Metaphor of Symbols of Iraqi Architecture and Urbanism: Studying symbols as identity of Governmental Buildings' façades in Baghdad, Iraq

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Abstract. This paper analyses the role of the symbol considered as an effective tool used in strengthening the properties of façades in architecture and urbanism. The symbol always considers as one of the most important metaphors used in defining the local identity, in Iraq, the identity of architecture and urbanism has deteriorated and been disordered after 2003 when different trends used in shaping the façades. Due to this continuous deterioration, problems of forming identity of Iraqi architecture and urbanism have been grown with no considerations or restrictions. The research problem thus can be outlined: How have Iraqi architects dealt with the tasks of designing façades during the processes of formation, modification and decoration? Baghdad has selected as a case study to examine a set of samples of Governmental Buildings' façades. The analysis has adopted a questionnaire technique to find out which factors have involved in the impact on the process of the metaphor of used symbols. The examination spans form the 1970s -2019. The results have shown that the use of the intellectual structure of the symbol has been very limited in the formations of the Governmental Buildings' façades.

1. Introduction

The metaphor as a concept makes the interaction between architecture and various socioeconomic and sociocultural topics valuable and rich. It is one of the designing tools which is used by architects to express their thoughts and concepts in designing their solutions. The metaphors are spatially defined by Ayiran as ‘imaginative rationality’ appears to be quite appropriate tools for solving such problems since they unite rationality and imagination [1]. Also, the metaphor of the symbols that reflect the local identity (as the scope of the study here) is an expressive tool used for expressing designing thoughts, identity, and the privacy for architectural productions [2]. In Iraq, these symbols have diverse forms adopted according to many factors during the 20th century; however, the use of these symbols is widely distributed with a great crisis of Iraqi architecture identity originated to the lack of the required practice, regulations, and design and build guidelines after 2003.

The metaphor in architecture is a productive manner in the design process, given additional meanings to the architecture and urban forms in the formation and extension of development projects [2]. The additional meanings are given by a set of aspects: movement, quotation, and inspiration, aimed to enhance the image of the metaphor's source, which is accordingly, going into reconfiguration state in new styles or positions expressed the joy, persuasion, and the influence on the recipients whom are going to realize the new architectural projects [3]. The aim of using the metaphor and the analogy methods and techniques in the design of architecture is to give the meaningful messages, of which needed visual connections delivered that meaning. This connection can be, therefore, the symbol for specific development or innovation established a new symbol [4].
For some extent, literature on the metaphor used in architecture, urbanism, and relevant areas is researched. There are many studies have addressed the metaphor issues and topics. Al-Jameel and Al-Nima have defined it as an operational process used in the design stages to bring proper elements, including shapes, functions, and sizes [3]. Conye has described that the metaphorical reasoning can permit the identification of previously unnoticed similarities regardless of the existence of vast difference [5]. Lafi explained that metaphor should have strong and logical reasons for the element (or thing) that borrowed for it and from it, and thus, there are three parts in the metaphor need to be described [6]: (1) the source domain, (2) the target domain, and (3) the metaphor.

In Iraq, there were many studies that demonstrated the role of the metaphor in shaping the Iraqi architecture forms and urbanism. Al-Majedi has studied the analogy and the conceptual act of the architectural design in the contemporary architecture thoughts [7]. Al-Jameel and Al-Nima have examined different metaphoric images in a set of contemporary Iraqi architecture [3]. Essa and Abood have studied the role of metaphor semantic in forming the architecture by using the final stage projects of architecture school as a case study; they have shown that how the use of semantic forms (potentials and structures) were depending on the architecture vision, design environment, function, and what is the position in the urban context and society [8].

The notion and practice of metaphor, including its symbolic features, is still problematic. So, there were many open questions that are still urgent and need to be satisfactorily addressed. For example, how Iraqi architects and urbanists have dealt with aforementioned symbolic notions and practices to meet the local identity requirements? In addition, what are the factors influencing the metaphor concepts and practices?

This paper, therefore, laid the objective of identifying the types of the metaphor of symbolic features that express the local identity of Iraqi governmental buildings.

