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Do We Need a Metatheory of the Built Environment?

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The special issue of *Building Research & Information*, guest edited by L. Koskela (36(3) 2008), that explores developing theories of the built environment reveals just how complicated it is to articulate any one theory that covers all aspects of the built environment. Drawing on early work, it is suggested that this difficulty has its roots in the belief that there can be one model that will amalgamate the many different perspectives that make up the use and experience of the built environment. It is shown that treating building users as either subjects or objects both have their problems and that some concept of a 'place', which combines both perspectives, is needed to make sense of what it is that the built environment is creating. This allows the combination of the building as 'filter', 'social facilitator', and 'symbol' to be integrated into the broader challenges of sustainability and social–ecological systems.

Keywords: comfort, models, place, power, space syntax

Ce numéro spécial de *Building Research & Information*, signé par le rédacteur invité L. Koskela (36(3) 2008), qui analyse les théories de développement du milieu bâti explique combien il est difficile d'exposer une théorie unique capable de couvrir tous les aspects de ce milieu. S'appuyant sur de précédents travaux, l'auteur suggère que la difficulté vient du fait que l'on croit qu'il peut exister un modèle qui regroupera les nombreuses perspectives différentes qui compensent l'utilisation et l'expérience du milieu bâti. L'auteur prouve que le fait de traiter les utilisateurs de bâtiments soit comme sujets soit comme objets génère des problèmes dans les deux cas et qu'un concept de lieu qui combine les deux perspectives est nécessaire pour donner un sens à ce que crée le milieu bâti. Cela permet à la combinaison de bâtiment prise comme « filtre », « facilitateur social » et « symbole » d'être intégrée dans les défis au sens large de la durabilité et des systèmes socio-écologiques.

Mots clés: confort, modèle, lieu, pouvoir, syntaxe spatiale

> No theory can exclude everything that is wrong, poor or even detestable, or include everything that is right, good or beautiful.
>
> (Schoenberg, 1983, p. xvi)

Looking through my earliest publications I was intrigued to note that one of the first, published 38 years ago, was called 'Need for a theory of function in architecture' (Canter, 1970). It was therefore fascinating to learn in the Editorial to the May 2008 special issue of *Building Research & Information* that the Guest Editor L. Koskela recognizes that the question still lingers of how we should conceptualize the built environment. As the title of that Editorial makes clear, there is still the open issue of whether there 'is a need for theory of the built environment'.

Approaching architecture as a young psychologist it was very apparent to me that our understanding of the role and significance of our physical surroundings

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had to be built upon some formulation of what buildings were for; why we have a built environment. But more than a generation on we are still struggling to find some abstract conceptualization of what the built environment *is* and what the most fruitful models are for making sense of how we study it. The curiosity of this struggle continuing is emphasized when it is realized that over the last 40 years we have gained a profound understanding of the nature of Mars and of the origins of the Universe. At the smallest possible level elementary particles that were only guessed at in the 1970s have already been found and measured. The human genome has been identified and mapped. Yet although building technology is now very sophisticated and computer-aided design is releasing ever more exotic building forms, we can still have a whole issue of *Building Research & Information* devoted to exploring if a theory of the built environment is necessary and if it is what form it would take.

When such fundamental questions linger on around a discipline it is a sure sign that the questions themselves are flawed in some way. Reading through the challenging special issue exploring theory it dawned on me why it is such a struggle to formulate a theory of the built environment. The multiple perspectives that interplay when considering what the built environment *is* and what its purposes are act like the varying viewpoints that are amalgamated in a painting by Pablo Picasso, or like the facets that make up the eye of an insect. A general notion of what we are dealing with emerges, especially if we accept that we are dealing with a moving object, but to get a firm fix on what we are looking at is extremely difficult. This of course is paradoxical because nothing could be more present than the built environment. However, it is because we are both in it, of it and help create the built environment that we have so many possible perspectives on it. It is difficult enough to formulate a framework for thinking about the person or society because we are attempting to conceptualize entities that we are inside. But the challenge of the built environment is much more complex than that because it is owned, shaped, planned, and fought over as well as being experienced, observed and symbolized.

To get to grips with any theoretical formulation of the built environment therefore requires a clear focus on what is the purpose of such theorizing. In the Editorial to the special issue Koskela does outline some important contributions that theory makes, but I would add one further, fundamental contribution. The main purpose of a theory in science is to go beyond the data. It is a means of identifying the crucial aspects of any phenomena and representing the general relationships between those aspects and the conditions under which those relationships will hold. Theories go beyond any particular instance or set of data to indicate generalities that allow us to extrapolate beyond specific examples. That is the power of science and the reason why it has had such world-changing influence. It allows us to take results from the past in one context and use them confidently to predict what will happen under similar, but not identical, conditions in the future.

