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SPATIAL IMAGES AND ACTIVITY AREAS  
IN AN URBAN ENVIRONMENT

A thesis presented in partial fulfilment  
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PETER HILL

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'Two roads diverged in a wood, and I -  
I took the one less travelled by,  
and that has made all the difference.'

Robert Frost.

## ABSTRACT

Cognitive-behavioural concepts and their introduction into geography are considered. A proposed schema suggests, and Research Hypotheses propose that the spatial schemata and activity area of individuals are interrelated and that constraints act upon this complex. Data are obtained, by means of a questionnaire/interview, for a population of 50 and evaluation of operational hypotheses is made with respect to this population.

Analysis of the data provides strong support for the interactive association of direct experience in and cognition of an urban environment. For the individual, physical distance appears to be a poor proxy for cognitive distance, though a 'group image' is suggested. Temporal constraints are seen to operate as are social constraints on the immediate neighbourhood scale. Socio-economic and personal constraints are not in evidence, which further supports the role of direct experience in the development of spatial schemata. The need to differentiate between the nature and function of the spatial schemata and image is clearly shown.

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## CHAPTER 1

### INTRODUCTION

#### AIMS OF THE STUDY

The fundamental assumption that underlies the cognitive-behavioural approach, adopted within geography to explain human activities, is the association between the cognition of the environment in which activity occurs, the cognitive representation of that environment, and the activity in that environment. Most 'cognitive-behavioural' research in geography has focussed on the relationship between the cognitive representation of the environment and activity in that environment.

The stimulus for this thesis arose from a comment in Francescato and Mebane's paper in *Image and Environment* (Eds: Downs and Stea, 1973. 147) regarding the 'role direct experience with different parts of the city plays in one's image and schemata', which re-emphasised that activity in an environment (direct experience) provides information that may influence the cognition of that environment.

This investigation seeks to evaluate the nature of the interactive association between elements of the cognitive representation of an urban environment and behaviour within that environment. The research framework also proposes that constraints operate to limit the development of the cognitive representation-behaviour complex and the study therefore seeks to evaluate the nature of such constraints.

## Approach

Since the early nineteen sixties there have been expectations in human geography that more 'powerful' theories to provide explanation were soon to be developed. First the 'quantitative revolution' was expected to provide objective insights into the processes underlying spatial behaviour, but frequently only provided greater precision in description. The 'quantitative revolution' did serve however to highlight conceptual inadequacies (Harvey, 1967), and this encouraged the employment of cognitive-behavioural approaches in the explanation of human behaviour. Although knowledge of the processes underlying behaviour is presently fragmented and incomplete (Harvey, 1969) Golledge, Brown and Williamson (1972) suggest that the potential for realistic explanation of spatial behaviour is the basic reason for adopting behavioural approaches. Disappointment and reservations have been expressed at progress to date (Downs, 1970; Graham, 1976; Bunting and Guelke, 1979), nevertheless the approach seems to offer one of the most viable means of explanation and has therefore been adopted in this study.

This investigation proceeds within a logical positivist framework which has in other research proved to be extraordinarily effective with respect to the puzzles it has solved and the efficiency with which it has solved them (Harvey, 1969). 'Scientific' explanation is not the only means of explaining human events. Doubts over its suitability have been expressed by many, and alternative means of explanation have been utilised; the phenomenological as exemplified by Tuan's (e.g. 1974 a & b, 1977, 1978) efforts to understand subjective meanings, and the Marxist as exemplified by Reiser (e.g. 1973)

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who sought explanation through dialectic analyses of social process.

The logical positivist mode of explanation offered two advantages in meeting the aims of this study. The first is that it uses a language of precise terminology that is understood; this is of importance when concepts are drawn from several disciplines. When the relationship of language to culture, as noted by Whorf (1940) is considered it is apparent that 'scientific' language has become so much a part of Western culture that 'scientific' explanations have become more effectively communicated. Further, doubts have been expressed (Wheeler, 1980) about 'our' ability to think outside the precepts of scientific understanding. The second advantage is that the logical positivist mode of explanation, in contrast with other explanation forms, uses a well developed methodology.

A characteristic of behavioural geography is that it tends to focus on the individual rather than approach problems at, for example, the level of the social group. This study seeks to employ a methodology which allows an intensive study of the relationships found within a limited group of individuals to be made, rather than one which aims to produce statements applicable to some larger 'natural' population.

#### Development of Investigation

In order that the stated aims could be realised using the approach proposed, a schema was formulated from which two Research Hypotheses were derived, one concerning the cognitive representation-spatial behaviour complex and the second concerning constraints upon that complex. As these were not amenable to direct testing a set of operational hypotheses

was established and data were collected on both the cognition of the urban environment and on the regular day to day spatial behaviours in that environment for a group of individuals. The investigation specifically sought to avoid the consideration of specific modes of spatial behaviour (e.g. shopping trips) that is in evidence in much research within behavioural geography; it sought rather to consider spatial behaviour in an aggregate, generalised sense. In integrating spatial behaviour within the limitations of a space-time framework it was possible to invoke the concept of time being a scarce resource as used by the Lund school. Constraints have rarely been considered in the cognitive-behavioural approach, although some research has considered aspects of their influence (e.g. Boal, 1969). In addition to time the investigation sought to measure and evaluate the nature of other possible constraints; social, economic and personal, upon the cognition-spatial behaviour relationship.

The study also sought the ability to make statements with a high level of certainty about relationships or processes discovered. As such the individuals from and about whom information was gained were a limited, artificially defined population for which statements could be made (from the evidence gained) with certainty, but from which formal, non-deductive inference to some 'natural' population could not be made. Procedures for the collection of information required to realise the aims of this study are described in Chapter 4.