The authors believe that the importance of this paper is to influence the thoughts, norms, and practices of using the metaphor in the design process for Iraqi architecture and urbanism. After 2003, the dilemma of local identity of Iraqi architecture and urban forms have been aggravated due to lacking of applying developing and planning regulated policies. This dilemma has been become an important concern of the internal Iraqi academics and professionals since many of development projects have ignored the use of expertise.

This paper is set in three main parts. First, the topics and relevant issues have introduced. Second, the previous studies were helped to identify the problem under investigation, the question, and objectives. Ultimately, how many samples will be examined to outline the results.

Since the analysis of this paper has relied on studying the Iraqi architecture and urbanism, some historic phases of this context need to be described. During the 20th century, the first phase, Iraqi architects have often used the heritage, historic symbols, and traditional materials as metaphor tools to physically express the local architectural identity. According to this interaction, among architecture, urbanism, and the heritage, one can mention that the relationship among the Iraqi architecture, urbanism, and the heritage is an influential variable during the 20th century. However, during the period between 1917 to 1942, there was a clear absence of using the heritage concept from Iraqi architects and urbanists. In contrast, British architects and the craftsmen were used traditional details, elements, and materials derived from the Iraqi and Arab architecture and urbanism (such as arches, domes, bricks, gates, and corridors) [9].

In the period from 1945 to 1958, the second phase, the heritage did not appear clearly in architecture because of the modernism impacts, while the period 1958-1972 has a wide presence for the heritage concept at the intellectual level, with the impacts of the Arab Nationalism trends showed at the scales of architecture and urban form during the 1960s, see [2, 10, 11]. It has invited the concept of reusing the Arab traditions for producing the contemporary forms for the architecture and urbanism. This appeared through the inspiration of some traditional details of architectural and urban forms, such as arches, ornament, bricks, landmarks, urban blocks, and urban clusters.

The third phase, during the period between 1972 to 1991, the heritage concept was spread wider than the previous period with the prevalence of terms like identity, privacy, contemporary, and the heritage. Here, many of development projects were impacted the heritage of architecture and urban forms since
they did not consider the physical and environmental requirements, which was well-put to mitigate the climatic conditions and shape a walk-able (pedestrian based) built environment [12].

Then, the period from 1991 to 2003, the concept of heritage was influenced by the philosophy approaches and continuity for the previous period [9]. However, there were some strong influences of spatial displacement (which practiced the sense of power) applied to impact the sizes and spatial territories of the architecture and urban forms [13].

Finally, In Iraq, after 2003 many political, economic, and sociocultural changes have occurred and been influenced both the architecture and urbanism. According to the many academic and professional studies, some parts of the City of Baghdad appeared at different levels, the heritage was one them, like the disappearance of traditional buildings and the architectural features at the design of building forms and structures, see [2, 14].

The symbols metaphor that reflect the local identity, are an expression tool about the designing thoughts, identity, and privacy for architectural productions.

According to the above-mentioned topics (concepts and norms), one can notice:

- The metaphor in architecture is a cognitive tool that was used by architects for making the connection between different topics to give additional and/or new meaning for the new architecture and urban forms, showed uncommon concepts and relationships.
- The metaphor has given new meanings, needing new visual connections that turned to be symbols over time, see [8, 4]. Therefore, one can classify that the metaphor of the symbols used in this study can be presented in two types:
  - Direct metaphor that is the symbol reflected the local identity in Iraqi architecture and urbanism with considering the same intellectual and formal structures of the reference, like the arches, domes, corridors, ornament, and bricks .
  - Indirect metaphor that is the analytical metaphor derived from the formal and intellectual structures and reshaped in different ways to give the new meanings, given from new concepts and relationships, and make the renewal in the symbol as a creative feature, as shown in Figure 1.
  - The style of metaphor is influenced by two sets of factors: (1) experience of architects and urbanists; and (2) trends of thoughts, methods, and techniques of architecture and urbanism.

