



Complexity of Mesolithic Settlements in Northeastern Bulgaria

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Abstract

The present study explores the Mesolithic settlement pattern in Dikilitash (Raised Stones) area in northeastern Bulgaria. On small sandy areas there are overlapping concentrations of Mesolithic flint artefacts. The stone columns on these areas are geological formations which are empty inside and part of them are able to produce sound by the passing wind or when hit with stone. My analysis of this phenomenon is based on considering the nature of sacred space where knowledge has discrete nature: inner mental predicates and outer cognitive artefacts situated in concrete and abstract space. I examine them as constitutive elements of the process of language formation that provide the deterministic part of this emergent social dynamic.

Illustrative to the possibilities of this approach is the similarity between the Mesolithic settlement pattern and the areas of intensive sales of corn in Atlanta, Indiana, USA (EIAW course, ESRI MOOC 2016). I base my explanation of this emerging pattern on the qualities of pattern formation with locally adaptable interactions were widely varying decisions towards introduction of elements of farming take place with different intensity. Their spatial characteristics turn the sites of the so-called 'Sandy Mesolithic' in Europe from marginal to central places that played a key role in introduction of sedentism and farming.

Keywords: Sandy Mesolithic, Nature of sacred space, Pattern formation, Non-linear settlement dynamic, Hot-spot analysis

Introduction

Archaeological phenomena are often looked upon and analyzed only in terms of their physical properties and internal components. The theoretical background on which these attitudes are based is the positivist understanding that equates the ways of knowing the natural world to the ways of knowing human and social worlds. This conceptual framework leads to recurrent attempts of discovering abstract universal social treats that are independent from social contexts and time. Thus, human cultures are constantly being reduced to survival mechanisms that aim to maximize profit

at any cost as an adaptive strategy that tunes in responses to the changing external global factors, such as climate change. These notions trigger an automatic explanation that directly relates "big" events in the natural world (volcanic and seismic activities, changes in sea level, global climatic change, etc.) to "big" events in changing human and social realities.

Contrary to this, scientific data in archaeology tend to fragment the "big" events that are supposed to cause social change, because they make more visible the local variation in the material record.

Thus, this raises the question what kind of explanatory narrative can be used in order to both explain social change and the increased local variation of archaeological data.

The Nature of Sacred Space

The concept of sacred space would form a satisfactory approach that has the potential to address the above question provided it is not taken in its traditional understanding as having direct transcendental meaning of “giving” purposive actions to individual and collective agents that happened under the absolute sanctity of God(s). This way of conceptualizing social agency in the past is considered to be valid for prehistoric communities which, on the other hand, are supposed to have totemistic and animistic beliefs. Thus this practical conceptualization of the causes of social agency reduces the notion of ‘sacred’ to particular ‘out-of-everyday-practice’ past material remains.

This simplification tends to equate past religious beliefs with development of rational knowledge. Up until now, in archaeology there have not been made any attempts to trace down a division line between prehistoric religious beliefs and the development of rational knowledge. Although archaeological science provides ample evidence for informed and strategic use of various materials, plants, animals, landscapes, in-site organization of settlements and out-site settlement patterns, these features go under the label of somewhat mystified individual and collective practices for everlasting increase of desire for accumulation of personal wealth, prestige, and power. In this way the relations of power are viewed only as an attribute of the later, stratified societies that are being marked by a set of prestigious objects, sanctioned through the sanctity given by Gods.

This conflation of mythologies and strict religious systems has long-lasting effects on representation of prehistoric hunters-gatherers and farmers as egalitarian societies that only through increasing the means of production can achieve the possibility for increasing personal wealth, prestige, and power that, in turn, are sanctioned by fertility cults of Mather Goddess. The cult towards the dichotomy ‘fertility’ vs. ‘non-fertility’ taken in its contemporary meaning divides prehistoric communities not only as firmly established social entities – foragers vs. farmers but situates the present-day knowledge about them on the ground of “productive” vs. “non-productive” economy at the level of human survival. It excludes any attempts to deepen the understanding of the complex ways of constitution of human societies and how they inscribed themselves in local and regional geographies.

An alternative approach to understanding the nature of “sacred” involves multiple interrelated notions of production, sharing, consumption, and communication practices. These are intertwined and complementary to one another concepts that come up in the process of everyday language production through constant exercising of diverse practices that feature the social web of a given community. Their objectification becomes possible through special natural places or built environment and creation of diverse symbolic objects. It is deliberately inversed and paired to human practice of embodiment where natural environment

becomes imbued with human characteristics.

