

SUBJECT: Extending the Ekistic Elements: Environment-Behaviour Studies - #1: Selected Core Ideas

AUTHOR: Sharmila Jagadisan and T. W. Fookes¹

**Extending the scope and methodology of Ekistic theory and practice:
A Research Memorandum Series**

This study on extending the scope and methodology of Ekistic theory and practice involved three steps.

Step A: A two part process which:

- 1) Reviewed ekistic methodology in the light of the current state of Planning knowledge and ideas; and
- 2) Explored a selection of identifiable influences (Antecedents and Contemporaries (Peers)) to see how some major theoretical and philosophical underpinnings encouraged Doxiadis to invent this discipline: presented as (a) Antecedents; (b) Contemporaries (Peers); and (c) Other influences

Step B: A review of the work of three WSE members covering the fields of Environment Behaviour Research, Community Sociology, and Phenomenology as a contribution to a dialogue on a Research Agenda for the WSE.

Step C: A proposal for a Research Agenda for the WSE as a basis for a dialogue on extending and modifying Ekistic theory and practice.

Introduction

The purpose of this *Research Memorandum* is the first of several to illustrate how contemporary work can add to and extend the body of Ekistic theory and practice which has been inherited from Doxiadis. Because of the large number of candidate disciplines or fields we have used selected case studies.² The case studies have been drawn from the published work of members of the WSE and relate to selected work of Professors Amos Rapoport, Suzanne Keller, and Ingrid Leman-Stefanovic.

¹ Sharmila Jagadisan completed her PhD at the School of Architecture and Planning in 2009 at the University of Auckland, New Zealand. T.W. Fookes (DPhil) is an Associate Professor at the School of Architecture and Planning, University of Auckland, New Zealand. They are both members of the WSE.

² Doxiadis explicitly recognized a number of disciplines in his invitation list for the annual Delos Symposium (1967-1972). For example the Ninth Delos Symposium in 1971 was attended by people from the following disciplines: Architecture (Sir Robert Mathew, Gerald Dix), Engineering (Buckminster Fuller), Anthropology (Margaret Mead), History (Arnold Toynbee), Geography (Jean Gottmann) (Source: Archival Information, Reference Code- 15980)

This *Research Memorandum* examines recent work of Professor Amos Rapoport who has been working across the interface between Architecture, Psychology and other disciplines. His publications are in the field of Environment-Behavior Studies (EBS). He began his research by focusing on the role of cultural variables, which led to cross-cultural studies, and theory development and synthesis.

The specific reference used in this case study is:

Rapoport, Amos, 2005, *Culture, Architecture, and Design*, Chicago: Locke Science Publishing Co., Inc.

Other related publications include:

1977: *Human Aspects of Urban Form*, New York: Pergamon Press.

c1990: *History and Precedent in Environmental Design*, New York: Plenum Press.

c1990: *The Meaning of the Built Environment*, Tucson: University of Arizona Press.

1994: *Thirty Three Papers in Environment-Behaviour Research*, Newcastle on Tyne: Urban International Press.

EBS Explained

In Rapoport (2005) the explanatory theory of EBS is through a framework based on one variable of "Culture". In this book he put forward three important questions that help to define EBS:

1. What bio-social, psychological and cultural characteristics of human beings (as members of species, as individuals and as members of various groups) influence (and, in design, *should* influence) which characteristics of the built environment?
2. What effects do which aspects of which environment have on groups of people, under what circumstances (i.e. in what context) and when, why and how?
3. Given the two-way interaction between people and environments, there must be mechanisms that link them. What are these mechanisms? (Rapoport, 2005, p-10)

Rapoport's starting point is 'Culture' because it holds a unique position in the three questions. Furthermore, the consideration of Culture is inescapable in EBS and environmental design. He emphasizes that first of all the possession of Culture is what is generally taken to define humans; since EBS involves humans one must consider Culture.

He also brings out the *interdisciplinary* nature of EBS, illustrating this by listing 19 disciplines that study anthropos (or individual persons). These range across social sciences, human sciences and computer science (ibid, p-15).

For Rapoport, Environment-Behavior research focuses on people and their relationship with physical and social environments. Designers and planners need to think about human behavior (individual and group) in terms of aspects of the (built) environment such as physical (comfort-temperature, humidity), psychological (cognitive emotional), and cultural (values, norms). He argues that for the design and planning of the environment to be successful it should be based on an understanding of how people perceive, experience and use their space. That is, the design is evaluated based on the users' satisfaction across the aspects above.

