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Authors

Škilters, Jurgis
Burgmanis, Girts
Krišjane, Zaiga
et al.

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Spatial Cognition and Perception of Large Scale Object Constellations: Evidence from Search Domain Analysis in Urban Environment

Jurģis Ŗķilters

Center for Cognitive Sciences and Semantics, University of Latvia, 1A Lomonosova Street Riga,
LV 1019 Latvia

Ģirts Burgmanis

Faculty of Geography and Earth Sciences, University of Latvia, 10 Alberta Street Riga, LV 1010
Latvia

Zaiga Krišjāne

Faculty of Geography and Earth Sciences, University of Latvia, 10 Alberta Street Riga, LV 1010
Latvia

Linda Apse

Faculty of Humanities, University of Latvia, 4A Visval?a Street Riga, LV 1050, Latvia

Abstract: Our study explores perception of urban environment and its encoding into the system of spatial prepositions. We explore the divergences between the physical topology and the cognitive topology of environment constrained by (a) geometric invariants (Landau & Jackendoff, 1993), (b) functional knowledge (Coventry & Garrod, 2004), (c) reference frame (Levinson, 1996), and (d) individual's spatial experience linked to a variety of social factors. Our results suggest that processing spatial environment generates a mental map containing different scopes of search domains for prepositions where the scope depends on the location of the living place (home) of the test person. We propose the following correlation: the more peripheral is the home of a test person the bigger is the scope of the search domain, e.g. the region denoted by "near the house" is larger for those who live in the periphery of a city.