ***	**0.1642**	**0.0040 ****
Distance to alluvium	**0.0154 ***	**0.00125 ****		**0.00167 ****	**0.0518 .**	**0.3817**
Distance to conglomerate	0.31359	0.31359			0.6995	0.3311
Distance to limestone	0.13987	0.13987			0.0841 .	0.8004
Distance to marble	0.38131	0.38131			0.7150	0.4969
Distance to gneiss/schist	0.42947	0.42947			0.5873	0.0693 .
Location on ridges	0.09362 .	0.09362 .			0.2881	0.4734
Location on peaks	0.47336	0.47336			0.8526	0.6178

Table 9.10. Model comparison (where *** p<0.001, ** p<0.01, * p<0.05, . p<0.1).

Variable	Pr(>|t|)	Confidence intervals	Pr(>|t|) log	Confidence intervals log
Elevation	0.285	0.9975619-1.0042317	0.810	0.85491158-6.3058249
Slope	0.6355	0.9909454-1.0058935	0.964	0.77924044-1.8826759
Aspect	0.18371	0.9993536-1.0016000	0.719	0.70889850-1.1670756
Distance to small rivers	0.116	0.9514106-1.0120769	0.253	0.49675619-1.1585001
Distance to large rivers	**0.0821 .**	0.9825247-1.0171144	**0.0338 ***	**0.48335227-0.9772687**
Distance to alluvium	**0.0119 ***	**0.9588105-0.9962698**	**0.00206 ****	**0.53530232-0.8483164**
Distance to conglomerate	0.609	0.9594972-1.0186250	0.849	0.62805302-1.1592568
Distance to limestone	0.428	0.9965976-1.0324077	0.8882	0.92065416-1.8422162
Distance to marble	0.468	0.9931390-1.0132564	0.454160	0.84799075-1.5435589
Distance to gneiss/schist	0.443	0.9886613-1.0057668	0.6897	0.59514446-1.2455265
Location on ridges	0.14	0.8799937-1.5506128	0.349	0.94137141-2.3335898
Location on peaks	0.713	0.9966120-1.0041161	0.33239	0.88300169-1.3088979

Table 9.11. Regression values and confidence intervals (where *** p<0.001, ** p<0.01, * p<0.05, . p<0.1).

Based on the models presented above and the level of their significance, it can be concluded that two environmental variables exhibit statistically significant relationships with the LBA site locations in this micro-region. Due to the lack of collinearity between the predictors, one can assume that potentially there is a dual settlement pattern. It seems possible that the local settlement strategy included a preference for fertile alluvium valleys for land use purposes, such as arable fields and easy access to navigable arteries and water supplies for irrigation of crops. In such a model, the subsistence strategy involved would imply limited or intensive farming and possible uses of the river arteries for transportation or trade.

9.1.2.2. Zone two: the entire Upper Thracian Plain

Despite a concentration of sites in the eastern part of the Upper Thracian Plain, the entire plain was also analysed here as a corrective to just paying attention to the eastern part on its own. The dataset consists of 142 locations, with an equal number within this of sites and non-sites. Based on this sample, the statistical diagnostics show no studentized residuals with Bonferonni $p < 0.05$ and therefore no statistically influential outliers. A few unusual locations are identified including the unexcavated site of Gichuriyata and two non-site locations for the raw data (Figure A2.8), and the cemetery near Kran as well as two random points for the log data. No multicollinearity was detected between variables in either dataset (Appendix2, Table A2.13, Figure A2.9, and A2.10).

Within the raw data model, positive correlation with distance to gneiss and schist was identified as the most significant predictor with 12% of the variance in the dependent variable explained by the model (at $p < 0.01$). The situation remains identical within the model built from the log-transformed distribution (Table 9.12).

In the next step, the stepwise AIC comparison based on the raw data combined distance to gneiss and schist (negative correlation) with distance to medium sized water sources (positive correlation). Only 7% of the variance, however, is explained by the model, with $p < 0.001$. The stepwise AIC also identified distance to gneiss and schist and distance to medium rivers appeared as the only significant predictors. The explained variance is about 10% at $p < 0.01$, which slightly increases the significance of such a model in comparison with the general models and the stepwise AIC model based on the raw data. Distance to gneiss and schist seems to be the only predictor in both ancova models too, but the confidence intervals around the regression value of this variable are too large and thus the uncertainty of the data is high (Table A2.21).

Variable/ Pr(>|t|)	*Raw data*	*Lognormal data*	*Raw AIC*	*Lognormal AIC*	*Ancova*	*Ancova l og*
Elevation	0.579796	0.45941			0.07066 .	0.8927
Slope	0.332935	0.10280			0.31768	0.3377
Aspect	0.554245	0.39729			0.60993	0.7860
Distance to small rivers	0.280015	**0.45860**	**0.0127 ***	**0.01898 ***	**0.28526**	**0.0970 .**
Distance to large rivers	0.174940	0.20504			0.15688	0.0777 .
Distance to alluvium	0.738125	0.04034 *			0.89987	0.2178
Distance to conglomerate	0.451492	0.00125 **			0.42548	0.8463
Distance to limestone	0.240275	0.31359		0.12947	0.60348	0.1984
Distance to marble	0.818947	0.13987			0.37952	0.4634
Distance to gneiss/schist	**0.006004 ****	**0.38131**	**0.0089 ****	**0.00267 ****	**0.00816****	**0.0113 ***
Location on ridges	0.530354	0.42947			0.45141	0.6538
Location on peaks	0.318903	0.09362 .			0.40643	0.8624

Table 9.12. Zone two, comparison of models (where *** $p<0.001$, ** $p<0.01$, * $p<0.05$, . $p<0.1$).

It is at first surprising that the more promising dataset with a larger sample size, including the entire Upper Thracian Plain, is not as straightforward to model as the smaller area of zone 1. The positive correlation with gneiss seems odd but the level of significance is low, especially compared to the results from zone 1 described above. The strongest model is with the log-transformed data, but neither of the general models showed a significant pattern. The only pattern visible in the stepwise AIC comparisons is formed by a large distance to gneiss and schist (negative correlation) and distance to medium and small-sized water sources (positive correlation). There is also a vague relationship with limestone that is suggested as one of the more influential predictors in the stepwise model based on log data, but without enough statistical significance ($p > 0.1$). Although it is difficult to imagine the purposeful avoidance of gneiss and schist in the location strategy, it probably has some role to play as a factor not present in certain targeted environments, such as the slight attraction to limestone, detected in the stepwise AIC model of the log data. The relationship with small and medium-sized water sources suggests an inclination towards landscapes suitable for farming. The vague emphasis on proximity to limestone in the same model could have a role in the soil preference, aiming at soils rich in plant-accessible calcium carbonate, which is the principal chemical component of limestone.

In general, although the sample size is larger than for zone 1, the models built on the data from zone 2 are much weaker, explaining between 7% and 12% of the variance in the dependent variable. Although both zones point at a similar subsistence strategy, it seems more likely that the more appropriate scale to examine it is the eastern part of the Upper Thracian Plain, perhaps as a preferred environment and subsistence using the resources of the area and the once navigable river arteries Tundzha and Maritsa and their main streams. It can also suggest that there are different patterns in the two sub-regions, but the small sample size in the west part of the Upper Thracian Plain does not allow to analyse it separately. Nevertheless, it still serves to dilute the patterning for the east part when the datasets were aggregated in zone two.

9.1.2.3. Zone three: the Rhodope Mountains

The zone embracing the entire Rhodope mountain range is another possibility for pattern recognition, although its eastern and western parts will be also examined separately. The sample consists of 216 in total, both sites and non-sites. There was a significant improvement in the distribution of the data after the log transformation (Appendix 2, Figure A2.12), along with reducing the level of multicollinearity between elevation, cost distance to large water sources, alluvium and limestone (Appendix 2, Table A2.23, Figure A2.14, A2.15). As unusual locations in the raw dataset were detected the sites of Alabak and Batalski Kamak, for which there is little information, and one other non-site location (Appendix2, Figure A2.13). Within the log-transformed data, two cemetery locations were detected as uncommon, one of which included dolmen constructions. This could be noteworthy considering the unusual character of this type of site and considering the significant improvement in the data condition when normalised.

The raw data model exposed a relationship with elevated locations seen in both ridge and peak landforms. Despite the fact that other variables like relatively lower elevation, preference for northern aspect, distance to conglomerate and marble, seem also to be correlated to site locations, the best model was formed by the high likelihood of location on ridges northern aspect. This model was able to explain more than 22% of the variance (at $p < 0.001$). The normalised data added to these two variables also distance to marble as a significant predictor and increased the variance explained by the model to 78.5% (Appendix 2, Table A2.24, and A2.25). The same predictors also remained in both stepwise models with the difference in the 19% variance explained by the AIC model of the raw data, and nearly 78% by the corresponding model of the log-transformed data, adding also a positive correlation between site location and distance to limestone (Table 9.13).

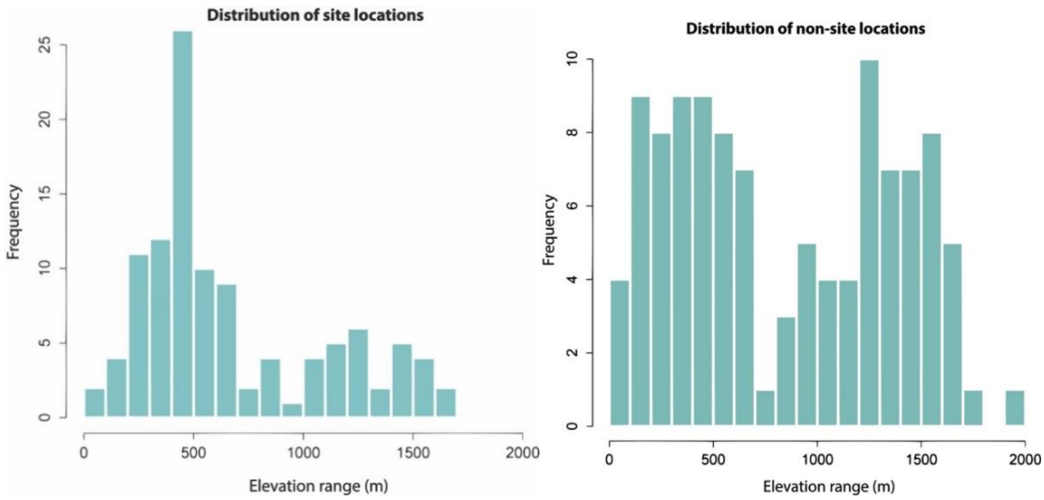
The ancova models built a more diverse picture. While keeping the same predictors, the analysis of variance of the raw data added elevation, aspect with northern exposure, and distance to conglomerate. The normalised data model was, however, significantly different; elevation and distance to conglomerate (negative correlation) were still present, but instead of aspect, the model identified distance to large rivers, distance to alluvium, limestone, and gneiss and schist deposits (all positive correlations). It seems that many factors have played a role in the settlement strategies according to this approach, although only distance to marble and likely location on ridges have narrow CI levels to be considered with less uncertainty (Appendix 2, Table A2.30). The other stronger predictors covered by most models are low elevation and distance to conglomerate.

It seems possible that complex processes have defined the character of the occupation of the mountains during the LBA if taken as a whole, but several interesting observations can be based on the location modelling of zone three. The model built on the log data, identifying likely location on ridges and peaks as well as proximity to marble, is the most reliable, based on the variance explained in the dependent variable and it is mostly supported by the stepwise AIC comparison, apart from the addition of distance to limestone as a significant predictor. However, although locations on ridges was preferred, relatively low elevation was probably also a factor, remotely detected ($p < 0.1$) by the raw data model and emphasised by both ancova models. It seems noteworthy that although pronounced landforms were targeted, more accessible and lower altitude was of significance for the locational choice. Such a combination of environmental factors suggests practicing of pastoralism possibly combined with small-scale farming.

Variable/ Pr(>|t|)	*Raw data*	*Lognormal data*	*Raw AIC*	*Lognormal AIC*	*Ancova*	*Ancova log*
Elevation	0.345766	**0.0694 .**			**0.00529 ****	**0.004908 ****
Slope	0.884068	0.8533	0.079735 .		0.75062	0.508220
Aspect	**0.003191 ****	0.3403			0.04068 *	0.899117
Distance to small rivers	0.279428	0.6248			0.10008	0.317505
Distance to large rivers	0.338441	0.1651			0.05086 .	0.000536 ***
Distance to alluvium	0.331761	0.2955			0.54377	9.91e-08 ***
Distance to conglomerate	0.067010 .	**0.2597**	**0.050580 .**		**0.00264 ****	**5.95e-07 *****
Distance to limestone	0.524982	**0.0778 .**		**0.0211 ***	**0.43326**	**5.81e-06 *****
Distance to marble	0.080152 .	**3.57e-12 *****	**0.020399 ***	**3.78e-12 *****	**0.01755 ***	**< 2e-16 *****
Distance to gneiss/schist	0.901864	0.7235			0.81918	4.46e-15 ***
Location on ridges	**0.000342 *****	**2.36e-09 *****	**0.000293 *****	**1.07e-10 *****	**0.00130 ****	**0.05481 .**
Location on peaks	0.984594	**< 2e-16 *****	**0.014403 ***	**< 2e-16 *****	**0.01689 ***	**0.61627**

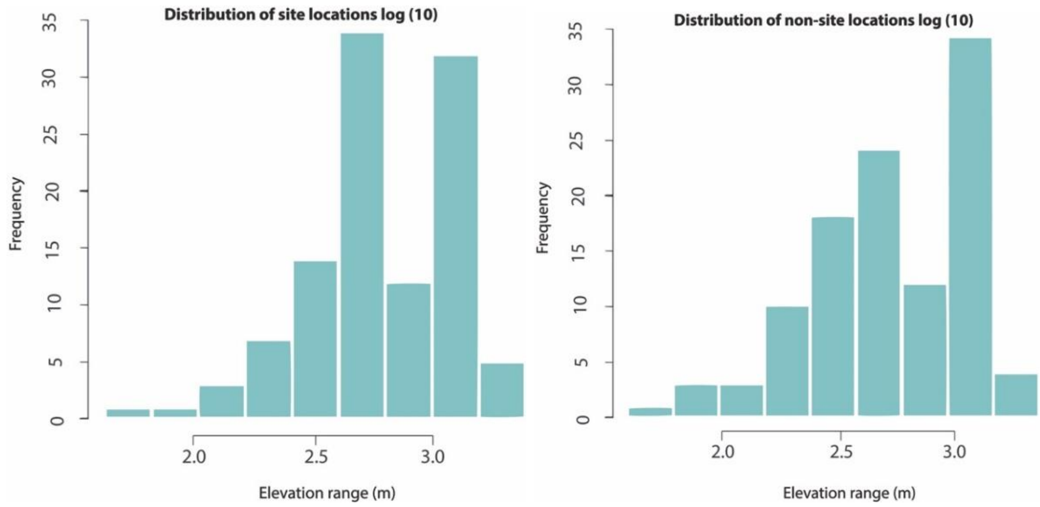
Table 9.13. Zone three, comparison of models (where *** p<0.001, ** p<0.01, * p<0.05, . p<0.1).

Furthermore, the high mountainous relief is characteristic mostly for the western part of the mountain range, while the eastern part is lower and more easily accessible. Examining the distribution of elevation values, it seems that the preferred altitude was around 400 m (Figure 9.9). There is a clear bimodal distribution, however, separating higher and lower values, which might indicate that two different patterns are observable in two different parts of the mountain range. This is also suggested by the second mode of the non-site histogram, where most random locations fall into significantly higher elevations, which is a natural characteristic for the western part of the mountains. Within the log data, this bimodality has been transformed into something much closer to a normal curve (Figure 9.10), so that it can meet the necessary assumption of normality. However, the dual pattern thus expressed in the raw elevation data must be taken into consideration.



a) b)

Figure 9.9. Histogram of site and non-site distribution across an elevation range covering the entire Rhodope Mountains.



a) b)

Figure 9.10. Histogram of site and non-site distribution across a log-transformed elevation range covering the entire Rhodope Mountains.

