

# Crossing Boundaries - The Value of Interdisciplinary Research

Proceedings of the Third Conference of the EPUK  
(Environmental Psychology in the UK) Network

The Robert Gordon University 23<sup>rd</sup>-25<sup>th</sup> June 2003

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# Architectural Hermeneutics XIII : The Missing Link

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The subject of environmental psychology (EP) in the UK has been around for over 30 years. EP is a field of study that led and/or followed behaviour out of the laboratory and into a contextual and ecological frame. It has attracted psychologists looking for the person in the environment and designers exploring the people side of the design process as an addition to the craft of building.

Would it be unreasonable to hold the psychologist responsible for the person rather than the crafted environment - the Designer for the appropriateness and utility of the design and/or its aesthetics? The way in which each of these disciplines, and others, are given or seek to take responsibility for parts of the total equation greatly reflects the mechanical subdivision of labour so much a part of Newtonian natural science.

This paper suggests that with the advent of Quantum physics and evolution the old mechanical model must make way to a new paradigm, one that reflects the philosophical progress in our understanding of what constitutes knowledge. Newton believed that there was an ordered universe for us to know, carrying on a long tradition about what knowledge seemed to be and where it might be found. However philosophical approaches to psychology teach us that knowledge might be better understood as a complex behaviour we share with others relative to an ontology that is neither 'out there' nor 'in the head' but constructed.

This behavioural approach is by no means a simple claim by psychologists so as to overtake designers in making decisions about environmental issues. It is not a behaviour in the sense of a Newtonian world of cause and effect, even at a distance. It suggests innate, acquired and conditioned reflexes relating surroundings and other sentient beings to experience that can be communicated. In this new paradigm no single discipline can any longer provide answers to the demands of society, not because any discipline is insufficient in itself (although it is) but because "it doesn't work that way".

## Many Disciplines Each Claim to 'Know'

An 'intellectual revolution'<sup>4</sup> between the end of the 19th and early part of the 20th Century in Europe resulted in cutting philosophy off from the 'ordinary citizen'<sup>5</sup>. So

<sup>4</sup> Hughes H S, 1959, p.33

<sup>5</sup> 'Consciousness and Society' by Hughes H S, 1959/1979 p.401. Hughes writes 'for another two decades (after 1922) Europe was to be without a philosophy that could speak to the ordinary citizen about problems close to her most pressing concerns'. ... 'the post 1945 vogue of French existentialism

the idea of thinking was to be the realm of scientists who 'know' how to be accurate.<sup>6</sup> This was enough to create a division between 'ordinary people' and experts and altered any popular perceptions of both the arts and the sciences.

We can see the application of the expert in architecture as perhaps one of the pioneers of Art Nouveau or the Chicago School attempting to visualize the forms of a new architecture [Euris W J, 1996] introducing modern science based technology to the building of our lived environment.<sup>7</sup> Architecture had for a long time theorized in written form [Kraft H W, 1994] and Vitruvius [1960] had eschewed architecture in any architect's education [Cousins M, 1999]. It seems that 'the people' who once knew their lived environment [Tafuri M, 1958] now lived in a symbolic world – the linguistic turn [Bryant G A, 1995] that required interpretation by specialists.

Amongst those whom we might refer to as pragmatic humanists – 'Architectural Psychologists'<sup>8</sup> struggled to find ways to 'link buildings back to people'. In the USA similar groups were known as Environmental Psychologists<sup>9</sup>. David Canter (1970) suggested that architects needed to know more about the psychological impact of their buildings<sup>10</sup>. More recently the term environmental psychology has emerged as the 'winner' in the terminology for the combined study of people and their surroundings<sup>11</sup> and the way in which individuals capture (sense or experience) their environment is mostly articulated as a visual mechanics – a perceptual problem rather than a problematic paradigm.

### Experience of our life-world

We have a considerable sufficiency of evidence to show that an environment helps to configure the nervous system [Blakemore C, 1998] and that emotional relationships to surroundings alter neural connectivity and capacity for selective action [Linias R R, 2001]. However to suggest that complex entities such as society<sup>12</sup> rest upon the innate neural mechanics of much smaller idiosyncratic cognitive agents [Holland J H, 1998] fits with old 'Newtonian' physics only so long as we believe that there is some grand design for the universe.

The actual sensation received by each and any individual is unique to himself thus in order to interact there must indeed be a mechanism to do so that is characteristically psychological [Piorkin H, 1994]. There must also be invariant relationships between

*grew directly out of a situation in which a concern with social problems appeared an inescapable necessity' – pp 401-402.*

<sup>6</sup> P. H. op.cit. "our period is a period of transition... our mental life has been without equilibrium."