Mere objects become transformed into cognitive artefacts with particular distribution within the environment that are recognizable and accessible by every member of the communities. It is exactly these places and objects that contain in themselves human knowledge and social relationships that become sanctioned through the consent of all the members of a group of communities as ‘sacred’ realities. Only through them the ‘sanctity’ of individual and community communication can be properly realized by outlining moral and practical systems of obligations, codes of behaviour of particular members, access to exploitation of special material and spiritual resources, systems of taboos and ritualized practices.

On this ground ‘sacred space’ may be presented as a negotiated reality achieved through intense intersubjective and inter-community communication and conditioned by a set of strictly defined social rules. This condition further entails that the nature of these social rules would be continuous and equally valid across certain time and geography of human practices. While the first part of this definition (strictly defined social rules) can be observed in the spatial distribution of the frequencies of the instances of sales of corn in the Atlanta area, Indiana, USA [1], the second part of the above definition, even on the example of present-day distribution of sales of various commodities, is not valid.

Thus strict social rules such as the act of purchase of corn or any other commodity, goods or services with equal value for humans (customers) across certain space and time do not generate continuity in human activities. The cited above example of sales of corn outlines a central area of intense sales, bordered by smaller areas where little or no corn has been sold, neighbored by other areas of intense sales. This patchy distribution shows that this social process is much more complex than the reductionist relationship of supply and demand, through which social exchange mechanisms become formally described and analyzed.

The contingent base of these social rules posed the task to the late Mesolithic communities to turn the patchy, unpredictable occurrence of early farming practices into continuous phenomenon of established agricultural societies over vast regions of Eurasia.

The two concurrent adaptive mechanisms through which Mesolithic people were able to fulfil this enormous task were to find a social mechanism that is able to generate regular aesthetic appreciation of particular natural and built landscapes and find alternative, even poisonous to a certain extent, foods that were able to radically change consumption practices of these early communities [2] While the second social mechanism may be considered as causal to the widespread switch to agricultural practices and provides the deterministic component of this social change, the first one gives its complex behaviour of non-linear occurrence of a wide variety of ‘out-of-everyday-practice’ material remains and landscapes that exhibit both time depth and endurance and have widespread geographical distribution.

Aesthetic appreciation plays a decisive role in processes of negotiation, because provides justification for accepting, for example, a new belief as an integral whole without necessary

appeal to further justification based on additional arguments or rules (regressive mode of argumentation). Such a holistic way of acquiring new information is illustrated by the famous example of Wittgenstein that a person cannot capture the content of a melody by means of paraphrase [3]. Thus, aesthetic appreciation of some objects and places with the help of somewhat mystified spiritual sanction of individual and collective judgements and rules as right or wrong, true or false feature the sacred space as a place where a negotiated reality established between different communities takes place.

There are a number of characteristics of an aesthetic appreciation (judgement of taste) according to Kant and later Wittgenstein (ibidem). These judgements are internalized cognitive states which are not based on conceptual rules; they are spontaneous, reflective in their justification of a particular case, subjective and normative in special aesthetic sense that does not require appeal to a further rule. The latter is the most important characteristic of judgements of taste for this study. It not only makes a normative demand on the members of a community sharing the same or similar symbolic complexes but provides conditions for introduction of novel symbolic incorporated from neighbouring and distant communities.

How does the 'Sacred' Space Work?

The above argumentation features the inferential aspect of knowledge production which is primarily deductive but often becomes complemented by inductive reasoning. Both operate within a particular conceptual framework objectified through specific symbology, that relate to cognitively established internal representational states. The process of intentional combination of various representational states may be considered as a probabilistic one which becomes conditioned by a range of conceptual and belief schemata through the general rules of human language producing practices. If taken that the conditioning of a representational state in the form 'A implies B, if and only if, C is fulfilled', then it would mean that the conditioning possibilities can be of two kinds. The first one compares the degree of importance of meanings in a situation where one or more representational states are signified as the most salient ones among a range of other possible states.

The second one makes representational state(s) visually distinguishable among spatially dispersed cognitive cues within a real or abstract landscape. In my understanding, representational states occur only in learning situations where a person is confronted by a difficult task to solve or understand. Put in such situation, a person would immediately grab a pencil and paper and would make an abstract scheme or write down some key words or topics. In essence, this process may be considered as mapping out few combinations of values or cues out of a larger number of spatially dispersed items within an abstract 'landscape of affordances'.

