

Spatial and functional differentiation: A symbiotic and systematic relationship

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Abstract:

Urban areas vary widely, not only in terms of social differentiation, i.e. classes and groups, and functional differentiation, i.e. types of activity and land-use, but also in terms of morphological character, i.e. the physical and spatial characteristics that give an area its primary identity. Is there then a relationship between spatial and functional patterns? Recent authors, such as Krafta (1994) and Siksna (1997), have outlined aspects of a possible systematic relationship, while Hillier (1996) has suggested a general linkage between one and the other through the ability of the spatial structure to influence movement patterns, and through this to influence the pattern of land-use specialisation.

This paper is a report of a study of the spatial and functional differentiation of urban areas in Bangkok. Thirty areas were studied in total. Hillier's theories of 'natural movement', 'movement economy', 'centrality as a process' and 'the city as object' were applied (Hillier, 1984, 1996, 2000, 2001). Space syntax techniques coupled with geometric measurements were used for the study of spatial pattern, while a land-use survey was carried out to reveal the functional pattern. Movement patterns were also investigated.

The findings show that: there is a systematic relationship between area structure and dominant land-use type; in spite of the differences in the spatial structure of the more recent areas and the evolving changes in the structure of the city within which the areas are embedded, the pattern of the spatial and functional differences has not changed; and, it is the actual lay-out and micro details of local area structure that influence the functional development of an area. Thus, this relationship also affects the land value of areas.

The results are then used to address the generative process theorised by Hillier. Through the feedback mechanism between spatial structure, movement and land use, the characteristics of the urban grid are determined by the degree to which movement economy is promoted or controlled, in relation to micro-economy or privacy and cultural constraints. A functional area which benefits greatly from movement develops in an area with a highly-integrated grid structure capable of generating strong movement economy, particularly at the local level. A functional area which benefits less from movement is developed elsewhere, although all grid structure are capable of generating a certain degree of local movement economy.

Keywords

Areal differentiation, area structure, micro-distribution of retail function, land value, Bangkok
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