The Cook's D plot identified a couple of non-excavated site locations in the Western Rhodopes as unusual, while the log data detected two further sites in the eastern part of the mountains. One of the latter sites, Uchastatsite, is one of the few dolmen sites with LBA pottery, which could explain different locational choices, which will be considered in the modelling of the eastern part of the mountain. Despite the lack of pronounced multicollinearity, mostly after transformation, the analysis of covariance added a few more predictors. Distance to conglomerate, limestone, alluvium and large river bodies revealed significant relationships with the dependent variable. The strength of the ancova model, however, cannot be easily measured and thus, these predictors are considered with caution. Finally, within zone three, the most influential suggested predictors appear to be locations on low peaks and ridge landforms with ease of access to marble and possibly conglomerate. In this respect, the differences in predictor combinations and the number of significant predictors detected by one model or another might mean that there are a number of environmentally visible factors that contributed to the choice of location, i.e. i) generic site types, such as settlements, cemeteries and sanctuaries, ii) specialised sites such as ore extraction locations, or iii) narrower micro-regional preferences, such as the division between east and west within the mountain range. While the recorded ore extraction locations in the area exploited in the LBA are only two and therefore cannot be a part of more formal locational modelling, the generic site categories will be explored in section 9.2 of this chapter. In the next two sections (9.1.2.4 and 9.1.2.5), I will analyse the west and east portions of the Rhodope Mountains separately.

9.1.2.4. Zone four: Western Rhodopes

The individual character of the western part of the Rhodopes in the LBA has been suggested multiple times, but no formal analysis has been executed so far. One of the reasons for separating this micro-region is the variation exhibited by its pottery (see chapter 7). The sample size here is only 60 site and non-site locations.. Despite the fact that there are no extreme outliers that would severely influence the regression according to Bonferonni's t-test, there are a few unusual locations. Particularly interesting is the burial site near Potamoi, identified within the log-transformed dataset (Appendix 2, Figure A2.18). This is an important site on the southern side of the mountains, geographically transitional between the Rhodopes and the lowlands of Western Thrace.

The multicollinearity exhibited by elevation, distance to large rivers, distance to alluvium, and distance to limestone is partially resolved after the transforming the covariates. Only elevation and distance to large rivers remained strongly correlated (Table A.33, Figure A2.19, A2.20). As statistically significant predictors in the raw data model, low slope and northern aspect preference, likelihood of location on ridges were identified. The variance explained by this model is significantly high – 44.7% (at $p < 0.01$). The log-transformed dataset identified correlation between sites and ridge locations, but weakened the strength of the low slope correlation as well as the relationship with between site locations and northern aspect. Instead, it detected close distance to gneiss and schist as a significant predictor. The variance explained by this model is very close to the raw data model with 46.5% (at $p < 0.01$) (Table 9.14, Appendix 2, Table A2.24, A2.25).

The models based on the stepwise AIC comparison have lower probability and a slightly smaller r-squared. The stepwise model of the raw data identified correlation of the site locations with likelihood of location on ridges, with preference for low slope or near flat terrain, but also added distance to conglomerate (positive correlation) and distance to limestone (negative correlation). The stepwise model based on the log data also identified low slope (or near-flat terrain surface), likely location on ridges, and distance to limestone (negative correlation), but added distance to gneiss and schist (positive correlation), as well as likely location on peak landforms. Even more diverse is the picture drawn by the ancova models, adding distance to medium-sized rivers and distance to marble for the raw data (positive correlations), and distance to conglomerate (negative correlation) for the log data. Evidently, ridge landforms and low slope are the most persistent predictors across all models, but the potential involvement of different types of geology and possible distance to water sources also need to be considered in site locational choice for this region.

Variable/ Pr(>|t|)	Raw data	Lognormal data	Raw AIC	Lognormal AIC	Ancova	Ancova log
Elevation	0.07470 .	0.3649			0.95424	0.82292
Slope	0.94082	**0.0620 .**	**0.000896 *****	**0.03699 ***	**0.00951 ****	**0.00766 ****
Aspect	**0.00675 ****	0.8315			0.62648	0.67543
Distance to small rivers	0.09949 .	**0.1930**		**0.18401**	**0.00459 ****	**0.02435 ***
Distance to large rivers	0.52591	0.4863			0.19956	0.60322
Distance to alluvium	0.54590	0.8901			0.08252 .	0.77541
Distance to conglomerate	0.86274	0.1568	0.046876 *		0.08305 .	0.01679 *
Distance to limestone	0.30347	0.0999 .	0.004984 **	0.01253 *	0.95985	0.19828
Distance to marble	0.27649	0.2972	0.103109		0.04671 *	0.04679 *
Distance to gneiss/schist	0.19386	0.0373 *		0.02195 *	0.87382	0.05132 .
Location on ridges	0.74070	**0.0114 ***	**0.002404 ****	**0.00252 ****	**0.01316 ***	**0.00396 ****
Location on peaks	**0.01723 ***	0.1668	0.023464 *	0.03974 *	0.09512 .	0.16679

Table 9.14. Zone four, comparison of models (where *** p<0.001, ** p<0.01, * p<0.05, . p<0.1).

Both- raw and log datasets produced strong models, explaining around 45% of the variance in the dependent variable. The first model revealed a preference for ridges with flat tops (low slope values), while the second replaces the significance of the slope with enhanced distance to gneiss and schist. When considering this western part of the mountain range, one needs to keep in mind that most of the sites discovered here are cemeteries. The relationship between LBA burials and gneiss/schist resources has already been suggested for the eastern part of the range (Nenova 2008), which will be discussed below, but it seems that this type of bedrock, and potentially conglomerate or limestone, was also of some significance for the western part of the mountain. In general, the locational choice here can be identified as a targeted landscape for burial practices, where the preferred spots were based on pronounced ridge landforms with flat tops, rather than valleys, and proximity to suitable rock types.

Although there might be a problem of site visibility in this particular micro-region, the absence of discovered settlements is noteworthy. Despite the fact that several survey campaigns took place in the area over more than forty years, the only type of LBA site recovered here, besides a number of chance finds, remains the burial mound. It seems that the Western Rhodopes was not left out of the scope of the LBA communities inhabiting the Thracian region, but either their settlements remain invisible for the contemporary archaeologist or this high mountainous environment accommodated certain nomadic or semi-nomadic groups with ephemeral settlements and established burial practices.

9.1.2.5. Zone five: Eastern Rhodopes

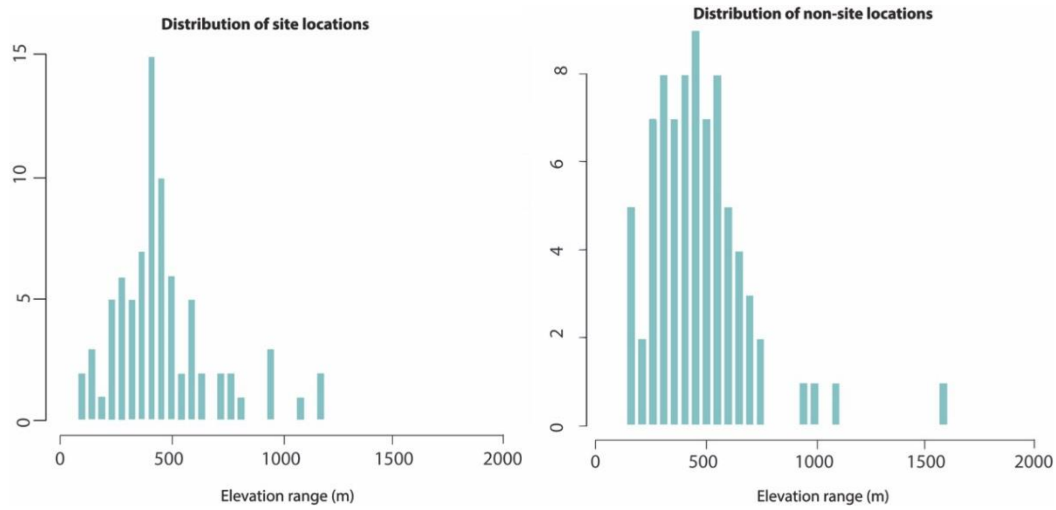
The sample covering the Eastern Rhodopes consists of 158 sites and non-sites. The attempt at transformation improved shape of the covariate data (Figure A2.22). A few unusual locations were identified in the sites of Bosilkovo, Strashimir, and one random location (Figure A2.23); within the log-transformed distribution, the sanctuaries at Aul Kaya and Dositeevo along with a non-site location stood out, but no significant outliers were detected. Multicollinearity is mostly resolved with data transformation, where distance to alluvium, distance to conglomerate, and elevation were co-dependent. The only variable with a strong variance inflation factor remained elevation (Table A2.43, Figure A2.24, and A2.25). The significant predictor in the raw data model is likelihood of location on ridges, while the log-transformed dataset also added higher elevation to the model. The raw data model, however, can be considered as not significant overall ($p < 0.1$), while the logged model is more significant in rejecting the null-hypothesis of no difference ($p < 0.05$) (Table A2.44, A2.45). The variance in the dependent variable explained by the latter was nearly 14% (Table 9.15).

As a next step, the stepwise AIC models identified likely location on ridges and distance to conglomerate as significant predictors in the raw data, and elevation for the log-transformed data, where the variance explained by the model was only about 9% (at $p < 0.05$) for the raw data and 12% for the log data (at $p < 0.01$) (Table A2.46, A2.47). Both ancova models also detected likely location on ridges and distance to conglomerate. The comparison of all models identifies elevation, distance to conglomerate and likely location on ridges as significant predictors, although the individual confidence intervals are very wide and the uncertainty of the point estimate needs to be kept in mind (Table A2.51).

Variable/ Pr(>|t|)	*Raw data*	*Lognormal data*	*Raw AIC*	*Lognormal AIC*	*Ancova*	*Ancova log*
Elevation	0.50270	**0.0197 ***	**0.0547 .**	**0.01840 ***	**0.2431**	**0.3127**
Slope	0.95784	0.1774		0.13635	0.3897	0.1247
Aspect	0.39816	0.1346		0.15443	0.2561	0.1933
Distance to small rivers	0.40154	0.3942	0.1244		0.0587 .	0.2810
Distance to large rivers	0.52808	0.1528		0.12556	0.2462	0.1192
Distance to alluvium	0.14749	0.7119	0.1625	.	0.6535	0.5049
Distance to conglomerate	**0.09058 .**	**0.1008**	**0.0303 ***	**0.07076**	**0.0259 ***	**0.0277 ***
Distance to limestone	0.31219	0.3163			0.9212	0.2156
Distance to marble	0.69520	0.8147			0.6062	0.9893
Distance to gneiss/schist	0.43619	0.8382			0.3249	0.6363
Location on ridges	**0.00521 ****	**0.0193 ***	**0.0133 ***		**0.0410 ***	**0.0268 ***
Location on peaks	0.81501	0.1369			0.4709	0.1369

Table 9.15. Zone five, comparison of models (where *** p<0.001, ** p<0.01, * p<0.05, . p<0.1).

The probability of location on ridges remained a constant predictor in all zones involving the Rhodope area, while here, in the eastern part, a preference towards higher elevation is pronounced. Therefore, the bimodality in the distribution of the elevation variable, detected in zone three, can be justified for both sections of the mountains when considered separately (Figure 9.11). The suggested elevation preference is influenced by both: i) a preference for not very high altitude in the western part of the mountain, where the elevation is significantly higher, and ii) a preference for higher elevations where the landscape is still mountainous but rather low. Thus in the Eastern Rhodopes one can say that locally-higher elevations were a priority, although the region overall is not as high as the western part of the Rhodope mountains. Because the number of sites in the eastern sub-region is larger, the elevation represented by those locations appeared as a preference towards low elevation when incorporated into the entire Rhodopean model. Proximity to limestone and conglomerate might have also contributed to the locational choice, suggesting an inclination towards fertile soils. It is worth mentioning that no water sources were involved in either model. The area, however, consists of a variety of site types, including settlements, sanctuaries and cemeteries, which potentially hide different location strategies. In this respect, the general raw data for the East Rhodope Mountains is a preliminary step towards analysis based on site categories of this better surveyed micro-region, discussed in section 9.2.



a) b)

Figure 9.11. Histogram of site and non-site distribution across a log-transformed elevation range covering the entire Rhodope Mountains.

9.1.2.6. Zone six: Eastern Rhodopes and Sakar

In defining this zone, the few sites in Sakar are combined with the eastern part of the Rhodope Mountains, because these areas show similarity in their material culture, primarily pottery. The sites in Sakar are very limited in number and cannot be formally examined as a separate unit. Therefore, these sites were modelled in combination with the Eastern Rhodopes forming zone five. The sample consists of 148 sites and non-sites.

A significant improvement is revealed with the standardization of the data (Figure A2.27). Highlighted as unusual locations were the sites of Bosilkovo and Strashimir, as well as a random non-site location. Within the log-transformed data, two other sites were identified as influential - Dyuz Kaya and the peak Malak Kostadin, also accompanied by a random non-site location (Figure A2.28), but there are no significant outliers, which might skew the modelling. Multicollinearity is also mostly resolved with covariate transformation, where distance to medium-sized rivers, distance to alluvium, distance to conglomerate, and elevation were initially co-dependent (Table A2.53, Figure A2.29, A2.30).

The raw data model identified likely location on ridges and peaks, and distance to gneiss and schist as significant predictors, being able to explain more than 18% of the variance in the dependent variable at $p < 0.001$. The model based on the log data lost the significance of the likely location on ridges and added instead preference towards higher elevation and distance to medium and larger water bodies. This model explains 21.4% of the variance in the dependent variable at $p < 0.001$, which predicts more than the fitted model of the raw data (Table A2.54, A2.55). The selective stepwise AIC models, on the other hand, combined distance to alluvium (positive correlation), distance to gneiss and schist (negative correlation), likely location on ridges and peaks in the raw data, and elevation, distance to medium and large rivers (positive correlation), distance to gneiss and schist (negative correlation), and likely location on peaks for the log data (Table A2.56, A2.57). The former explained 17.4% of the variance in the dependent variable (at $p < 0.001$), while the latter - nearly 20%, (at $p < 0.001$), both statistically significant (Table 9.16).

Variable/ Pr(>|t|)	*Original data*	*Transformed data*	*Original AIC*	*Transformed AIC*	*Ancova*	*Ancova log*
Elevation	0.99893	0.00389 **		0.002240 **	0.4611	0.06518 .
Slope	0.20679	0.88303			0.0333 *	0.50277
Aspect	0.08750 .	0.63609	0.08746 .		0.0668 .	0.78626
Distance to small rivers	**0.24171**	**0.03233 ***	**0.06426 .**	**0.011147 ***	**0.0258 ***	**0.00213 ****
Distance to large rivers	**0.88168**	**0.00638 ****		**0.007132 ****	**0.6432**	**0.04442 ***
Distance to alluvium	0.08862 .	0.09059 .	0.00283 **	0.156311	0.9572	0.92322
Distance to conglomerate	0.96788	0.38114			0.5607	0.06718 .
Distance to limestone	0.09392 .	0.26138	0.07038 .		0.0103 *	0.02342 *
Distance to marble	0.66041	0.39754			0.5184	0.46193
Distance to gneiss/schist	**0.00573 ****	**0.00171 ****	**0.00182 ****	**0.000264 *****	**0.0128 ***	**0.00292 ****
Location on ridges	**0.01585 ***	**0.08930 .**	**0.03542 ***	**0.088857 .**	**0.0369 ***	**0.07915 .**
Location on peaks	0.51369	**0.00756 ****	**0.00764 ****	**0.003382 ****	**0.0151 ***	**0.00756 ****

Table 9.16. Zone six, comparison of models (where *** $p<0.001$, ** $p<0.01$, * $p<0.05$, . $p<0.1$).

The ancova models showed something slightly different. In the raw data, the slope variable suggested that many of the sites were more likely located on a significant slope, not observed in the other zones analysed. The other predictors detected in this model were distance to medium-sized water sources, distance to limestone, distance to gneiss, and likely location on ridges and peaks. The ancova model based on the log data identified distance to medium as well as large water bodies, distance to limestone (positive correlations), distance to gneiss and schist (negative correlation), and likely location on peaks. In the end, common denominators among all models were distance to both types of water sources, distance to gneiss, and likely locations on peaks and ridges. Furthermore, only distance to medium and large rivers have narrow confidence intervals and thus can be considered with greater certainty (Appendix 2, Table A2.61).

