Investigation of the Meaningful Tools in the Theoretical Framework and Adaptation of These Tools in Proportion to the Architectural Design

Mostafa Kheyri

Master of Architectural Engineering, Islamic Azad University, Tehran Branch, Tehran, Iran.

Abstract: *The scope of metaphors can be evaluated from different perspectives, but no area completely covers metaphor topics. Metaphor in all area of the human thought is an instrumental and not cognitive one, which makes it difficult to recognize metaphors. Metaphor is not the dominant produced by human beings, but it is in conjunction with its essence and produces and helps the man in the development of human science and knowledge. Therefore, there is not much effort to explain this in different areas. The lack of valuation frameworks and metaphorical understanding of areas other than rhetorical science makes it difficult to explore and transfer between areas for its development in the architecture industry. In the architecture, metaphor is only applicable as an item to be considered after the design and is used as a trait for a specific building. A structural approach to a metaphor for the production of a new architectural product due to the lack of necessary information in the architecture and the need for the study of the researcher (architect) in the field of rhetorical sciences and achieving adequate maturity to explain the solution in the area of interest (architectural design process). Therefore, the purpose of this research is to examine the meaningful tools in the theoretical framework and adapt to these tools in line with the architectural design.*

Keywords: *Architecture, Metaphors, Structural approach*

INTRODUCTION

Architecture as a manufacturer tool of the human environment moves towards a path in which the two-way communication with the mind of the audience is beyond its main priorities. Although thought, meaning, concept, and theme are involved in a complex mechanism, it leads to the production of meaning in public culture and the reality of a people with a profound concept and diverse thoughts. The lack of tools and roots of the semantic and constructive meaning in the design of an architectural work is also one of its weaknesses. The man as a creature influenced by the surrounding environment seeks to explore meanings and communicate with his/her environment. By defining such a space, the problem of moving towards achieving the meaningful tools begins to clarify the meanings and perceptions through the design and the environment. The main variables of the above problem include the public mind and popular culture, the designer and the design process, without meaningful tools. Metaphor is considered as a powerful tool for answering the above problem. The metaphor is a creative and innovative tool and full of various interpretations. The emergence of metaphors in the speech and writing is an illegal act but is inseparable from all the legal languages. According to this definition, even thinking is a metaphorical expression. How to use

and the emergence of metaphors in more profound semantics is a matter of moving towards the larger research and purpose to clarify the problem space. The purpose of this research is to examine the meaningful tools in the theoretical framework and adapt to these tools in line with the architectural design to reflect a particular message in the ritual-dramatic climate and historical context.

Theoretical Foundations of Research

1. Metaphor in literature
1-1. Definition of metaphor

The metaphor means something to be borrowed in terms of word (Abedi, 2007).

In fact, the metaphor is borrowing words rather than the other word, and in the "Persian literature", the term "word" is used instead of the same term, despite the metaphorical representation, in fact, is the compact and summary simile, which remains the only image. In addition, the poet in the simile claims the similarity of two phenomena, but in the metaphor, there is the same claim of the two phenomena. These two features make the metaphor more artistic and fanciful than a simile (Soltani Moghaddam, Metaphor).

The metaphor is used in the following cases:
- When we try to return words from a subjective or objective subject to another.
- When we try to show a subjective or objective subject as if it were something else.
- When we concentrate our focus from one area to another (with the hope that through the development of the subject and with the intention of this method, we can clarify the subject) (Anthonys, 2012).

1-2. The pillars of metaphor
- Vehicle: The initial and apparent meaning
- Tenor: the inner meaning and desired by the poet
- Point of similarity: The relation between the first word and the desired word
- Pseudonym: A word that is metaphorical (Soltani Moghaddam, Metaphor).

2. Metaphor in the process of architectural design
2-1. Design process

The design process involves a series of complex mental activity that occurs in the path of identifying the problem until finding a solution (Bayat and Moghaddasi, 2014).