In view of the above made considerations the abstract 'landscape of affordances' becomes objectified through the process of language production. The two defined above characteristics of such an abstract learning situation are similar to the general grammatical structure of both verbal and written expressions,

which have been analyzed in particular cross-language studies [4,5]. The results of these studies show that in most languages, despite their different grammatical forms, there is an overall similarity of expressing two kinds of general representational states. They are created in learning situations and appear in the word order of the sentences that describe a difficult to understand phenomenon. The first one measures the degree of salience of a given message(s) relative to the salience of other messages and to the general coherence of a narrative such as movie, story, etc. The second one picks up both visually or mentally represented object that is spatially situated up and in front of the subject's immediate perception. The latter perceives not only the 'up-and-in-front' object, but also the neighbouring objects located at its sides and behind it. In the word order of the sentences describing these two kinds of representational states, the words that directly represent the degree of salience or 'up-and-in-front' objects tend to take a position either at the beginning or at the end of the sentence.

On the other hand, this otherwise deterministic mechanism of conceptualizing representational states does not produce the same sentences and phrases in individual and collective production of language: telling stories, description of rituals, scientific explanations (not methodologies), etc. This is because of the inherent human ability to intelligently individualize any coherent belief or story through grounding it on the formal logical procedure of endless regression of arguments. It plays the major role in formulating and accepting a given belief through the procedure of constant 're-phrasal' of statements (appeal to novel arguments) when it is necessary to describe or explain it.

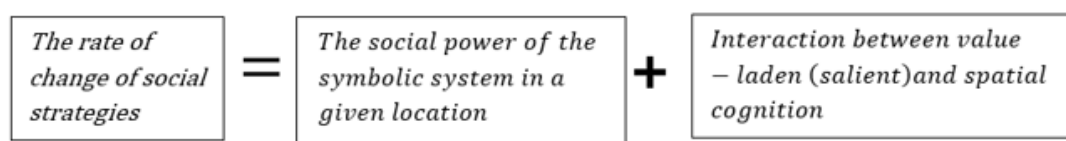
Thus humans are unique in their personal characteristics through which they constantly try to construe their own way of leaving personal mark on their social interactions through the cognitive mechanism of 'alterity'. It is a holistic feature of human consciousness that sets a transcendental limit of ultimate human behaviours that can only be approached in an asymptotic way [6]. Thus, the mechanism through which 'alterity' appears as human and social phenomenon forms conditions that pre-suppose religious thoughts or requires a kind of 'divine' sanction. This is the most common way to overcome the process of endless regression of arguments in Favor of a given belief that goes both through rational schemes and aesthetic appreciation.

The question that arises is how this fluctuating conscious process of endless regression of arguments becomes anchored by rational schemes, aesthetic and divine sanction. The account for divine forces that are responsible for almost all natural, human and social phenomena is the easiest and, hence, the most common one. This is so, because the general appeal for novel arguments in a given discussion becomes effectively limited or stopped by involving divine (spiritual world's) argumentation. As a social norm it can be viewed in the art of some illiterate people where the exact similarity between human body and figurines representing spiritual world does not matter. In these cases, aesthetic appreciation of strictly defined art forms does not play significant role too. Instead, it allows using a wide variety of forms and materials as long as these representations correspond and express the 'right' relationship with

the spiritual world [7]. The inverse possibility of the relationship between aesthetics and religious thought is expressed by the fact that some elements of artistic representations do not change and are made by applying the same techniques and the same materials (ibidem). This duality of the relationship between aesthetics and religious thought presupposes the synchronic appearance of these two aspects in local contexts. Their spatial distribution is expected to exhibit complex patterns that have the ability to evolve from simple to complex ones.

Apart from the above presented salient (prominent value-laden cues) and spatial cognition, a major role in pattern formation of the distribution of Mesolithic/Neolithic monuments plays the social power of the symbolic system in a given location. There

are a number of features that characterize the social power of particular, locally produced symbology. The most important one is that such behavior stretches deep in the past and persists in time while remains confined to a limited number of natural and artificial landscapes. Among these features the most prominent one is the repetitive use of one and the same space. The second one is that it should be stable natural or architectural form with good visibility within its immediate environment. Another one is that it has to provoke aesthetic appreciation of all participants. Last but not least, this space should be imbued with social identities created through ancestral rights and sanctioned by 'divine' or spiritual worlds. Thus the concise formula for modelling this process of pattern formation from simple to complex one may be presented as follows.