Often in the literature the eastern part of the Rhodope Mountains and the mountains of Sakar are considered together. While the raw data model for this joint sub-region identified location on ridges as a strong predictor (just as it did for the Rhodopes in general), the log data model also detected a relationship between site locations and higher elevation. Preferences for location on peaks and distance to water sources (positive correlation) were also selected together with distance to gneiss and schist (negative correlation). Taken as a whole, the analysis of the combined area of the Eastern Rhodope and Sakar suggests locations appropriate for subsistence farming or semi-nomadic pastoralism. However, it is possible that the observed correlations contain more than one pattern, based on the variation in the general site types and a possibility for differently specialized sites targeting specific resources.

9.1.2.7. Zone seven: West Thrace and East Macedonia

West Thrace and east Macedonia, excluding Chalkidiki and its hinterland constitute another possible zone. The sample here consists of 102 site and non-site locations in total. According to Bonferonni's t-test, there are no extreme outliers, which would severely influence the data (Appendix 2, Figure A2.33). Multicollinearity is partially resolved with the log transformation. Nevertheless, elevation, distance to medium-sized and large rivers, distance to alluvium, and distance to limestone remained co-dependent (Table A2.63, Figure A2.34, and A2.35).

The model of the raw data detected only low elevation as a significant predictor with $p<0.05$, while the normalised log distribution identified distance to limestone and distance to marble (positive correlations) with 33.8% of the variance explained by the model (at $p < 0.001$). The stepwise AIC model linked the raw data to distance to limestone but with an insignificant p-value and very low (4.7) percentage of the variance explained (Table A2.64, A2.65). The stepwise AIC function of the log data highlighted low elevation, distance to limestone, and distance to gneiss and schist (negative correlation), explaining 32% of the variance (at p < 0.001) (Table A2.66, A2.67). From the ancova models, the log data model identified only distance to limestone and marble as significant predictors.

The model comparison displayed below highlights elevation and distance to limestone across the models, but only distance to marble has narrow confidence intervals, which is identified as a predictor in only two of the models (Table 9.17, Appendix 2, and Table A2.71).

Variable/ Pr(>|t|)	*Raw data*	*Lognormal data*	*Raw AIC*	*Lognormal AIC*	*Ancova*	*Ancova log*
Elevation	0.0156 *	0.872072		0.0180 *	0.4421	0.613571
Slope	0.8917	0.120045			0.8482	0.809998
Aspect	0.59831	0.775312			0.8812	0.651771
Distance to small rivers	0.7129	0.714526			0.3448	0.073922 .
Distance to large rivers	0.6383	0.982490			0.8830	0.201391
Distance to alluvium	0.6013	0.480642			0.8766	0.890766
Distance to conglomerate	0.0890 .	0.651182	0.0866 .	0.0645 .	0.0621 .	0.106461
Distance to limestone	**0.0695 .**	**0.047363 ***	**0.0373 ***	**0.0201 ***	**0.2918**	**0.000224 ******
Distance to marble	0.2567	0.040525 *			0.6402	0.019852 *
Distance to gneiss/schist	**0.6227**	**0.840642**		**3.51e-06 ******	**0.7885**	**0.000185 ******
Location on ridges	0.4400	0.000203 ***			0.5085	0.505461
Location on peaks	0.1280	0.498277			0.7869	0.465386

Table 9.17. Zone seven, comparison of models (where *** p<0.001, ** p<0.01, * p<0.05, . p<0.1).

The relationship with limestone marble can be meaningful from the perspective of indicating soils rich in calcium carbonate, and could also be a factor with respect to access to construction material. This, however, is mostly speculation, because the majority of the sites in West Thrace are unexcavated. Even so, settlements like Dikili Tash suggest the existence of stone architecture as a possibility in this micro-region, which is not attested in the settlements in the Rhodopes, Sakar and the Upper Thracian Plain. Furthermore, the settlements in zone seven tend to be located on flat terraces, occupying the top of mounds and potentially exploiting larger or smaller-scale fertile arable lands, which contrasts significantly with the occupational patterns in the mountainous areas just to the north.

9.1.2.8. Zone eight: Upper and Middle Struma Valley

The last micro-region to be considered within Thrace is the Struma Valley. It seems that this area has distinct characteristics in terms of local environment and distinct patterns as well in its LBA pottery distribution. It therefore deserves consideration on its own. The number of sites, however, is relatively low, but an initial examination of any locational patterns would be a good foundation for future analysis since the sites have been increasing significantly in the most recent regional investigations. The sample consists of 82 sites and non-sites. The dataset appears slightly improved after the log transformation, and no significant sites were highlighted as outliers (Figure A2.38). Multicollinearity was also partially resolved by covariate transformation, but elevation, distance to medium-sized and large rivers, distance to conglomerate, and distance to limestone remained co-dependent. Nevertheless, the latter two variables, as well as distance to medium water sources, have significantly reduced variance inflation factors after the transformation (Table A2.73, Figure A2.39, A2.40).

Both global models unfortunately did not suggest any strong predictors, but they were able to explain 27% of the variance with low significance (0.02562) in the log-transformed distribution. There is a slight preference towards distance to gneiss in the logged model (Table A2.74, A2.75). The stepwise AIC model of the raw data detected distance to conglomerate, gneiss, and schist (positive correlations), and was able to explain 22.3% of the variance under $p < 0.001$. The stepwise AIC of the log-transformed data preferred distance to medium-sized water sources, with variance of 21.5% and $p < 0.001$, keeping in mind the issues of multicollinearity (Table A2.76, A2.77). The ancova models also did not identify any predictors (Table 9.18 a).

Variable/ Pr(>|t|)	Raw data	Lognormal data	Raw AIC	Lognormal AIC	Ancova	Ancova log
Elevation	**0.8211**	**0.90627**			**0.000298 *****	**0.000298 *****
Slope	0.2146	0.56392	0.1070		0.217830	0.217830
Aspect	0.0559 .	0.91180			0.115359	0.115359
Distance to small rivers	0.2087	0.21865		0.0011 **	0.410206	0.410206
Distance to large rivers	0.9704	0.55368			0.709772	0.709772
Distance to alluvium	0.8912	0.29407			0.821028	0.821028
Distance to conglomerate	0.4943	0.11655	0.0393 *	0.1470	0.548078	0.548078
Distance to limestone	0.6693	0.95693			0.623629	0.623629
Distance to marble	0.5192	0.40444			0.480266	0.480266
Distance to gneiss/schist	0.1769	0.07850 .	0.0393 *		0.158680	0.158680
Location on ridges	0.4715	0.68345			0.939055	0.939055
Location on peaks	0.0959 .	0.66932			0.901127	0.901127

Table 9.18. a) Zone eight, comparison of models, based on sample 1 with 41 random points (where *** p<0.001, ** p<0.01, * p<0.05, . p<0.1).

The second sample including 500 random locations suggested the covariates were improved by transformation, but a number of the environmental variables remained co-dependent. Besides this zone, the rest appear to be more robust, where the larger sample of random points does not influence the resulting models. In zone eight, however, the difference in each of the models is substantial (Figure 9.18 b).

The raw data model identified a large number of predictors like elevation, distance to small and medium-sized rivers as well as large ones, distance to alluvium, conglomerate, limestone, marble and gneiss and schist. The same set was identified for the log data model too, with a slightly weaker correlation between site locations and distance to marble. The stepwise AIC comparison based on the raw data combined only low elevation, distance to large rivers and distance to alluvium, while the stepwise AIC model of the log data replaced alluvium with limestone. The ancova model of the raw data drew a picture very similar to the raw data model, while the log ancova did not detect distance to marble and gneiss and schist. This large number of predictors identified by most of the models, could be explained by the high level of multicollinearity among the environmental variables. The difficulty is to recognize which predictors were more significant for site location choices. The stepwise AIC comparison suggested a pattern in which the most important were elevation, distance to large rivers and distance to either limestone or alluvium (positive correlations). The distance to large rivers seems appropriate, since the majority of the sites in this zone are located on both sides of the Struma river.

Variable/ Pr(>|t|)	*Raw data*	*Lognormal data*	*Raw AIC*	*Lognormal AIC*	*Ancova*	*0.6178*
Elevation	**0.006498****	**0.028190***	**0.000196*****	**0.002145****	**0.003568 ****	**0.001786**
Slope	0.079085	0.199081			0.356247	0.139671
Aspect	0.218659	0.324567			0.634754	0.527342
Distance to small rivers	6.74e-06***	4.14e-04***	0.108	0.063476 .	0.021573*	0.002434 **
Distance to large rivers	**1.44e-05** ***	**0.000674** ***	**0.000089*****	**0.002637****	**0.005463 ****	**0.000765 *****
Distance to alluvium	**0.000598** ***	**0.00125 ****	**0.001175****		**0.38969***	**0.000915 *****
Distance to conglomerate	**1.26e-06** ***	**0.001264****			**0.067949 .**	**0.016532 ***
Distance to limestone	**0.001837****	**0.002229****		**0.003516****	**0.010817 ***	**0.016438 ****
Distance to marble	**0.010668***	**0.001975****			**0.037554 ***	**0.039682**
Distance to gneiss/schist	**0.000258** ***	**0.019134**			**0.003768 ****	**0.023642**
Location on ridges	0.955413	0.955276			0.434347	0.728612
Location on peaks	0.813477	0.759833			0.868494	0.285441

Table 9.18. b) Zone eight, comparison of models, based on sample 2 with 500 random points (where *** p<0.001, ** p<0.01, * p<0.05, . p<0.1).

Elevation also seems to be consistent, with sites ranging between 300 and 400 m altitude, which is about 100-150 m above the river valley. This way, the sites seem to sit at elevated spots on both sides of the river valley and seem appropriate for monitoring traffic along Struma. However, there is also a traditional perception of the Struma valley micro-region as a ‘contact zone’ or ‘marginal landscape’ linking Thrace and the Aegean. This has resulted in an over-emphasis of potential foreign elements discovered in the area, before identifying any local cultural characteristics and not taking into account processes of reaction and resistance against the import of goods and ideas (Atanasov et al. 2011, 345). The locations of the three excavated sites in this area, Kamenska Chuka, Krasto Pokrovnik and Bresto, are hilltops with steep rocky slopes – locations potentially facilitating fortification. These three site are also protected by their massive stone walls, unidentified anywhere else in Thrace. There is already a suggestion that these three sites could have been a part of a defensive network protecting the region (Stefanovich and Kulov 2007: 395). A further 14 unexcavated LBA sites also show traces of massive large rubble spreads and may have had similar fortification walls described in the literature as the 'Kamenska Chuka' type (Atanasov et.al. 2011: 346). It is possible that the correlation between site locations and different geological characteristics suggested by the models built from the second sample, would have been relevant to the settlement strategy demanding ease of access to construction materials.

9.1.2.9. Zone nine: Chalkidiki and its hinterland

This zone falls entirely outside of Thrace and covers only the sites in Chalkidiki and the nearby hinterland. The aim of exploring this area of Macedonia is to compare its location patterns with those from Thrace and to explain the differences or similarities between the distributions and their possible bases. The sample consists of 118 sites and non-sites. As a part of the statistical diagnostics, Cook's distance detected a few unusual locations from the non-site category. Within the log-transformed data, there are two statistically influential sites, Agios Mamas and Neos Skopos, which were identified as outliers and thus excluded from the sample (Figure A2.43). While the reason why Neos Skopos is distinct is not clear at the current level of investigation, Agios Mamas (Olynthos) does not only have a different environment, but it is a culturally influential site for the central Macedonian Bronze Age with regional connections of different character and directions. The log transformation did not succeed in improving the data significantly (Figure A2.42). A high level of multicollinearity was revealed amongst elevation, distance to medium and large rivers, distance to marble, and distance to limestone. The log-transformed data omitted only the dependency on distance to marble (Table A2.83, Figure A2.44, and A2.45).

It seems as though in this area, sites preferred flat terrain and low elevation. The variance explained by the raw data model is just above 16.6% at $p < 0.05$. The log data model identified a relationship between site locations and distance to large water bodies, although there is a degree of multicollinearity among distance to large rivers, distance to medium rivers, distance to limestone, as well as elevation. The variance explained is 15.4% with $p < 0.05$ (Table 9.19).

Variable/ Pr(>|t|)	Raw data	Lognormal data	Raw AIC	Lognormal AIC	Ancova	Ancova log
Elevation	0.5238	0.0931 .			**0.00294 ****	0.13964
Slope	**0.0346 ***	0.6803	**0.000338 *****	**0.029974 ***	**0.02077 ***	**0.76203**
Aspect	0.6147	0.3000			0.43457	0.81575
Distance to small rivers	0.8890	0.7754		0.127581	0.98326	0.83064
Distance to large rivers	**0.1143**	**0.0325 ***			**0.39996**	**0.00883 ****
Distance to alluvium	0.1892	0.8714			0.18327	0.45745
Distance to conglomerate	0.7295	0.5683			0.72457	0.36241
Distance to limestone	0.2475	0.9552		0.012598 *	0.14848	0.74800
Distance to marble	0.8015	0.8623			0.67349	0.63740
Distance to gneiss/schist	0.8391	0.4329			0.84215	0.52606
Location on ridges	0.2480	0.1599			0.28388	0.15987
Location on peaks	0.4155	0.6349		0.134293	0.18934	0.13964

Table 9.19. Zone nine, comparison of models (where *** $p<0.001$, ** $p<0.01$, * $p<0.05$, . $p<0.1$).

The stepwise AIC model of the raw data identified only low slope as a significant predictor and explained 10.5% of the variance in the dependent variable (at $p < 0.001$), which makes this model more statistically significant, but less effective. The stepwise AIC model of the log data can be considered the best among all model, with 14.5% of variance explained by the model and $p < 0.01$ (Table A2.86, A2.87). This model identifies low slope and distance to limestone as significant. A similar picture was drawn by the ancova model, where the raw data revealed a significant relationship with low slope, while the log data identified distance to large water bodies. These two predictors can be generally considered as the most influential environmental predictors for the locational modelling of zone nine.

Most models explain between 14% and 16.6% of the variance in the dependent variable and point at two predictors only. Habitation in this area is restricted to steep-sided mounds. It seems that in a landscape of coastal plains, river valleys, and hills, low flat terrain with no or little slope along with distance to large river bodies were factors in the selection of settlement locations. The collinearity exhibited between the large water bodies and distance to limestone covariates could be explained by the choice of locations related also to access to construction materials necessary for the walls, which typically surrounded the settlements in Central Macedonia, or guaranteeing lands good for cultivation. This environment offered security in terms of subsistence, providing good potential for the intensification of agricultural production. Archaeobotanical evidence from the area also suggests diversified farming and agricultural wealth (Andreou 2001: 163; Jones 1992). According to Andreou, there is evidence for a relatively fast rate of deforestation in Central Macedonia, which may be an indication of a more extensive system of cultivation (Andreou 2001: 169).

9.2. Multivariate categorical analysis: East Rhodopes

The above models lumped all kinds of site types, given the limited sample sizes. The Eastern Rhodopes on the other hand have been surveyed more intensively and provide an example of much better resolution and functional control which is unique in Thrace. Thus, it can allow a multinomial, multivariate examination and finer detailed study of a Thracian dataset differentiated by site type. This area has a larger number of representatives of each of the three main categories (settlement, cemetery, and sanctuary), defined according to their primary function. It is possible that that there were different motivations involved in the choice of a place for living, practicing religion, and burying the dead. At least to some extent some environmental factors must have played a role. Settlements, cemeteries and sanctuaries in Eastern Rhodope were each separately tested using the methodology described in the previous section. The independent variables considered in this model were slightly different from those used for the analysis of the zones described above: aspect, slope, elevation, and geology, occurrence on ridges, distance to limestone, distance to water, distance to river channels and distance to peaks. Because the sample sizes are reduced significantly at this scale of analysis, the difference between different site types might be unclear. Therefore, I also back up these results with a multinomial regression at the end. In general, the latter detects probabilities of a categorically distributed dependent variable, given a set of independent continuous or categorical predictors.

