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Le fait humain par excellence est peut-être moins la création de l'outil que la domestication du temps et de l'espace, c'est-à-dire la création d'un temps et d'une espace humaine.

André Leroi-Gourhan: *La Geste et la Parole*

TO OUR STUDENTS

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# The social logic of space

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# Contents

	<i>Preface</i>	ix
	<b>Introduction</b>	1
<b>1</b>	<b>The problem of space</b>	26
	Society and space	26
	The problem of space	29
	The logic of discrete systems	33
	The inverted genotype	42
	Morphic languages	45
<b>2</b>	<b>The logic of space</b>	52
	Introduction	52
	Compressed descriptions	53
	Some examples	55
	Elementary generators: an ideographic language	66
<b>3</b>	<b>The analysis of settlement layouts</b>	82
	Individuals and classes	82
	A model for syntactic representation, analysis and interpretation: alpha-analysis	90
	A procedure for analysis	97
	Some differences	123
	An excursion into interpretation: two social paradigms of space?	140
<b>4</b>	<b>Buildings and their genotypes</b>	143
	Insides and outsides: the reversal effect	143
	The analysis of the subdivided cell	147
	Some examples of domestic space	155
	Two large complexes from the ethnographic record	163
<b>5</b>	<b>The elementary building and its transformations</b>	176
	Elementary buildings	176
	Reversed buildings and others	183
<b>6</b>	<b>The spatial logic of arrangements</b>	198
	From structures to particular realities	198
		vii

viii	Contents
Abstract materialism	201
The semantic illusion	206
<b>7 The spatial logic of encounters: a computer-aided thought experiment</b>	<b>223</b>
A naive experiment	223
Societies as encounter probabilities	234
<b>8 Societies as spatial systems</b>	<b>242</b>
Some societies	242
Notes towards a general theory	256
<b>Postscript</b>	<b>262</b>
The social logic of space today	262
Notes	269
Index	276

## Preface

However much we may prefer to discuss architecture in terms of visual styles, its most far-reaching practical effects are not at the level of appearances at all, but at the level of space. By giving shape and form to our material world, architecture structures the system of space in which we live and move. In that it does so, it has a direct relation – rather than a merely symbolic one – to social life, since it provides the material preconditions for the patterns of movement, encounter and avoidance which are the material realisation – as well as sometimes the generator – of social relations. In this sense, architecture pervades our everyday experience far more than a preoccupation with its visual properties would suggest.

But however pervasive of everyday experience, the relation between space and social life is certainly very poorly understood. In fact for a long time it has been both a puzzle and a source of controversy in the social sciences. It seems as naive to believe that spatial organisation through architectural form can have a determinative effect on social relations as to believe that any such relation is entirely absent. Recent reviews of sociological research in the area (Michelson, 1976<sup>1</sup>) do not really resolve the matter. Some limited influences from such generalised spatial factors as density to social relations are conceded, subject to strong interaction with such sociological variables as family (p. 92), homogeneity (p. 192) and lifestyle (p. 94). But little is said about the ways in which strategic *architectural* decisions about built form and spatial organisation may have social consequences.

The puzzle is made more acute by the widespread belief that many modern environments are 'socially bad'. Again, there is a tendency to discuss these in terms of simple and general physical variables, such as building height. However, the inference that more fundamental spatial factors are involved is strongly supported by the failure of recent low-rise, high-density schemes to provide a convincing alternative following the *débâcle* of high-rise housing. Modern high- and low-rise housing have in common that they innovate fundamentally in spatial organisation, and both produce, in common it seems, lifeless and deserted environments.

It has become clear that a lack of understanding of the precise nature of the relation between spatial organisation and social life is the chief obstacle to better design.

The obvious place to seek such an understanding is in the disciplines that are concerned with the effect of social life on spatial organisation – how spatial organisation is in some sense a product of social structure. This has long been a central concern for geographers, but recently anthropologists (Lévi-Strauss, 1963; Bourdieu, 1973, 1977), theoretical sociologists (Giddens, 1981) and archeologists (Ucko et. al., 1972; Clarke, 1977; Renfrew, 1977; Hodder, 1978) have become aware of the spatial dimension in their subject, and its importance to questions of social morphology and structure.<sup>2</sup> This has created the early stages of a new interdisciplinary literature on the study of space and society.

The first result of this attention, however, has been to show how little effective theory and methodology there is in understanding the society–space relation, in spite of two decades or more of the ‘quantitative revolution’. But while academic disciplines may simply deplore the lack of theory, for architects and planners the problem is a more pressing one, since as things stand there is no way that scientific theory of the society–space relation can either help to understand what has gone wrong with contemporary design or suggest new approaches.

The aim of this book is to reverse the assumption that knowledge must first be created in the academic disciplines before being used in the applied ones, by using architecture as a basis for building a new theory – and a new approach to theory – of the society–space relation. This is possible, we believe, because theories of the relation between society and its spatial form have encountered two fundamental difficulties. First, there is no consistent *descriptive* account of the morphological features of ‘man-made’ space that could be lawfully determined by social processes and structures. Second, there is no descriptive account of the morphological features of societies that could require one kind of spatial embodiment rather than another. The reason for this lack of progress is at root to do with the paradigm within which we conceptualise space which, even in its most progressive forms postulates a more or less abstract – certainly a-spatial – domain of society to be linked to another, purely physical domain of space. The paradigm in effect conceptualises space as being without social content and society without spatial content. Yet neither can be the case, if there are to be lawful relations between them.