The designer is able to consciously provide a better background for his or her mental activity, given the skill and experience of the previous design issues. This means that it can direct its thoughts towards the concept that is called the origins of the concept. Analogies and metaphors are two examples of these origins (Davoudi and Ayatollah, 2008).

The design and architecture process has always been concerned with two fundamental categories: form or shape, and concept or meaning. These two categories form the nominal and semantic aspects of architecture, respectively (Bayat and Moghaddasi, 2014).

The form in music, architecture, and poetry shows the mental dimension and the only way to convey a specific concept from the creator to the user and audience (Alipour, Khakzad and Bab al-Hawaej, 2013).

Therefore, metaphor is the origin of the concept, which is one of the methods that can help the architect and creator of the work to reach the specific concepts in the form and transfer them to the audience (Bayat and Moghaddasi, 2014).

2-2. Variety of Concept

In order to determine the position of the concept in architectural design, the five types of concepts are introduced as follows:

- Analogy (look at other things)
- Metaphorical (look at abstracts)
- Essences (look beyond program requirements)
- Programmatic (look at the requested needs and goals)
- Ideal-oriented (look at absolute values) (Khaybanian, 2010).

2-3. Metaphorical Concept

Of the different types of concepts, it is only the metaphorical concept that we examine. Metaphors describe the relationships between objects that are more abstract than objective. It can be said that similes and metaphors make it possible to provide communication between patterns.

Charles Moore states this matter like buildings as Geode, and extends this simile in a scenario like this: Coastal apartments in Sihouns Allies, Georgia represent such a picture (like Geode). Outside is massive, but inside, is a collection of colorful, decorated walls surrounding the interior space. Geode is a conceptual metaphor (Khaybanian, 2010).

The root of metaphor (the basics of accessing metaphors)

The definition of metaphor involves the transfer of meaning from one area to another. The root that the metaphor receives from it is more abstract; the formed metaphor is richer and more capable of transforming into a viable and dynamic metaphor.

The origin and destination of a metaphor can be chosen in general from any area, but only a small fraction of these metaphors can be evaluated as a metaphor in the literary area; because in many of these areas, the distance between the origin and the destination is long and the perception of the individual cannot be realized over the time. It can be said that other metaphors outside the common literary area are capable of transforming into artistic-architectural metaphors. The mysterious and abstract nature that is well-known in the art-architecture literature is the main symptom of these metaphors.

In general, the areas where metaphors, in particular, artistic-architectural metaphors, are taken from, include the historical, cultural, background, conceptual-philosophical, scientific roots and many other well-known areas of human societies. For example, even the area of human knowledge and science is full of metaphors, and sometimes it is, either intentionally or unwittingly, the main axis of producing metaphors in other areas, such as social-cultural or architectural areas.

2.4. Recognition of the design process of architecture in relation to the origin area (viewpoints of the research area of design trends).

Metaphorical and simile method (McGinty's division)

Metaphors and similes, such as analogies, determine the relationship between phenomena. According to McGinty, when the relationship of the design with a certain phenomenon is an abstract relationship, in this case, this design method can be called metaphorical or simile design. The analogy method seeks a direct and accurate relationship between the proposed scheme and the specific phenomenon, but the metaphor and simile method are followed by an indirect and parallel relationship (McGinty, 1979).

Analogy or metaphorical method (Broadbent's division)

Instead of starting work or controlling materials like those used in the application-oriented, in this method, the designer first imagines the design by phenomena analogy that is beyond the scope of the architecture, then it goes into more detail to execute it (Broadbent, 1973).

Bryan Lawson says: "In this method, the designer uses schema analogy in other areas to create a new solution" (Lawson, 1980).

Creating a form in this method with visual analogies is to find a structure for the project that is similar to the other existing structures or natural factors. Here, the basis of the work is the analogy. An analogy can be done with examples of architectural scope or even outside of it. Broadbent says a metaphorical method in this way. Therefore, this method is shaped by the designer as a result of comparing the backgrounds and other texts with architecture. The designer constructs the problem with this comparison in a new way (Lawson, 1980).