9.2.1. Settlements

For the settlement category in the Eastern Rhodopes the following results can be reported. The initial raw data model identified correlations between the site locations and northern aspect, geology, distance to water (in general), and proximity to rivers. The most influential appeared to be an elevation range of 600-700 m at $p = 0.00103$, and moderate distance to water sources (between 400 and 900 m and between 1300 and 1500 m, both at $p < 0.01$). It is worth mentioning that the general model based on all site categories in Eastern Rhodopes analysed together, described in section 9.1.2.5, did not reveal any correlation with water sources, but the elevation, which is high for this part of the mountain range, was already identified. In that model, location on ridge landforms appeared as a significant predictor, while the general model of the settlements also highlighted more substantial distance to peaks at $p = 0.4883$ (Table 9.20). The initial interpretation of these patterns suggests that the settlements in the Eastern Rhodope mountain branch prevail at locations with relatively high elevation, as a part of ridge landforms, which were not necessarily the most dominating landforms around, such as peaks. Furthermore, it might be suggested that the place for living was usually chosen in a particular mountain ecotone, where running water was an important feature, but immediate proximity to rivers was not consistent among the majority of sites. This settlement pattern partly corresponds with the impression we gathered from the general raw data model for the Eastern Rhodopes, suggesting environment suitable for pastoral groups, requiring access to water and grazing lands along and in between ridge landforms.

A change in the settlement logic at the beginning of the LBA is evident by the appearance of sites, mostly absent after the end of the Chalcolithic, and the fact that almost no sites from the earlier Bronze Age were registered in this micro-region, despite the more intensive surveying of this area. The intensive, although patchy, settling of the mountains during the LBA is perhaps partly influenced by the development of ore extraction, organised in special-purpose sites as indicated by Ada Tepe (see Popov and Jockenhövel 2011).

	Estimated	*Std.Error*	*z-value*	*Pr(>|z|)*
Intercept	-0.5690733	0.7888552	-0.721	0.47067
Geology	-0.6698699	0.3787215	-1.769	0.07693 .
Elevation	1.5908690	0.4846561	3.282	**0.00103 ****
Distance to limestone	-0.0004393	0.0001753	-2.507	**0.01218 ***
Water	0.0013447	0.0004993	2.693	**0.00708 ****
Location on peaks	0.0004015	0.0002083	-1.970	**0.04883 ***

Table 9.20. Binomial model of settlement type locations (where *** p<0.001, ** p<0.01, * p<0.05, . p<0.1).

9.2.2. Cemeteries

For cemeteries, the only strong correlation was between their locations and distance to gneiss and schist deposits at $p < 0.01$ (Figure 9.12, Table 21). This correlation was observed also in the western part of the mountains, as described in section 9.1.2.4 above, where most of the known sites were burials. For the Eastern Rhodopes, given the presence of dolmens and schist graves, a possible explanation could be that the cemeteries in this area were located where they allowed easy access to raw material for grave construction. Furthermore, of all the examined zones only the two parts of the Rhodope Mountains exhibited preferred proximity to gneiss and schist, and both correlations were linked to cemeteries. This supports an interpretation identifying the ease of access to raw material with the choice of location.

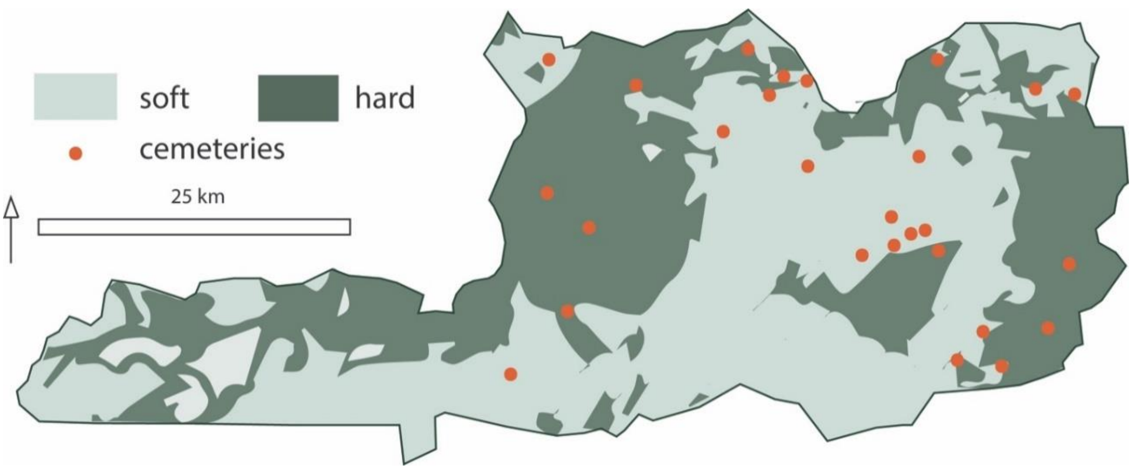


Figure 9.12. Two-class geological map and the locations of sites identified as cemeteries (where hard combines limestone and marble and soft indicates gneiss and schist).

Pr(+)	Pr(-)	Pr(+/-)
Geology- 0.0002	Aspect - 0.733	Water - 0.733
	Slope - 0.438	Elevation - 0.733
	Ridges - 0.553	
	Limstone - 0.648	
	Peaks - 0.562	

Table 9.21. Probability values of the predictor from the binomial model of cemetery type locations.

9.2.3. Sanctuaries

The category of peak sanctuaries are by definition those usually found on higher landforms, distinguished from the surrounding terrain (Figure 9.13). For example, the site Alada is located at the highest peak in the East Rhodopes (1241 m). This relationship is partially revealed within the locational model, although without quite reaching the significance threshold. As mentioned earlier, the number of peak sites interpreted as sanctuaries is higher than the number of settlements in the area. Peak sites also appear to be located on ridges (i.e. not mountain-tops but more generally convex landforms), and also reveal a preference for close proximity to limestone and marble (Table 9.22). The connection with limestone and marble was suggested in zones seven and nine, but revealed as significant only here. This relationship is difficult to explain, but it is a fact that during fieldwork, the exposed ‘white stones’ usually served as significant clues to the presence of such sites. Indeed, during the survey, locals made it clear they were aware of the fact that ‘ancient pots’ can be found wherever we see ‘the white stone’ (referring to limestone and marble). It is hard to judge whether this leads to bias in recovery or is a real pattern, but the recognition of this site type in other settings suggests the latter. A possible explanation would adjust the function of these sites (or at least some of them) from sanctuaries to seasonal settlements, leaving limited evidence behind. The proximity to limestone could be connected to the necessity of soils good for small-scale subsistence farming.

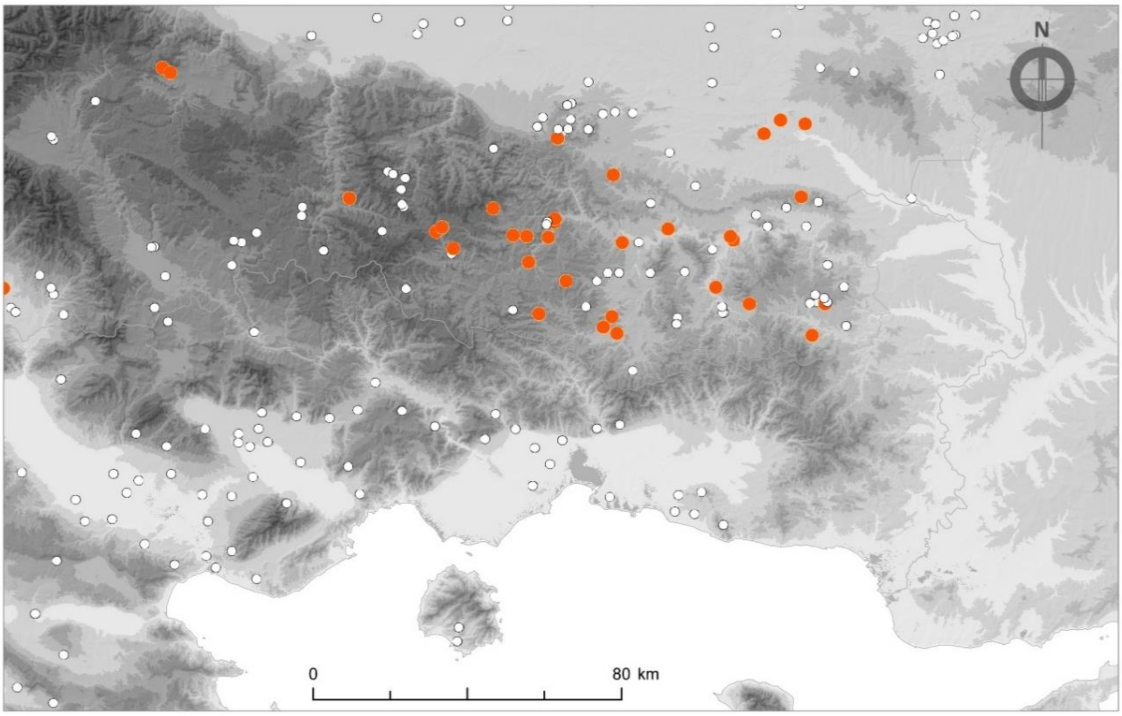


Figure 9.13. Distribution map of 'sanctuaries' in the area of the East Rhodopes (where red dots stand for sanctuaries, and white dots stand for other site types).

Pr(+)	Pr(-)	Pr(+/-)
Limestone- 0.002	Geology - 1	Channels - 0.230
Ridges - 0.130	Slope - 0.736	Elevation - 0.200
	Water - 0.699	Aspect - 0.362

Table 9.22. Probability values of the predictor from the binomial model of sanctuary type locations.

9.2.4. A multinomial model as an alternative

As one last analysis for the Eastern Rhodopes case study, I also developed a multinomial version of the regression model where the three categories of sites were modelled jointly, avoiding the need to generate a random-sampled non-site dataset. This made it possible to juxtapose settlements, cemeteries and sanctuaries in the same model and then compare the results with the binomial models described in sections 9.2.1-3. Reassuringly, the results of these two approaches largely coincided, with only two differences: the negative correlation between settlements and peak locations was not significant in the multinomial model, while for the sanctuaries, the link to ridges was, more surprisingly, undermined (Figure 9.14). Thus, although these models are not entirely robust, it seems that these sites had a somewhat dominant location and different ways of measuring this probably point in the same direction. Despite the fact that such multinomial testing of different site categories would be very relevant elsewhere, at present only this micro-region allows such a type of analysis.

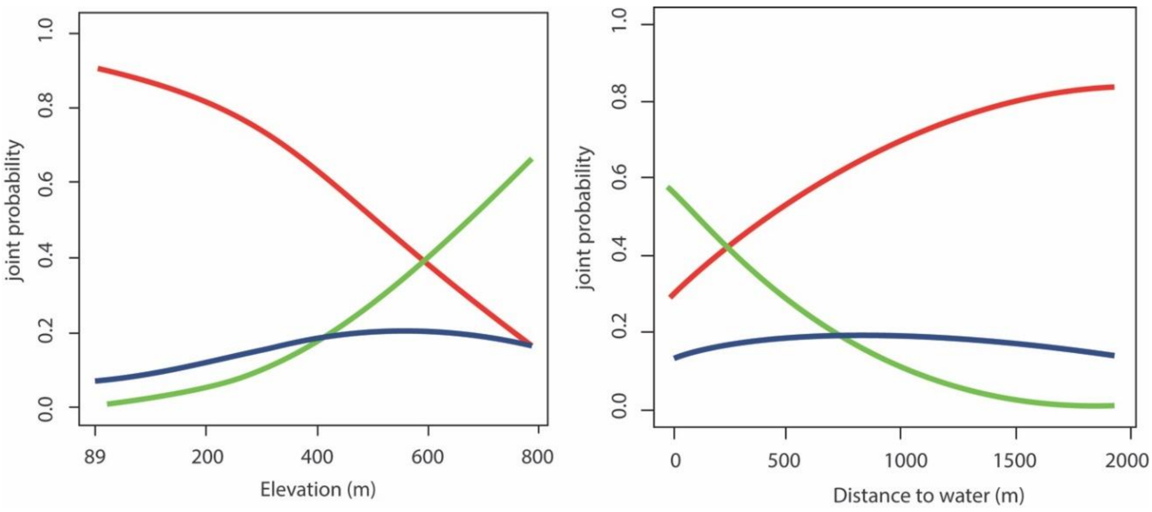


Figure 9.14. Multinomial regression juxtaposing settlements (red), cemeteries (blue) and sanctuaries (green) against two of the environmental variables (elevation and distance to water).

9.3. Summary

To summarize, based on the locational modelling presented above, it becomes clear that different scales of analysis resulted in different patterns. The locational choices linked to the environment vary from zone to zone and suggest different subsistence strategies and locational logics for the communities in each micro-region (Table 9.23). Thus, while the groups in the Upper Thracian Plain were probably targeting areas suitable for subsistence farming (e.g. more intensive agriculture as suggested by the evidence from excavated sites). A similar picture can be seen also in West Thrace and East Macedonia. In the Rhodope Mountains there seems to be more than one pattern. First, in the western part of the mountains perhaps nomadic or semi-nomadic groups left burial mounds behind, but with invisible settlements, possibly just ephemeral ‘camps’. In the eastern part of the Rhodopes and in Sakar small, probably seasonal villages served the needs of pastoral groups, perhaps combined with small-scale farming. The existence of specialized sites for the exploitation of ore deposits is suggested by the recently excavated site Ada Tepe. All these contrast with the more intensive agriculture practiced by the communities in Central Macedonia, suggested by the locational model, but also by different types of evidence from excavated sites (see Andreou 2001). Along the middle Struma Valley there is a system of defensive settlements, which must have practiced small-scale subsistence farming, probably combined with animal husbandry, based on archaeobotanical and zooarchaeological evidence from the area (see Atanasov 2011, Stefanovich and Bankoff 1998 and Stefanovich and Kulov 2007).

Area	*subsistence strategy*	*settlement type*	*landform*
Upper Thracian Plain	subsistence farming/ horticulture	mounds	terraces
East Rhodope/Sakar	pastoralism/ mining	hamlets	peaks/ridges
West Rhodope	nomadism/ semi-nomadism	camps (?)	n/a
West Thrace/East Macedonia	subsistence farming/ horticulture	mounds	terraces
Struma Valley	subsistence farming	fortified settlements	hilltops
Central Macedonia	intensive agriculture	mounds	terraces/hilltops

Table 9.23. Settlement types, related landforms and suggested subsistence strategies for the main examined micro-regions, where notable patterns were detected.

Chapter 10. People and places in LBA Thrace

This penultimate chapter revisits my results so far and offers a comparative analysis of geographic and social factors. I shall also try to elucidate some of the processes behind the spatial patterns we see in Thrace during the 2nd millennium BC, based on a combination of material culture and settlement patterns. The first section will describe the character of each of a series of micro-regions identified in previous chapters, while a second major section will discuss the origins of the Thracian LBA. A third key question relating to the end of the Bronze Age is left to the final section and discussed with regard to an apparent large gap in our LBA evidence for eastern Thrace (Figure 10.1).

Figure 10.1. Map of the area with the main places mentioned in the text.

10.1. Micro-and macro-regional perspectives

For a long time, the relative paucity of Bronze Age evidence from Thrace, in comparison to the abundance of information from Neolithic, Chalcolithic and IA sites, has obstructed our understanding of later prehistory across the entire Balkan Peninsula. Bronze Age distribution maps of various types often stop at the Bulgarian border, with insufficient research usually to blame. What has become evident from the analysis conducted so far, however, is that there is indeed a significant body of relevant evidence to study, and that the Thracian area has manifested a heterogeneous, shifting character throughout the second half of the 2nd millennium BC. What seems challenging is the formerly dominant idea of a single, large ethno-cultural group inhabiting the area throughout the latter part of the 2nd millennium, which both is unlikely and risks ignoring interesting, abundant evidence of local difference. Thrace as a generic term has so far most often been linked with the Upper Thracian Plain, while the archaeology of the Rhodope Mountains and the Struma Valley has by default been considered separately, if at all. Often, the lands north of the Balkan Mountains were also attached to Thrace and, even more regularly, all this was defined as 'Bulgaria'.