<sup>7</sup> Giddens suggests that science, technology and expertise plays a fundamental role in the reorganization of experience so that direct contact with events and situations which link the individual to broad issues of morality are rare and fleeting, Giddens A, *Modernity and Self Identity*, Polity, Cambridge, 1991, p 8

<sup>8</sup> David Canter writing (p.11) in the proceedings of a conference on architectural psychology held at Stretchleyde in the UK in 1969

<sup>9</sup> see for example Innesen writing in an American publication produced in 1976 [Innesen W H, 1976]

<sup>10</sup> The place of architectural psychology in *proceedings of the architectural psychology conference at Kingston Poly in September 1970* p.3

<sup>11</sup> Susan Cant in her book *Applying Psychology* published in 1998 links early psychological experiments to Lewis's proposals that behaviour is a result of interaction between person and environment pp 2-3

<sup>12</sup> we need to take account of Ryle's (1953) means of describing entities – for example the university that is a thing but not in the way that a football is a thing. Society then seems to be more like a university than a football in that it is an entity appearing as different 'kinds' according to our scale of experience.

individuals and surroundings at some scale, something for the individual to exert an action upon. It has always been assumed possible that we might 'work on' society itself but the suggestion by Boulding<sup>13</sup> is that features of interaction are such that no large scale planning is necessary in order that some semblance of a plan might manifest itself. This implies at its most simple interpretation that a contingent universe can have a time span so great that parts of it seem to us to be standing still (or to be clockwork) and a spatial reach so large that most of 'it' is invisible.

The relationship between individual and surrounding in Boulding's model must be conceptualized on several scales. The large-scale macro environment is unplanned - selections made are contingent upon an ostensibly material relationship that convinces the individual in the possibility and even actual reality of a greater plan. It is possible to demonstrate and claim the growth of artificial social entities from simple small scale rules [Epstein J M Axtell R, 1996] as if there is a Newtonian model. Reid [Reid A K, 1998] talks about 'reward cycles' relating to behaviours that appear to demand, need, rely upon insight or some kind of overview that might confirm the Newtonian overview - and yet the cycles are shown to emerge without any global plan whatsoever.

If we wanted to find an evolutionary mechanics we do in fact require the mutation of the individual in some non-linear non-programmed way rather than as part of some grand plan. Individuals may become different by virtue of changes to their ecological context and any concept of what that context might be will alter as individuals make discoveries and change or adapt to what they believe is a plan or structure. Individuals are forced into some kind of belief in order to contemplate any larger scale entities that surround them.

The world in which sentient beings share their larger scale entities seems to be some kind of middle ground whose name 'society' describes a complex multiplicity of group actions within an overall ecology. We might assume that when the social is not in turmoil what emerges is that which we call Culture and when in turmoil appears to be in chaos, dysfunctional. One of the fundamental political requirements is usually that the social is not in turmoil and ways of obtaining 'non turmoil' vary, as we know from examples such as dictatorships to ironic liberalism.

### **The End Of Pathology?**

If we accept that there is no grand plan except in our imaginations then we are forced to the conclusion that we can never know where or who or what we are. We can only relate to and act upon parts of the universe that are shared by others and can only guess at how closely they resemble our own efforts to make sense of it all.

The problem for architecture and environmentalists is that buildings seem so thoroughly material. It is difficult to move from a craft, holding and touching building materials, to a relationship that relies upon comparisons based upon our perceptions. But in comparing our perceptions we fail to appreciate that it is our experience as humans in the world that matters. The way we may begin is to consider experience as the methodological base for environmental understanding, not experience of anything in particular but the fact of experience that occurs within the lifetime of the individual and may differ from other lifetimes.

<sup>13</sup> in the preface to Zeleny's work on intellectual management. [Zeleny M, 1980]

The effect of concentrating on social knowledge, as what communicates, rather than the private (idiosyncratic) shifts attention from a consideration of universal humanity as an opposition of idiosyncrasy towards the socially relative. It implies the possibility of some kind of intentionality. The impossibility of maintaining any sense of the real reflecting upon the world at large forces thinking humans to consider the social as the most meaningful relationship to substance. This is neither object nor self but second person knowledge. Using such knowledge can allow us to know a constructed reality, a belief consonant with empirical evidence and daily life and ideas (that might be quite wrong) affected perhaps by the diversity of questions and answers we are prepared to tolerate.