Thus, the metaphor's symbolic features are considered as communicative tools used in the design process to physical present thoughts, identity, and privacy for both architecture and urban forms. After explaining the role of meaning of metaphor in architecture and urbanism, the study methodology should be set to answer the research question: What makes metaphor of symbolic features important for the Iraqi identity of local architecture and urbanism?

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**Figure 1:** The types of the metaphor according to symbol's structure.
2. Methodology
The methodology was conducted in a set of stages, which are described in below:

2.1 The Study Cases
Samples have included the governmental buildings, formed or designed, in the City of Baghdad. These cases are the headquarters of Iraqi government ministries.

- All studied cases are designed by the Iraqi architects.
- The majority of studied cases was founded in the 1970s, 1980s, and 1990s; however, only one case was studied and it is still in the process of building now. The building was selected to be implemented during an international architectural competition held in Baghdad, Iraq in 2011.
- All study cases were influenced by the symbolic features used as metaphor tools in the design processes due to identifying the Iraqi local identity.

2.2 Research Instrument
Questionnaires (a total of 50) were distributed to the architects who have worked in public, mixed, and private organizations in Baghdad, Iraq. Only 32 responses were recalled. Most of the questionnaires in Baghdad and the surrounding areas were handed over in person; others were mailed or sent by a research assistant.

- A questionnaire technique was applied as a part of research instrument to question 50 Iraqi architects and urbanist to examine the selected study cases.
- Architects and urbanists were diverse in terms of ages, gender, and the place of work. They work at both public, mixed, and private organizations.
- The response rate was 53.33 per cent. Of the subjects, 60 per cent were male and 60 per cent worked in public organizations. About 33 per cent were either designers or assistant designers, 31 per cent had a graduate college degree, and 42 per cent worked in organizations giving consulting services, including designs, assessments, and supervisions.
- The questionnaire is made up of three: (1) evaluation of designing methods used metaphor's symbols, (2) organization of studied samples in relation to the place and the sociocultural value, and (3) action of dealing with the symbolic features in the design process.
- In the survey, respondents were asked three questions:
  1) “How do you assess the metaphor symbols used in the façades of governmental buildings?”
  2) “How do you organize the use of metaphor's symbols in relation to the place and the sociocultural value?”
  3) “How do you determine what is the best use of metaphor's symbols in the façade governmental buildings?” see Figure 2.
- Answers were varied, in the first question, they were asked to rate the following on a 1 to 5 scale with 1 being ‘Strongly Disagree’ and 5 being ‘Strongly Agree’. In the second, they were asked to arrange samples and rate them from 1 to 5 with 1 being the ‘Worst’ and 5 being the ‘Best’. The last question was used an open-ended question asking for personal explanations of how we can properly use the metaphor concepts and practices.
2.3 Evaluation Processes

To understand the metaphor potentials found in the study cases in Baghdad, an exploratory analytic approach was performed. We wanted to approach these cases from a theoretical perspective to allow for options that might have not occurred in past research. Thus, the analysis was conducted to show the results, which were included two main practices: direct metaphor and indirect metaphor.

3. Results and Discussions

3.1 Evaluation of designing methods used metaphor’s symbols

3.1.1 Iraqi Ministry of Communication. The building was designed by the Iraqi famous architect Rifat Chadirji in the 1971 located at Al-Sinak area in Baghdad. The style of Rifat Chadirji used in dealing with the Iraqi local heritage was described as the first use of traditional symbols in such modern buildings and the arranged of the architectural elements were very clear [2]. At the urban form, the location of this building is spatially important because it mediated in focal place between modern development and the access to the heritage area [2, 10, 11].

The answers of the questionnaire have shown that 53% agreed that the use of arch as the symbol applied for producing a creative feature and promoting locality, rated good. Responses have determined that the new and clear architecture compositions and actions for the arch's form are appropriate.

Based on the questionnaire, the use metaphor's symbolic features in the façade of the building is:

- Indirect metaphor was included the arch's form and reshaped the structures in different ways to make the renewal process as the creative feature by:
o Deleting the lower part of the arch, with keeping the upper part, and reshaping it with a new material, the concrete.
o In addition, the continuity of the shape stopped by the materials, the brick and concrete.
o Reshaping the arch's form when the solid shape was used instead of hollow form.

