SHOULD ARCHITECTURE MEAN ANYTHING?
Explorations into Approaches to Study Environmental Meaning in Architecture

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ABSTRACT: The way in which a way of life is translated into an architectural frame is often considered to be one of the main issues in environmental design. Any building belongs to an environment and forms part of a larger context; the environmental aspect of architecture however, is still 'blank'. Architecture should be more than a play of forms. An architect's task should be to plan or produce a meaningful environment. In designing environments, the major issue is to find valuable approaches to scientific studies. The problem of 'meaning' in architecture is hardly understood and there is much research to be done. In this paper, the origins of human-environment studies are presented in order to identify the importance of studying 'meaning' in architecture. In this way, previous studies on environmental meaning, semiotic and environmental meaning approaches are analyzed by contrasting them with a third approach: 'ecological'. The main focus is to concentrate on theories that have potential to develop an ecological approach. For this purpose, two different concepts, 'affordance' and 'existentialism' will be discussed in order to develop a model in which to study the ecological approach, and in turn, work towards drawing a conclusion for further research and application into environmental problem-solving. The analysis revealed that the semiotic approach has focused too much on the role of signs in communication, that is, in the transmission of secondhand experience. The Environmental Psychology approach, on the other hand, has accentuated individual differences in environmental cognition at the expense of discovering common traits in the ecological niche of the human special. The ecological approach is a far more difficult subject of study, but also a more enthralling one. It indicates direct experience of the organism and environment conformity process on the basis of 'theory of affordance'. However, the theory of affordance alone does not answer the question of how people become sensitive to existence meanings in the environment. At that point, theory of 'existential meaning' opens a new perspective to develop ecological approach. With this theory, it can easily be seen how meaning is inherent in a public form of life. Briefly this paper outlines a framework to develop an 'ecological approach' in order to study environmental meanings in architecture. It also proposes a beginning model on how this approach can be reflected into environmental design in order to create liveable environments.

Keywords – Affordance, Ecology, Existentialism, Human-Environment Relations, Meaning, Theory.

1. INTRODUCTION

Today, we experience a 'communication-gap' between larger parts of the public and architects. Life consists of changing activities that changing variable surroundings. However, a large conflict appears to exist concerning the built environment and how it presents itself to its users, and what people expect from it.

It is clear that Man's relationship with his environment is not as simple as it may appear at first sight. Recent research indicates that people always perceive things with a meaning. Meaning is a social phenomenon. It is the product of cultural and historical continuity; this is the reason why architecture must serve desired meanings. Krampen (1997) mentions that Pre-Renaissance settlements were highly charged with meaning. Following the Renaissance, settlement became increasingly 'hyposignificant', (i.e., decreasing in meaning) (Krampen, 1997). Finally, due to industrial production, modern settlements are only 'monosemic', (i.e., one-sided in meaning.), because genuine participation of the users in the whole process of

environmental design did not take place. Decisions for the design of physical developments in general were taken by architects, according to the continuing understanding of the common rule, expressed as 'form follows function', of Modernism; meaning that the physical form should fit the functional requirements.

However, recent scientific research mostly indicates that people in spaces or places do not behave in the way in which designers predict, or the way in which designers want them to. Instead, people sometimes refuse to act upon the environment in which the designers propose. Research also indicates that people need to use a built environment in a meaningful way and also deposit meanings upon the physical environment. Places transcend physical and functional requirements to which people experience meaningful events of their existence. Schluz (1975) argues that 'house' is a central place of human existence, '… the place where child comes to understand his being in the world and the place from which man departs and to which he returns.' (Schluz, 1975). That is why 'to be somewhere' implies more that location.

The problem of meaning in architecture is hardly understood, and there is much research to be done. It is difficult to say that at present there is a large-scale social science theory of environmental meaning available. For so many years, the studies on 'spatial meaning' have been on the agenda of architecture. But during the last decade, they gained acceleration by putting forth a new perspective as the 'ecological approach.'

In designing environments, the major issue is to find valuable approaches to scientific studies. In this article, the origins of the human-environment studies are presented in order to identify the importance of studying 'meaning' in architecture. Two different approaches to study environmental meaning are then analyzed by contrasting them with a third approach: 'ecological'. To draw conclusions for further research and application to environmental problem solving, two different concepts, 'affordance' and 'existence' are discussed to develop the ecological approach.