As individuals we are dependent upon our ability to measure and value and act upon a set of understandings about our place in the world so that we can know where we are and what to do about it. People such as Ryle [1949] and Quine [1953] illustrate the paradox of being in the world and in the head living in a world of entities and creating objects (in the head) relating us to entities in various ways. Any hope of communication rests upon a configured set of measurements and values and our ability to configure ourselves to work upon them [Plotkin H, 1999] thus we will adopt the terms entity for the scale of substance and object for representation within the scale of consciousness.

This renaming will shift the idea of knowledge so that positivist intentions of measuring substance will be as OK as any analysis of relationships created by objects so long as it is agreed that both exist in a phenomenological world of experience. This is a life-world in which whatever 'architecture' is has to be digested rather than sensed or thought about<sup>14</sup>. The idea seems reasonable that objects and entities arrive in our consciousness having neural links with life experience and that some experiences are invariant whilst others are variable by degrees and all are contingent upon an unplanned and unknowable cosmology.

Knowledge becomes a way in which we relate to each other using objects and entities based on experience that alters according to our actions and the actions of other 'beings'. Our behaviour indicates whether or not we share the same knowledge, in other words we interact with knowledge rather than with each other but strongly suspect that we can infer knowledge from behaviour. In order to allow this to happen we have to do something with the speed at which we can behave according to the knowledge required at each moment. Several new terms emerge from this paradigmatic alteration to our model of knowledge, such as the constructed reflex, the neural link that allows rapid access between entities, objects and consciousness and several old terms, such as the affordance, are given new definition.

### Working Models Of Knowledge

By accepting that we have developed a computational theory of cognition - "that intentional processes are syntactic operations defined on mental representations" - it is neither a, nor even a large part of a, true model of the way cognition works [Fodor J, 2000]. Much of the empirical work in environmental psychology assumes a similar model to a model of artificial intelligence (AI). This is probably because workers in

<sup>14</sup> Phenomenology is here considered as the study of becoming. Creativity is too big a word but certainly it is the study of bringing into being as an ecological entity that which is human as self, social and symbiotic. Ecological is taken in the sense coined by Haeckel in 1830 from house and study - *oikos* and *logos* - [Bradshaw et al., 1986] thus the bringing into being of the human life world.

the production of the built environment select a paradigm that fits the computational and logical background like AI.

Roger Hart and Gary Moore [Hart R A Moore G T, 1973] typically eschew consciousness and philosophical issues when dealing with cognition. The empirical models of behaviour are, in that particular case linked to theoretical work by Piaget [1976] based upon 'the epistemological problem of space'. The latter is said to be (p.252) that what we take to be real is a product of the act of knowing. If we ignore Piaget's developmental approach<sup>15</sup>, we discover an approach to knowledge that is intentionally evolutionary.

Piaget [1976] claimed a teleological system that becomes more and more stable (p.258). The system remains stable by a process of adaptation in which individual elements that make up the whole become more flexible and mobile. Intelligence (in Piaget's theory) is made functional by assimilation (the integration of sensation with neural configurations p.258) and accommodation (the readjustment of the neural configuration to surrounding configurations). Thus can we assume that stupidity is some opposite outcome by the same mechanism, for example non-integration or a failure to re-adjust to the system that is seeking itself? [Reason J, 1992]

Could it be better to consider the developmental relationship slightly differently? Rather than describing intelligence could Piaget [1976] be dealing with the development of a relationship to a set of objects and rules about those objects such that there is a prescription to be acquired in order to be fully operational? In other words it is devotees of the constructed system that seek to promote it. The development of finding out by trial and error, (p.259) of becoming aware (pre-operational) of deciding to become a mature operant and then a fully functional expert of in this case a prescription for systematic relationships. The notion of a stability requiring adaptation of the sort mentioned is quite useful. Assimilation and accommodation imply some kind of adaptation but it is one that also requires a prescription.

Could it be that Piaget [1976] has described a model of interaction and acquisition of a culture as if any culture is a set of rules and procedures in relation to a set of objects prescribed by a bunch of individuals who are theoretically culturally integrated? If as Piaget [1976] suggests we construct that model then we would appear to be lacking any relationships with externality once we have acquired functionality other than assimilation and accommodation. There is an 'intrinsic motivation' (p.259) toward higher levels of equilibration, but to what are we moving? In Piagetian terms as described in that environmental psychology literature it would be to a fully operational stability at the level of system rather than as an individual - i.e. the individual IN environment-system.

Thus, the possibility that if knowledge depends for 'its' stability upon the co-operation or at least the altruism of the knowers then the knowers might or ought to form a republican version of knowledge in some way if they have any equity in that knowledge as all. For example Wittgenstein's agreement that the players have become an important part of knowledge. It is worth presenting the following extract from Scruton [1995] (pp 280,281)

<sup>15</sup> Piaget [1976]'s theory of development is no longer considered 'accurate' as a way of describing the development of intelligence in children. This is because the development of neural circuitry depends to a great deal on use and even diet and is not entirely genetic. This is not to say that we cannot use Piaget's intentionality - to explain the evolution of knowledge - and his mechanics.

