TECHNOLOGICAL MODELS IN ARCHITECTURE: A Critique

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Abstract

A discussion of various forms in which architectural (and meta-architectural) discourse makes use of technological metaphor, models and lexicons: the term 'technological' is intended to encompass notions of engineering and technical manipulation as well as more traditional mechanistic concepts. What follows from the application of mechanistic principles to such phenomena as human relations and environmental planning? What are the implications of the architect's projected role as social engineer?

There is a rather more detailed examination of cybernetics (in its capacity as a psychological theory) as a paradigm case of mechanistic approach but in this sort of area, the question of empiricism as a basis for epistemological theories and consequent psychological theories is considered critically in the light of such research as Noam Chomsky's in linguistics. A possible misconception as to the nature of psychological enquiry is suggested as being linked to the empiricist as opposed to rationalist (on the Cartesian sense) bias.

In discussing technological models in architectural theory, I should first make clear a distinction which I think will help to clarify the issues. There are those theories within the realm of architectural discourse which attempt to present the role of the designer in a technological or mechanistic way, which claim, essentially, that the designer's function could be not unlike the decision-making process of a computer and that it would, in fact, be desirable for such elements as personal intuition and unproven impasse to be eradicated from the design procedure in favour of more 'scientifically' justifiable methods. On the other hand, there are other theoretical positions which argue that the material with which designers must deal, e.g. interpersonal relations, the individual human personality, social intercourse and structures, should itself be seen in mechanistic terms; that, for example, the psychological analysis put forward by cybernetics is the correct one. At the risk of caricature, one might say that one category of views presents the architect-as-machine while the other suggests, rather more monolithically, man-in-society as a kind of mechanism. Not that I wish to suggest that these two sorts of mechanistic view are mutually exclusive: many of the architect-as-computer proponents argue as well for the general mechanistic nature of the human condition, and it is easy to see why these notions should be so compatible. If one desires to see oneself as functioning, in one's decisions-making capacities, in ways which can be described and accounted for in mechanistic terms, then the position of a general mechanistic view of human nature simplifies things enormously: the subject matter with which one has to deal is conveniently chopped up and arranged in categories manageable by one's own favourite methodology. There are, I think, two rival computer protagonists who suggest explicitly or implicitly that human beings who are not mechanistic are both preposterous, and entitled, to personal preferences, individual needs for expression and idiosyncratic tastes and that the architect, by his depersonalized approach, is guaranteeing the freedom of the general population to indulge its creativity. I shall return for a comment on the contradiction in this view later on.

To begin, let us consider two more universal views which centre on a mechanistic view of human nature. As I have levied so much abuse in the past in the architectural school, I shall leave it in peace for the present and directly comment on a more literally mechanistic psychology: that of cybernetics. To make one tangential point first: in a Stock Exchange context, the encounter individuals who mistakenly assume that the cybernetic position consists simply in a peculiar fondness for computers and the advocacy of their application to design problems. To all those laboring under that misapprehension I should like to stress that there is far more involved in espousing cybernetics than having the right PR for IBM. Cybernetics is a psychological theory which takes as its most fundamental premise that human mental processes are precisely those of a computer and that all aspects of personality development and learning are explicable in mechanistic terms. To take as an example, it is an intuitively obvious way of 'mechanistic' advice for cybernetics literally sees the human mind as a machine, not as being like a machine or analogous to a machine.

