

TECHNOLOGICAL CYCLES IN THE PREHISTORIC BALKANS

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The present workshop explores the extremely ancient and varied archaeological record of prehistoric Balkans. It outlines the theoretical and practical framework, which, in its basic assumptions, shapes our thinking of it starting with the relation between biological and cultural evolution. For example, our understanding of the appearance of an early Middle Palaeolithic Levallois (Levallois-like) facies in the cave Kozarnika, northwestern Bulgaria, can now be based on new theoretical background. The fact that our genome has remained unchanged for several thousand years, while our cultures underwent fundamental changes, suggests that the major part of the evolution of social systems is no longer biologically but culturally based. Humans had the chance that animals never had with the possibility of their societies evolving over much smaller time scales than animals. With the same body we can change our cultural habits. Humans do not need to wait for death and a very low mutation rate of several generations to evolve. The rapid evolution of its parts constitutes the superiority of human social systems over animal systems.

All this means that such an early appearance of Levallois-like technique should not surprise us neither with its early age, nor with its unusual context. Human choices follow, relate mutually and outdo the process of natural selection. It may be studied at an empirical level and appears in different forms: linear vs. non-linear selection, threshold selection, uniform vs. locally distributed, etc. Since the dynamics of human behaviour is running on smaller time-scales, this largely eliminates biological selection through an already structured population. Within this framework humans appear not as isolated individuals but as cooperators that aim to fulfil common tasks. From this point of view prehistoric techniques may be considered as common tasks of human groups set to reduce the risk of living in risk-prone environments. Hence, the next

assumption is that the degree of technological complexity would depend largely on risk-avoidance strategies. The distribution of high-quality, long-distance imported flints in the Gravettian cultural levels of Temnata cave, Iskar gorge, in northern Bulgaria suggests exactly this. The high risk of hunting dangerous animals such as horses had to be counterbalanced by hunting less dangerous species, by choosing the most appropriate 'broken terrain' within the Iskar gorge, and by applying the best raw materials for making tools. It is possible to distinguish three distinct features of these past human strategies. In the first place, it is the resilience of Upper Palaeolithic and Mesolithic communities to cope with harsh and risk-prone environments. Their longevity of occupation points to an inherent robustness of these past communities, their attitudes and ways of life. The second one is the repeated evidence for similarity of various risk-avoidance practices. The third is the remarkable variability of the overall systems and the way they invariably reflect detailed local knowledge of topography, distribution of resources, etc.: prehistoric people knew from observation exactly how to maximise the efficiency of their subsistence strategies, and how best to move and settle within the terrain.

If we have a closer look at these features we shall see their mutual interdependence. The term 'broken terrain' fixes attention upon resilience in terms of depletion of resources: over-hunting, overgrazing, shifts in water supply regimes, etc. The idea of resilience is closely related to the overall similarity of risk-avoidance practices. This means a reduced risk through an increased technological complexity, increased importation of high-quality materials, the use of appropriate landscape for capturing animals, water, etc. The third feature suggests that no matter how diverse the risk-reducing practices may be, the calculated chances of success of each strategy remain almost the same.

We may expect greater variability in the values assigned to different resources: fish, shellfish, salt, hunting, flint outcrops, etc. by Mesolithic/early

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Neolithic populations in Trieste karst area. By 'random access to constant food and other resources' I mean that the probability of access for exploitation of a given resource for each individual of a group at any time is equal to 1. The probability of depletion of that resource is equal to 0. Thus the caves settled both by Mesolithic and Neolithic groups may be considered as stable points of reference in the landscape. With the aid of DTM created with GIS, it is easy to calculate the mean distance from a cave-site to different resources. Our expectations would be that human groups followed the rule: the more distant the resource – the more valuable it is. Such a strong link can be described as an exponential relationship. From this follows that the value calculated for each resource would depend on the number of sites equidistant to that resource, on the maximal distance (10 kms) suitable for a daily walk and performance of a daily work, and on the mean distance to all sites from that resource.