Selected Core Ideas

The length of the Research Memorandum requires a selection of Rapoport's core ideas. The ones identified in this Research Memorandum are *criticality* and *conceptualising 'environment'*. From these stem a number of concepts and notions which have a potential relevance to ekistic theory and practice.

Criticality "refers to situations where environments have more effects on people who in some way have 'reduced competence', whether due to illness, age, excessively rapid culture change, or other factors" (ibid, p-12). Planning needs to respond to these situations by providing *highly supportive environments*. Rapoport also uses Question 3 (above) to remind us of the importance of understanding *mechanisms* which link people and environments (ibid, pp. 13-14).

Rapoport also argues for the need to conceptualize 'environment' in general, and to consider types of environments (e.g. housing) so that "the environment can be understood as the organization of space, time, meaning, and communication; a system of settings; the cultural landscape; as well as consisting of fixed, semi-fixed, and non-fixed elements. (ibid, p-24).

These core ideas provide the context for the following presentation of concepts and notions arising from them.

Notion of Settings

The identification of space, time, meaning and communication is especially important in the context of ekistic theory and practice. Rapoport's understanding of Space and Time introduces the notion of *settings* (i.e. how the same space shows different settings over time). For example, the use of a beach in Chennai (India) is an example. During early morning the beach is just a place for doing Yoga, jogging, walking, etc., and if you see the same place in the evening it gets completely transformed with scores of shops and people. This clearly reveals that settings are not the same as spaces. They completely vary with time.

Rapoport's *System of Settings*³ comprises a milieu, which defines a situation within which ongoing (i.e. regular) and predictable behavior occurs. This milieu and the behavior in it are linked by rules as to what is appropriate and expected in the settings. In addition, settings and their rules are usually communicated by cues (the physical elements of settings and furnishings), and these cues acts as mnemonics, reminding people about the situation and hence about appropriate behavior (ibid, p-26)

For example, children in the classroom behave quite differently than children in the library because the setting in the library reminds them to be silent, because they have strong cues of how to behave in the library. Similarly people in New Zealand when they enter a Marae (NZ Maori settlement) they know how to behave in a traditional way. Therefore cues should be very strong and clear in order to work so that People can understand and obey i.e. to follow the expected and appropriate behavior.

3. Based on Roger G. Barker (b. 1903) and his students.

Rapoport's reference to *system of settings* compares a dwelling within which all activities occur, and another where only one activity occurs within the dwelling – the balance of activities occur at various distances from the dwelling. The dwelling is therefore defined by its system of settings, as illustrated (Fig.1) (ibid, p-21):

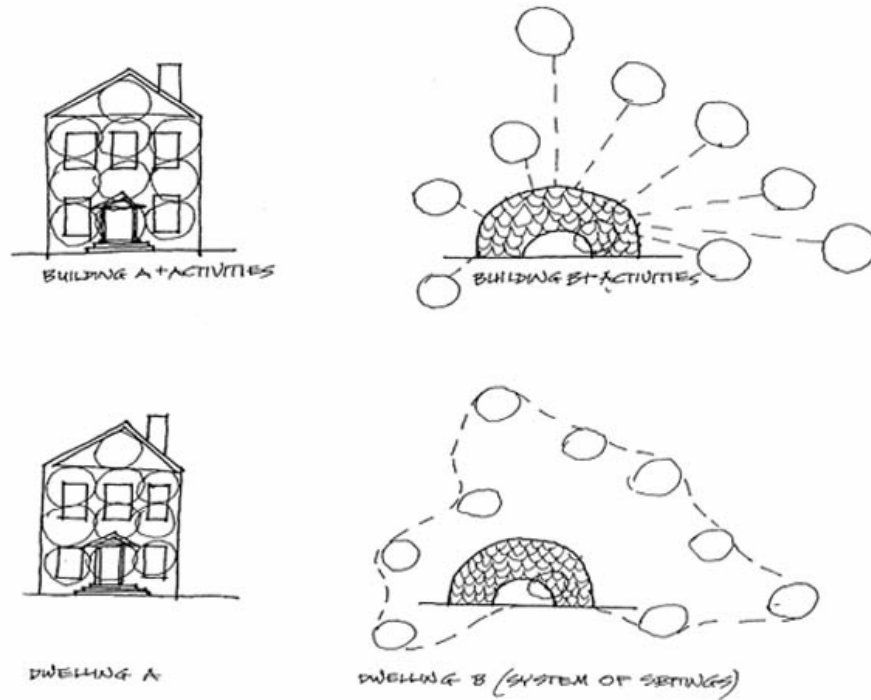


Fig. 1: Comparing Dwellings as Defined by their Systems of Settings
(Source: Rapoport, 2005, p.21)