I am forced to repeat, in my criticisms of cybernetics, many of the points I have made in the last few years: that the stimulus-response model is an inadequate description of learning and mental development; that the system of definitions on which the conceptual framework rests in circular and tautological and that the account given of human perceptual processes is ludicrously primitive and naive. To illustrate the untenable nature of a cybernetic view of mental development, one must turn to sophisticated capacities such as judgment (as opposed to the usual cybernetic examples of habitual responses.) If all mental events and capabilities can be accounted for in the cybernetic framework, then the following sort of activity should provide little difficulty for the theory, it should be able to deal with the origin of judgment in terms of the distinctions necessary for effective action; those between fantasy and reality, for example, between the phenomena of 'inner-sensation and outer-stimulated perceptions of the actual world. The stimulus-response model must interpret this form of judgement as the infant consciousness observing that certain of its sensations and impulses do not result in actual consequences in the world, while others do and on that basis sorting out the perceived phenomena into the categories of real and not real. But what sense can be made of such a categorical dilemma as real and not real simply emerging out of one's experience? One can't perceive and learn to recognize realities in the way that one can redress. This category distinction cannot be seen in the way that the distinction between what is red and what is not red, can be seen.) Could any number of inner-imaginary-phenomena and outer-stimulated-phenomena provide the consciousness with criteria for distinguishing between them? Or can one provide the conception of such a dictionary? The determining of actual consequences, of course, begs the question such a determination presupposes the ability to distinguish between real and not real, instead of accounting for it. This is the example I cited against behaviourism in an earlier paper (Daley 1969) and the reason, I would claim, that it is equally damaging to both schools in a precisely similar way in that both postulate real on a simplistic basis, and that empiricism as an epistemological framework is thoroughly inadequate. I shall go into my reasons for holding this view shortly.

The cybernetic analogy of human mental processes to computer processes overlooks is that the computer only seems to be functioning upon a perfect 'learned response' model. It looks, superficially, to be the ideal empiricist -- a mind which functions, makes decisions, reaches conclusions, etc. without any theoretical presuppositions, no preconceived concepts of meaning or theory- laden criteria. What the cybernetician fails to allow for is that, on the one hand, those theoretical presuppositions required for the intelligibility of the computer's communications are, in fact, present; they have been programmed into its operations with even the skeletal conceptual vocabulary necessary for its functioning and, on the other, that computers are not, as it turns out, capable of the innovative intellectual processes of which the human mind is capable precisely because they lack systematic concepts on a rationalist model, something analogous to Chomsky's 'universal grammar'. Noam Chomsky, the linguistic analyst who has revolutionized modern thinking on epistemological problems, has shown convincingly that the fundamental logic of language: the underlying conceptual scheme without which understanding and use of language would be incomprehensible, is neither 'learned' nor 'learnable' in the behavioural or cybernetic sense. That there should appear to be innate capacities for conceptualizing and linguistic innovating which cannot be accounted for on the empiricist model (which depicts the mind as an, initially, empty receptacle in which sense-data accumulate and are somehow sorted out into an intelligible scheme.) It is impossible to pursue Chomsky's work at length here but it seems pertinent to quote a remark of his on theories of linguistic development:
"It seems to me that the essential weakness in the structuralist and behaviorist approaches to these topics is the shallowness of explanation, the belief that the mind must be simple in its structure than any known physical organ and that the most primitive of assumptions must be adequate to explain whatever phenomena can be observed. Thus, it is taken for granted without argument or evidence that language is a system of signs, that it is a physical system, that it is a system of devices to respond. Accordingly, knowledge of language must develop solely through repetition and training, its apparent complexity resulting from the proliferation of very simple elements rather than from deeper principles of mental organization that may be as inaccessible to introspection as the mechanisms of digestion or coordinated movement."

(Chomsky 1968)

The empiricist-based psychological theories, I should maintain, are wrong-headed because their approach rests on a fundamentally mistaken view of the sorts of questions that are being asked in psychology and the methodological consequences. Where the empiricist psychologies might be called 'why?' questions, the empiricist introspectively perceives in offering 'how?' answers. There are two very different sorts of endeavor which are undertaken here and the confusion of the two has had a great deal to do. It seems to me, with the unconvincing nature of experimental psychology's claim to be a science. While 'how?' questions, e.g., those of structure and process, are appropriate and satisfying in such properly empirical, related disciplines as physiology and neurology, they misrepresent utterly the nature of what is distinctively psychological for else, they resort to reductionism and imply that there is no such distinct discipline as psychology which psychological problems amount to nothing more than physiological or somatic issues.