2. RECENT DEVELOPMENTS IN THE THEORY OF ARCHITECTURE

Recent research reveals that discussions over the nature of the relationship between environment and human behavior have relevance for architecture. It is through such research that peoples' psychological needs, as well as social and cultural values, have an impact on the development of built environments, just as their physical and physiological needs and capacities do.

During the 1950's and later such a view expressed widely that human behavior can be shaped by the design of the environment alone - called 'Architectural Determinism'. Modern Architecture tried to improve the lives of people living in poor physical conditions. In other words, architects believed that major changes in the environment determine human feelings.

In Modern Movement, the intention was to create an international style for each culture, each geography, no matter where they are located. The American architect Luis H. Sullivan's dictum, 'form follows function' became the basic principle of the movement. Movement assumed that a whole range of human needs can be reduced to a few universal, constant physiological requirements (Lang, J., 1987). The "model of a man" has been the basis for much architectural design. In this model the basic needs of human beings were taken under consideration but psychological needs such as security, privacy, territoriality; social needs as interactions; or symbolic aesthetics were not considered in the model. It is suggested that "modernism", with its abstract, classical forms, creates places in which the individual's reactions to the building, independent of any social or cultural processes, is the essence of the design approach.

It was TEAM X (consisting of 12 architects from 9 European countries, called itself 'Group for the Research of Social and Visual Interrelationships') who initiated the strongest opposition to this view for the first time. The team was concerned with the "complexity of city life" and the relationship between "people & the environment". The contribution of TEAM X to the development of more realistic theories of environment lines in their efforts to formulate the urban space, was based on a broad understanding of man's social, psychological and spiritual abilities. In their formulation, the group members emphasized 'meanings' that people attached to places. Their studies led many architects to speculate upon human behavior and needs. The current view of human-environment indicates that human behavior cannot be determined by the physical environment alone, but rather by two main factors; (i) behavior system, and (ii) affordance of environment. The first of these factors refers to behavior system that has to do with physiological abilities and socio-cultural characteristics of an individual. The second factor, on the other hand, refers to the opportunities that make possible the actualization of a human action.

The values of people are often different from the architects. Therefore, the concepts such as symbolism, personal expression, personalization, privacy, territoriality, environmental meaning… etc. reveals that the views and the needs of the users should be understood.

Architects, sociologists, and geographers in such interdisciplinary organizations as the Environmental Design Research Association (EDRA) in the USA, and the International Association for the Study of People and Their Physical Surrounding (IAPS) in Europe, began to undertake research on environmental meaning.

3. PREVIOUS STUDIES ON ENVIRONMENTAL MEANING: Semiotic and Environmental Approach to the Study of Environmental Meaning

To understand a society, it is helpful to utilize the concept of a triangle of meaning, in which there are three interconnected parts essential for complete understanding; the first being the idea, or culture; the second the word, or the language; and the third, the signified, or what is meant. In Western thinking, there has been a great tendency to think in dualistic terms, an either-or, black-or-white style of thinking which sets up dichotomies as a structure for understanding the world. How are we to try to find out about meanings at all?

Krampen (1997) addresses two concurrent approaches to study environmental meaning: Semiotics and Environmental Psychology. Later however, he discusses on ecological approach, and points out its potential contribution to understand environmental meaning, which is the main subject of this paper.

The first two approaches stem from different origins and traditions. They use similar terms, but these terms have different definitions to each approach. Krampen (1997) stresses that the semiotic approach to environmental meaning is sometimes confused with the linguistic approach. He argues that architectural and environmental semiotics is guilty of this confusion because they tried to emulate linguistic models.

There is a difference in the implication of meaning for two approaches. In semiotics, 'meaning is a property of signs, based on interpretation of a sign's signifier (its material body) in relation to its signified (or meaning) (Krampen, 1997). This definition of meaning is thought to be very technical and narrow. To social sciences on the other hand, term meaning seems very board and is in need of further specifications. Thus Rapoport (1982) proposes to differentiate between different 'levels of meaning'.

There is also a difference in the aim of two approaches. Krampen (1997) claims that

> "…the semiotic approach favors the study of synchronic semiotic structure, that is, of sign systems or codes in the natural or human environment, the approach of

environmental psychology is mainly concerned with environment- behavior relationships."