Cultural Landscape and Environment

In his conceptualization of the environment Rapoport includes *cultural landscape* which refers to the interaction between human actions and the “primeval” landscape over time (ibid, p-29). He argues that “the more modified by humans, the more cultural does a landscape become” (ibid). He also adds that cultural landscape are the result of the individual decisions of innumerable people, the fact that they add up to such recognizable totalities strengthens the view that they embody cultural schemata (Altman et al, 1980, p-26). If one knows the ordering system, or code, it is possible to say that this - an Indian or Italian city, Mexican or Australian landscape (ibid, p-9) (Fig. 2).



Fig. 2 shows the cultural cues of Kerala (a South Indian state)

Rapoport's also views 'environment' as consisting of fixed, semi-fixed, and non-fixed elements.

- *Fixed elements:* infrastructure, buildings, walls, floors, ceilings, columns, etc
- *Semi-fixed elements:* 'furnishings' of the environment, interior or exterior. At the urban scale they are trees and gardens, fences, signs, billboards, lights etc.
- *Non-fixed elements:* typically people and their activities, behaviors, clothing, vehicles, animals etc (Rapoport, 2005, p. 32)

Analytical Model

Rapoport has also introduced the detailed version of the three element model shown in Fig. 3 which helps us to analyze whether the built environment is being evaluated against people's aspirations, values, ideals and norms (preference and choice of an individual or group) what would be the action of the users (ibid, p- 53).

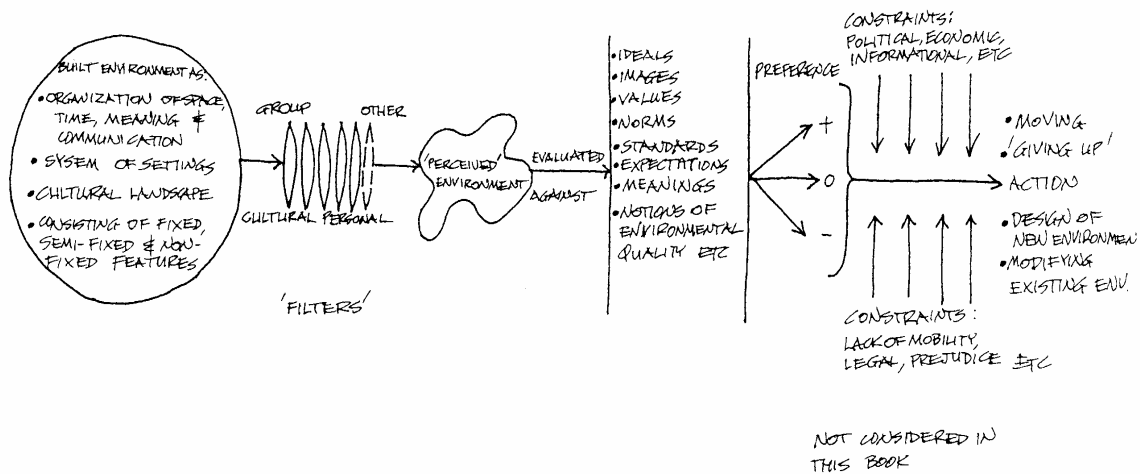


Fig. 4: The three element Model of EBS (Source: Rapoport, 2005, p-51).

This model addresses the following questions:

1. What will be the outcome (perceived) of the users? (To see whether the users are satisfied with the design or not?)
2. What is the level of stress that one could get out of this unsatisfactory design? (It can be maximum or minimum?)
3. What are the corresponding coping responses with respect to unsatisfactory design in terms of EBS? (example one may either adapt to that design or modify)

Here the specific "filters" or evaluative criteria define variable environmental quality profiles helping us to answer what is "good" or "better" environment, better for whom etc.? (ibid, p-57)

Rapoport explains this model with reference to various environments. He says that housing, neighborhood and other environments are used differently by different groups where culture plays a significant role in them because it has got abstract ideas and values, perceptions of the world that are informed and are reflected in people's behavior. A central underlying premise is that culture (People's choices and aspirations) structures the built environment and the built environment inculcate culture. Here he used stress "as the outcome of an evaluation or matching of a situation against certain norms, desired levels of the meaning of the situation etc., and one is dealing with the perceived stress (ibid, p-49).

