Design Method and Deep Structures of Geoffrey Broadbent

Mohammad Rezaei Afkham

M. A., Department of Architecture and Urban Planning, Zabol University, Zabol, Iran

Abstract

Nowadays, design is not considered as an unconscious fact but it is regarded as the result of endeavor, search, recognition, evaluation, and exact information processing. In design, origin, goal and destination should be known. The importance of the study is rooted in knowing that how a designer starts design and how select his/her approach among design approaches. In the present study, it has been attempted to explain various design methods in the perspective of some theorists such as Christopher Alexander and Geoffrey Broadbent through general, comprehensive and organized information. In this regard, a qualitative approach has been used to theoretically discuss architecture using some examples. After investigating four design methods of Broadbent, as the greatest design method programs, the place of Iranian architecture and Iranian architects has been studied through finding the relation of these methods with Iranian architecture.

Introduction

Different architectural designs are the result of different design methods and different design methods are the result of different thinking ways. Through a short view to such classification of design methods during various years, the methods proposed by Geoffrey Broadbent are encountered. He designed methodology and claimed that all architectures in every period with every method design can be put into his classification. That is, all architects rely on four certain ways of form generation, including pragmatic, iconic, analogical, and canonic.

In this regard, the present paper has tended to investigate four methods of Broadbent and specifying his approach towards this classification. The way of putting Iranian contemporary architects in this classification has been also analyzed.

Design is an endeavor to innovate solution before implementing them. Mostly, design is regarded as an analytical process while it needs analysis, evaluation and selection as well [5].

The stage of design in the process of architectural design act, the architecture of perspective, or urban design is a stage in which potential solutions of design considered in the stage of recognition are innovated (or selected out of a set of solutions). The act of design can propound new problems and lead to redefining the main program but its main attention has been focused on the definition of buildings, perspective and urban design and/or on the environment in general.

Professional designers in all fields of design use the principles of design to find the answer for their questions. The principles of design are not realities, rules or fundamental theorems that determine the conditions and relations. The design principles are the base of the regular design [5].

Maybe, one of the greatest design method programs, particularly the programs for using in architecture but in fact, with many genera qualities, have been developed by Geoffrey Broadbent (1973). Maybe, the method of Broadbent is not really a perfect method but it relies on the four ways of design form generation which are called pragmatics, iconic, analogical, and canonic by Broadbent. Studying the history of architecture, Broadbent reached to his classification and showed how each of these fur techniques have been used in different times Broadbent asserted that in perfect design methods, designer uses all the four methods in an organized process and then, one of the generated solutions have been selected. There is no evidence indicating that designers worked in this way but his four techniques are worth to be investigated and add useful data to the set of designers’ tools to restraint and guide the thought of design [6].
The four design methods of Broadbent are introduced as follow:

Pragmatic:

Pragmatic design such as selecting from a catalogue, is merely the use of existing construction materials and methods which are generally non-innovative. Since designer is dominant over weaknesses and strengths of traditional and conventional techniques, this method has surely its unique applications. This approach is traditional, conservative and accordingly, less-risky and it is unlikely to lead a great failure. This approach is practically a manual-like approach and unlikely leads to the creation of an extraordinary design or ideas. However, this method can be valuable to identify a range of possible forms for all or a part of a technique plan [6].

In an example provided by Broadbent in his book, using mammoths’ skin by hunters to create a space between rocks through drawing the skin over the rocks has been considered as a part of this category.

Iconic:

This method is more conservative than pragmatic method since designer is practically asked to imitate available solutions. It seems that constructors who build and sell buildings use this method by repeating their conventional species without considering the conditions of place or external constraints of design land. Conrad Jameson (1971) criticized architecture for the fact that they begin their design with a blank paper as if every problem is totally new. Using iconic design method, designers can start with the available solutions and adjust them for responding to new conditions. Such a fact can lead to more stability and hinder common mistakes of designers in not accounting the intelligent way of problem solving in local designs as if there is the possibility that such a method causes some errors by itself [6].

