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Resources and spatial analysis at actual Nenets campsites: Ethnoarchaeological implications

Jiří Svoboda^{a,b,*}, Sandra Sázelová^a, Pavel A. Kosintsev^c, Vlasta Jankovská^d, Martin Holub^a

^a Department of Anthropology, Faculty of Sciences, Masaryk University, Kotlářská 2, 611 37 Brno, Czech Republic

^b Institute of Archaeology, Academy of Sciences of the Czech Republic, Královopolská 147, 612 00 Brno, Czech Republic

^c Institute of Ecology of Plants and Animals, Russian Academy of Sciences, 8-go marta 202/3, 620 144 Ekaterinburg, Russia

^d Institute of Botany, Academy of Sciences of the Czech Republic, Poříčí 3b, 639 00 Brno, Czech Republic

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ABSTRACT

The aim of this paper is to present and discuss empirical evidence on the dynamics of occupation and site formation processes from contemporary mobile campsites in Northwest Siberia. The questions posed are derived generally from archaeological studies of Upper Paleolithic record in Europe. We document the active Nenets summer camps at lakes and the abandoned winter and spring camps in the open tundra and the forest tundra. Analysis of the floral and zoological resources shows that plant resources and fish are available predominantly in the summer while reindeer are abundant in these regions in fall and winter when they return from summer pastures further north. When natural resources are not available, groups supplement with food purchased at shops. Within these living camps, “structures évidentes” and “structures latentes” of classical French paleoethnology cannot be distinguished as clearly as at Upper Paleolithic sites: and architectural remains, ash from hearths, and other objects may be removed from the central areas towards the site peripheries. However the investigated camps preserve a discrete structure with interior living areas (including children’s playgrounds), exterior areas with evidence of reindeer carcass processing, woodworking, and other activities, peripheral toss zones, and dispersed activity remains in the surrounding landscape.

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The ethnoarchaeological questions

A methodology based on planigraphy of contemporary nomadic campsites was introduced with the development of more scientific approaches in archaeology during 1960s and 1970s. Numerous documents and publications concerning the spatial distribution of objects and features at nomadic campsites within a variety of contemporary environments inform our research (Yellen, 1977; Binford, 1978, 1987; Cribb, 1991; Gamble and Boismier, 1991; Phillips, 2001), but inadequacies remain in the interpretation of nomadic behaviors, resource exploitation, site formation processes, and their visibility in the landscape (Gamble, 1991; Rossignol and Wandsmider, 1992; Khasanov, 1994).

Upper Paleolithic settlement archaeology provides a rich record of hunters’ settlement strategies and resource exploitation in the Last Glacial landscape (Kroll and Price, 1991; Peterkin and Price, 2000; Vasišev et al., 2003) and the reindeer-and-horse-based Magdalenian sites of the Paris Basin serve as the classic case study (Ler-

oi-Gourhan and Brézillon, 1972; Stapert, 1989; Czesla, 1990). Our approach was inspired by current fieldwork at Upper Paleolithic archaeological sites in the Moravian corridor as one of the most important European passages for animals and their prehistoric hunters. One of the aims of Moravian archaeology (or, paleoethnology) is to explain how this landscape was used and exploited by a variety of cultural entities. In terms of resources, the Gravettian hunters adapted their site-location strategies to maximize mammoth exploitation along the river valleys. Mammoths markedly predominate over reindeer in the faunal remains from most of these sites, and are supplemented by a variety of small animals. In contrast, the Magdalenian economy in the same area is predominantly reindeer-oriented and partly horse-oriented, again supplemented by small animals. However, the Magdalenian settlement strategy does not echo the geomorphology of the Moravian corridor and its riverine network as closely as the Gravettian one, and the majority of sites are limited to distinct cave clusters in the Moravian Karst.

In terms of spatial analysis of the Upper Paleolithic landscape, human occupation reflects the seasonally predetermined changes of vegetation cover and the regular migrations of animal herds. Seasonal observations inferred from archaeological and environmental data suggest that the large settlements might have had

* Corresponding author at: Department of Anthropology, Faculty of Sciences, Masaryk University, Kotlářská 2, 611 37 Brno, Czech Republic. Fax: +420 519517637.

E-mail address: svoboda@iabrno.cz (J. Svoboda).

year-round or long-term winter occupations, while some of the smaller sites were more temporary spring and summer campsites. Theoretically, there are several levels of spatial analysis: In the Moravian corridor, the complex landscape contains individual sites and site-clusters localized on the valley slopes and elevations, in relatively lower altitudes, and with almost regular distances between one another. On a smaller scale, the individual sites demonstrate a distinguished hierarchy with regards to their size and complexity. Another factor is the seasonality and function of sites, and the extent to which they were specialized hunting or tool production sites or more general occupation sites. Therefore, these Upper Paleolithic sites are composed by elements and factors which may not be directly comparable. A variety of analytical approaches are necessary.

Contrary to recent nomads who rely on food security and keep reindeer herds as constant source of meat, wild reindeer might be perceived as an unstable subsistence resource during the Upper Paleolithic. In the archaeological record, it is not even clear how to distinguish the effect of hunting from herding (Ingold, 1980; Krupnik, 1993). Recent nomads are companions of reindeer rather than their active leaders, thus reindeer herding appears as an intermediate adaptation between hunting and domestication (Bogoras, 1901; Ingold, 1980; Krupnik, 2000; Stammler, 2007).