Reducing risk cannot only be achieved through successive hunting and random access to constant food resources. It also depends on the ability of prehistoric people to communicate. Natural landforms become often incorporated into long-distance networks of communication and exchange. A question then might be asked how landscape features and the perception of landscape combine knowledge, embodied skills, narratives, ritual practices, land-use and organization of settlements into a complex notion built through human imagination. Such a complex relationship creates images (metaphors) rich in notions and connotations that remain always ready for explanations. I shall confine myself only to the contrasts visible through mapping artificial landscapes such as tell-sites onto lowlands and uplands. My general supposition is that cooperation and exchange that relies on circulating images (metaphors) standardize norms and values. Geographical horizons widen, and so do the ideas about distant communities. Common images can help establishing a balance of power, can foster exchange and provide a public forum for the social actors. Prominent landscape features are visible for every member of a given community and the narratives, meanings, images, etc. are equally accessible and shared in almost the same way by close and distant communities. For example, alluvial plains with annual renovation of fertile lands create places of stable human occupation. As focal points of human perceptions and human-landscape interactions they dominate the surrounding (satellite) network of settlements. The 'exotic' materials and 'special' artefacts become naturalized into the local notion of fertility through 'monumentalization' of tell-sites. They create the contrast with the flat plain and map onto 'monumentality' of the surrounding mountains. The evidence so far clearly shows that the imported flint varieties found in the

tells in Thrace come from directions bordered by mountains: south, north and north-east. At each site only few percentages out of the total amount of imported flints come from the eastern Rhodopes Mountains – upstream the Maritsa river. Long blades, and during the Eneolithic, superbldes come from north and north-east. There is no presence of Kaletepe long obsidian blades, known from the PPN in Central Anatolia. This fact undermines the widespread hypotheses of mass migrations of farming communities from Anatolia. What governs this large-scale exchange of 'exotic' raw materials and 'special' artefacts is the naturalization of 'exotic' into the local notion of 'fertility'. In the eastern Balkans this happens through a visual metaphor of matching 'monumentality' of a tell-site with the 'monumentality' of the surrounding mountains and with the 'monumentality' of the flint outcrops that establish multiple analogies between them.

The mismatch of the visual metaphors also reflects different kinds of land-use and a different perception of habitual practices than those in Thrace. The hilly areas and highlands in north-central Bulgaria underwent intensive soil formation during the early and middle Holocene. This caused a much more diversified land-use than that in the large alluvial plain in Thrace. Prehistoric settlements were much more mobile and the settlement patterns we find today consist of overlapping concentrations of dispersed small tells and open-air sites. Unlike the dominant position of the Thracian tells, the horizon of north-central Bulgaria consists of merging curves of small hills dotted with dispersed settlements. Though geographically this region is much closer than Thrace to the high quality flint outcrops, most of these sites have no, or a limited number of imported flints from the northeast. The long blades tend to be shorter than the ones from Thrace and superbldes rarely occur.

These are two opposing examples of creating long-distance communication and exchange networks through landscape contrasts. The artificial landscape of tell-sites on the alluvial plains stresses the ideas of 'stable, unchanging' social order. By contrast, the merging landscapes in north-central Bulgaria convey mobility and the tendency for periodic movements and instabilities.

These contrasting landscape metaphors contain together the notion of *local evolution* and the notion of social *reproduction*. The first one implies gradual change within a bounded social system, while the second one implies reproduction within an ever-changing social network. The merging landscapes in northcentral Bulgaria create an image of persistent movement within seasonal and annual cycles of human experience that gradually expands through space. Boundaries imposed on social relations, on

human knowledge, experience and skills are not stable and move constantly. Consequently we can expect that the archaeological record of the merging landscapes in late prehistory shows greater variability and asynchronous alternative appearance of major pottery styles, hunting vs. stock breeding and plant cultivation. It seems exposed to a greater extent to the influence of exogenous factors such as long-distance communication and exchange. Yet, it does not oppose to the bounded local evolution of tell-settlements in Thrace, for example. In this case of particular importance are the issues of (1) how the archaeological record changed and diversified given the strong tradition of cultural continuity, and (2) what makes the archaeological record remain almost the same through time and over such a wide area when there is no central authority to cope with local change. To a greater extent, the answer to these questions is that both change and continuity are seen as endogenous processes. Cumulative cultural growth and change often represent an exponential development through time and

uniform distribution through space. This means knowledge, expertise, and skills spreading from individual to individual and passing from one network to another through long-distance communication and exchange. Thus the focus of research shifts from the structure of particular instituted relations and economic values to prehistoric "information technology" and symbolic value ascribed to places and objects. A related aspect is the definition of the factors that make some images (patterns, designs, etc.) more attractive than others. The question is to see how certain 'special' objects deviate from their habitual contexts and develop beyond their original medium and social milieu: prestige objects such as flint superblades, scepters, ritual axes, etc. The limitation of this theoretical framework is to build new approaches and reformulate the old questions, which could empower regional syntheses. The aim is to achieve flexible and dynamic enough models that account for the extremely variable archaeological record in southeastern Europe.