Probably the strongest example of how theories can go beyond the data is the work of Hillier and Hanson (1984). For more than three decades Hillier and his colleagues have been demonstrating that relatively simple mathematical representations of built forms relate to many aspects of the way we live. We do not need to know the colour of a building or the materials from which it is made or even much about its size or shape in order to predict important aspects of how it will be used. Space syntax analysis has shown that all that is necessary is to measure the relationships between spaces and their inter-penetrability. They draw attention to crucial properties of built form that carry wider-ranging significance, just as Robert Boyle showed that all we need to know about the volume of a gas is its temperature and pressure. What it tastes like is irrelevant.

Almost inevitably, with such a powerful hammer Hillier and colleagues are tempted to see everything as nails. They thus argue that it is the particular mathematics of space that generates social processes. Hillier and Hanson (1984) allow that the processes of generation are not simple determination:

> but that spatial configurations provide the conditions for the emergence of different kinds of complexity in human affairs.

From this perspective, human beings are certainly active agents in 'creating and using space'. It is apparently the 'kinds of complexity' they can generate in those activities that the syntax of space helps to explain.

There may be some confusion, though, in the missionary zeal of those advocating the power of the mathematical grammar of space. There is a tendency to claim that this mathematics is an explanation of the kinds of complexity of human interactions. The limitations enshrined in certain mathematical qualities of the relationships between spaces are what give rise to particular patterns of activity. This is the use of theory as more than going beyond the data to point out generalities. It is the use of theory to explain and facilitate understanding.

A less ambitious interpretation of space syntax is to see it as a model of one aspect of how the built environment relates to human activity. There is much to be said for models as more appropriate ways of going beyond the data than the majestic sweep of theories

that attempt to explain as well as generalize. Burch (2006) make a very strong case for the value of models as opposed to theories, drawing heavily on the writings of Giere (1999) and Burch (2006). Within this framework 'a model is any abstract representation of some portion of the real world' (Burch, 2006, p. 44). Some models can be recognized as theories when they have a strongly integrated system of concepts, such as the theory of evolution, but a map of plate tectonics is a useful model without it being a theory of how the Earth moves.

Models are evaluated on their fit to observations and their scope and accuracy. They are relevant across all disciplines. So models of how harmonies relate to the form and movement of music can be evaluated in terms of whether we do indeed experience the development of music as predicted by the shift in harmonies. But in discussing how music works, Schoenberg (1983) emphasized that what he was describing was only one way of modelling music, as the quote at the beginning of the present paper indicates. Interestingly, his book on harmony makes no mention of tone rows or the twelve note system for which Schoenberg is famous. As a musicologist Schoenberg was obviously aware that there were many different effective models for composing music.

The recognition that models have limited applications and serve particular purposes leads to the view that there will always be a range of different models, and indeed theories, that are fruitful for different contexts. Wolfgang Amadeus Mozart is no more or less acceptable as music than Igor Stravinsky even though they employ very different models in the creation of their music. We would similarly expect civil engineers to approach the design of a bridge rather differently from a management consultant guiding the amalgamation of two companies.

The difficulty with this neat multicultural perspective on theories of the built environment, in which we just allow all the different disciplines to go their own way, is that the diverse perspectives do interact. The challenge is more than just that the user of a building may be ignored in the pressure to maximize profits or create an award-winning design, it is that the perspective we bring to bear on the user is itself distorted by the models with which we are operating. Even before I explored the need for a theory in architecture, it seemed important to point out that there are two very different ways of conceptualizing people as users of buildings (Canter, 1969b). One perspective that is strongly articulated by the work of Vischer (1985) in which users of buildings are treated as viable experts on their own experiences, in effect as *subjects* whose viewpoints were dominant in influencing the shaping of the built environment. From this point of view the comfort of the users is the paramount criterion for making sense of the built environment. This perspective equates a theory of the built environment with models of what make people comfortable.

There can be little doubt that this approach has been enormously beneficial. It has helped to define the boundaries of acceptability for many designed parameters, whether it is the space that should be provided in offices, the loudness of music allowed in nightclubs, or the ventilation that is appropriate for a prison cell. However, the influence of putting comfort at the heart of building design is more problematic within the envelope of what is comfortable. For as attractive, and fundamentally democratic, as this approach is the practicalities of built environment use raise many complications. Most fundamental is the problem that was spelt out in *The Psychology of Place* (Canter, 1977) that there are always many different users of buildings. Their 'environmental roles' shape their experience of the buildings (Canter, 1991) give people often radically differing perspective on what is acceptable or comfortable within a building (Canter, 1969b).