Regionalism/Contextualize (Urormaaka's perspective)

According to Urormaaka (2003), in regionalism methods, the architecture tries to fit with features that are not necessarily derived from the direct environment around the project but is a function of its regional or national characteristics (Uremaka, 2015).

Contextualize is also the designer's entry into different areas of design and a kind of response, in line or the opposite direction of information obtained from the destination area.

2.5. Design approach (general classification of architects tendencies in using metaphors)

At best, it is possible to convey a clear message in architecture with a particular conceptual transfer and literal translation of three-dimensional visualization of an object or referral to something, but the architectural has never been mixed with such an attitude. Architecture is beyond the direct induction of a limited image or concept. Architecture is not realized except in the presence of people in it, living and spending time in the enclosed space. The use of the above approach leads to reduce the architecture to the sculpture and the branch of visual arts. The architecture has a life and its language is mixed with the words of time and interpretation, so the architecture represents the weakness of the mere concepts and powerful producers of interpretations. Architecture is the constructor of meaning. If there is no more abstract architecture and direct referral, it can be more interpreted, and if the design interpretations have a hidden and certain concept, then the attractiveness of the building will increase. Designing on the basis of concepts, we can be faced with different layers of meaning, whereas the design to achieve a particular meaning limits the scope of these semantic layers.

2.5.1. Literal transfer

The simplest and most convenient way of using metaphors is to orientate the design path towards a meaningful literal transmission with the focus of communication with the audience, often appears in a definite context with specific visual or socio-cultural characteristics that appear in the mind and the audience's definition of the environment, a tendency toward a particular concept. For example, a platform is an important event or symbol of an influential element in history, as well as an environment that guides the mind of the designer directly to a specific theme and gives a comprehensive and complete answer in his mind. Also, among a lot of stone and concrete walls, perhaps a tree is the answer to the design problem. It is also the nature of the project, or the designer's orientations and goals, in the context of the literal translation of metaphors or specific concept.

2.5.2. implicit transfer in the design context

In this interval, the designer chooses a metaphor from the context and the environment and/or his perception and intuition as the starting point for designing or answering the problem, but here, the ultimate goal is not the designer's communication with the audience, but merely the development of a particular theme in its design. His design process begins with his metaphorical tendency or the entire design process is a demonstration of a metaphor. The presence of metaphor in this tendency is not the image design, and the existence of metaphor can only be found by studying the design process. The final volume and product have their own personalities and have no tendency to refer to

the specific items. It often shows an exciting path and drives the mind into the wider sense perceptions. One of the projects that have been shaped by the designer's orientation is the Wexner center and Peter Eisenman.

2.5.3. Combined transfer in the design context

In this tendency, a design based on the metaphors, the designer begins with the theme or the basis of the metaphorical design. Each design is based on the designer's view and, through the powerful metaphorical presence, chooses two or more specific themes and tries to create the subject. It is often the main metaphor for the hidden design, whose design process is entirely structured, based on their interactions and the presence of these themes, but the implicit transfer of these metaphors to the audience is not the main purpose and forms part of the goal. First of all, it affects the design process, but unlike the implicit transfer, the designer, through the use of metaphors related to the main subject, in detail or in different parts of the scenario, proposes movements with the nature of the literal transfer of metaphors. The designer's side reveals to the audience that he understands his original design and metaphor. In this approach, the audience plays a key role in the design scenario and is part of the design issue. Therefore, the designer, by placing the keywords and semantic elements familiar in his complex design, guided the reader to an interpretation of a fraction to the whole. For example, we can refer to the project of the Jewish Museum in Berlin, designed by Daniel Libeskind.

2.6. The form-based approach in the metaphor-based design

According to the studies in the general categorization of using metaphors in design, metaphor-based design, the approach of designers in using and direction to form can be classified into two general categories: A) Symbolic generalization, B) indexical generalization.