To make this distinction between 'why?' questions and 'how?' questions clearer, let me put on a case of personality disorder, phobia, say, a stimulus response therapy for which the phobia is in terms of instincts deriving from a subconscious level in the personality which the subject fears to such a degree that he cannot permit himself even to recognize the nature of his fear. Here, instead of analyzing his anxiety so that he may project his fear on to some form outside himself. Regardless of how convincing or not you find either of these alternatives, note that they are crucially different in their conceptualization of the problem. The stimulus-response psychologist gives his account of conditioned responses -- e.g., the subject has learned, and been conditioned to, respond in certain ways to certain phenomena -- be it, in effect, offering a description, in a particular kind of theoretical terms, of how mind and behavior are interacting. The psychoanalyst, however, is giving explanation rather than description. "There are certain forces in the personality he is claiming "which act on each other in particular ways and this is why these events occur." It is in the latter frame of stating and dealing with the problem which seems to me that appropriate and satisfying for the rise used by psychology and, unlike some investigators, I do believe that there are a set of concerns distinctively psychological whose role is to be understood and explained. It is true, of course, that they are among the most vital and interesting of the human condition. It is a rather more profound question to look introspectively and say, "I wonder in the universe?" meaning teleological or metaphysical ones for getting the theory, the Universe is conceivable. The planets travel on elliptical orbits with their paths regulated by gravitational force, etc...."

Where you had asked a question in metaphysics, you are receiving a reply in the terms of astronomy. You did not request a description of how the physical universe was structured but a description of how it was structured in that way for any way.)

What the exclusive concentration on the aspects of psychological discourse which could be dealt with the "why" rather than the "how" basis has amounted to, is that dogmatic insistence on what is simply termed "scientific evidence" with which we are all familiar. What is meant by "scientific evidence" is a variable empirical data of a form which is objectively verifiable. This, in a pervasive leveling down and narrowing of a vital field of intellectual enquiry, all questions or statements not acceptable of empirical proof or disproof -- the sort of explanatory thesis for which one gives argument not evidence (because nothing would count as evidence either for or against) -- are eliminated. The poverty-stricken discipline which results is left with the trivia, the truisms and the spurious pseudo-scientificism which renders it a pastime activity, a caricature.

To return now to the architect-as-machine, my concern here closely resembles the worries I have expressed about the behavioral sciences. That cult of 'objectivity,' that cult of "instrumental rationalism" which encourages the designer to believe that he can and should abstain himself as an intuitive and creatively expressive agent -- the idealizing of the architect-engineer as opposed to the architect-artist or the architect-philosopher -- strikes me as a most demoralizing symptom of modern disillusion. Firstly, let us bear in mind that any intellectual stance which confines the possibility of a human decision-maker becoming an automaton whose theoretical system whether it be a mathematical model, an over-conceptualized design methodology, or a behavioural monolith is seen as so merely bed-proof, so empirically unapproachable that it releases him from the moral responsibility of his own personal and intimate intervention. It is neither possible nor desirable for any individual to de-personalize his activities in the sphere of social life and human welfare to such an extent. Not possible because modernist theory transmuted the entrenched theoretical presuppositions within which they were conceived, cannot "justly live" like disembodied spirits -- technically engaged from the framework which lend them their intelligibility. To delude oneself into believing that a complex intellectual up -parus can be adopted in the disinterested and casual way in which one would use a mechanical tool, without realizing oneself in its theoretical commitments is a dangerous folly indeed.

Not destitute because the teaching of home life and conscious preference in design has the most immense of the references. The notion that somehow, by stripping design bare of personal creativity and intuition, one can thereby create architecture, can be transformed or substituted in which human imagination itself becomes an alien, perhaps as abstract and cold as the mountainous heights, one can be adopted in the disinterested and casual way in which one would adopt a mechanical tool, without realizing oneself in its theoretical commitments is a dangerous folly indeed.

What is it is that I mean for in architectural theory and practice is recognition of what it is that has caused previous generations to revive creative expression in architecture and the discipline's alliance with the creative arts. Some idea of personal sensibility has been confused with dictatorial whims, individual conscience with vital crudeness. The fact that men do have vision and insight into their condition and that they express them in the arts, the forms of expression of their environment which overlaid and are superior in any favorite social scheme. The fact that we have such visions or the repudiation is to designate what is most magnificent in human spirit.