The significance of the differing perspectives on buildings is such that some authorities have taken the manipulation and compromises necessary to amalgamate these differences as the essence of what building is about. In his profound book Markus (1993) argues that the central role for buildings is the management of power. He takes this a stage further, echoing some of the fundamental assumptions of space syntax, by arguing that the different types of building are reflections of different ways of managing power relationships.

Thus, although Markus allows a significant role for human agency in the shaping and use of the built environment, there is a tendency in his examination of how power is enshrined in buildings, which is much stronger amongst many other architectural professionals and researchers, to regard building users as *objects* (Canter, 1969b). Here the people who populate the built environment are entities within a system of other entities. They may be regarded as economic constituents that manage and use capital as Atkinson (2008) discusses, or they may thought of as organisms that are part of a social–ecological system (Moffatt and Kohler, 2008). There is clearly great utility in being able to treat people in this way, but it runs the risk of alienating the very people for whom the environment is being built. For although Atkinson tries to consider well-being rather than the more primitive idea of a fuel that is required for the person to work, enshrined in the concept of 'needs'. But the entities in the system that he explores can still totally distort an economy and erode it sustainability by the sense they make of their surroundings

and what they signify for them. Similarly, Moffatt and Kohler (2008) with all their exciting models of the flow of materials through the building process still have to have a parenthetical mention, *en passant*, that the 'system is the interface between culture and built environment' (p. 257). Yet culture is the amalgamation of all the understandings and viewpoints of the people who use the environment, constrained by the power structures and meanings that underlie the production of any environment. Culture is not a slightly problematic variable that can be fed into a complex equation. It is the very essence of what is generating our interactions with the environment in the first place.

The modelling of building users as objects, whether it is in the space syntax or the ecological sense, as economic entities or transport modalities, always comes up against the problem of culture. This is the challenge of how people's activities are shaped by experience and expectation, meaning and tradition. The subjective perspective, or 'user centred theory', as Vischer (2008) calls it, also struggles with the social context of the built experience when it relies mainly on feedback of existing experiences.

Part of the problem is that both the subjective and objective approaches, by putting culture in parentheses, greatly undervalue one of the major roles of buildings. Buildings signify. The built environment has layers of meaning that are its purpose and shape its influence. Our televisions and magazines are overflowing with accounts of the places where people live or want to live. Almost invariably these accounts cover the significance of the places for the people. The amount of space or light, noise level or décor are all dealt with in terms of how 'nice' they are. This is the generic word in English for capturing the psychological relationship the person has to the entity being described as 'nice'. What the individuals are reaching for is the recognition that what they want to do in that place, what they see the place as supporting and the meanings it expresses all come together in a coherent form. This is the model of place (Canter, 1977) which sees places as a combination of the actions, physical from and conceptualizations that come together for any person in any location.

The model of place recognizes that any location takes on a significance from the combination of three elements. One is the activities it makes possible. For most actions the crucial component is what they imply about social contact. Thus, the space syntax analyses are a valuable road into exploring how places take on their significance for social action. But the physical form carries many other implications beyond the actions it houses. Some of these are economic and relate to sustainability, others position the location within the flow of energy and use which the social–ecological analysis is so helpful in exploring. But a third and crucial aspect of a place is how meanings emerge from it in terms of what it signifies and symbolizes. This is where it engages with culture, both personal and social memory. So often what is being created is a symbol that goes beyond the mere use of the building or its economic significance even though it draws on those to give it power.

However, as Atkinson (2008) and Moffatt and Kohler (2008) demonstrate, we cannot build any models of places without being aware of their being part of a process of creation and decay. This is where so much of what is called 'Environmental Psychology' (Canter, 2000) that grew out of *Architectural Psychology* (Canter, 1969a) missed the point. It ignored the fact that the built environment is indeed built. These areas of applied psychology have had so little influence because they did not engage with the processes by which places come about. They ignored even Markus's (1993) emphasis on buildings as part of political systems.

Models of the built environment therefore have to struggle with the radically different perspectives of buildings as physical entities and lived experiences. They also have to take on board the pragmatic issues to which Rabeneck (2008) draws attention because to be of any utility the models must relate to what people do when shaping the built environment. In all of this it has to be recognized as well that what is being manipulated is as much a set of meanings as a range of artefacts.

It is thus inappropriate to look for one model or theory that covers all that the built environment is. However, because all the different models impinge on each other there needs to be some metatheory within which the models fit, allowing us to understand their interactions. I have suggested that recognizing that what we are studying is not the built environment but *Places* may be one step towards such a metatheory. But then I would, wouldn't I?

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