In symbolic generalization, the designer tries to relate and use literally of forms or form the elements of the metaphor constructor in its design process. Considering the design approaches mentioned, this viewpoint can be considered as a literal approach of metaphor. This view of metaphor selection often has profound dependence on the visual features or metaphor's ability to express itself visually.

In indexical generalization, the designer often attempts to transform metaphors into a new and vital nature beyond pre-emptive or attempt to transfer concepts from one area to another (by recognizing the crucial structural points in the body of the metaphor and its extension to another pattern in the destination area).

2.6.1. Functional features of metaphors

To analyze the metaphors with literary-metaphorical tools (interactive theory and cognitive theory of metaphors), two qualities can be set for metaphors.

(A) Metaphors with conceptual quality; and (B) metaphors with visual quality.

A. Metaphors with conceptual quality: when analyzing and generalizing metaphors in the form of sentences and literary traits, a set of metaphors beyond the original mental image attempts to clarify and generalize a type of conceptual or structural policy of an image. The description of the metaphor brings a complete picture of the processor. Cultural or historical metaphors or metaphors in the non-linguistic areas such as architecture (contextualize, etc.) are among these metaphors.

B. Metaphors with visual quality: many of the metaphors, when expanding meaning in theoretical frameworks beyond all their conceptual roots, formed image and make it clear from a subject that precedes the other roots. Such metaphors prior to generalizable structural clarification attempt to establish communication-based on similarity to the origin and the audience are easy to use and easily visualized in other contexts. It is much easier to reach the root of such metaphors than metaphors of conceptual qualities, because of the

visual link between the origin and the audience. Among these metaphors in the area of visual arts, we can point to a pattern and model.

2.6.2. Metaphorical tools

In general, the term "tools" is something that helps people and makes it easy. Based on theoretical frameworks, metaphor is also a tool that its task is to help human and facilitate human perception. In the production of metaphor, tools play a significant role. With regard to the mentioned materials in the theoretical foundations, in the general view, the origin of the production of metaphors can be classified into three categories.

1. **The arena of the mind-perception**

The first stage of the creation of art is the metaphor of the human mind and uses metaphor as the main cognitive framework, and the production of metaphors is formed in this context. Sensory perception of humans in different sensory areas and according to the different experiences of the individual in relation to the environment gives a wide range of information to the individual. By using the empirical perceptions and the connection between different areas, the person begins metaphor.

2. **The arena of language and speech**

Literature and the arena of speech and communication among humans are the fields of production, dissemination, and transmission of metaphors. Each language, according to its internal structure, introduces a framework for the production of metaphors by linguists that receives information from the collective perceptions.

The interactive theory of metaphor and the cognitive theory of Lakoff are among the linguistic experts' efforts to introduce the tool and framework for the production of a metaphor with a general nature. The interactive theory of metaphor has a five-stage structure for generating a metaphor based on the general cognition.

The nature of the metaphors of the arena of language and speech is for the transfer of the rich meaning and has features such as clarity and dignity.

3. **The arena of art and architecture**

The arena of art and architecture is a place for the creation of new metaphors. Artistic instruments such as artistic styles and arena of architecture, with different orientations, are trying to produce new metaphors that transcend a wide range of contradictory meanings, while preserving this position for a long time, this requires abstract metaphors from different areas; while in the arena of mind-perception of the person, the production of metaphor is driven by the means of the mind to use metaphors in order to understand the environment and knowledge about it, and in the arena of language and speech, metaphors are used to transfer this knowledge and semantic-perceptual knowledge from one person to another. So in these two categories, metaphors are transparent and accessible, but in the arena of art-architecture often, there are ambiguous metaphors. The commentaries only add to their semantic scope and complicate the acquisition of the root in most cases. Part of the reason for this is the abstract structure of these areas, but it is often due to the nature of the art and the reasons for its formation.

2.7. The general approach of modern architects in the use of metaphors

The architecture created by this approach does not cause alienation in people and solves the puzzle of creativity/identity.