Both approaches use different methods for their studies too.

Semiotic approach from the beginning has always dealt with practical problems, for example the Greek medicine semiotics were the science of symptoms. "New wave" of semiotics of architecture dates back to post World War II 1950s in Italy where a massive building boom in the big cities began to deface the urban image.

According to Krampen (1997), Preziosi's (1986, 1979a, 1979b, 1983) work on the semiotics of architecture could be considered the most advanced in the study of environmental meaning from a semiotic point of view. Preziosi criticizes the 'linguistic fallacy' of early attempts looking for parallels between language and architecture. There is an agreement with Umberto Eco, who applies 'Componential Analysis Method' (Eco, 1972) of semiotics to architectural objects to analyze the structure of architectural meaning.

It appears that the concepts in the field of spatial and architectural meaning have become more sophisticated during the last few decades. The main reason for this is the discovery of multi-codal and multifunctional complexity of spatial meaning.

On the other hand, studies on spatial meaning in environmental psychology began in the 1960s. However, studies on environmental meaning are not as easy to find, because that is not a main trust of research in the field. As mentioned before, there is at present no 'large scale social science theory' of environmental meaning available. Moore (1979) claims the questions of environmental meanings are sporadically treated, however, within the context of cognitive theory under the heading of 'environmental cognition'.

Cognitive psychology is concerned with the workings of the mind. How we think, feel, remember, or where our symbolic knowledge comes from, how it develops or forms, are all issues of cognitive psychology. As a result, over time, a person's interaction with their physical environment causes psychic and mental state belonging to the area of cognition.

Culture plays an important part on environmental cognition (see Moore 1972). In a continuous process, perception and human behavior are results of the mind receiving, processing, storing, and producing environmental information. In this process, a person's organization of meaning continues as a part of his/her culture.

"How are environmental meanings and their importance learned? How are likes and dislikes developed? Why are some places better remembered than others? These are all questions involving the basic cognitive process of learning and remembering." (Lang, 1987). In his book, "The Image of the City", Kevin Lynch (1960) develops the cognitive mapping methods to understand the image of environment in people's minds. He makes people draw mental maps of their living environment and analyzes what are the most important elements which play a role in imposing a pattern in mind.

Methods of the environmental psychology approach have become increasingly sophisticated as in the semiotic approach, as the problems have increased in scope and variables.

As a conclusion, it can be pointed out that the semiotics approach has paid too much on the role of signs in communication, that is, in the transmission of secondhand experience. On the other hand, the environmental psychology approach has accentuated individual differences in environmental cognition at the expense of discovering common traits in the ecological niche of the human species.

4. AN ECOLOGOCAL APPROACH TO MEANING: New Perspective to the Study of Environmental Meaning

The Ecological Approach is a new perspective in the study of environmental meaning. However it is not a completed view as it proposes a new and enthusiastic perspective to possible solutions. This approach is presented in Gibson's book called "ecological approach to perception" (Gibson, 1979). Ecological approach consists of a set of objective data or categories of perception and cognition. That's why it basis on reciprocal relationship of the organism and its environment more adequately.

In the ecological approach, the first and most important concept to identify is 'ecology'. But what is ecology? The term ecology is first used in biologist Haeckel's study in 1988 'General Morphology of Organisms'. He defines the term; "Ecology is the general science which studies the relationships of the organism and its external environment". Krampen says:

> *Would an ecological approach to the study of environment be the investigation of the organism's relationships with its surrounding "space"? But then, what does "space" mean in an ecological perspective? Certainly not the ghost-like line grid of the three-dimensional coordinate system; that is intellectual space. Ecological "space" is lived and moved-through by the organism.*

(Krampen, 1997)

That is why we are forced by the ecological perspective to consider ourselves as a part of our human environmental niche. The term 'habitat' refers to the set of places where a species lives, but the term niche means how it lives. We should not subjectively remove from the environment in which we see the meaning of things directly. This view can be best put forward in the Gibson's Ecological Approach to Visual Perception (1979), in which he introduces the 'theory of affordance'. He argues that a whole set of affordances typical for a given species may be called its ecological niche.

