

**THEREFORE THE GRID***The Need for a Theory of Order*

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**0 Abstract**

Historically, space syntax analysis turned attention away from geometrical notions of spatial order in the study of buildings and cities, and pointed to spatio-functional patterns which are, formally speaking, closer to topology than to geometry. Such patterns have been characterised by Hanson (1) as 'structures', by which is meant patterns that reveal themselves through everyday space use and movement rather than through geometrical intuition, and which can be retrieved by computer analysis and simulation. Such 'structures' are contrasted with the type of geometrical 'order' found in ideal town plans and formal facades, where geometrically similar elements are brought into geometrically similar relations, making it possible for the eye to see and intuition to summarise the pattern 'all at once'.

The 'structure-order' distinction has proved endlessly useful, but philosophically it leads to some quite deep problems. First, on the scale from geometrical chaos (in the old sense) to order, it is clear that cities are pretty close to the order pole, and utterly remote from chaos. They are 'nearly geometrical', not 'nearly chaotic'. Second, the main space syntax technique for analysing cities - axial analysis - does have a geometric aspect, but it seems to be dealt with in an odd way. A system of space is first represented geometrically as a matrix of lines, then the geometry is taken out by turning the line matrix into a graph, one of the least geometric of mathematical entities. We start with geometry, it could be said, and then we waste it.

Is there then a hidden geometrical 'order' in cities, that is not brought to light by, and may even be concealed by syntactic analysis? The aim of this paper is to try to resolve this problem by outlining a theory of order which links order and structure into a continuum in which order is what the human mind puts into a system and structure is what emerges. The theory arises from a reconsideration of the stage at which geometry was eliminated from syntax analysis: the translation of geometric representations into graphs. A theory of order, it will be argued, arises from looking again at some quite deep problems in the idea of structure.

35.1

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