The role of sandy Mesolithic in pattern formation of Neolithic monuments' spatial distribution.

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The negotiated reality of sacred space can be better understood by answering the question how it is possible that often simple locales are capable of acting as a source of social power that has the potential to change subsistence and symbolic strategies of large populations living far apart. In my view the inability to understand this property of social change lies in the modernist dichotomy: modern vs. primitive, where illiterate peoples are considered as not capable of having abstract language. Contrary to this widespread view, Claude Lévi-Strauss points out that the use of abstract terms does not depend on intellectual capacity. The so-called primitive people use abstract terms and are able to denote linguistically a vast array of natural phenomena: species with their morphological characteristics of flora, fauna, predict meteorological events, etc. (1962, 11-14). The same ability is valid for their knowledge about the spiritual world related to these natural phenomena. All these entail that this high knowledge is not an adaptive social response that increases chances of survival of "primitive" peoples. Rather it may be considered as an inexhaustible source of bonding of social ties that promotes social change.

From this point of view, I will present the major features of some of these special Mesolithic spaces that possess such a large potential for social change. In this light, the best way to look at their properties is through the various ways of their appreciation by prehistoric people, long before and after the Mesolithic times. For example, the large chamber of the Devetashka cave, northern Bulgaria has excellent acoustic qualities and perhaps this is one of the reasons why Middle/Upper Palaeolithic people and Eneolithic/Early Bronze Age communities used to settle in

the cave. Although this may not be the case in many instances of establishing settlements, particular landscapes that have aesthetic appeal become populated by people at one point or another, where distances between them are measured in terms of degree of appreciation of different aspects of the surrounding geographic and geomorphic features. And when the natural world was not enough, early people started to enhance it by adding or building their own aesthetically driven world. It is a well-known fact that Palaeolithic people often used natural convex/concave surfaces on cave walls in order to make the painted by them images more vivid and thus more appealing to their audience.

The second major feature of Mesolithic landscapes is their monumentality. Monumentality may have different forms of appearance which may range from large to smaller natural and artificial features or local combinations of them. It may involve large standing stones, cliffs, rock shelters, caves, lakes, coastal areas which are marked by repeated human presence that leaves archaeological remains, such as stone or wooden floors, middens, areas with exploitation of seasonal resource such as nuts, particular species of fish, and stone platforms and ancestral places with monumental art: rock art or stone sculptures.

Another important feature is that Mesolithic sites would exhibit large assemblages of small artefacts that both have practical and symbolic meaning, such as various points and microliths, pierced shells, figurines, deliberate use of particular colours, fibre production from plants and textiles based on various kinds of wool. The only requirement that stems from the above presented rules of language production is that some of small artefacts' salient representations would form ambiguous symbolism which would have local rather than regional significance. The same rule would

also require that the in-site spatial distribution of such artefacts would be close to the pattern of the region of intense sales of corn in Atlanta, Indiana, USA. This means that it is impossible to create a regression model that will reveal any independent variables that cause or directly contribute to the spatial variation of these artefacts. Thus, the “ambiguity” of both salient and spatial meanings of the small artefacts may be considered as the potential source of social power for forging diverse and often controversial from our point of view social identities and subsistence practices.

All the features of Mesolithic spaces are additive in nature, but the effect of their interaction is a complex one. Rather, they form additive elements of a characteristic function that approximates the solution of the above presented formal expression of complex pattern formation of Mesolithic spaces. This means that the repetitive, regular use of the same places over long period of time is able to produce patterns of diverse combinations of symbolic and subsistence practices that spread far beyond their geographic settings. On the one hand, these combinations enhance

farming practices at one place, while reinforcing foraging, hunting and fishing practices at other places. Thus the increasing craft differentiation reinforces the process of combining individual and collective identities that exist through the constant re-creation of personhood, social positions and cognitive practices. They may evolve from foraging to farming and vice versa with numerous intermediary stages between these two extremes. Spatially, they may evolve in one or several places, or encompass an entire region with characteristic local and regional variation of their symbolic expressions.