4.1 The Theory of Affordance

Perception is to transform 3-dimensional, spatial and time relations to the "meaning". In other words, it is loading meaning to the "image". Up until 1950, scientists have tried to understand visual perception as a process in the brain. Psychologists always evaluate their studies according to action-reaction relations. In this view, the effect of environment has been neglected, because during the theories of perception, the environment always had an unchanged meaning for the scientists. Traditionally, psychological theories have drawn a distinction between the natural world and the cultural world. But later, James Gibson developed the ecological approach (1979).

According to the ecological approach, what we perceive are affordances of the environment. The concept of affordance, has been developed by James J. Gibson, and is explained as "The affordance of the environment are what it offers the animal, what it provides of furnishes, either good or ill." (Gibson, 1979).

Gibson states his concept as a radical departure from existing theories of value and meaning. His theory begins with a new definition of what value and meaning are. He argues that "values" and "meanings" of things in the environment can be directly perceived. Gibson says; "The perceiving of an affordance is not a process of perceiving a value-free physical object to which meaning is somehow added in a way that no one has been able to agree upon; it is a process of perceiving a value-rich ecological object. Any substance, any surface, any

layout has some affordance for benefit or injury to someone. Physics may be value-free, but ecology is not."

When we look at the natural environment, it is easy to identify that different animals have different ways of living. This is because environment offers many ways of life. Gibson states, "…the behavior of observer depends on their perception of the environment…." (Gibson, 1979). According to him, what we perceive when we look at objects are their affordance, not their qualities.

According to Schluz (1965) we are highly dependent upon seeing our surroundings in a satisfactory manner. We do not only have to find our way through the multitude of things, but we also have to 'understand' or 'judge' the things to make them serviceable to us. We are acting through spontaneous perceptions. We do not try to classify or analyze our impressions. That is why no perception is, in reality, completely free from an emotional content. Cultural, social and personal factors determine individual's possible organization of reality. Things are always perceived with a meaning and we only perceive what we expect to see. Science alone does not give us a complete picture of our world of perceptions and actions, because it does not include environment. Human beings have a perception capacity, and this makes them dependant on their environment.

In this process, people's cultural backgrounds, which took place in their perception process, play an important role. As Hall mentions; "An affordance description encompasses both natural and cultural features of the environment." (ed. Heft, 1997). Rapoport argues that meaning mediates the relation between built form and behavior. (Rapoport 1976, p. 261). Meaning cannot stand on its own, nor does it seem to be generated from other meanings or meaning system.

Krampen (1979) claims that "The ecological approach to the question of environmental meaning seems to render more concrete and even the existential question students of semiotics & environmental psychology have been asking for many years about the meaning of architecture and urban development". But the theory of affordance alone does not answer the question of how people become sensitive to existence meanings in the environment. At that point, Norman Schluz's theory of 'existential meaning' helps us to develop an ecological approach. However Schluz's theory goes through the architectural symbol system and it is clear to see that it has same theoretical base as the theory of affordance. Schluz (1975) argues that there are existential meanings which are not something arbitrary added to man's daily life, but inherent in daily life, consisting of relationships between natural and human properties, process and actions.

4.2. The theory of Existentialism in Architecture

In philosophy, there is more than a little difficulty in saying just what existence is. Is it perhaps the experience of being oneself, of being identical with oneself? This is a continuous discussion in the field of philosophy that is out of the scope of this article. The question of what we mean by 'existence' in architecture is put forth here. In his book 'Existence, Space and Architecture', Schluz (1975) argues that culture and mentality are interdependent aspects of the same totality, that is, 'existence'. According to him, any individual is born into a system of meanings, which he calls 'existential meanings'. Existential meanings are not something that is arbitrarily added to man's daily life, but such meanings are inherent in daily life.

Schluz describes personality as a system of roles determined by the individual's participation in different interactions (Schulz, 1965). We have ordered behaviors to play our roles in society. These behaviors are feedbacks of tradition, social structure and culture of any

society that are parts of symbol system. It is the symbolic content which gives the concrete things their social meaning.

The objects, or the form we assigned to the world, are expressed in our behavior. Objects are part of a system that describes the world and each object has different values in society. The environment is divided into 'physical', 'social', and 'cultural' objects. Schulz mentions 'the cultural objects (ideas, works of art... etc) are known through their social or physical manifestations, while social objects are known through the study of behavior (physical manifestations). The physical objects, finally, are known through observation, and may be reduced sense-data or phenomena.'. 'To grow up signifies to become aware of meanings.' (Schluz, 1975).

