Land Ontology: Semantics, Semiotics, and Geographic Modeling

From the ancient times, the conceptual exploration of space by people have been conducted through understanding of all natural objects filling the space, as well as the phenomena and events associated with a particular landscape.

At present, with exploration of the northern and Arctic areas, especially relevant are becoming the existing practices of a balanced man-nature interaction, which is manifested through the ethnic and cultural landscape in human-environment co-evolution. Due to its active use in business and daily activities, the geographical terminology makes one of the most important components of a dialect vocabulary. The study of semantics and semiotics of the landscape nomination on the material of indigenous languages of North-East of Russia (Yakutia, in particular) provides an opportunity to compare different ideas about the natural world, to reveal the trends in vision, representation and use of the surrounding landscape.

The exploration of the vast territory of Yakutia with its variety of landscapes by indigenous peoples took place in different historical periods. In addition, each ethnic group, adapting to the surrounding landscape, occupied their niche - their own ethnic and cultural landscape without competition with others. Every ethnic group, inhabiting the region, elaborated its own system of geographical terms, the semantic content of which is determined not only by features of the landscape, but also by lifestyle and economy. Cross-language contacts also played an important role in the formation of geographical vocabulary of various languages in the region.

The issue of local spaces representation in the mind is studied by various disciplines: psychology, architecture and urbanism, geography, neuropsychology, and cognitive linguistics, to a certain extend. However, no one has considered the interaction of a verbal text and a mental map, as well as the transfer of spatial values in interpersonal communication. Therefore, it seems that when referring to the issue of mental representation of the local landscape in folklore studies, through the prism of verbal descriptions, we cannot restrict ourselves to results obtained in one of these disciplines, only. One of the areas of the research, aimed at a comprehensive study of the local spaces representation, is to use satellite images as images of the landscapes space for creating mental maps.

The academic significance of the project is dictated by the interdisciplinary approach to the study of landscape, namely the widespread use of methods applied both in liberal arts (linguistics, folklore studies, semiotics, sociology, ethnography, archaeology, history, etc.) and natural sciences (geography, physics, computer science, space technologies). A comprehensive study of the ontology of the landscape, features of modeling and exploring landscapes typical of northern ethnic groups, the concept understanding of the landscape and its representation in the consciousness and culture will be held in the light of technological advances, namely with the use of GIS technology, remote sensing and satellite imagery of the landscape.