*The social perspective caused Wittgenstein to move away from ... emphasis on the concept of truth, or rather, to see this emphasis as reflecting a more fundamental demand that human utterance be answerable to a standard of correctness. This standard is ... a human artifact ... it does not mean that the individual can decide for him (her) self ... on the contrary ... we are constrained by a conception of ourselves as beings who observe and act upon an independent world.*

In an analysis of human behaviour in complex space completed in 1999 [Thompson B] the term coined for knowledge of the sort implied in the extract above was 'second person knowledge'. The idea was to combine knowledge of the sort that we use for our behaviour with the sort of knowledge that tells us about the world and since the world is too big to comprehend we stop asking questions at some crucial point. The proposition was that we have first person knowledge that must be idiosyncratic, then we have second person knowledge that has to be 'correct' within a framework of the perception of others and ultimately a point of 'no more questions' (belief). Then there is symbiosis that all individuals experience but only at the interface of an immediate surroundings whereas in fact the interface is infinite.

Looking at Piaget's [1976] thoughts at around the time of the approach by Hart and Moore [1973] we find Piaget wants us to understand behaviour as "teleological action" (p.x). This action is "aimed at using or transforming the environment" and seeks to "evaluate its role within the framework of the general processes of the evolution of life". Piaget [1976] reports that his 'accommodation' derives from Baldwin and his 'assimilation' from Waddington, the combination being in effect an organic shift to mutation by selection.

Without consciousness this would be difficult to imagine but by interrogating the results consciousness allows an awareness of advantage together with the suppression of any disadvantage. It is possible that the period of time over which that sort of selection might operate is hardly likely to be long enough to become influential in biological terms. However we might also argue that we have now come to alter DNA and in so doing are seeking to select for the biological part that has heretofore evaded our selection, thus the theory has merely been waiting for the model upon which to act.

Consciousness can be seen as that which provides the individual with a link to the ecological by direct comparison of experience that has individual social and environmental components (and also that consciousness will indicate pathology) [Canguilhem G, 1966]. Thus we can talk of a brittle structure and an elastic structure, bearing in mind that these are ecological person environment structures and not marital structures.

Rather than the concept of observing an independent world "*as beings who observe and act upon an independent world*" Scruton [1995] we might do better by assuming a symbiotic universe of which we are part. We are always connected up, but never in such a way that we can appreciate the entire universe. The experience is life as we know it unique to the individual, however the location of that life is within a symbiotic universe whose scale is billions of years either side of now and at one and the same time immediate.

Winnicott [1983] illustrates an interaction between individual and surroundings as the experiences of acting upon and of being acted upon. Extended beyond a simple interactive condition in which the boundary is our skin and flesh we can portray the individual as having an increasingly complex understanding of the interaction. The

reflex has to be continually crafted to take account of an ever-widening boundary condition as we experience more 'symbiosis' and question relative experiences.

We can take the combination of perception and action as a constructed reflex rather than the model offered by Hart and Moore [1973], which is the constructed perception (after Kant), since we do not see the world as it is or as it isn't. Using the constructed reflex we act always and only upon the 'mental representations' that Fodor [2000] suggests also allows the computational model of mind but does not require that our perception be isomorphic or that our perception is identical in any way to any other individual's perception. What matters when we adopt the paradigm of the constructed reflex is that actions are teleological or ignorant of that teleology

Syntactic exchanges are thus ways of relating to entities in the universe that require certain quite specific rules and understandings but not rigid rules of necessity. Thus it is not the case that signs are arbitrary nor that the universe itself is meaningless. In order to make certain kinds of interactions with surroundings take on meaning then signs must become significant and users must appreciate the levels of significance required.

More or less effort may be invested in making meaning so that in some cases the levels of meaning may be ambiguous whereas in other cases the meaning is absolute. J J Gibson [1986] uses the flow of information in what he terms an 'ecological perception' to explain how information from surroundings is understood. However such an understanding is not as simple as a first reading of Gibson seems to suggest.

Gibson coined the term 'affordances' [Heft H, 2001] and I have argued [Thompson B, 2003] that affordances need to be links within second person knowledge – they are a knower's knowledge. There are those [Flach + Holden, 1998] who accept the idea I have outlined above but insist on some kind of 'reality' based, it seems, upon the need for an objective scientific programme (p.93) for universalizing meaning. *"the construct of affordance reflects this new fundamental basis for reality in the relationship between actor and environment"*.