Schluz points out that, any individual is born into a system of meanings, which he comes to know through its symbolic manifestations (Schluz, 1975). At that point, art and religion have common roots and together serve the purpose of making man aware of existential meaning. That is why meaning is not arbitrary but inherent in daily life. Any meaning is revealed in a particular place, and the character of the place is determined by this revelation (Schluz, 1959). These places are called 'existential space', in which any human action has a spatial aspect. Existential space is not identical with geographic space, as defined in purely physical terms, but is determined by experienced properties, process and interrelations. Here, it is important to identify the difference between perceptual space and existential space. Schluz separates these two terms by pointing out that perceptual space varies continuously, where as existential space has a relatively stable structure that serves as a frame of reference for the transitory perceptions and turn them into experiences.

There are 'public' and 'private' existential spaces. Schluz (1975) says "…participation in a society, among other thins, means that one's private existential space has certain properties in common with the public existential space. It thereby becomes possible for the individual to use the environment in a meaningful way." In this revelation, existential meanings manifest themselves as 'characters' and thus, existential spaces are the hierarchy of interrelated characters. For this man only gains an existential foothold if he manages to give his place a concrete character. Here Schluz's argument is important:

> *"For architectural theory it's important to understand space in concrete terms rather than as an abstract system of semiological relations... Architecture may be defined as a concretization of existential space."*
>
> *Schluz (1975)*

Schluz interprets history of architecture through this angle. He claims that there are two parallel histories; (i) the factual history of building and use, (ii) ideal history of possible symbolizations. According to his interpretation, cultural developments do not mean that the world gets better or human become happier, but certainly that man's possibilities of choice are augmented. History, thus, may be defined as a growth of accessible meanings (Schluz, 1975, p 433.). Also, it should be evident that architectural history goes parallel with the psychological development of the individual, and meaning is a psychological problem that should be questioned in a public form of life.

As Schluz says "…All the existential possibilities experienced during history are at our disposal, but either we are blind to them or we select one narrow set of meanings, believing that we have discovered absolute truth." (Schluz, 1975). That is why a meaningful environment forms a necessary and essential part of a meaningful existence, and much research to must be done.

5. CONCLUSION

How a way of life is translated into architectural frame is the main question that modern architect's come face to face with. Although any building belongs to an environment and forms a part of a larger context, an environmental aspect of architecture is still 'blank'. Architecture should be more than play of forms. An architect's task should be planning or producing a meaningful environment.

The meaning system is part of the spatial organization that occurs according to time. When environments are being designed, four elements are being organized; *space, meaning, communication* and *time* (Rapoport, 1977). Only if existing meaning in the environment is assimilated by the people and conveyed to the spaces can we talk about livable and sustainable environments. Bringing order into certain relationships between man and his environment should be understood as bringing meaning to the environment.

From an architectural point of view, it is important to become sensitive to meaning and make it clearly manifested to make a socially valid perception possible. Different meanings are revealed in particular places. The task of architecture must be in creating places with a meaningful character. Schluz mentions that the true purpose of architecture is to help make humane existence meaningful; all other functions, such as the satisfaction of mere physical needs, can be satisfied without architecture (Schluz, 1975).

Three different approaches had been questioned during this article. The semiotic approach has placed too much importance on the role of signs in communication, that is, in the transmission of secondhand experience. The Environmental Psychology approach, on the other hand, has accentuated individual differences in environmental cognition at the expense of discovering common traits in the ecological niche of the human special (Krampen, 1997). The ecological approach finally, seems a far more difficult subject of study, but is also a more fascinating one. It indicates direct experience of organism and environment conformity process on the basis of 'theory of affordance'. If we add Schluz's argument to that approach, we can easily see how meaning is inherent in a public form of life. By combining these two theories under the heading of 'ecological approach', we can have a much more potential contribution to understand environmental meaning.   All this may be reflected into environmental design in order to create livable environments.

Buildings and cities are 'instruments' 'museums' and "mirrors" of time. They enable us to see and understand the passing of history and our presence. That is why the goal of design should turn from creating only physical spaces to develop programs to find a way for human and environment relations. Architecture should mean anything…

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