L. J. Waks (2001) claims that their great achievement of the most prominent faces in research on the design theory, which has realized the power and the influence of metaphors: "he discovered that productive metaphors allow us to structure the meanings and concepts in a changing situation, as

well as provide a linkage created by family similarities between our past experiences and the new situation".

According to Fernandez (1974), metaphors play a key role in the formation of identity. Creative and productive metaphors, by adding new meanings and concepts, create the enormity in a particular cultural and environmental context (Tucker, 1994).

The importance and value of an open space discovered are never absolute and is accompanied by a continuous change and interpretation (Foucault, 1986). As Tucker (1994) shows, "Architecture, such as art and language, can use metaphors to convey and transfer a particular philosophy. In some instances, a whole artistic or architectural work becomes a metaphor."

From D. Draaisma (1995) perspective, metaphors, as a scientific and literary structure, are a reflection of a particular era that includes its culture and environment. This situation is also valid for architecture. A new and different identity of every age has a metaphorical design approach that can be seen in the architecture with respect to the transformation of the existing culture. In line with the intermediary role of creating a new identity and enhancing the richness of existing culture, metaphors are the means of transferring cultural identity from one place to another. According to Fernandez (1974), this transition is discussed in the language or the architectural environment by the intersection of similar or opposite metaphors. The theoretical results and achievements that can be interpreted in the architecture with a structure-oriented approach are included three main steps. The purpose of these main steps is to reach to the interdisciplinary interpretation of metaphors from the recognition of metaphors.

Step 1: Metaphorical binding

According to the above definition of metaphor, which introduces the transfer of meaning from one area to another, the binding between the two semantic fields is caused by two factors, intellectual reasoning and physical similarity (Diagram 1).

Diagram 1: The general of metaphorical binding, Source: Author

In addition to the above mentioned, in semantic substitution, the existence of a kind of ideal pattern (archetypal) in each subject discussed by metaphor is also involved in the collective memories and culture and other social factors that transcend metaphorical binding beyond similarity, toward emotional load (positive or negative) to create a metaphor (Diagram 2).
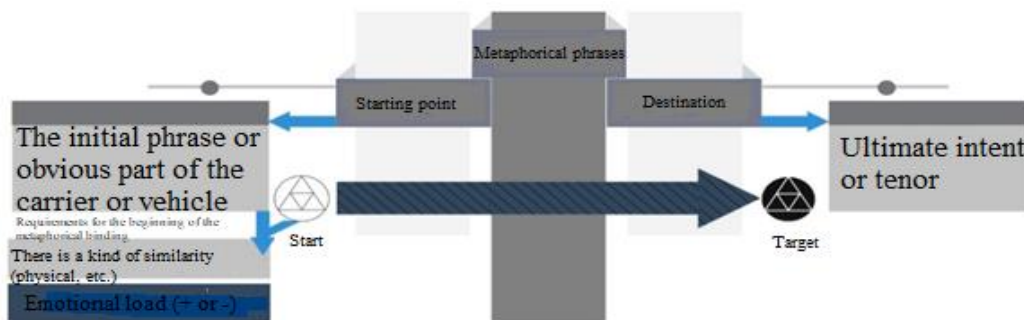

Diagram 2: Opening metaphorical binding according to theoretical foundations, Source: Author