The second way of looking at the model in consideration of stress is to think about stress relieving settings and this variation is found among individuals based on their life-style. He says that if all the systems of settings are stressful and if there is no stress-relieving settings the problem is more serious (ibid. p-50).

Emic and Etic Perspectives

Two further concepts arise from Rapoport's identification of people's choices and behavior for which he uses the terms *emic* and *etic*. These have been described as follows:

- Emic perspective - Perceptions, values, beliefs and attitudes that the members within the culture use to explain themselves and their Worldview.
- Etic perspectives - Perceptions, values, beliefs and attitudes from other cultures or from culture-general concepts that the learners use to interpret the target culture (Moran, 2001, p-148).

Culture, Activities and Environment

Rapoport comprehensively discussed the relevance and importance of Culture, which plays a crucial role in generating different activities and environment. He believes that the activities are direct expressions of lifestyle and ultimately of culture and he also added that the environment created by designers should be supportive for those activities. This shows the extent to which form is shaped by activities. To make it more operational Rapoport dismantles⁴ the term "Activity" (also applies to "Function") into four components so as to achieve its finer level of resolution as shown in Fig.5:

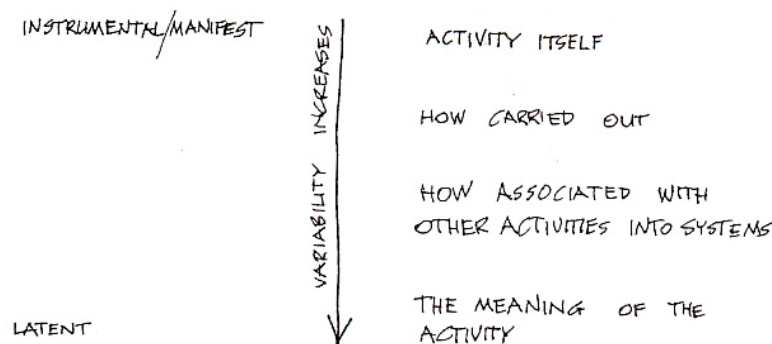


Fig. 5: Activities dismantled to four components by Rapoport
(Source: Rapoport, 2005, p - 41)

⁴ Rapoport argued at the 2002 WSE meeting in Tinos that this idea of 'dismantling' should be applied to the concepts and terms used in Ekistics (e.g. the ekistic elements).

Fig. 5 shows that there are also two aspects of activity/function – Instrumental/Manifest and Latent. He demonstrates this with an example of an activity, Cooking. At its simplest, most instrumental level, cooking is the transformation of raw food into cook food. But here Rapoport investigates how cooking is performed in different culture and also their effects on design.

- Firstly he starts with the different ways of how food is been transformed in different culture – Baking, Frying, Boiling, Roasting or even fermenting (example Pickling like Kimchi in Korea).
- Secondly he discuss about the way people use fire to cook (burying with the rocks, throwing into the fire), which is also different.
- Thirdly, about the wide variety of ingredients and cooking utensils which indirectly has an ergonomic impact on the workplace design, their location and body positions (e.g., squatting).
- Finally he reveals the importance of the associational activities of cooking, which varies to a great extent. Because cooking can be solitary activity, carried out by servants, a communal activity, a social activity, or a teaching activity for offspring etc. This clearly shows that how *variability with lifestyle goes up as one moves from the instrumental / manifest aspects to a latent aspect of an activity (or function)* (Rapoport, 2005, p-42)

Between the two aspects Rapoport feels the meaning and association of the latent aspects, which varies in different culture plays a major role in bringing greater diversity within the built form. This brings an insight the importance of cross- cultural studies (Rapoport, 2005, p-41).

Conclusion

The purpose of this summary of elected aspects of Rapoport's work has been to identify selected aspects which could be of relevance to ekistic theory and practice. The next Research Memorandum reports on the conclusion which have been drawn from this exercise of reading Rapoport's book *Culture, Architecture, and Design* (2005) with its contribution to Ekistics in mind.

References

Altman, I., Rapoport, A., Wohlwill, J., (1980), *Human Behaviour in the Social Environment: a Social Systems Approach*, Published by Springer.

Moran, Patrick, (2001), *Teaching Culture: Perspectives in Practice*, Australia: Heinle and Heinle.