I suggest that the affordance is, all things being equal, a reflex linkage between lived experience and what we might call, for want of a better term, "second person correctness". Its description has to do with speed and a lack of questioning a.k.a. real in the immediate scale but could not hold up in the mega scale of space or time. In this sense of usage the term social must be construed as having a scale smaller than cultural yet greater than individual. We may also apply the terms brittle and elastic to the structured system in which the affordance holds.

## References

- Blakemore C, *How the Environment Helps Build the Brain*, In – Cartledge B (ed), *Mind Brain and Environment*, Oxford University Press, 1998, pp.28-55
- Bradshaw A D Goode D A Thorp E H P (eds), 1986, *Ecology and Design in Landscape*, Blackwell Scientific Publications, Oxford, Melbourne, pp 15-36
- Bryant G A, *Practical Sociology*, Polity Press, Cambridge, 1995, p.5
- Canguilhem G, 1966, *The Normal and the Pathological*, Zone Books, New York, 1989
- Canter D Brown C (eds), 1970, *Architectural Psychology*, RIBA Publications, London
- Cave S, 1998, *Applying Psychology to the Environment*, Hodder & Stoughton
- Churchland P M, *The Engine of Reason the Seat of the Soul*, MIT, 1995



- Cousins M, *Building An Architect*, in- *Occupying Architecture*, Hill J (ed), Routledge, London, 1999, pp.13-21
- Curtis W J R, 1996, *Modern Architecture Since 1990*, Phaidon Press, London + New York, 2002, p.11
- Epstein J M, Axtell R, *Growing Artificial Societies*, MIT Press, 1996
- Flach J M Holden J G, *The Reality of Experience: Gibson's Way*, Presence, Vol.7, No.1, February 1998, pp.90-95, Massachusetts Institute of Technology
- Fodor J, *The Mind Doesn't Work That Way*, MIT Press, 2000
- Gibson J J, *The Ecological Approach to Visual Perception*, Lawrence Erlbaum Assoc., London, New Jersey, 1986
- Giddens A, *Modernity and Self Identity*, Cambridge, Polity Press, 1991
- Hart R A Moore G T, *The Development of Spatial Cognition*, In - *Image and Environment*, Downs and Stea (eds), Chicago, Aldine, 1973
- Heft H, *Ecological Psychology in Context*, Lawrence Erlbaum, London, 2001
- Holland J H, *Emergence From Chaos to Order*, Helix Books Addison Wesley, 1998
- Hughes H S, *Consciousness and Society*, Harvester Press, Brighton, 1979
- Itelson W H, *Some Issues Facing a Theory of Environment and Behaviour*, pp.51-59 IN *Environmental Psychology*, Proshansky H M et al. (ed), Holt Rinehart and Winston, 1976
- Kruft H W, *Architectural Theory*, Princeton Architectural Press Zwemmer, New York, 1994
- Llina's R R, *I of the Vortex*, Massachusetts, MIT Press, 2001
- Piaget J, 1976, *Behaviour and Evolution*, Routledge and Keegan Paul, London, 1979
- Plotkin H, *Some Psychological Mechanisms Of Culture*, IN *The Nature of Concepts*, Philip Van Looche (ed), Routledge, London + New York, 1999 pp.115-127
- Plotkin H, *The Nature of Knowledge*, Allen Lane, 1994
- Quine W V O, 1953, *From a Logical Point of View*, Harvard University Press, 1980
- Reason J, *Human Error*, Cambridge, Cambridge University Press, 1992
- Reid A K Staddon J E R, 1998, *A Dynamic Route Finder for the Cognitive Map*, *Psychological Review*, Vol.No. 105, No.3, p586
- Ryle G, 1949, *The Concept of Mind*, Penguin, 2000
- Scruton R, *A Short History of Modern Philosophy*, Routledge, 1995
- Tafuri M, *Theories and History of Architecture*, Granada, London Toronto Sydney New York, 1980, p.80, first published in 1968.
- Thompson B, *Architectural Hermeneutics V: Harry and the Philosopher's Stone*, *Environment and Behaviour*, May 2003, in press
- Thompson W J, *PhD Thesis Wayfinding in Complex Space*, Herriot Watt University, 1999
- Vitruvius, *The Education of an Architect The First Book*, *The Ten Books of Architecture*, trans. Morgan M H, Dover, New York, 1960
- Winnecott D W, *Human Nature*, Free Association Books, 1988
- Zeleny M (ed), *Autopoiesis, Dissapative Structures and Spontaneous Social Orders*, AAAS Selected Symposia, Westview Press, 1980