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Abstract

This paper will discuss the problems of the transposition of linguistic analogies and models to design methods in architecture. Specifically, it will attempt to show that language and architecture, which seem to be similar modes of communication, are in fact different in one particular aspect. Because of this difference the use of linguistics models as anything more than an heuristic device in architectural design becomes suspect. This paper will attempt to isolate that aspect of architectural space which affects communication and meaning in a way which at present is not able to be modeled either by traditional architectural methods--history, aesthetics, function--nor by new theories of meaning. In doing so this paper takes a position against the application of existing linguistic, semiological and communicational models to architecture. Furthermore, it is proposed that we must develop our own models more related to the actual "stuff" of architecture. The following is both a position and an introduction to such development in the context of syntactic or formal concerns.

This paper is intended for two purposes: First it is a critique of existing approaches to architecture using the idea of language or a design language as a basis. Second it is an outline of my own position, which has evolved parallel to this critique. Two almost opposite directions in particular may be seen as antecedent to the ideas in this presentation. They concern a fundamental question in any architecture of the form-meaning relationship. One, more conservative, was essentially continuing a tradition of German art history developed at the Warburg Institute in London. While the people involved were essentially art historians, their influence on the architecture of the 60's through such people as Rudolph Wittkower and his pupil, Colin Rowe, in England and America, was no less profound. Another supposedly more innovative direction was concerned with an attempt to study on a more methodologically rational basis physical design (initially manifested in industrial design) and architecture. The major thrust of the work of such people at ULM as Tomas Maldonado, Abraham Moles and Giu Bonsieppe can be seen to be exemplary of this intention. The difference between the two directions might be summarized as follows: the former group was concerned with types of meaning--with problems of iconography and symbolism; the latter group was concerned with problems about the nature of meaning--with such problems as the nature of sign systems in the physical environment and with the lack of an agreed upon sign convention between the form of the environment and the meaning which accrues to it.

Partly because of a desire for rationality of method and partly because they were involved in an analogous problem, this latter group turned to disciplines outside of architecture and art history: to linguistics and, more specifically, to semiology. These external models were thought to provide not only a more rigorous and even more scientific frame of reference, but also, they were thought to possess characteristics which were analogous to the form-meaning relationship in architecture.

In the 1960's, most of the European manifestations of the use of linguistics and semiology in an architectural context were based on the work of Ferdinand de Saussure, in particular, and more recently on French structuralism in general. The appearance of a book such as Meaning in Architecture, while significant for its mere existence at that time and for its title, which indicates the particular bias of its contributors, is probably more important in that it was, in a way, a signal to the end of a period which expressed an explicit series of preferences characterized primarily in terms of what is excluded from consideration. Fundamental to these preferences was a concern for meaning as opposed to form.

While this is obviously an oversimplified and schematic introduction, it is useful in that it provides a background to the problem of the form-meaning relationship and to the propositions which will be put forward below. Fundamental to my proposal are the following considerations:

- 1) The elimination of semantic considerations and the focus on syntactics; that is, the consideration of formal elements or regularities seen as a potential system of marks.
- 2) The understanding that what is perceived--the particular configurations in the built environment--is only one aspect of a more complex phenomenon, that there exists in any environment an underlying structure which ultimately affects communication.

Traditionally in architecture, considerations of form have played an important role. Previously these considerations were basically concerned with aesthetic problems, with the analysis and the design of specific configurations having proportions, size, scale, contrasts of texture, color and light. Beyond this concern for the physical properties of elements there was equally a concern with relationships--sequence, interval, location, etc.--between elements. These concerns are not aesthetic but more appropriately syntactic in that they are concerned with relationships. However, they are syntactic only in what will be called a surface structural sense. For example, a column or an entry facade in itself may be considered as a formal and thus syntactic element. A description of a particular shape, texture and coloration of a column or a facade would provide us with information concerning the actual physical form, which is only the surface structure. Equally, the relationship of a column to a wall--their location, proximity, direction, etc.--which provides information of a syntactic nature is still information regarding the specific or surface configuration. Thus, it can be said that even when architecture was concerned with formal relationships, i.e., syntax, these were relationships of the elements or objects themselves, i.e., shapes, or the

relationships between shapes in a specific environment--dimension, size, scale, etc. This was the limit of syntax. But this did not account for another or underlying level--a more complex phenomenon which can be detected in a specific environment.

- 3) This underlying structure can be described in terms of a set of conditions and a set of operations which would link this underlying structure with the particular configuration.

A further difference between my proposition and other work being done in syntax is in the nature of the description of this underlying structure. If we analyze the nature of the formal information potential in any specific context we can see first, that there is information which is iconographic and symbolic and comes primarily from cultural sources which are external to the environment. This information seems to be the product of a cultural interpretation of the formal relationships in the specific context. These exist at a real, actual level, where an individual is aware of them through his senses: perception, hearing, touching, etc. But there is another aspect of information affecting this iconographic interpretation which seems to be derived from another level of relationships. These exist in a more abstract sense; they cannot be seen or heard, but they can be known. In attempting to define the nature of this underlying structure one may consider ways in which formal information may be manifest. The first and most obvious is in a relationship to what may be called a notational order. This order seems to be a description of any formal regularities which may be seen in a specific environment. A notation can be made from the actual geometry of any shape. A second way in which formal information is manifest comes not from the actual geometry or from pure physics alone, but rather from two things: one, from the way in which the individual conceives of space and form and two, from the particular way the underlying structure forms relationships in a specific configuration. For example, the idea of forms existing in a state of shear can be said to be information which derives from comparing two sets of formal relationships, an actual condition in relation to some prior condition. A prior condition is a description of certain formal regularities which when conceived of as juxtaposed to produce a relationship with the actual geometry which cannot be marked yet is implied in the environment.