- Direct metaphor was carried out by using local material like bricks as well as the forms of narrow windows and vertical divisions of the façades to give impressions of human scale and traditional influences of city heritage shown in Figure 3.

![Figure 3](image-url)

**Figure 3:** right is the Façades of Iraqi Ministry of Communications [15], and left is the analysis.

3.1.2 *Iraqi Ministry of Interior.* The building was designed by the Iraqi famous architect Husham Monier in 1974 at Rusafa side of Rusafa side in Baghdad [16]. Responses of the questionnaire have shown that 66% agreed that the use of the arch as the symbol reflected the creative feature and locality, rated good. Responses also have determined that the suitable and clear use of arch's forms in the architecture compositions was good. The architects have determined that the clear architectural composition for the arch's form – the diverse materials used in the construction process – and the arch itself considered as a core element of the local architecture are the reasons to be good.

Based on the questionnaire, the use metaphor's symbolic features in the façade of the building is:

- General architectural metaphor for “the policeman’s face and his hat” [3]; it is indirect metaphor, but this type of metaphor is not the scope of our research. The architectural metaphor for symbolic features involved to make the renewal process as the creative features and locality are represented by:
- Indirect metaphor for Baghdadi Shanshool and the direct metaphor was used for the arch's form, without making any kind of modifications. Here, the architectural feature was kept as it was; it has used as a single and hollow element with a repeating pattern in the design. The arch's form was thus employed with a new material in this period which was the concrete.
- Small vertical divisions and openings were used by the architect in the façades reflected the human scale with consideration of the city heritage. shown in *Figure 4.*
3.1.3 Iraqi ministry of Industry and Minerals. The building was designed by the Iraqi architect Fadel Agina in Rusafa side in Baghdad. Responses of the questionnaire have shown that 53% agreed that the use of the arch as the symbol reflected the creative feature and locality, rated good. The responses determined the use of bricks as a local material and the architectural compositions can improve the adoption of metaphors symbols in the design process. Responses have mentioned about the metaphor's form that there was a disorder and a miss-configuration of the compositions reduced the influences metaphor values.

Based on the questionnaire, the use metaphor's symbolic features in the façade of the building is:

- Indirect metaphor of the arch's form was manifested in different ways to make the renewal as the creative feature by:
  - Deleting the half vertical of the arch's form, with keeping the other half, was reshaping the original form and reintroducing it. Reshaping the form based on using the orthogonal directions with only one material, which was the bricks, and tried to reflect the sense of vertical continuity.
  - Architect designers reformed the arch in a solid shape in a contrast notion that the mental image about it as a hollow form.
- Direct metaphor was used the bricks refereed to the local materials derived from the local environment. Small vertical divisions and openings in the façade given the impression of the human scale and locality. shown in Figure 5.

**Figure 4:** The direct metaphor for the arch's form and the small divisions [17].

**Figure 5:** Right, the Iraqi Ministry of Industry and Minerals; left, the analysis of the arch used in the design of façades, [18].
3.1.4 *Iraqi Ministry of higher education and the scientific research.* The building was designed by the Iraqi architect Mazen Kamoona at Rusafa side in Baghdad. The metaphor in this building was derived from the iconic winged bull from the Ashourian civilization era, and the arch in the façade of the building was an abstract shape of the wing of the winged bull. Responses of the questionnaire have shown that 38% agreed that the use of the arch as the symbol reflected the creative feature and local distinction, rated good. Responses have determined that the simplicity and clearness of the arch's form and the repetitive pattern for it in the design are the reasons to be good.

Based on the questionnaire, the use metaphor's symbolic features in the façade of the building is:

Direct metaphor for the arch's form appeared in the façades as a light and hollow architectural element. The architect was repeated the arch and taking the advantages of the joints for making the vertical lines and divisions in the façade; this has given the impression of the human scale and the heritage city, shown in Figure 6.