Particularities of the spatial distribution of Mesolithic sites in the Dikilitash area: beyond the visibility analysis

The geological and geomorphological formation of the Lower Eocene columns form eighteen strips (islands) of sand distributed within an area as shown in Figure 1, (Nachev & Nachev, 2001). Seventeen Mesolithic sites were found in the form of overlapping surface concentrations of microliths. Each of these sites is located within a restricted space on almost every island.



Figure 1: Geographic distribution of the Mesolithic sites in the Dikilitash area.

The best way to approach the complexity of this settlement pattern is the notion of ‘visibility’. In archaeology this notion is mostly understood as direct visual contact between observers and the observed objects, where only the ‘visibility’ between these two points generates social significance. Yet human beings rely more on their own accumulated knowledge and the shared knowledge with the others than on their direct visual experience. Part of their mental capabilities is based on cognitive maps that feature particular region according to human needs, and where the geometry of sacred space differs from the geometry of natural environment.

For example, the spatial distribution of the Dikilitash Mesolithic islands (GIS, Spatial Statistics Tools) reveals how these people perceived this region. Common sense expectations would suggest that the Mesolithic settlements would be distributed around the biggest physical-geographical feature of this region – the Beloslavsko Lake. The central feature of this distribution, however, is the sandy strip Izvorite (Water Sources) which lies at a distance of about 2 kms to the north from the lake (Figure 2). This also suggests that the primary focus of the Mesolithic people were not the rich aquatic resources of the lake, but the open grassland of the steppe where finding water sources was of crucial importance.

Thus this particular spatial distribution points out that these communities ascribed greater importance to these sandy islands not as exploitable material resources but as sources of symbolic expression.



Figure 2: The most central feature of the spatial distribution of Mesolithic sites.

The importance of the symbolic aspect of this spatial pattern is better visible from slightly different considerations. Small open sandy areas or alluvial fans along the river courses can be found within the wider region that has been pointed out by I. Nachev and Ch. Nachev [8]. Its central area is around the Belosloavsko Lake and spreads with a radius about 15kms to the north and to the south.

The GIS multispectral analyses of the area point to the existence of a mosaic landscape which, at the beginning of Holocene, might have consisted of mixed steppe and forested environment (Figure 3). Yet the regular and repeated settlement in this area is confined to the sandy strips situated only at 5-7 kms to the north and south from the Beloslavsko Lake.

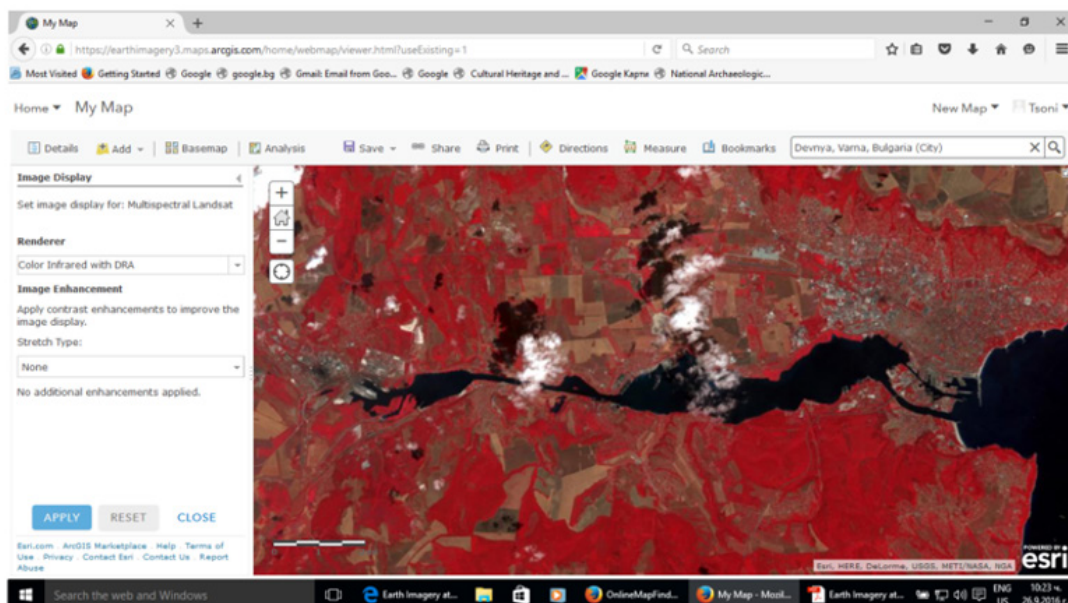


Figure 3: Healthy Vegetation Cover, Image Display for: Multispectral Landsat. Color Infrared with Dynamic Range Adjustment, ArcGIS Online.