Recognising the importance of scale has played an essential role in this study. On one hand, attention to this issue has enabled the formulation of appropriate questions with which to interrogate existing datasets; on the other, just as a puzzle piece does not mean much on its own before completing a bigger section of the picture, one isolated micro-region cannot be adequately understood if not considered in its larger regional context. Furthermore, 'zooming in on' and then 'zooming out of' the area has many benefits. Therefore, in this chapter I will first look at the sub-regional characteristics of local traditions across Thrace and then examine the Thracian LBA against the background of much larger regional patterns.

Bearing in mind the challenges of any boundary definition, Thrace's diversity of practices was first identified at the level of material culture and observed in a number of spatially sensitive pottery characteristics via vessel shapes, types, surface treatments, and decoration techniques. Traditionally, the LBA pottery in Thrace was often compared to the handmade burnished pottery in Central Macedonia. In this respect, the burnished ware in Macedonia represents a local handmade pottery tradition going back to the MBA. The MBA phases XIV to IX at Toumba Thessalonikis consist of only undecorated burnished vessels (Andreou and Psaraki 2007: 405). The appearance of incised ware in Macedonia happened only in phase VII at Toumba. Despite the introduction of new wares, however, throughout the Bronze Age burnished vessels remained the most numerous by far. The vessels of both matt-painted and incised ware were carefully executed testifying to an already established tradition of firing and decoration. More importantly, the new types not only remain “in very limited numbers” (Andreou and Psaraki 2007: 408) throughout phases VII to IV, but the representative vessel types correspond to the main categories of plain burnished ware. As an exception stands the globular kantharos, which appeared as a new shape, perhaps intended for storage or transport (see Andreou and Psaraki 2007). Similar distributions of ceramic wares can be observed in other relevant sites in Macedonia (see Hochstetter 1984; Horejs 2007; Jung et al. 2009; Koukouli-Chryssanthaki 1980; 1992; Wardle 2007). It seems that the LBA incised ware in this context did not develop locally as a new pottery type, but appeared as a foreign element alongside local burnished ware. The first incised vessels can be seen sometime during the 16th century BC; they peak during the late 14th to 13th centuries BC until the end of phase VI at Toumba and KIV at Kastanas (Hochstetter 1984: 15); then they begin to peter out and completely disappear by the end of the 12th to the beginning of the 11th centuries BC.

If one is to compare the handmade ceramic distribution in Central Macedonia with that of Thrace, the varying character of the Thracian pottery distribution needs to be considered. First, the ceramic material in the Upper Thracian Plain is of specific character: besides the amount of incised ware, there is also a significant presence of plain burnished vessels of types not distributed in the rest of Thrace. More recently, some types of pottery shapes, traditionally linked to EBA 3, have also been associated with MBA contexts dated by Anatolian imports, and even connected with the beginning of the LBA (see Leshtakov 2002). More explicitly this association could be observed in the lifespan of the spouted vessel in its variations and different types of bowls usually absent from the more traditional LBA assemblages (Figure 10.2).

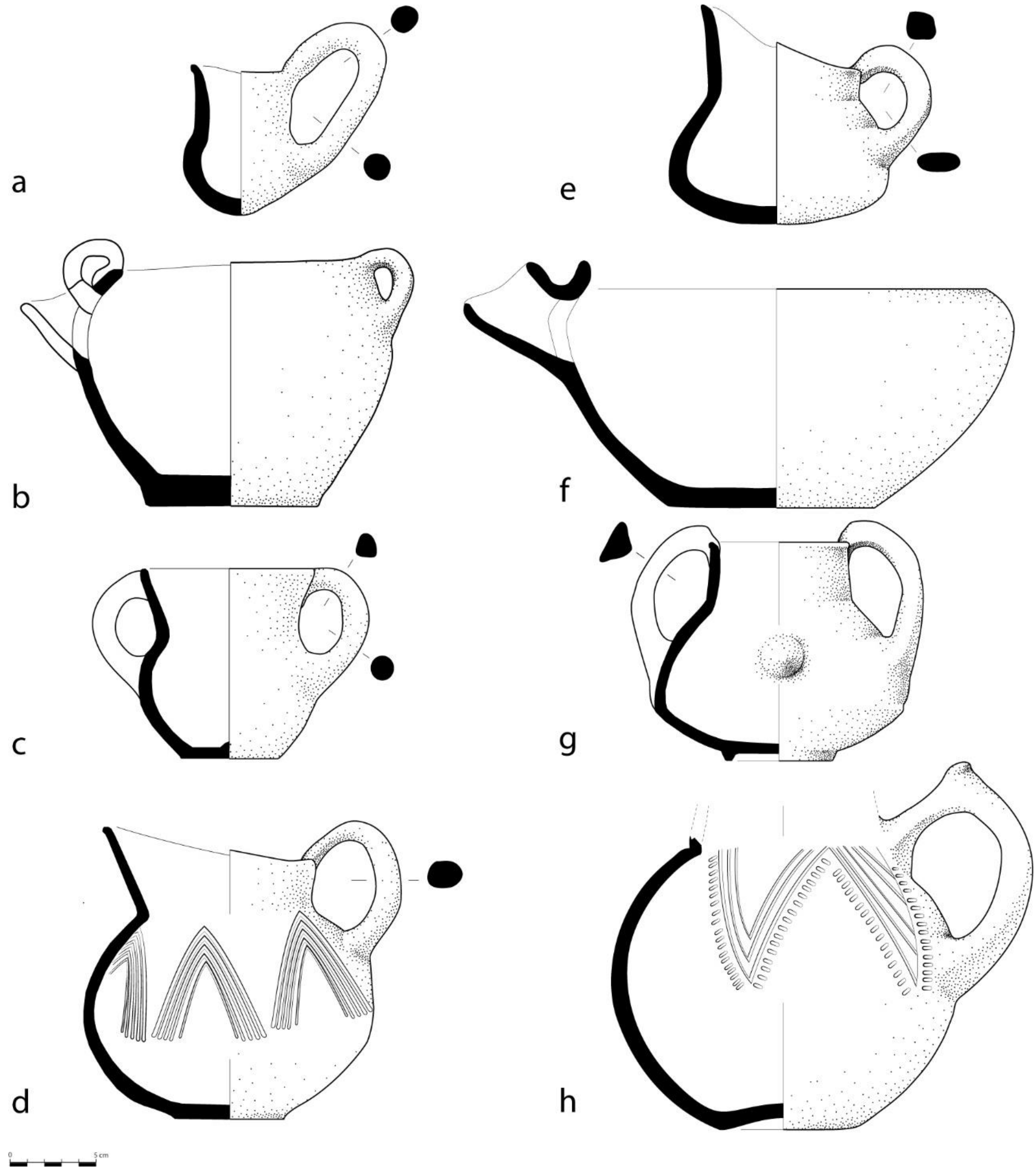


Figure 10.2. EBA 3 vessel types (a-d) and their relation to similar types dated in the MBA (e-h) from sites in the Upper Thracian Plain.

Although the archaeological evidence from Upper Thrace has no stable stratigraphic position to allow detailed analysis, the burnished ware which is made in a similar fashion to the Macedonian pottery can be observed only here and nowhere else in Thrace. I suggest that this type of material, besides possessing a regional character, also has a chronological value and can be associated with the earlier part of the LBA in Upper Thrace or even with the final phases of the MBA. As in Central Macedonia, the habitations are restricted only to settlement mounds, the settlements in Upper Thrace are almost exclusively located on top of earlier prehistoric tell sites along large rivers and alluvial valleys. Nevertheless, unlike the Macedonian communities, the Thracian groups did not succeed in maintaining intensive agriculture, but, based on the very thin-layered settlements with no preserved housing structures, probably re-located frequently, due to periodic exhaustion of resources. The river valleys of Maritsa and Tundzha are subject to seasonal floods today and it seems possible that overflows may have seriously affected the fields of small-scale subsistence farming groups. The use of these previously navigable rivers for either transport or communication between different parts of Thrace and possibly the north Aegean coast could have also prompted this settlement logic.[18]

To identify further the character of these 'river' communities, the burial rite related to this period in Upper Thrace is typically inhumation in a pit in flexed position (Georgieva 2002: 90-91; Hristova 2010) as part of flat cemeteries of an open-air type. The extramural cemetery near Vratitsa is one of the most indicative examples and is dated to the same period as a nearby open-air settlement. It is, however, difficult to identify the exact connection, since the ceramic material from the cemetery, referred to as a 'poor grave inventory' (Leshtakov et al. 2010, 37) is not published and the settlement is dated roughly between the 17th and 13th/12th centuries BC, so may or may not be contemporary with the use of the cemetery (see Hristova 2010, 59). It is important to note that inhumation as well as flat cemeteries are not common in the rest of Thrace during the LBA. Based on this burial custom, the small-scale farming centred around tell sites, and the specific ceramic types with roots in the MBA and perhaps earlier, it seems that the communities in the Upper Thracian Plain belong to a different cultural tradition from the other Thracian groups, with a settlement strategy closer to that of the earlier LBA communities in Central Macedonia. Outside of Upper Thrace, this early phase is not documented, with the exception of an earlier stratum at the rock sanctuary of 'Tatul' in the East Rhodope area. Furthermore, there is no evidence that the Rhodope Mountains were populated between the end of the Chalcolithic and the beginning of the LBA. The

18 On the subject see Delchev 1965, Matsas 1995 and Tzonchev 1957, and for a discussion, see Leshtakov 2007: 455.

Upper Thracian Plain on the other hand seems to show signs of a more conservative EBA 3 ceramic tradition, which gradually evolved and developed into MBA ceramics.

The occurrence of pottery with incised decoration in the Upper Thracian Plain is an interesting phenomenon. Although without much stratigraphic evidence, this material seems to belong to a tradition probably appearing later than the plain burnished ware. Unfortunately, there is not enough evidence to prove the presence or absence of a hiatus between the incised-ware horizon and the earlier plain burnished pottery or to pinpoint their stratigraphic relationship. Furthermore, there is no observable link between the incised ware, the few recorded MBA contexts, or earlier Bronze Age material. Although incised decoration exists in EBA 2 and EBA 3 contexts as well as sometimes in the MBA (see Leshtakov 2002: 208, Figure 12; 2006: 179, Figure 21), there is no recognisable evolutionary link between the earlier and the LBA incised pottery types. It is unambiguous, however, that the heavily decorated and often encrusted vessels appear on top of almost every tell site in the Upper Thracian Plain, mixed with EIA material as a result of modern agricultural activities.

Beyond the Upper Thracian Plain, incised pottery can also be traced in the Rhodope Mountains and more specifically in the Eastern Rhodopes area and Sakar. The distinctive character of this area has been already emphasised on several occasions (Leshtakov 1990; Nekhrizov 1995; 2005). A specific feature of the East Rhodopean micro-region including Sakar is its settlement system, to the extent that it can be reconstructed. The number of settlements recorded is very limited, while the majority of the sites have been interpreted as peak or rock-sanctuaries. A preference for higher, more prominent places was identified by the spatial analysis presented in chapter 9; locational choices involving a preference for ridge landforms at a specific elevation range seem to have been a requirement when the East Rhodopes was populated by LBA communities. Immediate proximity to water sources seems to have been avoided, but easy access to running water was of essence. The choice of such mountain ecotone within the Eastern Rhodopes could have been dictated by the need for grazing lands. Furthermore and unlike the case of the Upper Thracian Plain, the tell sites in the Eastern Rhodopes, once abandoned by the earlier prehistoric communities, were not repopulated during the

LBA. Instead, most settlements show signs of short-term existence and at least some of the sites interpreted as sanctuaries could have been temporary or seasonal settlements, leaving no substantial man-made structures and little material traces behind.

Likewise, there are not many cemeteries that undoubtedly belong to this period in the eastern part of the Rhodope Mountains; the burial ritual is not easy to identify due to extensive looting in the area, but cremation is suspected in most cases. The dolmens and some cist grave structures are also difficult to interpret, because of their multiple re-use and looting, but the LBA incised ceramics associated with a number of these sites suggests that even if they have not been erected as full-scale monuments yet, at least they were in use during the LBA. Certainly, the dolmens continue to be used during the IA in the Rhodope and Sakar mountains, but are almost always associated with earlier LBA incised ware (Nekhrizov 2005). Further southeast, in the Strandzha Mountains, they are very frequent and almost exclusively of an EIA date (Aladjov 1997; Delev 1982; Iliev 2006; Nekhrizov and Iliev 2006; Nekhrizov and Petrov 2005; Panayotov 1976; Venedikov 1976). To my knowledge no LBA material has been found anywhere on the Strandzha Mountains.[19] The only strong correlation with the environment that these burial locations exhibit is immediate proximity to gneiss and schist bedrock. These two types of rock are the primary rock used for the construction of dolmens and cists (Iliev 2008). Practically, it seems to have been important to place the graves near the material source.

The Western Rhodopes differ topographically and culturally from the East Rhodopes. There are no identified settlements or peak sites of the type distributed in the East Rhodopes. Instead, the area is filled with tumuli, chiefly following the burial ritual of cremation in urns. There are only a few examples of inhumation, also under burial mounds (Kissyov 2004; 2009). Only one case from the eastern part of the mountains can be considered of a similar type, the urn burial near Akcha. There are no recorded LBA tumuli in the Upper Thracian Plain, unlike a number dated to the EBA, throughout the

[19] The only known LBA site in this part of Thrace is Valchanovo Kale, on the Black Sea coast. However, there is almost no available information for this site, besides its location.

IA as well as to the Roman period. The distribution of this type of burial seems to continue south, down to the southern slopes of the Rhodope Mountains and occasionally along the middle Struma Valley. More recent finds attest LBA burial mounds also in the area south of Sofia and the plain near Kazanlak (refer to Figure 10.1).

The preference in the West Rhodopes was for locating sites on ridges of relatively low elevation, low slope and a northern aspect. Nevertheless, the almost exclusively funerary character of sites in the area, despite many years of local investigation, suggests that either there is a high level of visibility obstruction or that this part of the mountain was inhabited by more mobile societies residing in relatively impermanent camps, and leaving permanent traces only in death. Although this model might seem rather simplistic, it would explain the appearance of ritual attested at the sites near Progled, Lyubcha, Borino, Devin (see Kissyov 1998; 2004; 2009; Leshtakov 2008) and unattested elsewhere in Thrace. The deceased was typically buried in an urn of amphora shape, covered with a large bowl or usually a kylix. Sometimes a bronze knife or rapier, other small bronze object, a few gold items, or amber beads are also buried as grave gifts (see Valla 2007; Leshtakov 2008). Next to the urn, there are one or two plain or incised kantharoi and sometimes a small cup. The decoration on the pottery from the burials as a whole resembles to a limited extent the East Rhodopean types. Some of the motifs are comparable, but the vessel shapes have specific characteristics, described in chapter 7, which have not been documented yet in either the East Rhodopes or in Upper Thrace.

Similar types of pottery are known from the Struma Valley and to an extent from east Macedonia as well as west Thrace and Thasos. Both the West Rhodopes and the lower Struma Valley, however, show some very close links to the vessel types typical of the Brnjica culture along the lower Morava course in the northwest. According to Stojic, the Brnjica group represents a development of the last phase of the Vatin cultural group also known as the Mojsinje-Dobraca horizon in the South Morava basin (Stojic 2006: 74). The main feature of this culture is tumuli cemeteries with cremation in an amphora-like urn, covered by a bowl or a kylix, a ritual widely attested in the West Rhodopes. The rest of the settlements, besides Hisar, are single layered and almost disappear towards the southwest edges of the Brnjica dispersal. Based on the pottery repertoire, three excavated settlements along the middle Struma course, Kamenska Chuka, Bresto and Krasto Pokrovnik, can be related to the same cultural group. The typical vessels in the area, described in chapters 6 and 7, are well known from the publication of Kamenska Chuka (Stefanovich and Bankoff 1998). What is interesting about the Kamenska Chuka type of site is the presence of stone architecture, non-existent elsewhere in Thrace, as well as massive surrounding, probably fortification walls. The defensive character of the sites in this micro-region is supported by numerous bronze arrow heads from Kamenska Chuka (Stefanovich and Bankoff 1998: 2007). Site locations closely resemble each other, however, in being on both banks of the Struma River on naturally protected hill sites.