Step 2: Recognition of the metaphor based on the definition of the two areas

In the cognitive definition, the metaphor is defined to transfer the meaning from one area to the other. According to the above mentioned, the general structure of a metaphor can be divided into two areas of starting point and destination (Diagram 3).
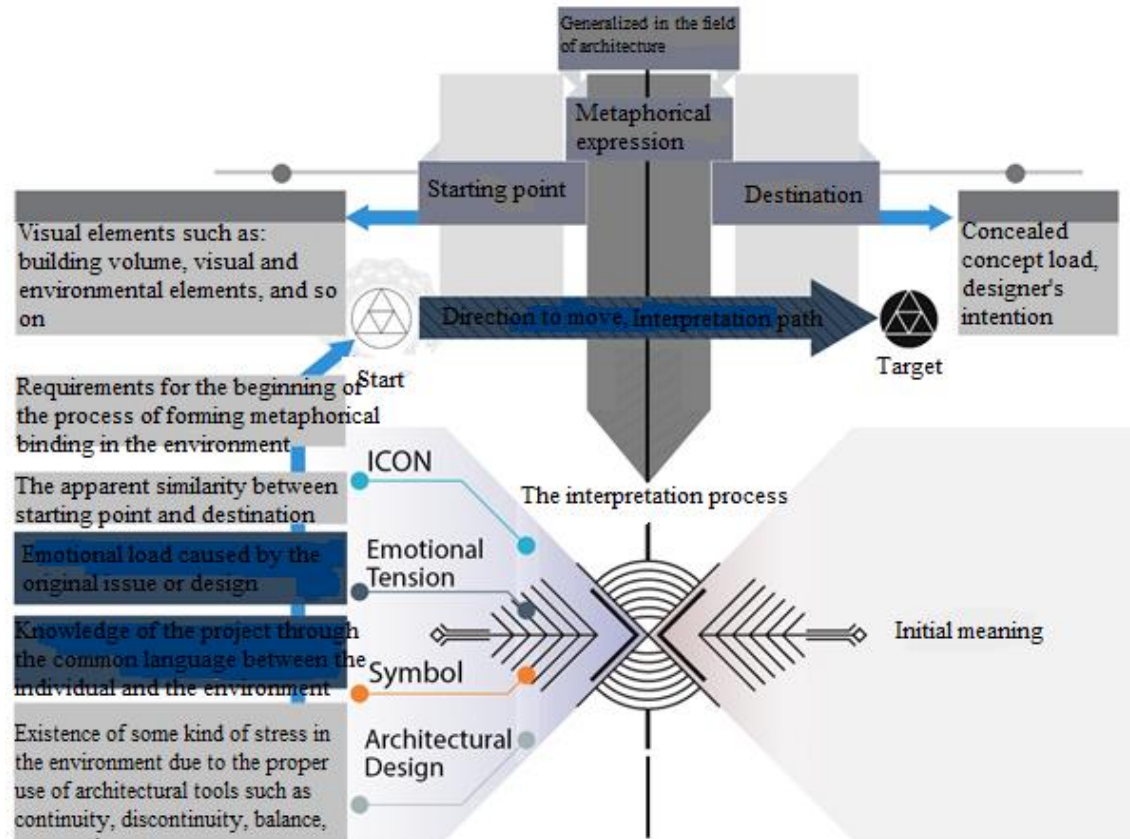

Diagram 3: Generalization of metaphorical binding in the form of environmental stimuli, Source: Author

Due to the abstract nature of the architecture tool, only with underlying roots in the surrounding environment (cultural, ritual-traditional, historical roots, etc.) can be drawn into the context of the interpretive process. According to a phenomenological interpretation, the initial meaning and the audience must have an old familiarity.

Step 3: Recognition, define and configuration of metaphorical elements in accordance with the frameworks of metaphorical interactive theory