![Figure 6: Right The façade of the Iraqi Ministry of the Higher Education and Scientific Research](image)

3.1.5 *General Secretariat of the Council of Ministers.* The building was designed by the Iraqi architect Mannhal Al-Haboobi. The project has not implemented yet. The building was selected among other projects during an international architectural competition held in Baghdad, Iraq in 2011. One of the most important factors of Al-Haboobi's project was the symbolic features of the metaphor used to produce the building's form, linked to the historic features used in the Mesopotamia civilization. Responses of the questionnaire have shown that 56% agreed that the use of symbolic feature – expressed the Infinity form – by Al-Habooby to make the renewal as the creative feature and locality, rated good. The form infinity symbol, in somehow, was impressive enough to reflect the notions of movement and the continuity in the design of the mass and the void proportions found in the core mass of the project [20], shown in Figure 7.

Responses have determined that the metaphor of the symbolic feature used as a creative tool, which was modified by the 3D design software in the final form of the core mass, considered as the reason to be good. Although the metaphor's form was impressive in the concept, some responses have stated that the infinity symbol is not Iraqi symbol.

Based on the questionnaire, the use of symbolic features in the façade of the building is:

- Indirect metaphor was pointing to the meaning of Infinity symbol, which was the movement and the continuity as an essence of that form, appeared in the void part of the cub.
- Direct metaphor referred to the cuneiform writing as the symbolic feature that belongs to the Iraq history. Small vertical divisions and openings put in the façades helped to give the impression of the human scale and the city heritage.
3.2. Organization of Study Cases

The architects arranged the samples of the study 1 to 5 with 1 being the ‘Worst’ and 5 being the ‘Best’ when they have dealt with the symbolic features that reflect the local identity of Iraqi architecture and make the renewal process as a creative feature.

- Both cases the General Secretariat of the Council of Ministers and the Iraqi Ministry of Interior have rated at the ‘Best’, the highest level. Organization was conducted according to:
  1) The meaning of the symbolic features.
  2) The use of new materials and architectural details, including small vertical divisions and openings, designed in the façades helped to reflect the human scale and human heritage for the city.
- The responses have chosen the Iraqi Ministry of communications to be in the next level, rated 4. Their choice was based on the use of indirect metaphor. They have indicated that the design of façades was put on the basis of using simplicity and clear perception for the symbolic forms.
- The Iraqi Ministry of the Higher Education and Scientific Research has rated at the third level, rated 3. They put this case under the type of the direct metaphor. They indicated that the use arch's form was pure and simple without reshaping.
- The Iraqi Ministry of Industry and Minerals has rated at the last level because the architects determined that the use of bricks and the details of arch's form were not clear and reflecting a sense of chaos.

We have noticed that the architects have relied on their classification of indirect metaphor on the meaning and form of symbolic features; also, they have considered that the simplicity and clear perception of symbolic features of facades are good techniques used in the design process.

4. Conclusions

One of the most important elements in both Iraqi architecture and urbanism is the façades of the Governmental Buildings, in particular between 1970 to the 2003. In this paper, the façades were consisted of two types of metaphor's symbolic features, which are:

- Direct metaphor was carried out by using local material like bricks as well as the forms of narrow windows and vertical divisions of the façades to give impressions of human scale and traditional influences of city heritage.
- Indirect metaphor was applied to the symbolic features by reshaping the form and reusing the materials in order to make the renewal process as a creative one and increase the sense of place and identity.
- The main style for dealing with the symbolic features represented local identities is the form structures and thus the reshaping process of physical details were conducted on the form structures.
- The metaphor of symbolic features was influenced by two sets of factors:
1) Objective factors that included the trends of Iraqi architecture and urbanism for each phase, which have dealt with the symbols like those used in designing the Governmental Buildings of the 1970s and the 1980s of the 20th century.

2) Subjective factors that comprised stylish techniques of Iraqi architects and urbanists like the use of different shapes of arches in the design buildings in the same phase.

Finally, this paper has found that the successful use of symbolic features of metaphors were the indirect metaphor that applied on the structures physically and intellectually. The new generated shapes and meanings were creative, with keeping the clarity, guaranteed ease perception for the new form, and meaning of metaphorical symbol.

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