Again, this information does not derive solely from the pure geometry or pure physical facts in the environment alone but both from our capacity to conceive of these geometries in relation to some prior configuration and from the nature of the actual shapes themselves to suggest this prior configuration. While there are many possible combinations of formal regularities in an underlying structural description and while all architecture may have such an underlying structure, only some of these descriptions possess this capacity to be manifest as a prior condition and thus to produce formal information.

This relationship to a prior condition also may affect our use of a space. For example, because of the difference between the conception of an actual configuration and the conception of its relationship to a prior condition, it is possible to conceive of different ways to approach and enter spaces. These ways seem to

be influenced by our conception of this relationship to a prior condition. And as was said before, while this other information may be given a notation, it does not derive from the physical fact alone but rather from the capacity of the relationship between actual facts and prior conditions to generate or imply other interpretations, and also from our capacity to receive this information. It is possible to articulate this other aspect of the problem by considering the capacity of the individual--using, perceiving and moving in space--to receive certain information which is present in that space which is other than notational (that is, it does not derive either from the specific configuration or from the relationship of the specific configuration to a prior condition); to be able to interpret this, and to turn it into mental constructs. This type of information, while involving the individual, involves him in his purely conceptual or mental capacity and has little to do with his culture, aesthetic predilections or taste. Again, this information is not derived from the actual shape but from the information inherent in the relationship between shapes. This second type of information derives from what we may call a relational order.

- 4) The two different types of relationships can be modeled by what I have called a dual deep structure.

Syntactic information as defined here is not concerned with the meaning which accrues to elements or actual relationships between elements but rather with the relationship between relationships. It is not information inherent in the actual environment, but rather it is information received in our mental construct of the relationship between the actual environment and a conceptual environment. The primary factor in this type of information is the activity of the underlying level of formal relationships, previously not brought to any conscious level of formulation but no less present. These relationships exist in what is called here the deep structure. The syntactic dimension of architecture can be initially conceived of as a dual level structure; it is a model which we are imposing on the existing conception of architecture in an attempt to uncover, define and make operative further relationships which may be inherent in any specific configuration. These relationships, it will be argued, pre-exist in any environment and also in our capacity to conceive of them; and, therefore, these relationships provide information to us whether by design or not, or whether we are even conscious of receiving this information.

- 5) But there is a further problem which at present cannot be modeled by a dual deep structure. It concerns what I will call the virtual nature of architectural space. While the dialectic potential of actual and virtual exists in all physical phenomena, its manifestation in architecture is held to be unique.

There is another level of information which seems to exist in any configuration which is more difficult to systematize. This touches something in the nature of architectural space which might be considered archetypal. That is, the capacity of a certain deployment of form and space to suggest a level of formal information which cannot be understood from a marking of the actual geometry alone but rather is derived both from the implications which are spatially inherent in the actual geometry and from the capacity of the individual in space to receive this information.

But the dual deep structure cannot model the nature of architectural space itself. Let us for a moment take another approach in an attempt to build such a model. Consider for a moment architectural space in relation to painterly space and sculptural space in that all three are activities involving physical integers of some kind. In both painting and sculpture there is an inherent dialectic between the observer and the space, which is not initially present in architecture. Whatever real space there is in painting and sculpture, the observer is usually outside of it; his relationship to that space can be considered virtual rather than actual. Thus, any understanding he has of that space, whether perceptual or mental, will always be in a sense conceptual in that he can never experience the actual space.

Now in architecture all experience of the space is actual, and one cannot have a virtual experience per se. Here is a central problem for architecture: It is all real, and our relationship to it is initially actual. Now if one posits that all physical reality has inherent in it a capacity for an opposite or virtual state, because of the capacity of certain spatial relationships to present a potential continuum from actual to virtual, then somehow we must be able to take this factor into account in any model concerned with the generation of architectural space, again, because this dialectic between actual and virtual may be active even if not designed or consciously interpreted. It is precisely because the individual has the capacity not only to perceive and actually walk through the space but to conceive of that space that he will receive information which he will translate into conceptions. Therefore, if an architecture can make one more aware of the actual space, e.g., its actual height, and an individual might from this awareness have a more precise understanding, e.g., why it's high, of the actual space and the information--beyond high, e.g., as a transition, sequence, definition--potentially available in it, then this awareness might be made possible by the presence of an intentional virtual structure. In other words, since there is always the possibility in architecture of a virtual experience as well as a real experience, they both might be predetermined. However, in architecture as opposed to the other plastic arts this virtual condition must be built into architectural space; it does not exist a priori. While these qualities remain latent in any environment, they must be modeled in both a surface and deep structural description. The exact nature of that difference in the space, what causes this difference, how it relates to a set of formal regularities in a deep structure, and what are the capacities in the environment in certain juxtapositions to produce this difference is in the nature of work to be developed in the future. It is enough here to merely point to this difference.

- 6) This initial description instead of being considered as a single deep structure is now thought of as a deep dual structure.

From these two deep structures, each with an internal dual structure, it is hoped that one can create a condition of conceptual and perceptual parity through the acknowledgement of this deep structure in the specific environment. The deep structures will be raised to a level of consciousness and therefore contribute more precisely to a potential understanding of the environment. Again the production of this state of parity remains a problem of transformation.