Given the variability observed in the Upper Paleolithic record, the aim of this paper is to present and discuss empirical evidence on dynamics of occupation and site formation processes from contemporary mobile campsites. To a large extent, our approach was *a priori* oriented by the aforementioned questions, derived from an archaeological context with a different environment and social structure. During our summer stay in the Polar Ural Mts. in 2009, we documented active Nenets summer camps on the Lake Taunto, as well as remains of temporarily abandoned winter and spring camps in the open tundra at Yangana Pe mountain ridge (the Valley camps and the Slope camps), and in the forest tundra west of the Ob River near Labytnangi (Oktyaberskaya campsite). Using a methodology basically similar to the one developed at Upper Paleolithic sites, we recorded the spatial distribution of objects, listed their inventories according to zones, and created photographic documentation. Dating of the abandoned sites (Table 1) was based on bone preservation (presence of muscles, fat, and ligaments) and on the expiry dates marked on industrial subsistence products.

Polar Ural and southern Yamal: ecological frameworks

In the Yamal–Nenets Autonomous Region, the north–south oriented principal mountain chain of the Polar Ural Mts. is paralleled in the east by one of the traditional migration corridors. This corridor is periodically frequented by reindeer herds moving along the mountains from the plains around the Kara Sea, where they spend the summer, towards their winter locations around the Labytnangi–Kharp railway. Along this roughly 250–300 km long corridor, the landscape grades from the open tundra through the dwarf shrub tundra to the forest tundra.

At the northern latitude of 67°, Polar Ural Mts. are joined by an east–west oriented limestone ridge named Yangana Pe (289 m a.s.l.) and the adjacent metamorphic ridge of Nyava Pe (236 m a.s.l.). Yangana Pe represents a unique phenomenon of the southern Yamal Peninsula because of its rich vegetation cover, influenced by the calcareous subsoil, which makes it an attractive environment for aboriginal hunting, fishing and pastoralism (Figs. 1 and 2). The landscape exhibits a structured geomorphology featuring mountain chains, isolated hillrock, broad valleys and gorges. Willow bushes are prevalent, with dominant species of willows, *Salix lanata*, *Salix glauca*, *Salix lapponum* and *Salix phylicifolia*,

accompanied by alder, *Alnus fruticosa*. Towards the higher elevations of western Yangana Pe, the subzone of open southern tundra grades into mountain tundra, comparable to the vegetation of the Polar Ural Mts. The hilltops allow a good overview to the surrounding flat tundra of southern Yamal Peninsula while sheltering the basins and lakes along the southern foothills from winds from the sea. A more favorable climatic at the southern foothills is supported by solar reflection of the whitish limestone cliffs, creating here the northernmost sheltered area where some dwarf trees and shrubs grow.

Yangana Pe intersects with the traditional reindeer migration route approximately in the middle of the pathway. In the past, strategic passes crossing the rocky ridge would have been good places for reindeer catches and kills. Although reindeer bones, skulls, and antler are widely dispersed over the landscape, they markedly concentrate in such passes.

The Oktyaberskaya camp lies 150 km south of Yangana Pe, where the forest–tundra vegetation zone expands from the eastern slopes of Polar Ural Mts. to the left banks of Ob River mouth. *Larix sibirica* is the dominant tree and *Betula nana* is the most frequent bush in this area. Geological subsoil is formed by fluvial gravel–and–sand cover of the Ob River in the east, whereas the western part is predominantly formed by fluvioglacial sediments with a higher representation of larger-sized gravel. Depending on geomorphology, hydrology, exposition and other abiotic factors, the vegetation composition varies both on micro- and mesoscales. Such versatile mosaic patterns are typical for a natural landscape not yet influenced by significant anthropogenic impacts (Knyazev et al., 2006; Rebristaya, 2006).

The aboriginal human impact on this vegetation is small, based on the data we collected. This small human impact contrasts with the radical vegetation changes that occur around the camps of Russian geological, mining, and biological expeditions (Forbes et al., 1999; Haller et al., 2007).

Northern aboriginal populations collect and use a variety of plant resources (Sinclair, 1953; Owen, 2005). The highly valued quality of any plant available in the tundra and forest tundra is its sugar content. Sugar also acts as an important means of food conservation. Along the Polar Ural Mts., the plants most frequently collected for subsistence are *Vaccinium uliginosum* (bog bilberry) and *Vaccinium vitis-idaea* (cranberry). Both are used to produce very sweet “vareniye” jam, which is used as a substitute for sugar in tea, as an addition to vodka and other alcohols, or produce a drink called “napitok”. *Vaccinium myrtillus* (blueberry) is scarcer, and is used for jam in cakes and, again, for a “napitok”.

Another plant, *Oxycoccus quadripetalus* (moosberry), is collected from peat bogs. It has larger and tastier fruits, especially when frozen. It is also used to make jam and “napitok”. *Rubus chamaemorus* (cloudberry) is a highly valued plant with orange fruit which is used in “vareniye” preserves, compotes and alcoholic drinks. *Lonicera altaica* (Altaic honeysuckle) is a medium-sized bush primarily found alongside streams. The fruits are small and difficult to collect but good for “vareniye” and when used in cakes or to sweeten tea. *Allium schoenoprasum* (chive) is collected and used fresh or conserved (probably in salt). Wherever the sporadic bushes of *Ribes rubrum* (red currant) are found, the fruit is directly consumed.

Mushrooms are usually not consumed in this region, but *Amanita muscaria* may have been used for ritual (shamanist) purposes and “chaga” (*Innonotus obliquus*, a mushroom that acts as a parasite on birches) is used to produce a heavy, dark liquid to drink.

Animal composition in this region changes radically throughout the year (Dobrinskiy, 1995; Kosintsev, 2005). Dominant animals present throughout the year are reindeer (*Rangifer tarandus*), wolf (*Canis lupus*), glutton (*Gulo gulo*), ermine (*Mustela erminea*), mountain hare (*Lepus timidus*), lemmings (*Dicrostonyx torquatus*, *Lemmus*

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