

Representing urban cognitive structure through spatial differentiation

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Abstract

A spatial differentiation measure conceived as a reference system between the physical environment and the corresponding cognitive structuring that takes place in human minds is formulated as a virtual spatial interaction. The proposed measure aims to represent the widely shared features of the cognitive structure given to the environment. The theoretical framework includes concepts from self-organisation (synergetics) and cognitive information processing. This approach permits that the mental processes behind the structuring of environmental information be “projected” onto the urban space, becoming an intrinsic part of it. Hence, the structure given to the environment is defined as an imposition of a possible hierarchical order, determined by features internal and external to the observer. The fundamentals of environmental cognition were defined as the identification of information patterns by different criteria and the aggregation or segregation of information based on similarities (or equivalence) and differences in the detected information. Attributes are used in different combinations for the determination of variables that represent distinct aspects of environmental information structuring, and the interaction rules use these variables in processes of competition and co-operation between the environmental elements to determine which tend to create isolated patterns of information and which will be agglutinated in more generalised patterns. An experimental module was applied and the obtained results were contrasted with results from traditional survey methods of public image.

Keywords

Cognitive structure, environmental cognition, spatial differentiation.

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