Canonic:

This method relies on using principles such as checked grid, rational systems and like that. In Renaissance, classic architecture style and their alternatives provided some opportunities for this approach and it was seen that how Vitruvius and later Albert formulated such principles. In modular time, Lu Corbusier can be considered as a person who tried to generate criterion principles maximizing anti-iconic design. Even more recently, industrial architecture relied on modular order and standard constructional components have created typically proasy and tedious results from this method [6].

Analogical:

This method is the result of using analogies with other areas ad fields by designer to create a new way for structualizing the issue. The view of this fact is based on a method which has been generally recommended for creative thought. Undoubtedly, there are clear examples for significant use of analogical thought in design. The application of organic forms in architecture which are useful in creating beautiful and efficient structures is the specific characteristic of architect/engineer Santiago Calatrava. His booklets contain numerous studies of the human body that he frequently suggests them due to their high flexibility of sustainable shapes of alternative structures to bear various loading patterns. Analogies may be used to organize through achieving various components of design solutions. The description of Richard McCormak about Shabestan space of upper story in Fitzwilliam Chapel is free from “floating” low structure. In this point, designer group saw the chapel in the shape of a ship and finally designed its making details in a significant and boat-like way. In fact, analogy of natural and organic shapes has previously in all design scales even in urban design. In a most recent work, Johansson architecture explains how to use analogy with electronic circuit. He even mentions chassis, harness and components in his buildings.

Creativity:

In fact, it can be said that Broadbent considers only his fourth method creative and considers the other three methods as the result of successful or unsuccessful copies.

All designs are not the result of creative thoughts. Pragmatic, iconic and canonic approaches of design proposed by Broadbent have declined the process into a custom-based act. On the contrary of this proposal, there are allegorical design and analogical design in which creative thinking is the axis of design. Mostly, custom-based processes are appropriately discerned. Although John Stuart Mill may accurately commented about the fact that “compulsion is a tradition preventing advancement”, leaving tradition is not caused to advancement by itself. In architectural design, for example, the goal of modernism has not been always to valuable results [5].

Creative view is the prerequisite of innovative problem solving. There are various processes that help convergent and divergent generation. Broadbent (1973) introduced three types of techniques leading to the growth of creative thinking. These techniques which can have individual or group origin include reconsidering lists, interaction methods and psychoanalytic techniques. Reconsidering lists are of the simplest techniques including words and patterns that briefly investigate the points expected from new suppositions. These lists can
discuss content issues or trends which are, in fact, the items related to the constructed space and the process of design. As an example of a content issue, it can be referred to the question asking that “if there is enough space for input?”

As Broadbent (1973) introduced, concept of Osbome’ Vice Versa Technique is an example of the second technique. In this approach, architects use the opposite technique of standard process for problem solving and testing. It is the same process of guessing and confirming (or denying) proposed by Popper (1962).

For instance, Broadbent narrates the utterance of Summerson (1949) regarding Lu Corbusier as follows:
“"We told him that park is an urban space for recreation and he answered, “No way, in the future, instead that park is placed in city, city will be placed in park”.

These evolutions are in accordance with new solutions of design but as the followers of Lu Corbusier found in many cases, being new is not the synonymy of success [5].

Broadbent And Structuralism:

A brief investigating on Broadbent’s books and studies reveals that he has always sought to classify the factors around him and create a structure for them.

The question which is not answered by Hegel’s collective soul is that why in different cultures, stylish similarities are sometimes appeared in cultural works? There are various wettings that briefly explained structuralism among which, it can be referred to the writing of Hawkes is one of the most considerable type. Firstly, meaning systems have their specific organic existence. Piaget, for example, considers the characteristics of each structural system as self-supporting, self-regulating and self-changing. The language of such a system is English. In its limiting, English language defines a clear but pale conceptual domain. Due to coherent and organized principles, this language does not refer to anything but its own system, it is self-regulating and is especially changed based on new conditions. For example, new concepts created due to computer evolutions for some terms such as mouse, surf and memory means that language is self-regulating.

Secondly, they have not meaning as much as the meaning existing in the relation between the existences. According to the theory of Saussere, words find meaning just like its components (e.g. words in alphabetic system). Internal network of these relations and the generality of their structural system form language while micro system of language/parole and phonemes or sounds- are the image of material figure of language system.