In this settlement pattern another factor plays a greater role than the distance from the lake. A GIS hot-spot analysis of the distribution of these sandy areas according to their altitude shows that hot-spot areas are those situated on the highest ground. These are the Komluka and Kajrjaka localities situated to the north and Pchelina and Stenitsata localities to the south of the Beloslavsko Lake. In fact, the hot-spot areas mark the extreme cases of positive

and negative values of z-score and show the actual outliers of this distribution (Figure 4 left). This pattern shows that the sites with middle altitude were the preferable ones and that they tend to group closer to the central feature 'Izvorite' (Figure 4 left). In this 'central' area the relatively hot spots have cold neighbors, which suggest the existence of a complex pattern of human preferences for their repetitive visits to particular places.

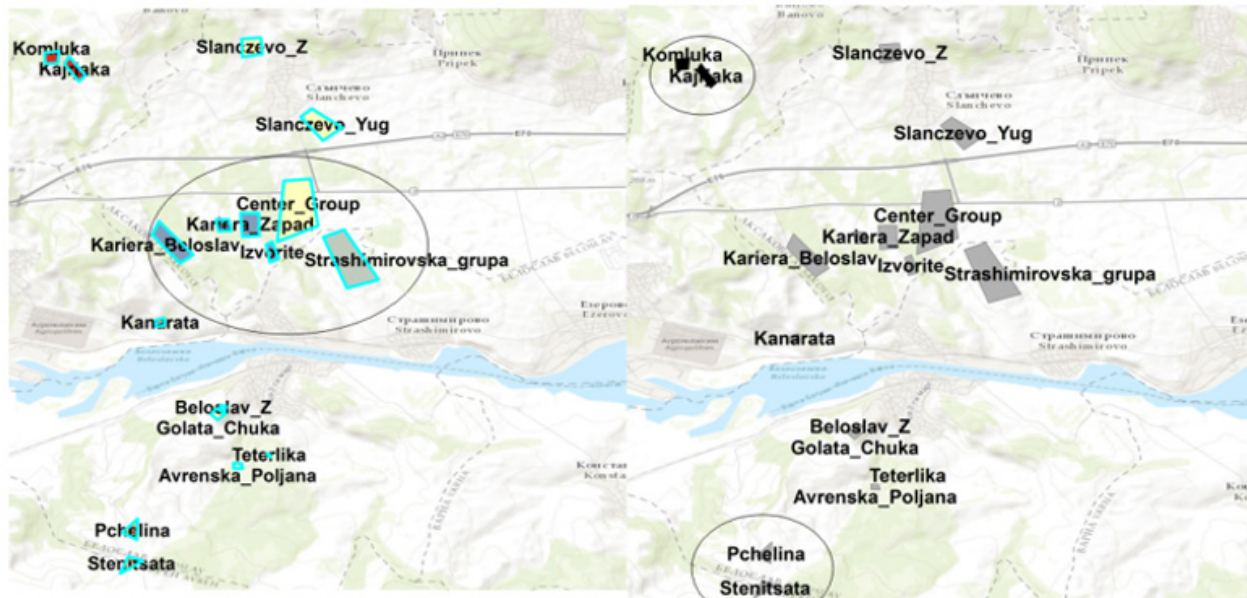


Figure 4: Hot-spot analysis according to the altitude of the sites (left). Cluster and Outlier Analysis (Anselin local Moran I), (right).