After recognizing the functional nature of metaphors, we need a simple tool for the creation and production of metaphorical binding. The designer needs simple and understandable information about his purpose and meanings. So, from the processes of producing metaphors, the interactive theory of metaphor offers the best description. The summary of this five-step process can be found in Diagram 4 by four steps as: a selection of the model to send information to the architecture area.
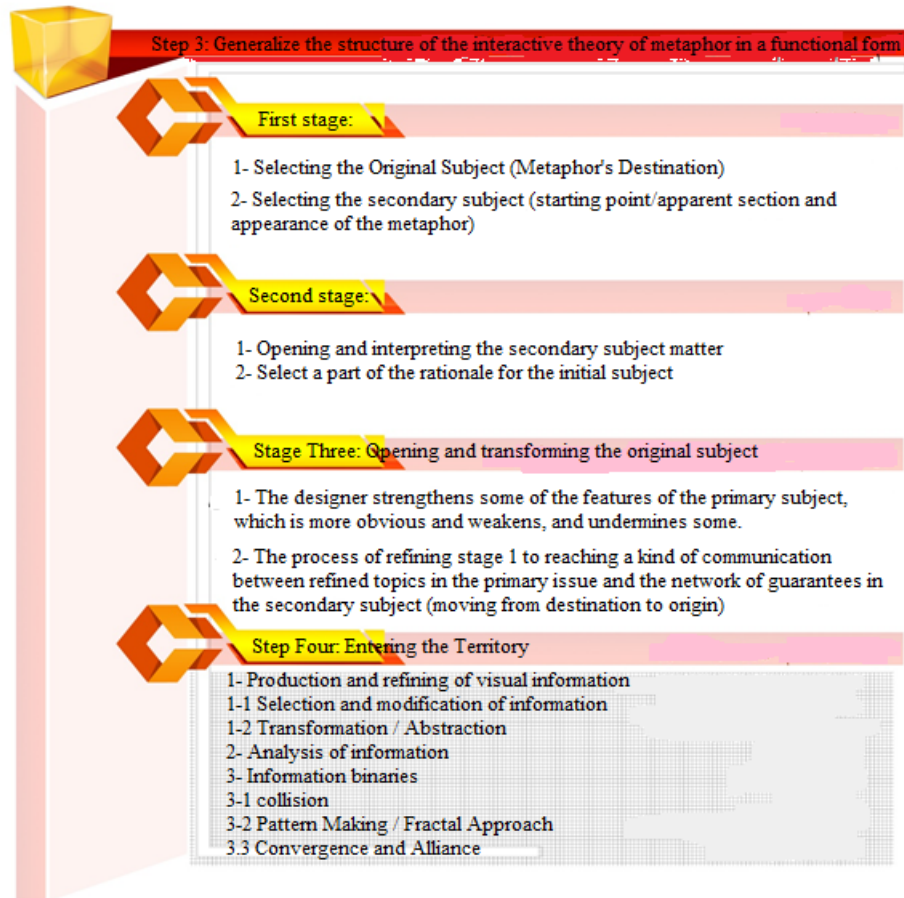
Step 3: Generalize the structure of the interactive theory of metaphor in a functional form

First stage:

1- Selecting the Original Subject (Metaphor's Destination)

2- Selecting the secondary subject (starting point/apparent section and appearance of the metaphor)

Second stage:

1- Opening and interpreting the secondary subject matter
2- Select a part of the rationale for the initial subject

Stage Three: Opening and transforming the original subject

1- The designer strengthens some of the features of the primary subject, which is more obvious and weakens, and undermines some.

2- The process of refining stage 1 to reaching a kind of communication between refined topics in the primary issue and the network of guarantees in the secondary subject (moving from destination to origin)

Step Four: Entering the Territory

1- Production and refining of visual information
1-1 Selection and modification of information
1-2 Transformation / Abstraction
2- Analysis of information
3- Information binaries
3-1 collision
3-2 Pattern Making / Fractal Approach
3.3 Convergence and Alliance

Diagram 4: Generalization of the structure of the interactive theory of metaphor in the application form. Source: Author