The aim of *The Social Logic of Space* is to begin with architecture, and to outline a new theory and method for the investigation of the society–space relation which takes account of these underlying difficulties. First, it attempts to build a conceptual model within which the relation can be investigated on the basis of the social content of spatial patterning and the spatial



content of social patterning. Second, it tries to establish, via a new definition of spatial order as restrictions on a random process, a method of analysis of spatial pattern, with emphasis on the relation between local morphological relations and global patterns. It establishes a fundamental descriptive theory of pattern types and then a method of analysis. These are applied first to settlements and then to building interiors in order to discover and quantify the presence of different local and global morphological features. On this basis, it establishes a descriptive theory of how spatial pattern can, and does, in itself carry social information and content.

The argument then turns to society, and extends the same morphological argument into the domain of social relations, by considering them as restrictions on random encounter patterns. From this naive spatial view of society, a theory is developed of how and why different forms of social reproduction require and find an embodiment in a different type of spatial order. This 'spatial logic of society' is applied first to some well-documented examples to establish the theory in outline, then is applied to try to give some account of the variability in spatial form in contemporary industrial societies.

The book is thus a statement of a new theory and sketch of new methods of spatial analysis. It should be emphasised, however, that a considerable number of studies have now been carried out at University College London using this framework, and it is intended that further volumes of case studies using the theory and method should follow *The Social Logic of Space* as soon as possible: these include the social logic of settlements, the social logic of housing, and the social logic of complex buildings.

Because it represents a new theoretical departure, however, *The Social Logic of Space* embeds itself only tangentially in the established frameworks and methods of the subject. Even fields of research that might appear, at first glance, to be close to our approach, turn out eventually to have limited relevance. For example, the 'pattern language' of Christopher Alexander and his colleagues at Berkeley (1977),<sup>3</sup> while appearing at first to be close to our notion of fundamental syntactic generators, is in fact quite remote, in intention as well as in its intrinsic nature. For our purposes, Alexander's notion of a pattern is too bound to the contingent properties of configurations to be useful for us; while at a more abstract level, his preoccupation with hierarchical forms of spatial arrangement (surprising in view of his earlier attack on hierarchical thinking in 'A city is not a tree' (1966)<sup>4</sup>) would hinder the formation of non-hierarchical, abstract notions of spatial relations which, in our view, are essential to giving a proper account of spatial organisation.

The more recent development of 'shape grammars' by Stiny and Gips (1978)<sup>5</sup> would again, at first sight, appear to be close to the

notion of 'space syntax' as formulated in this book, the more so since 'shape grammars' are firmly concerned with the abstract generative principles of spatial patterns. But while conceding their superior mathematical refinement, we have found that shape grammars are in general too over-refined to model the untidy systems which are found in the real world of settlements and buildings. Our notion of 'syntactic generators' is insufficiently formalised for a full mathematical treatment, yet syntactic generators are right for the job that they are intended to do: capturing the formal dimensions of real-world spatial systems in terms of the social logic behind them. Syntactic generators are simpler than shape grammars. Moreover, they are shape free. We are convinced that it is unnecessary to specify shape in order to model real-world generative processes; indeed, that the concept of shape obscures the fundamental relational notions that underpin human spatial order. Moreover, with the limited role assigned to randomness in shape grammars – as opposed to the foundation of space syntax on the notion of randomness – we find that in their very foundations they tend to overdetermine the realities that we are trying to model.

At a more general level, we can properly be accused of ignoring the considerable development of mathematical methods of spatial analysis in quantitative geography. The reason for our lack of continuity with this work is more fundamental. To our way of thinking, two concepts underpin the geographic approach to formal spatial analysis (with the possible exception of the tradition from von Thunen (1826) to Christaller (1933) and Lösch (1954), which adds a geometric element into morphology): these are the notion of *distance*; and the notion of *location*.<sup>6</sup> It is crucial to our approach that neither of these concepts – in spite of their manifest usefulness for the purposes for which they have been applied – appears in the foundations of 'space syntax'. This is initially distance free, and for the concept of location is substituted the concept of morphology, by which we imply a concern with a whole set of simultaneously existing relations. It is in the analysis of the global properties of such complexes of relations that we believe that space syntax has a robust and demonstrable role, revealing aspects of structure which are obscured by conventional analyses.

We sincerely hope that in time this discontinuity between our work and more established lines will cease to exist as synthetic studies are carried out. But in the meantime the reader is asked to read the book as what it is intended to be: a statement of a wholly new theoretical approach, rather than a review of existing work – with all the weaknesses, as well as the advantages, that this can imply.

September 1982

## Acknowledgements

This book was conceived in the mid-1970s in the later stages of my collaboration with Adrian Leaman. Some of the foundational concepts were elaborated first in a series of papers which we authored jointly in the early 1970s. The substantive theory set out in the book, and its associated methodologies, date, however, from my collaboration with my co-author, Julienne Hanson, which began in 1975. Since then, several people have made substantial and indispensable contributions to the development of both theory and method. The chief of these is Dr John Peponis, whose influence especially on the analytic chapters (3, 4 and 5) is too pervasive to be acknowledged in detail. The contribution of Paul Stansall during the early stages of the 'space syntax' research programme on which the book draws heavily, was also of key importance. The Science Research Council (now the Science and Engineering Research Council) must also be thanked for its sustained support of the 'space syntax' research programme over several years. This allowed us to turn abstract ideas into operational techniques of analysis.

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BILL HILLIER

xiii