It is noteworthy that the ceramic repertoire from the cemetery of Sandanski is close to the pottery found in the settlements. However, the site is located further south and the difference in the funerary ritual from the main Brnjica type is significant: in the cemetery at Sandanski, burial is flat with inhumation in a flexed position. This could be described as the southernmost point of distribution of this pottery type recorded to the present. In my opinion, it seems possible that the Western Rhodopes and the middle Strymon Valley were gradually populated by the same ethno-cultural groups, bringing cremation rites, tumuli, different ceramic shapes and access to foreign prestigious objects, such as bronze weapons and jewellery made of bronze, gold and amber.

Further south, in west Thrace, not many sites have been investigated and most of our observations had to be made on the basis of surface collections. A number of correlations were, however, detectable. The local pottery can be related to both East and West Rhodopean styles, but also Macedonian and Thasian incised wares. The settlement at Stathmos Aggista, which is located just south of the West Rhodopes in the West Thrace, in fact has more parallels in Macedonia and Thasos, than with sites on either side of the Rhodopes (see Koukouli-Chryssanthaki 1990). The presence of burnished light-coloured pottery and wish-bone-handled bowls, accompanied also by occasional matt-painted material, in the north Aegean area is also connected more to Macedonian societies. There is a significant record of matt-painted pottery in west Thrace and east Macedonia, but nowhere beyond those regions. It seems as though the appearance of matt-painted ware was a phenomenon developed on a scale that generally did not involve Thrace.

10.2. Cultural traditions and LBA chronologies

10.2.1. The origins of the Thracian LBA

Given the paucity of evidence elsewhere, only the Upper Thracian Plain has clear links with the last phase of the MBA and hence suggests a resident population who inhabited parts of Thrace since the earlier Bronze Age, probably developing from cultures like Ezero and Kirilovo (see Georgiev 1979; Katinchrov 1982; Leshtakov 2006). If any of the Thracian cultural groups were to be described as locally evolved, those using the 'plain burnished ware' are the best candidates, since this ware is the most reminiscent of EBA 3 shapes. Incised pottery on the other hand, appears as a new phenomenon possibly at a later stage, involving new shapes and decoration techniques. In the following paragraphs, I will try to address the origin and the nature of the incised pottery tradition in the Balkans in general and in Thrace in particular.

Because of the uncertainty in the chronological evidence in Thrace, the ceramic material documented in the stratified central Macedonian toumbas offers the closest comparative data. Some similarities between Macedonian and Thracian pottery have encouraged several researchers to define routes of transmission for Macedonian incised pottery from or through Thrace (Horejs 2007; Koukouli-Chryssanthaki 1982; 1990). Tell sites like Kastanas and Assiros have been traditionally used for synchronisation, although some of the authors have pointed out the considerable distance between the sites used for direct chronological comparison (Stefanovich and Bankoff 2007; Leshtakov 1990). The appearance of incised pottery at these sites is stratigraphically later than the local handmade plain burnished ware with roots in the MBA. It also appears earlier than another foreign element, southern Aegean Mycenaean-style pottery, and it then gradually declines before completely disappearing at the beginning of the 12th century BC (Andreou and Psaraki 2007: 400, Figure 3, 401, 412). The novelty of incised ware in central Macedonia is emphasized by the fact that this was the first time since the end of the 5th millennium BC that decorated pottery was used in this area. The origin of the incised ware found in Central Macedonia is traditionally placed in the Lower Danube area or perhaps Thrace (Horejs 2007, 397). Horejs points out that the pottery of the Bulgarian so-called Cerkovna and Zimnicea-Plovdiv groups appear stylistically far from the lower Danube pottery groups, but are also not the same as those in eastern and central Macedonia (Horejs 2007: 80). It is interesting that the incised ceramics in Central Macedonia were executed with the same local technological skills usually applied to burnished ware (Andreou and Psrakai 2007: 411), which differ from the technological characteristics of the incised pottery in the Eastern Rhodopes, for example. Yet the local burnished pottery continued to exist in the tradition established in previous periods (in terms of surface treatment and firing), with an overwhelming concentration on one type, the deep rounded bowl with wish-bone handles. Furthermore, the incised pottery did not appear as a ceramic group to fulfil the needs of certain domestic or festive functions or to replace the local plain burnished forms, but covered a similar range of common categories such as amphorae, jugs, cups, etc. (Psaraki 2004: 138-140, 234-235). Thus, an entire package of shapes and types was adopted, while simultaneously the plain burnished forms continued to be in use. As an entirely new shape appears the globular kantharos, which is also the earliest known type in the area associated with the ceramics executed in the incised style.

In the Upper Thracian Plain the local plain burnished ware possibly followed a ceramic tradition established in the earlier Bronze Age, similar in vessel shapes to the plain burnished ware from central Macedonia. This plain ware possibly also partly co-existed with the incised ware in the Upper Thracian Plain, as it did in Central Macedonia (see Andreou 2009; Kiriatzi and Andreou 2016). In the Rhodope Mountains, however, and more specifically in its eastern part, the incised ware is the only documented type and no earlier Bronze Age presence is attested. The earliest appearance for the pottery type in the Eastern Rhodopes area has been recently dated in the late 16th or early 15th centuries BC, as described in chapter 8. It also appears to be a complete package of established shapes, types, decoration techniques and motifs, undocumented in earlier periods in this area. Furthermore, the differentiated ceramic distributions analysed in chapter 7 and the micro-regional settlement patterns described in chapter 9, suggest a more complex regional diversity than previously thought. What processes forced or encouraged such diversity? What are the roots and the directions of the cultural spread?

Is there any chronological meaning in the observed distributions? These are only a few of the questions one can ask from the existing dataset and the documented patterns.

For decades the LBA of present-day Bulgaria was referred to as the ‘Cherkovna’ or ‘Zimnicea-Plovdiv’ group, based mostly on the presence and the distribution of the generic category of the kantharos shape. The possibility for detailed research was overlooked due to the argument that there was an insufficiency of accumulated material. There were suggestions that the culture on both sides of the Balkan Mountains was different (Hänsel 1976: 83-84), but the discussion was mostly left at that. The chronological position of this cultural group is also unclear. Although most researchers refer to it as representative of the LBA in the area, it is traditionally dated to the end of the period (Chickikova 1968; Hänsel 1976: 77; Nikolov 1974). Even more puzzling are the characteristics of the pottery style represented in the finds from Plovdiv, Cherkovna and the necropolis near Zimnicea (see Hänsel 1976), which are rather different from the rest of the material found in Thrace. Incised decoration is almost absent, the shapes are roughly executed and the quality of the surface treatment is relatively low.

In terms of distribution, the deposit from Plovdiv can be considered as the southernmost, relatively complete find, but a number of isolated finds, mostly small jugs, also reached the Rhodopes and the Northern Aegean hinterland and more specifically the settlement at Stathmos Aggista (Koukouli-Chryssanthaki 1990). The distribution north of the Balkan Mountains can be traced via the kantharos type from Plovdiv with parallels near Veliko Tarnovo (see Hänsel 1997: Figure 34, 6), just on the other side of the Balkan Mountains, and a few other finds near Pleven and Vratsa (Hänsel 1997: Figure 34, 4-5). Several other variations of the type known from Zimnicea and Cherkovna, are distributed on the south coast of the lower Danube, central-north and northeast Bulgaria. The only decorated shape of this ‘horizon’ has parallels with the Govora group, which is also described as late Verbicoara (see Hänsel 1997: Figure 4, 5). Elements from Govora, Coslogeni and partially Noua cultures are present at the same time and in the same contexts south of the Danube and are the closest relatives to the Zimnicea-Plovdiv shapes. Most of the jug and amphora types can also be seen as related to Coslogeni (see Hänsel 1997: Figure 1). Therefore, I am more inclined to treat the

‘Zimnicea-Plovdiv’ horizon as a separate phenomenon that occurred in Thrace with a *terminus post quem* at the peak of Coslogeni; its distribution seems to follow a rather direct north-south route, reaching the Aegean coast and Thasos.

As a separate event, the incised pottery in Upper Thrace and, for the most part, that in the East Rhodopean area appears rather independently and seemingly at an earlier stage of the LBA. It is extremely rich in ornamentation and distinct from previous ceramic traditions in Thrace in general. Incised ceramics are well known from earlier Bronze Age contexts as isolated examples, but the new decorative style is quite distinctive as are the vessel shapes. The rich ornamentation style from the East Rhodopes is considered local for this area, but it is hard to ignore its appearance as a developed style as well as the introduction of a new incision technique – the *furchenstich* – as well as the re-introduction of encrustation. Furthermore, the mountains seem to be entirely depopulated during the EBA, which means that the LBA population cannot have been local. In terms of decoration and decoration techniques, similarities can be found with various cultural groups on the other side of the Danube River. Close analogies can be seen in cultures like Verbicoara and Tei IV as well as some elements that are reminiscent of vessels from the later Govora group. The novelty of the decorative style, the similarity of the motifs, and the replication of shapes suggest that the origins of the East Rhodopean tradition must be related to an extent to the southern part of the Carpathian Basin or that these groups had a common ancestor that led to the dispersal of culturally similar entities. Some motifs and ornaments could be paralleled in the earlier MBA, Monteoru and Wietenberg cultures in the northern Carpathian Basin.

The encrustation technique in various styles is extremely common along the Middle and Lower Danube throughout most of the central European Bronze Age. The *furchenstich* technique itself can be traced to the Vucedol and Vinkovci cultures in northern Serbia. This is the grounds on which the proposition that the direction of influence is north-south instead of south-north or an alternative is based, and that these cultures are the genesis of the pottery repertoire, the surface treatment and the decoration technique. The so-called *furchenstich* method, also known as the ‘furrow-stitch technique’ (Savel

2006: 139), is already known from the early Somogyvar-Vinkovci cultures (Bondar 1995) in the Republic of Slovenia and south Hungary. The widely distributed geometric motifs are also common for this group; horizontal lines or incised V-patterns along with hatched triangles in a combination of zig-zag were frequent throughout the Pannonian Plain in the EBA (Kalicz-Schreiber 1986: 249), at around the 25th and 24th centuries BC, according to radiocarbon dates from the Rascica settlement (Savel 2006: 141). The technique later survives in some of the MBA cultures of the Great Hungarian Plain from around the 20th to the 17th centuries BC. The black polished surface known also from Vucedol and Vinkovci is also typical of Hungarian MBA encrusted pottery cultures, and is most probably intended to replicate the reflective effect of a metal surface. On the basis of some of the MBA Danube cultures the so-called Cirna-Gârla Mare/Dubovac-Zuto Brdo/Baley-Orsoya culture develops on both sides of the lower Danube, reaching northwest Bulgaria. The ornamentation of this group, however, follows a different branch of the cultures and is based on mostly floral decoration as opposed to geometric. Clear continuation of the tradition can be seen between the latter culture and Vatya III and Szeremle (Bona 1975: Figure 215, 5, 18; Figure 216-221) as well as Vattina (Bona 1975: Figure 201; see also Dzhanfezova 2010: Figure 9, 1). The more widely distributed double-crossed and hatched-triangle motif, typical of the East Rhodopes in different variants, can be seen already in Vatya I and II (Bona 1975: Figure 19, 15; 20, 4, 25, 9) and in Ujhartyan-Vatya (Bona 1975: Figure 27, 28), as well as a small knob with solar motifs characteristic of the Fuzesabony culture with possible EBA roots from Vinkovci (Bona 1975: Figure 190, 11). *Furchenstich* with parallel and perpendicular lines, similar to that on an East Rhodopean vessel, is also known from Vatya III (Figure 50, 6).

Another cultural feature that appears in Thrace is the wagon-wheel model, which is a component of most incised-ware pottery assemblages (Figure 10.3). North of the Danube, the Carpathian region is one of the regions with a significant distribution of such models, mostly undecorated from the Glina-Schneckenberg sites, and they remain in use throughout most of the MBA in Hungary and Transylvania and along the lower Danube (Otomani, Wietenberg, Gîrla Mare/Žuto Brdo). They gradually disappear from the record sometime at the beginning of the central European LBA (Markova and Ilon 2013). Similar models appear regularly associated with incised ware in the East

Rhodopes. An entire clay model is known only from the Gîrla Mare/Žuto Brdo culture, but the wheels are not uncommon in the south. It is hard to ignore this fact when interpreting the cultural characteristics. It seems to me that this is one of the factors that signify movement of people rather than just transportation of goods, considering the importance of the horse and wagon for such mobile peoples.

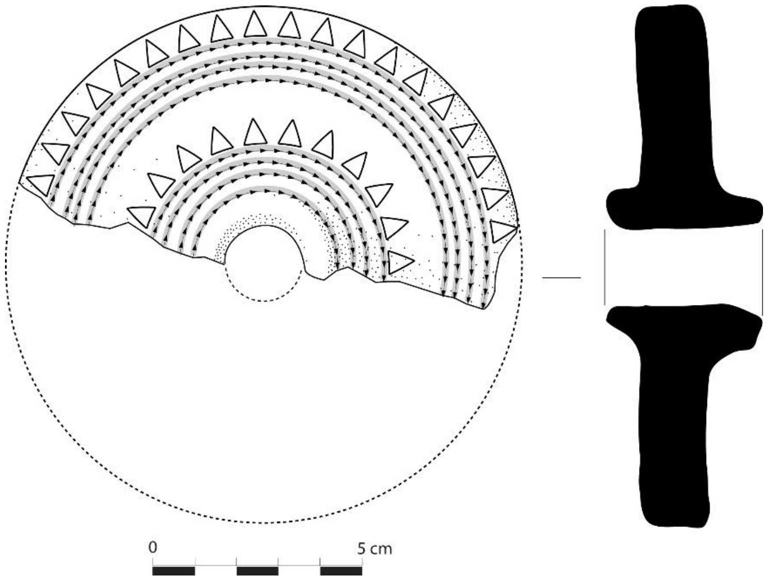


Figure 10.3. Clay wagon-wheel model from Perperikon.

The parallels are many and different elements can be seen in a number of cultural groups along the Danube and in the Carpathian region. This does not mean that Thracian incised pottery is derived directly from the cultural groups in the Great Hungarian Plain, but it rather points to the early origins and potential spread of both human populations and cultural traditions that eventually arrived south of the Balkan Mountains. What is interesting is that these roots can be traced to the MBA and even to the EBA in these northwestern regions. The Hungarian MBA is placed roughly between 2000 and 1600/1500 BC according to radiocarbon data (Raczky et al. 1992). The entire Vatya culture, which has some of the closest parallels, especially in its phase III, is dated 2100-1640 BC (Kiss 2012: 201). Other markers are seen in the Vattina culture, which is placed between 2040 and 1420 BC (see Garašanin 1973: 1983; Tasič 1974; 1982; Majnaric-Pandzic 1984; Marinkovic 2007). Nevertheless, most of these connections are exhibited in the Lower Danube encrusted ware and get expressed in the Cirna-Gârla Mare/Dubovac-Zuto Brdo/Baley-Orsoya group (Figure 10.4). Some elements originating in the earlier Bronze Age of the southern Hungary, however, travel farther and perhaps follow different routes. *Furchenstich* techniques, encrustation, some motifs and probably the ancestors of some shapes originate in that area.