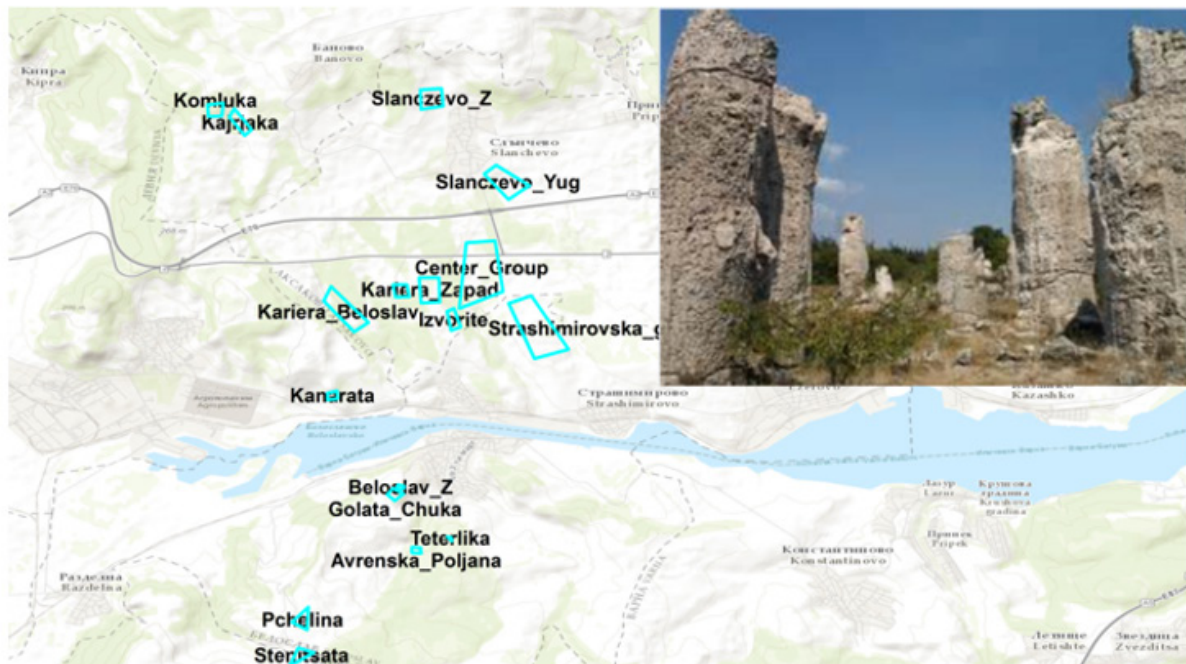


Figure 5: Monumentality of the sites.

The question that arises is how these people appreciated the natural features and beauty of this environment? The aesthetic values of these sites can be viewed in two different aspects of their appearance. The first and the obvious one is the monumentality of the stone columns that are dispersed like the trees in a forest (Figure 5). The second and less obvious one is that some of these columns are hollow inside and can produce sound by the passing wind or when they are struck by stone or a wooden stick. The soundscape of each of these sandy islands is quite variable. There are spots with augmented acoustic (probably through vibration of the columns and the sand), while other have poor acoustic.

Apart from the visibility of 'up-and-in-front' objects (columns), it is the augmentation of human voice and the sounds produced by the environment, which have the potential to transform the first-person experience of the Mesolithic people into normative truth-seeking beliefs. Thus the transient places like Dikilitash area confine in themselves discrete, repetitive actions of human groups. The sense of single-purpose collective acts of ritualized everyday practices help establishing common notion of beauty in each representational act and how truly it re-creates its relationships with the spiritual world. It is a process of accumulation of these small epistemological goods which, although they do not promote establishing economic packages such as the Neolithic one, played the major role in transformation of the symbolic systems of these early communities.

Back to grand narratives

A question that arises is whether it is possible to integrate universal theoretically informed explanations and locally valid scientific data. The answer is positive, but the key element for answering this question lies in human ability to create cognitive maps of universal cues that are valid across vast regions. The only way of creation of such maps is through interaction between human and natural worlds. In this interaction two grand narratives (sacred discourses) appear to dominate. These are totemism and animism that predetermine the transformative power of a wide range of mixed exogamous and endogamous practices. Through them there is a great variety of taboos imposed on consumption of different foods (Lévi-Strauss 1962, 95-133). This enormous local diversity in consumption practices may be conceptualized through the models of complex pattern formation. Thus, the interaction between the power of a source of local symbology and the interplay between visual and salient cues in the process of language production can be additive in nature, but their joint effect may lead to diverse mosaic of local exponential growth of some symbolic and practical consumption practices at the expense of other ones.

So the reason for transition to predominantly farming practices cannot be sought in the fluctuating climatic conditions but in the social arrangements of varieties of mixed endogamous and exogamous practices that permeate these early human-environment interactions. This approach is supported by a growing number of isotopic data obtained from archaeological materials that point to an enormous local diversity of dietary practices that were probably based on imposing various taboos on food consumption within and between the established kin or lineage groups. Examples of this

diversity are enormous. The most prominent one seems to be the isotope dietary assessment of the Neolithic Catalhoyuk.

