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Abstract

There seem to be three basic kinds of theories trying to provide explanations for the urban spatial process: the causal, the formal and the decisional. By these terms it is meant respectively theories based on cause-effect mechanisms linking the social and the spatial; theories that take some sort of spatial transformation mechanism of their own, which are triggered by the social; and finally theories that take agents' intertwining decisions as the mechanism of spatial change. Causal theories, being the oldest, are apparently the crudest, whilst the cutting edge multi-agent simulations seem more elaborate. However, the former have been able to expose basic and stable relationships between man and space, even though they have not been able to explain how individuals actually interpret and use such relationships to their own interest in different situations. The latter try to do precisely that, but very little spatial matter has as yet been included in the agents' decision-making process.

Our point is that fundamental spatial attributes of the city, such as accessibility, centrality, relative position, and polarity could be included as reasoning instruments in agent-based models. In order to do that, however, cause-effect relationships should not be taken as laws or principles to be obeyed, but as means to realise profit (and utility), subject to speculation, personal interpretation and relative short sighted decisions. The paper reviews part of the configurational theory and proposes a model of production and consumption of urban space, based on agents that make decisions on a spatial basis. The model is presented in a conceptual form, and its testing in a computer simulation is also described. In order to do that, we comment on the computational approach that was used in such simulation. Some early results of our experiments with this agent-based social simulation are also mentioned.

Keywords

Urban morphology, agent-based urban modelling, urban configuration

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