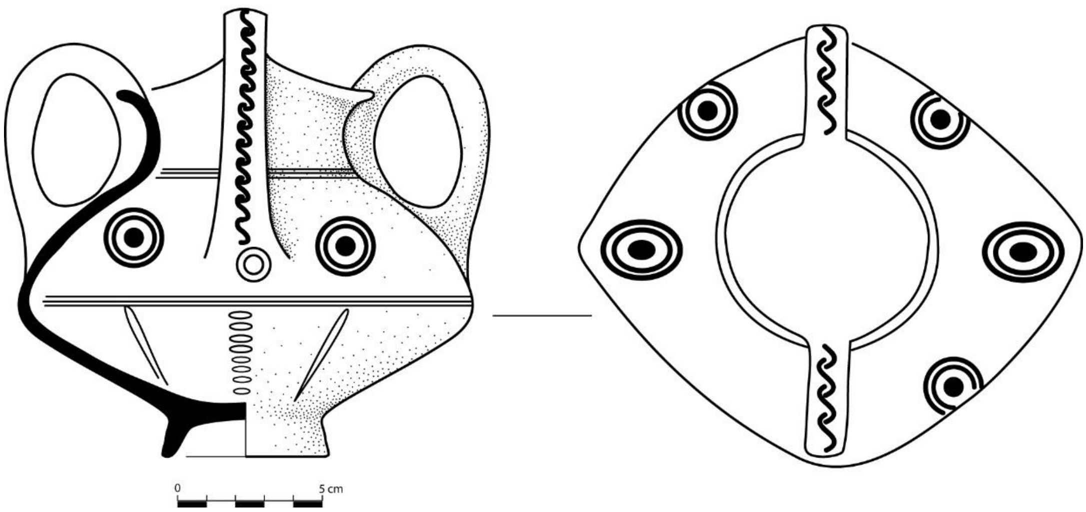


Figure 10.4. Kantharos type, typical for the Cirna-Gârla Mare/Dubovac-Zuto Brdo/Baley-Orsoya group.

The Cirna-Gârla Mare/Dubovac-Zuto Brdo/Baley-Orsoya group distributed along the lower Danube remains quite distinct from what is happening in the south and marks a separate line of distribution. Govora and Vebicoara, though, exhibit much closer connections that can be traced to the Upper Thracian Plain later horizon and the East Rhodopean pottery, which has followed a different route at perhaps a different stage of the Bronze Age. Tasič suggests that the appearance of late encrusted pottery in the Banat area was due to the arrival of a population group from Transdanubia moving to the east. He traced the reason for this to the pressure from the incoming Tumulus people from the west. The remaining population would have then formed the Dubovac-Zuto Brdo group, which is seen as the successor of the Vattina to the west and

Verbicoara to the east of the Lower Danube encrusted ware cultures (Tasič 1984: 63, 64, 74; 1996).

To summarize, it seems that in LBA Thrace three pottery traditions existed i) plain burnished ware with origins in the earlier Bronze Age, ii) the commonplace LBA incised ware with a potential origin in the Carpathian Basin or the Hungarian Plain and iii) plain ware, characteristic of the end of the local LBA as a part of the spread of Coslogeni and partially Noua ceramics. It can be also suggested that there were at least three different localized types of subsistence strategies, based on the site location analysis conducted in chapter 9, i.e. subsistence farming and different degrees of pastoral mobility. There are also different types of burial practices – inhumation in flat cemeteries, cremation under tumuli and dolmen/cist graves without evidence for the ritual. These types of evidence overlap to a certain extent across Thrace to present the following picture.

In the Upper Thracian Plain communities practicing subsistence farming settled or continued to inhabit settlement mounds, possibly targeting fertile soils to maintain a level of subsistence. These groups buried the bodies of their deceased in pits as a part of communal flat cemeteries or occasionally covered by burial mounds. The earlier plain burnished ware is typical for this area, overlapping with incised ware possibly at a later stage. In the Eastern Rhodopes and Sakar by contrast, pastoral groups colonised a specific mountain ecotone following ridge landforms with potential for regular access to grazing lands and running water. This micro-region was perhaps also attractive for its natural mineral resources as suggested by the gold ore exploitation at Ada Tepe. The only evidence for the burial rite practiced here are the dolmen structures with preserved LBA pottery. The typical ceramic material is richly decorated incised ware, partially overlapping with types distributed in the Upper Thracian Plain. Correspondence with some of these pottery types can be seen in some ceramic traditions documented north of the Danube, precisely in the Carpathian Basin and the Hungarian Plain, which is potentially indicative of the origin of the incised ware in Thrace. In the western part of the Rhodopes, possible nomadic or semi-nomadic groups brought cremation in tumuli to the area and left little or no trace of permanent habitation. The imported prestige objects in some of these graves suggest that these groups had access to foreign goods and that they participated in wider networks of regional interaction. The pottery assemblage typical for this area partially overlaps with the types distributed in the Eastern Rhodopes, but it is much closer to the ceramic tradition of the Brnjica culture. Probably communities from the Brnjica culture also populated the middle Struma Valley, forming a system of defensive settlements towards the end of the 13th century BC.

10.2.2. The role of metal in the local economy

Thrace is often referred to as a potential source of copper for south Aegean centres. However, despite a number of copper mines in the area, there is no evidence for exploitation during the LBA and certainly no indication of export; no analyses of south Aegean metalwork as yet support this model. In any case, surrounding areas such as Macedonia, the Carpathian basin, the territory of Serbia and the lands around Troy are also rich in copper. Thus, if the LBA population in Thrace did not produce copper locally, there was no immediate need for ore extraction and export. Thrace also has natural tin resources available with zinc ores in the East Rhodopes, but there is no indication of their extraction or even knowledge of their existence.

That said, the discovery of more than 500 tin-bronze objects from Bulgaria (see Chernykh 1982), mostly in the territory north of the Balkan Mountains, gave grounds for the suggestion that bronze tools and weapons were locally produced. The vast majority of these finds, however, come from hoards mostly distributed along the lower Danube River and there is not a single LBA site indicating metallurgical processes. Hoards appear rarely in Thrace and are very uncommon in the Aegean. The common bronze finds from Thrace consist of rapiers and horned swords, spearheads, and double axes. The majority of these, however, are chance finds without context and the few examples found during excavations belong to rich burial contexts in the west part of the area. Although these finds are traditionally considered as evidence for established regular contacts and networking between the south Aegean and Thrace, they are still relatively rare and can be considered prestige weapons with undocumented provenance, which cannot testify to direct exchange relations between the two areas. Furthermore, the standard flange-hilted swords, nine of which were found in Thrace, are common not only in central and southern Greece, but also in Macedonia and Albania, which could therefore be considered as source areas for their distribution in Thrace. Therefore, it is not feasible at this stage to focus on such objects if we want to understand the situation in Thrace, which seems to have been part of a separate system.

If the economy of the Thracian Bronze Age included part-time craft specialisation in metallurgy, there is not much evidence on the ground. The only site that has the potential to be identified as a part of such a model is the gold-mining settlement of Ada Tepe. The mines located on the slopes of that hill seem to have been exploited over a long period within the LBA. Furthermore, no signs of metal production were discovered on the site, which means that either the raw material was traded or that there was an ephemeral processing site nearby. Nevertheless, almost no imported goods can be identified in the material culture of the settlement. If one looks at the mundane objects of utilitarian character, such as pottery, imported vessels are extremely rare in Thrace in general and there is also no indication of Thracian pottery penetrating the Aegean or Anatolian world. Thus it seems that food, oils or perfumes, as represented by ceramic containers, were not involved in the exchange networks. In fact, if there was any regular trade or exchange between Thrace and the surrounding areas to the south they remain invisible to us at this stage of research. Furthermore, whatever the routes linking the south Aegean and the Carpathian Basin were during the LBA, it seems that they mostly bypassed Thrace. This is supported also by the distribution of oxhide ingots exclusively along the Black Sea coast and the Danube delta, following particular transport arteries (see Leshtakov 2007). Whether those ingots participated somehow in the local economy, once they reached the coasts of Thrace, is impossible to say at this point. It seems clear, however, that the territory north of the Balkan Mountains, in the north of Bulgaria, was part of the central European orbit, while still remaining isolated and, although traditionally linked to the Aegean and principally the Macedonian Bronze Age, housed a self-contained group of cultural entities.

10.2.3. Chronological reconstruction

The chronological picture in Thrace seems rather complicated, but in order to understand it, there are several general processes that need to be kept in mind. First, the MBA in the Hungarian Plain and the Lower Danube is not a period of large cultural complexes, but rather of smaller interconnected entities archaeologically recognised as cultures or cultural groups (Ljustina 2011: 110). For example, in the cemetery of Dunakeszi-Kopolya there are mixed ceramic assemblages of the Hatvan, Vatya and the Encrusted Pottery cultures. Current research can testify that this is not only due to exchange between different groups, but is also a matter of a mixed population that already occurred sometime during the MBA. Support for this is also given by the difference in burial ritual that accompanies the differing ceramics (Kiss 2012: 186). We meet a similar situation at a cemetery in Campina, where we find mixed finds of the Tei and Monteoru cultures (see Frinculeasa and Lichiardopol 2011). To the northeast, along the western Black Sea coast and immediately inland, however, the presence of mixed Noua and Coslogeni elements seems to be attested.

As briefly mentioned above, on the west side of the study area one can observe slightly different patterns. Around 1400 BC, parallel to Belegis I, there are two other cultural groups that start to develop – Paracin I and Brnjica I (Jovanovic 1999: 67-72). The two cultures are differentiated mostly on the basis of burial practices, but share similar traits in pottery style. Tasič proposed that Paracin is earlier than Brnjica (Tasič 2003: 100). One of the better published representatives of this culture is the cemetery of Klucka-Hippodrome in Skopje (Mitrevski 1993: 80 Figure 4; Stojic 2006), where we can see ceramic parallels with the Strymon Valley and some of the Macedonian sites. This is mostly undecorated ware with specific shapes, mostly recognisable as kantharos and amphora shapes. Besides this pottery style, however, there are some connections that could be traced to Wietenberg or Monteorou, which can be seen in the incisions used in the earlier as well as later Kastanas horizons (see Hochstetter 1984: Figure 21, 13, 18 and 40).

I see the following possible reconstruction of the processes taking place in the second half of the 2nd millennium BC in the region. It seems that by the end of the 16th century BC some instabilities in the Hungarian Plain caused the relocation of certain human groups to the east, following the lower Danube course and the lands immediately north and south of it. Around 1500 BC in the western part of Hungary and Slovakia the so-called 'tell cultures' collapsed, probably due to the expansion of the Tumulus culture eastwards. This, along with the westward expansion of the more settled Noua population from the Circum-Pontic region, caused the interruption of some long-term regional networks and had a number of large-scale effects (Kristiansen and Larsson 2005: 212). Furthermore, the expansion of other groups from the steppe could have contributed to the formation and the expansion of the Noua culture area (Sava 1998; Gershkovich 2003). That influx reached Tape in Hungary where an appearance of new groups can be demonstrated (Trogmayer 1975; Farkas and Liptak 1975). This caused a chain-reaction of events that affected also the areas south of the Danube, probably including Thrace (Figure 10.9).

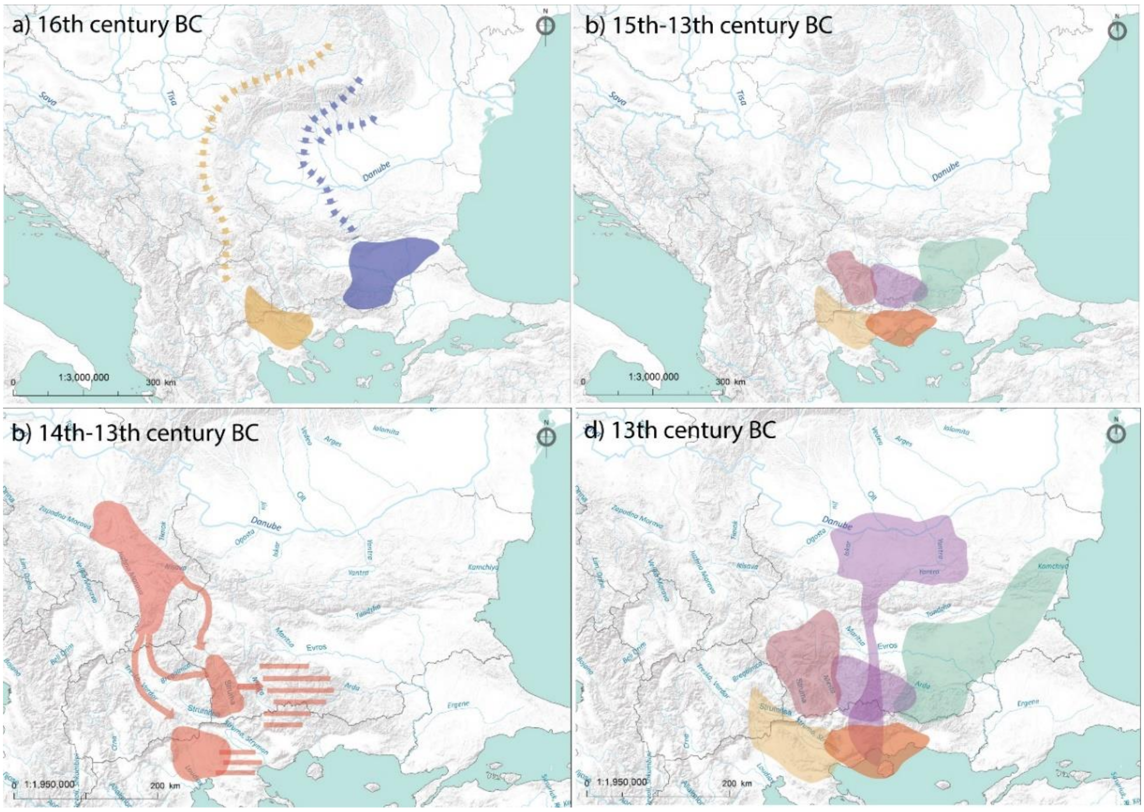


Figure 10.9. Chronologically defined distributions based on pottery styles: a) the earliest appearance of the LBA incised ware in the area with its potential direction of spread; b) micro-regional diversity in the developed LBA; c) appearance of Brnjica type pottery in the southwest part of the area; d) appearance of elements from Coslogeni and Govora (late Verbicoara) during the last phase of the LBA.

A direct link with some of the Hungarian cultures, like the MBA Vatya, can be seen in the Lower Danube group of Cirna-Gârla Mare/Dubovac-Zuto Brdo/Baley-Orsoya. The elements associated with this group remain in this area and do not spread further south.

A second spread can be connected with the groups of the Verbicoara and Tei in Romania. An indication of population movement can be traced through northwest and central Bulgaria towards the Upper Thracian Plain and the East Rhodopes. The short life of the sites in northwest and central Bulgaria can be explained by the temporary character of the common cave sites, such as Devetashka, Tabashka, Emenenska and Muselievo, (Bonev 2003: 32), which were probably those sites that survived due to better preservation. It seems possible that there are two separate periods within the Thracian LBA linked to separate pottery traditions originating in the areas north of the Danube. The earlier period, associated with the 16th and 15th centuries BC, was based on the Verbicoara and Tei traditions, but developed its own character in Upper Thrace and the East Rhodopes. Later connections are associated with the cave settlements in central-north and northwest Bulgaria and with the Govora group, which also originated north of the Danube River. Some of the LBA traditions in west Thrace and Thasos, could have been related to either of these distributions or, in a more direct connection, with the East Rhodopes. A large portion of the material culture in this area, however, seems to have 'arrived' through the mechanism of the appearance of the Macedonian incised ware. This combination of material culture gives the specific character of the west Thracian sub-region (Figure 10.9 d). With respect to Macedonia *per se*, there are substantial differences with the material from earlier phases. The roots of the appearance of the incised ware in this area can be seen in Wietenberg and Monteoru.

Another connection with the northern Balkan and central European regions can be seen in the 14th and early 13th centuries BC, when ceramics from Belegis II can be seen as the common type in the region of Baley-Orsoya. In the west, the distribution of ceramics and burials of the Brnjica type can be seen in Kastanas, horizon 14, and the West Rhodopes. The Upper Strymon Valley can also be considered as part of the same cultural spread, although it also has stronger similarities to the Ulanci and Paracin groups, which developed in the southern parts of Brnjica (Figure 10.9 c). Some authors have already connected the appearance of cremation in urns in the West Rhodopes with the movement of actual communities from the north along the Maritsa and Tundzha (Bonev 2003; Mikov 65). These routes, however, are probably incorrect, given the fact that such cultural characteristics are not present along those routes. It seems logical to assume that this tradition originated in the northwest, and was transmitted through Brnjica. Furthermore, the tumuli do not continue to the east, in the area of the East Rhodopes, if we do not count the small tumuli with re-used dolmens, which are considered part of a different tradition, and the isolated burial by Akcha.