The northern area (building 1) revealed burials of probably an extended family that show considerable variation of the diet of its members. At the same time, in the southern area the human bones showed relatively uniform food consumption practices (Richards et al 2003) These results might have been biased to a certain extent by the difficulty in extracting representative for the total population of this Neolithic community samples. Yet another isotope study shows great variability in dietary practices among neighbouring Neolithic settlements in Western Europe (Sjögren et al. 2016).

This diversity is mostly due to the consistent presence of non-local females, which supports the arguments for the existence of exogamous practices. The process may be conceptualized as a 'random local migration' that, considered to be effective within an area of 100 kms, may have an effect of spreading genetically formed novel generations across the entire European continent within a period of one thousand years. Thus this social mechanism is not only a rational way of building exact classificatory knowledge about the natural taxa of the surrounding environment, but the totemic behavioural characteristics establish particular 'sensitivity' of every interaction between the members of a given community relative to the surrounding nature (Lévi-Strauss 1962, 241-246).

In fact this homology between classificatory systems of human and natural worlds may be considered as negotiated reality that is being constantly re-established in sacred spaces. These homological relationships are able to create and re-create diverse identities situated within the interaction between cosmology and various relationships with ancestors. This is the reason why these identities find their material expressions in a wide variety of forms: from monumental art, rock-art, monumental natural environments to everyday practices which bear traces of idiosyncratic and artistic behaviours. Examples are numerous that appear often in combinations formed by the mentioned above types of material symbolic expressions. For example, in the Dikilitash area, there is a combination between monumentality of the stone columns, the aesthetic appreciation of their ability to produce various sounds, and the typological diversity of microlithic assemblages. In this typological diversity there is one major categorical distinction between the major tool types. All assemblages contain typical geometric forms, which form homogeneous variant of the late Tardenoisian industries and Sauveterrian-like points, which seem to be older as they resemble the dated ones in the Sauveterrian assemblages in Western Europe (Vialou 2004, 1217). In my view this fact not only shows that there was a local evolution that mark long-term recurrent human presence in the area, but it may point to forging diverse identities through Sauveterrian points (rare occurrences) and the other numerous geometric microliths, which remain local phenomenon and deviate from the typical Tardenoisian assemblages. Such local particularities can be found in the flake-based microlithic industries in the Aegean [9], the blade and bladelet microlithic assemblages in the Near East and forested zone in East Europe [10], and the bladelet industries in the Western Europe (Valentin et al. 2013) [11]. But the most visible relationships

between the appearance of farming and the intense building of identities through the social grid of sacred spaces occurs in the forest Neolithic in Northeast Europe. The appearance of the small-scale cultivation of plants and domestication of animals coincides with the appearance of pottery (Early Comb Ware) and rock-art [12]. In this case the working of clay and pottery making cannot be considered only as practical use of novel types of containers of foods. The complexity of the sensual human experiences of working clay and the durability of ceramic objects that convey messages are able to replace microlithic assemblages as symbolic expressions of personal and communal identities. At the same time, all these disparate trajectories of 'sacred' human behavior become united by the social structure of house societies [13]. Thus all the elements of the Mesolithic sacred spaces become replicated in the small space of houses and in the diverse layout of built and open spaces of the seasonal and year-round sedentary villages.

Conclusion

It has been shown the complex spatial pattern of Mesolithic settlements in the Dikilitash area. The multi-spectral analyses of vegetation cover of the surrounding region also reveal that the Mesolithic settlements cannot be associated with exploitation of particular food resources. These facts suggest that the aim for settling this region relates to its symbolic expression of particularities of 'sacred' space that is typical for the 'Sandy Mesolithic' in Europe [14,15]. The formal model that explains the nature of this type of 'sacred' space is derived from cross-language analysis of language production and pattern formation of complex systems. It was formally presented as interaction between the power of the local source of symbolism and the value-laden salient cognition, which is relative to some major particularities of spatial cognition. Under certain conditions this expression may show local exponential growth which may push social dynamic of these communities either towards greater application of farming practices or to enhancing hunting and gathering [16-18].

The anthropological dimension of this formal model has been derived from some major theoretical works and ethnographic observations on totemic and animistic views of present-day small-scale societies. The negotiated reality of imposing various taboos may have played significant role for introduction of farming practices. Thus, the Sandy Mesolithic and other sites with similar characteristics may have served as promotor for developing social practices that led to introduction of farming and establishing 'house societies' in the Near East and Europe.

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Conflict of Interest

No Conflict of interest.

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