As Caws stated, “that specific characteristic of each word is its difference with all other words and such a difference is merely comparable”. It should be noted that for perceiving concepts, no external resource of language system is required; concepts are obtained from lexical relations, it is arbitrary and depends only on the agreement of the society to which such concepts are attributed [2].

Generally, structuralism believes that “it can be stated that the real nature of things is not related to them but to the relations created among them and then perceived by human”. The world is created through a language which is a structure from meaningful relations between optional signs. Therefore, structuralisms state that in linguistic systems, there are only differences but not positive statements.

Structuralists emphasize on codes, contracts and processes which cause the comprehensibility of a work, i.e. creating meaning before social attainment. Structuralists, as a method, discusses “conditions and implication positions” but not content. However, structuralism is rooted in linguistics and anthropology. It is also a multidisciplinary research regarding a text with specific structures and processing such as linguistics, psychology, and metaphysics, rational, social, and rhetorical. Languages and structures are changed into the main resource of description and explanation rather than being innovative, founder or self-aware.

In the following explanation, although an architectural work is placed instead of a literal work, the intent of structuralism is revealed in architectural domain:

Structuralists apply linguistics as a method and try to create some “grammars”; that is, a list of systematic elements and the possibility of their combination and mixture- which create the form and meaning of literal works [9].

Therefore, it can be found that structuralism seek to create grammar, what Broadbent does with his surrounding phenomena and tries to create a systematic list of them.

Deep structures of broadbent:

The idea of deep structure is reminded form the theory of Chomsky about the creation of language. Chomsky believed that mind is inherently able to organize the world and hide it in the language. He extracted from deep structures a set of scientific methods making sentence. This theory has been used to explain architecture generation as well since architectural forms should be also created from human mind’s inherent biases just like the form of language universality. Broadbent and his colleagues have introduced four mental biases for these structures: a structure as the human activities party, a structure as the controller of climate, a structure as cultural symbol, and a structure as sources consumers. These structures suggest a base for historical evaluation of forms though a way beyond a certain cultural area. Another idea of willingness to deep structure is that mind expresses some biases in geometric form and in a visible boundary.
Iranian Architecture During 1981-2001:


In this book, for each intellectual flow an architect is also introduced. It has been attempted to put the place of Iranian contemporary architects in the classification of design methods of Broadbent through a brief study.

According to the definition of pragmatic design, the first flow (culturalism) and the result of their architecture s placed in this category. Originalists, Traditionalists and Historicists can reach to less risky architecture which is unlikely leading to a great failure through dominance over weaknesses and strengths of the situation of traditional and conventional techniques and using old constructional materials and methods.

In fact, the mosque of Sharif University constructed by Hojat and Nadimi can be mentioned as an example in this regard. In this book, Hojat is of traditionalisms and Nadimi is of Originalists.

In another classification including modernists, the works of this group can be considered as an effort to generate the criteria principles that increase the possibility of anti-iconic design. Through such a definition, the works of his group can be considered of canonic design which relies on using principles.

The sentence of Mirmiran belonging to Modernists is as follows: “... for me, an architectural work has always both a universal quality (i.e. time and space-free) and a certain temporal and spatial quality” (architecture and urbanization, no. 31 and 32, p. 142).

The design of Islamic Republic of Iran’s Embassy in Bangkok, Thailand and the Consulate General of Islamic Republic of Iran in Frankfort of Mirmiran’s works can be considered of canonic design.

Fig. 1: Islamic Republic of Iran’s Embassy in Bangkok, Thailand: architect: Mirmiran (Architect Magazine, 52)

Darabad Museum of Contemporary arts can be also regarded as of canonic design whose intellectual flow belongs to Expressionists.

In the classification of this book, Saremi is of Post-modernists and Shaykh Zain-Ul-Din is of traditionalists.

The architectural works of Saremi can be regarded both iconic design and analogical design. Some works of Saremi are more conservatism than pragmatic design since in these works, he practically imitates available solutions but some other works of Saremi can be regarded of analogical design.

Through a short view on the architectural works of Shaykh Zain-Ul-Din, for example, the Embassy of Iran in Tokyo can be regarded of analogical design.

Fig. 2: Islamic Republic of Iran’s Embassy in Frankfort: architect: Shaykh Zain-Ul-Din (Architect Magazine, 34)
REFERENCES