Yet a later ceramic tradition with northern origins can be seen during the 13th century BC related to the groups Noua and mostly Coslogeni. Both traditions can be seen combined at the necropolis near Zimnicea and spreading further south through central and northeast Bulgaria to reach the Upper Thracian region at Plovdiv (Figure 10.9 d, Figure 10.10). The Coslogeni spread was detected also at Durankulak, which could be one of the last settlements of this culture that survived the destruction of the 12th century along the Danube delta. Todorova dates the settlement at Durankulak in the 13th to 12th centuries BC (Todorova 2002). The well find from Essenitsa, near Varna, can be considered a part of the same distribution (see Bonev 2003: 34).

This late period (13th century BC) perhaps partially coincided with the establishment of settlements along the course of the Struma and the distribution of burial mounds in the West Rhodopes. During that period, the neighbouring area of Northern Macedonia (today's FYROM) is also marked by a similar distribution. The local culture at the time, the so-called 'Ulanci' group, extended to the Skopje-Kumanovo region to the north, the Pelagonia region to the west and in the Struma Valley to the east (Mitrevski 2003: 46-52, T.V, T.VI). Its settlement life has been revealed by the multi-layered Lower Vardar tell sites, with layers belonging to this group (see Heurtley 1939; Hochstetter 1984; Hänsel 1989; Papaeftimiu-Pilali 1997) as well as further north at the sites Vardarski Rid–Gevgelia (Mitrevski 2001) and Stolot–Ulanci (Mitrevski 1997: 44-45).

Most of the newly excavated sites in this group, however, are cemeteries – a situation similar to the West Rhodopes. The lack of clearly documented settled life in two neighbouring areas above all tells us about the mobile character of the groups that stayed long enough in this part of the world to develop some distinctive ceramic styles and to erect burial mounds at this particular time. Some of them perhaps mixed with local populations inhabiting the tell sites farther south. During the 12th and up to the beginning of the 11th centuries BC, the development of this culture was interrupted (Mitrevski 2007: 447). That interruption is recorded in the many destruction levels at Kastanas, Vardino, Vardaroftsa and other sites in the Lower Vardar (Heurtley 1939). The settlement at Vardarski Rid relocated to a nearby hill location after a destruction (Mitrevski 1994). The appearance of a completely new pottery style, lustrous ware, happened almost at once in archaeological terms over a larger territory at the end of LHIIIC. Furthermore, with the establishment of this new, IA culture, the old burial customs with inhumation in cist graves reappeared. With the beginning of the IA we can observe a level of depopulation or reduced intensity of habitation along the valley of the Vardar (Mitrevski 2007: 449). According to Mitrevski, the groups represented by this new tradition did not remain long in this area but turned east towards Anatolia.

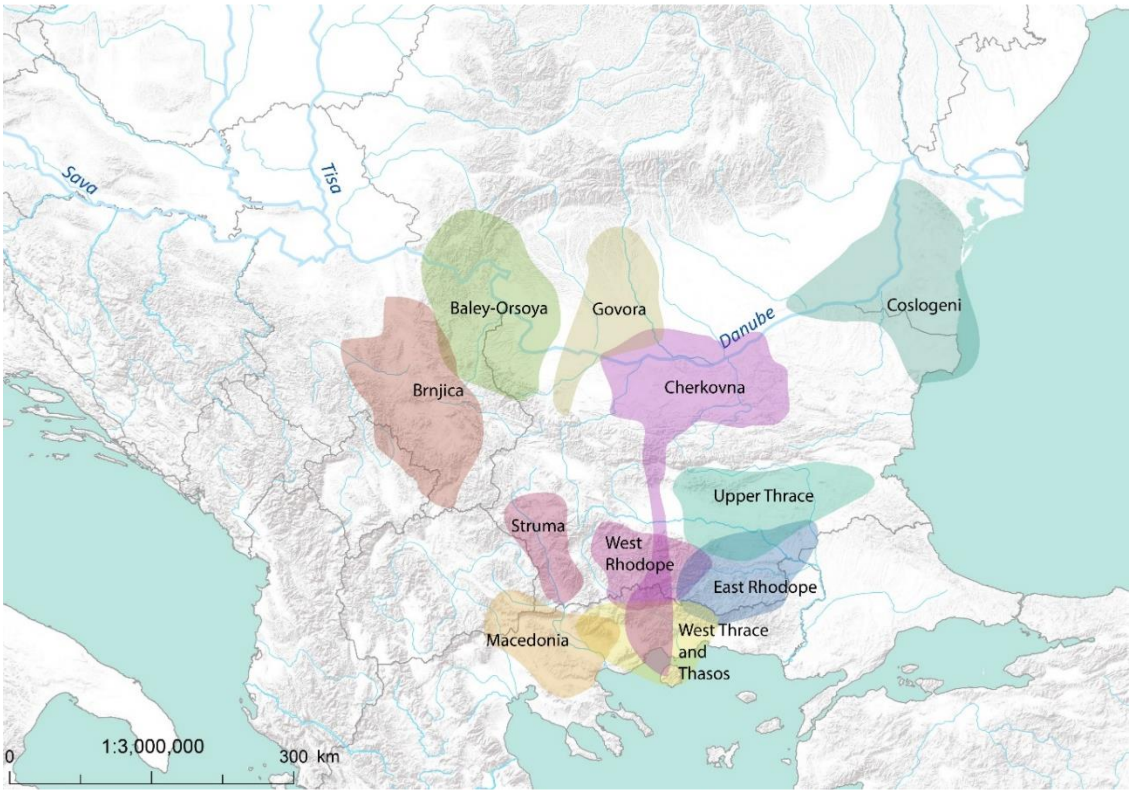


Figure 10.10. General picture of cultural diversity in Thrace and beyond (16^{th}-13^{th} centuries BC).

In retrospect, it seems that during the EBA, Thrace accommodated an agriculturally-based economy, with tell sites and significant thickness of EBA layers indicating longevity of occupation (Harding 1989). After the end of the Ezero period in EBA 3, most of the tell sites were abandoned. Except for a few isolated cases, the MBA is underrepresented in Thrace. The East Rhodopes contain one of the few cases of MBA evidence, which is the first sign of habitation in the area after the end of the Chalcolithic. This part of the Rhodopes became intensively inhabited, according to the observable patterns in settlement and pottery distribution, with the appearance of the incised-pottery tradition. The short life of the settlements throughout the area can be explained by a small-scale self-sufficient economy including low-intensity agriculture along with rotation of cultivated areas upon exhaustion of resources. This model contrasts with southern Aegean and Anatolian economies, where centralisation and production control were paramount (Harding 1989: 175). Production and exchange must have been executed on different local scales, supporting subsistence farming models and perhaps a certain level of mobility throughout the LBA.

The various evidence discussed above suggests that the picture in the Balkans and more specifically in Thrace was probably far more complex than previously thought. The diverse societies who left their marks in the area, need to be approached from multiple angles in future research. Changing scales as well as avoiding deep-rooted assumptions are the first steps towards addressing the nature and the origin of LBA groups. The short final chapter that follows summarises these issues and offers some thoughts on a way forward.

Chapter 11. Conclusion and directions for further analysis

11.1. Closing remarks

The research presented in this thesis represents the evolution of work I began in 2005 with an MA dissertation investigating the character of the Late Bronze and EIA pottery from a small section of Thrace (the eastern part of the Rhodope Mountains) and continued via an MSc dissertation where I studied settlement patterns from the same sub-region. An idea for doctoral research evolved naturally from these preliminary efforts to address the entire area of Thrace combining both types of artefact and settlement evidence. My main aim has been to investigate the nature of local material culture in the Thracian region and to explore any detectable signs of one or more settlement systems. The preceding chapters have drawn upon a large sample of local ceramics selected from an even larger group of pottery with which I have either had direct or indirect experience. I have also brought together as exhaustive a set as possible of location records and attribute information about LBA archaeological sites. The site database consisted of 359 different sites classified by type, while the final pottery sample included 3094 diagnostic ceramics from over a hundred sites in the entire area. For the purposes of visualising typology and material representation, I have illustrated a large sub-sample of the ceramic dataset, much of it publicly documented for the first time. While some material used here was not available for direct study for reasons of loss or restricted access and was thus only redrawn from existing publications, I nevertheless studied some 60% of it personally.

Despite providing an unprecedented window on the Thracian LBA, these two datasets, the pottery and the sites, still contain a high level of uncertainty and bias. In particular, they originate from more than one Balkan country and this demanded attention to the complex processes which have scarred the region from medieval to modern times. In order to begin to understand the character of the local LBA, it was essential to comprehend how the archaeological evidence was generated within the national and often nationalistic archaeologies serving the ideologies of each nation state. Thereafter, the topographically and geomorphologically diverse landscapes of Thrace also required a descriptive view with regard to available resources and other features that may have played a role in settlement strategies. A clarification of the use of the term 'Thrace' was also offered through a review of the historically changing boundaries and the external perceptions of the area based on ancient written sources, which have informed political agendas as archaeological research objectives, assumptions and strategies. After revising the relevant archaeological research conducted so far and existing problems of interpretation, I formulated three main research questions. The first aimed to redefine key cultural characteristics of LBA life in the study region, especially with respect to pottery production, settlement patterns and burial practices. The second more diachronic research question aimed to examine the formation, development and decline of LBA tradition(s) in Thrace and to assess the degree to which this trajectory was influenced by wider patterns of regional development. Last, but not least, I proposed to investigate the nature and the extent of interregional interactions, aiming to raise some of the issues related to the frequently discussed (mostly in the Bulgarian literature) connection between Thrace and the Aegean.

One major approach has been the analysis of local ceramics spanning the most common pottery traditions traceable throughout the area, such as incised ware, burnished ware and plain ware. A set of spatially sensitive characteristics including shape, decoration and production processes was subjected to spatial analysis using both basic distribution maps and relative risk surfaces. A novel unsupervised clustering technique was applied to a stack of relative-risk surfaces of all pottery types, and as a result, I was able to identify the extent to which different ceramic characteristics are spatially correlated and whether their combined distribution forms clusters of preferred pottery types. Quantitative analysis involving GIS and spatial statistics was then used to explore any spatial variations in the site record, based on regional zoning suggested by the analysis of ceramic distributions. This second spatial analytical component consisted of site locational modelling, also known as 'predictive modelling', which was used to address the extent to which environmental factors influenced the local distribution and relative density of sites across different potential micro-regions. Thereafter, the regional zoning suggested by the site-type distribution was compared with the observed spatial variability of the ceramic repertoire. The combination of these two methods was used to explore relationships between people and space and to trace changes over time where possible.

Several important conclusions can be drawn from the results of these analyses. First, the distribution of ceramic features across Thrace reveals patterns of striking material culture diversity rather than any uniform pottery tradition. Furthermore, the site location modelling not only complemented the identification of micro-regional patterns suggested by the ceramic analysis, but also helped to identify possible subsistence models. At least five sub-regions could be distinguished based on the above criteria, which come to question the use of a construct such as the Zimnicea-Plovdiv horizon. Besides spatial variations in the pottery traditions, various kinds of possible population mobility can be suggested in addition to chronological discrepancies. Although the boundaries between these culture zones remain fuzzy, certain areas stand out as distinctive: i) the West Rhodope Mountains, ii) the lower East Rhodopes together with Sakar Mountain, iii) the Struma River valley, iv) the eastern portion of the Upper Thracian Plain and v) west Thrace. Furthermore, both west Thrace and upper Thrace experience connections with east and central Macedonia at different stages of the LBA. The pottery analysis also suggests three phases of the LBA, not evenly represented in each micro-region. The chronology and the periodisation of the LBA was based not only on synchronisation with neighbouring sites, but also using newly accumulated radiocarbon evidence.

Another central interpretative point is a discussion of the origin of incised ware in the region. It seems that it comes into the region from outside, appearing ‘on top’ of an enduring earlier Bronze Age pottery tradition in upper Thrace. This is even more valid for the Rhodope Mountains, which appear to have been almost entirely depopulated after the end of the Chalcolithic. Potential cultural ancestries for the incised pottery tradition were traced to the Hungarian Plain and the northern Carpathian Basin, which were then further established locally in Thrace on one hand and central and eastern Macedonia on the other. Another type of ceramic appeared in Thrace, especially in the Upper Thracian Plain, at the end of the period as possible ceramic lineages deriving from Noua, but mostly Coslogeni groups identified along the lower Danube.

A further exciting topic is the decline of these pottery traditions at the end of the Bronze Age and their replacement by new ceramics, now spread all over Thrace. For this reason, the end of the Bronze Age has been discussed in previous chapters in tandem with the beginning of the EIA and with the appearance of the lustrous ceramics (also known as 'knobbed ware' or 'Bukelkeramik') which entirely replaced the earlier traditions. In some areas, like the East Rhodopes, there are indications of a gradual shift, accommodating incised and lustrous ware together, although for only a short period. It was in this context that (a) the distribution of Thracian LBA traditions in the southeast and southwest, (b) the absence of clear LBA ceramics in Turkish Thrace, and (c) the character of the 'Barbarian ware' found in Troy VIIB1, were also re-considered.

Finally, it is worth offering a more speculative view of settlement dynamics in this period. In contrast to the relatively stable agricultural economy of the EBA, destabilization characterizes the centuries after the end of the Ezero culture, with the abandonment of most tell settlements. Aside from at a few isolated sites, the MBA is under-represented across Thrace. The short life of the settlements throughout the area during the LBA signifies a state of relative mobility for human population, at least in certain parts of Thrace. Although different pottery groups can be identified and represent different traditions, it seems that no social group established a dominant cultural system across the whole area. This model of heterogeneity contrasts heavily with the southern and the eastern Aegean and Anatolia, where centralization and control of production are salient features at this time (Harding 1989: 175). In Thrace, production and exchange must have been local and a small-scale agro-pastoral economy must have been the basic strategy.

Although there are a number of limitations to the dataset I have presented in previous chapters, for the first time the entire Thracian area has been examined for the LBA both qualitatively and quantitatively. Detailed assessments of possible sub-regions of Thrace on the one hand were combined with the act of stepping back a scale and looking at Thrace against the background of neighbouring regional trends and wider interaction patterns on the other. For the first time also, the beginning and the end of the LBA have been analysed based on a combination of site, pottery and radiocarbon evidence and inter-regional comparisons. I would argue that this research represents a step forward in understanding the character of local Thracian societies.

11.2. Directions for future research

Despite the progress achieved in the present study, there is still more work to be done. Petrographic study of carefully selected samples of incised and burnished ware will be the next step towards distinguishing exchanged material from local imitations, and detecting the origin and the potential routes taken by this pottery style as disseminating technological traditions, traded objects or carried possessions. A full-scale excavation of a well-selected site of that type and a small-scale detailed study of one more ceramic assemblages might help to reduce some of the uncertainty in our interpretation. Furthermore, an attempt to identify and study the coarse ware from Thrace will contribute to a more complete the picture of all pottery traditions present in the area. A detailed study of LBA archaeology north of Balkan Mountains would be another major step towards advancing the completion of the puzzle presented by what are currently still challenging archaeological distributions. In this respect, further work is needed to develop a more definitive chronological scheme based on the growing body of scientific evidence. Likewise, further research is needed to understand better the character of the so-called ‘sanctuaries’ that are a distinctive feature of the East Rhodopes. Provenance analysis of bronze artefacts distributed across the western part of the area would clarify issues of inter-regional relationships involving the western periphery of Thrace.

Yet, archaeological research involving a more scientific agenda is still in its infancy in most of Thrace. Because of the complex geopolitical context of the area, there are still many basic steps to be taken. Through the current analysis, I have tried to create a platform upon which other approaches can build in the future. More radiocarbon dates for the LBA, petrographic study of local ceramics and greater application of interdisciplinary tools would all promote better understanding. Regardless, the opportunities in such a diverse and nodal region between Europe and Asia are considerable and introducing Thrace to a crossroad of wider inter-regional interactions between the Aegean and Central Europe during the 2nd millennium BC can be crucial for the study of larger-scale regional processes.

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