Conclusion

Achieved a functional discourse for transferring to the design process

Regarding the recognition of the design trends described in the architecture, with Broadbent's structure called metaphorical analogy methods, presents a general schematic of the architecture design process using the metaphor structure, which this process, at its core, introduces metaphor or analogy between the starting point and the destination and during the design, it relies on the elements and details.
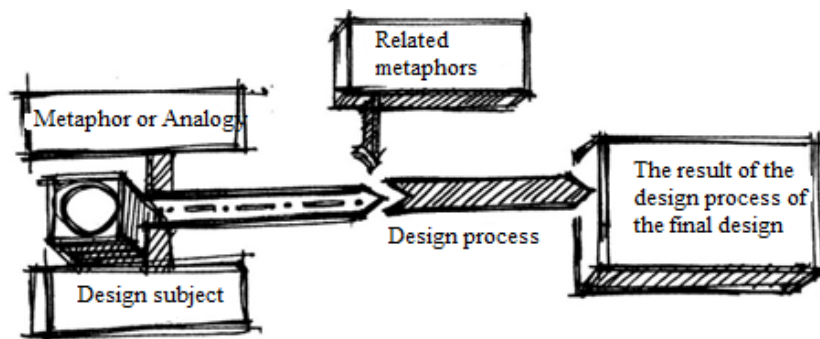

Diagram 5: Transition to the design process

Due to the way of thinking and producing information, the best core to select the metaphor or the analogy is regionalism and contextualization. Combined transfer method in the design context creates the best conditions for moving towards a conceptual and constructive design of the meaning, which is rooted in a combination of implicit metaphors and literary guidance that the efficiency of this design process is directly related to determining the primary and secondary priorities and creating a difference between the data.
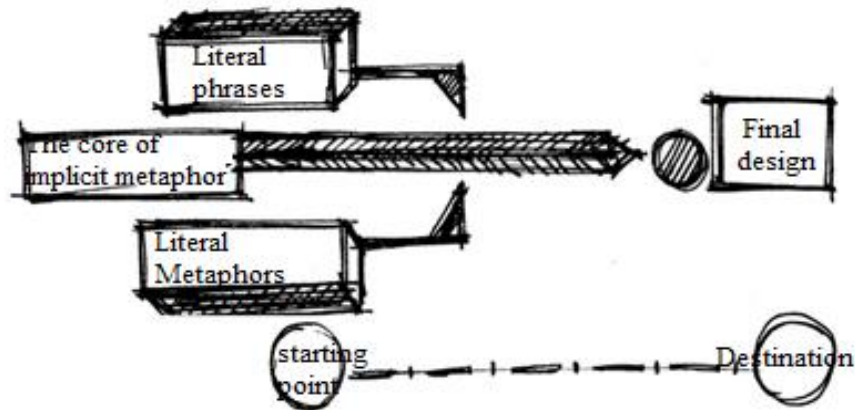
Diagram 6: Transition to the design process

In general, moving from the frameworks of the metaphors producing in the literary area and transferring to the visual area (architecture) to produce the necessary tools can be categorized as follows: (Author):

The first step involves explaining the project in the form of a detailed description of the two areas of the starting point (secondary subject) and the destination (primary subject), which is identified as the metaphorical binding.

The second step, entitled "Understanding metaphor based on two areas", examines and interprets the different dimensions of the two areas that determine the roots of the choice of the central metaphor (in the Broadbent's design process).

The third step involves explaining the stages of the production of metaphors to begin the design, which is the generalized five phases of the interactive theory of metaphor in the form of four functional stages.
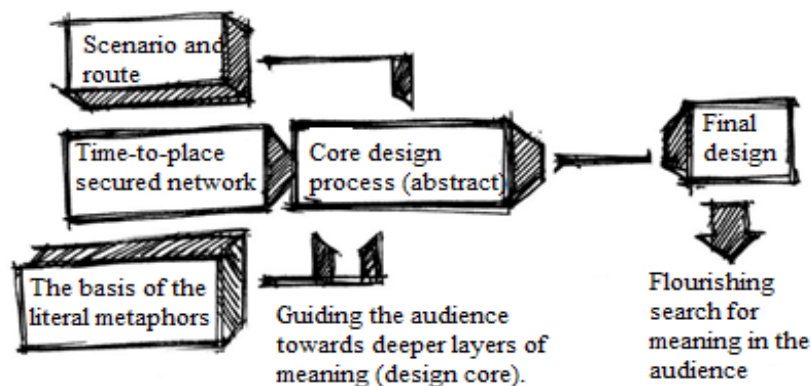
Diagram 7: Transition to the design process

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