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SEMIOTICS AS AN APPROACH TO THE ANALYSIS OF SYMBOLISM IN ISLAMIC ARCHITECTURAL ARTS

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Abstract

Introduction: There is a large gap in the studies and literature dealing with the concept of denotations and connotations in Islamic architecture, whether in terms of a purely geometric or artistic and aesthetic aspect. However, studies addressing these works from the ideological point of view and inferring values are scarce. This gap is a direct result of the problematic method of reading the Islamic artistic plane and its visual reading tools. **Purpose of the study:** We aimed is to reduce the gap between many European and Muslim researchers in understanding the symbolic connotations of various elements and the aesthetics of abstract vision in the apparent form focusing on the "spiritual component", and relate to the conscience of the Muslim and his mind without the need for stereotypical visual representation. **Methodology:** By adopting semiotics as a tool for modern criticism in reading and implicit analysis of the Islamic architectural text, we linked it with the fixed ideological component present in every place and at any time — the spiritual content. **Approach:** In the course of the study, we interpreted analytical and implicit reading of some Islamic architectural elements and their symbolic connotations. **Results:** We discuss three design trends that recently appeared in the Islamic world: the direct copying of traditional elements, the contemporary trend, and distinguishing and innovating new design elements based on traditional symbolic connotations. **Novelty:** Contemporary buildings have lost their identity and value and have turned into soulless creatures. Therefore, it is necessary to highlight the need for returning to cultural and architectural artistic heritage and benefiting from it in finding new and contemporary design solutions using modern digital technical means.

Keywords

Semiotics, Islamic architectural arts, denotations, connotations, implicit critique, symbolization, abstraction, visual text.

Introduction

Most studies, literature, and theoretical references have applied the concept of semiotics within the scope of Islamic architectural arts from a purely architectural standpoint or in terms of the geometric analysis of architectural forms. The studies dealing with the architectural concept from the perspective of the semantics, symbolic aspect, and spiritual content are scarce. Manieri-Elia (1996) studied architectural arts from the perspective of the geometric and formal aspects only and argued that the size, space, and characteristics of a building must relate to its function (Grabar, 2003; Manieri-Elia (1996). Other researchers dealt with pre-prepared models for semiotic analysis, e.g., the Gervereau model for the semiotic analysis of architectural and artistic works in terms of two aspects: formal and technical (Gervereau, 2020). However, it does not represent architecture as much as it represents a composition void of soul and life.

In his paper, Kononenko (2018) pointed out this gap between scholars studying architecture and stated that authors from Muslim countries put emphasis primarily on the "spiritual component", ignoring the architectural realities, while many European researchers routinely build on specific monuments, ignoring their religious component.

In the system of Islamic principles and standards, the art of personification does not have prime importance as is the case with the West (given skepticism about personification, and preoccupation with the universe in general). Trying to distance themselves from portraying people, artists turned their eyes to calligraphic, geometric, and ornate decoration, which are the areas where Islamic arts flourished. Perhaps one of the most prominent obstacles that prevented research methods from being able to develop a systematic theory of Islamic architecture is that some researchers mistakenly believe that its function is limited to serving religion only as explained by Grabar (2003), Titus (2009), and others who employed the metaphysical, mystical, and spiritual aspects in explaining Islamic arts, based on Western critical methods. Their works

were unable to crystallize any visual readings that would reveal the functions and connotations of Islamic arts, proceed from the text itself without any spiritual and mythological projections coming from outside, and operate beyond this text of aesthetic and social concerns. Although Islamic arts — in contrast to Western arts — include what is sacred and secular in the life of a Muslim and everything related to their livelihood, behavior, and moral and social values, they do not aim to tell religious stories about monasticism and glorification of holy wars, like Western arts have been doing with regard to the Middle Ages.

One of the most popular and well-accepted critical approaches, which proved its efficiency in studying and analyzing the artwork of the last decades of the last century, is the semiotics approach. It is considered one of the most relevant Western critical approaches to the Arab-Islamic heritage. This approach allows us to study linguistic and rhetorical connotations, poetic symbols, and other matters related to literary work. Semiotics was developed by the linguist Ferdinand de Saussure. As a contemporary Western term, it derives from two Greek words: “seme”, which means sign, and “logos”, which means science. It is mainly concerned with the generation of meanings in addition to how meanings communicate (Chandler, 2007; Eco, 1984; Leach, 1997; Lune and Berg, 2017).

Islamic architecture is a mixture of modern and religious architectural designs. It has been developing since the establishment of the Islamic faith, which directly affects construction in Islamic culture (Hamid, 2010). Contemporary scientific research lacks adequate studies on Islamic architecture, addressing the significance of forms and inner semiotics of their elements, with account for the analysis of philosophy. Semiotics is discussed in works looking into the distribution of meaning in architects’ communication (Medway, 1996), addressing built environments as the physical representation of semiotic styles (Cameron and Markus, 2002), and considering construction as a complex of signs (Medway and Clark, 2003). The formal and symbolic aesthetic values of architecture (as, above all, a language of communication through visual elements including signs and intellectual, aesthetic, and social connotations, which guarantees the continuity of the movement of meaning in architecture) represent the identity of society, and there is no need in a pictorial narrative to reveal the meanings (Porphyrios, 1981), which is what this study seeks to explain semiotically by analyzing visual components and their denotation and connotation implications. According to Eco, if semiotics is really to be a science studying all cultural phenomena as if they were systems of signs, then one of the fields in which it will undoubtedly find itself most challenged is that of architecture (Leach, 1997). Therefore, the purpose of this study was to adopt semiotics as a tool for modern criticism in reading and implicit analysis of the Islamic architectural text, which goes beyond the superficial concept of Islamic artistic creativity and its abstract aesthetics to its deep internal perception that the study seeks to achieve, and analyze models of visual text and their denotation and connotation implications.

1. Architecture semiotics: a critical review

Semiotics is the study of signs and symbols, which includes semantics and can be used as a method to analyze the meanings of the artwork (adopted from linguistics) and interpret visual language (directly or indirectly). Semiotics emerged as a result of various studies in linguistics. Being a system of signs that represent culture, it is closer to metaphysics since it shows what is behind the artwork, with its patterns of semantic interpretations. Architecture is an unspoken language that seeks to convey a certain meaning. It can establish new sources of knowledge by shifting the focus from styles and techniques to content and meaning (Ramzy, 2013).

A building may evoke particular feelings and ideas in recipients, such as a sense of transcendence or loftiness. Therefore, semiotics is compatible with the study of architecture. Wang and Heath (2011) noted that the use of semiotics can produce a universal language of the built environment. Just like a spoken

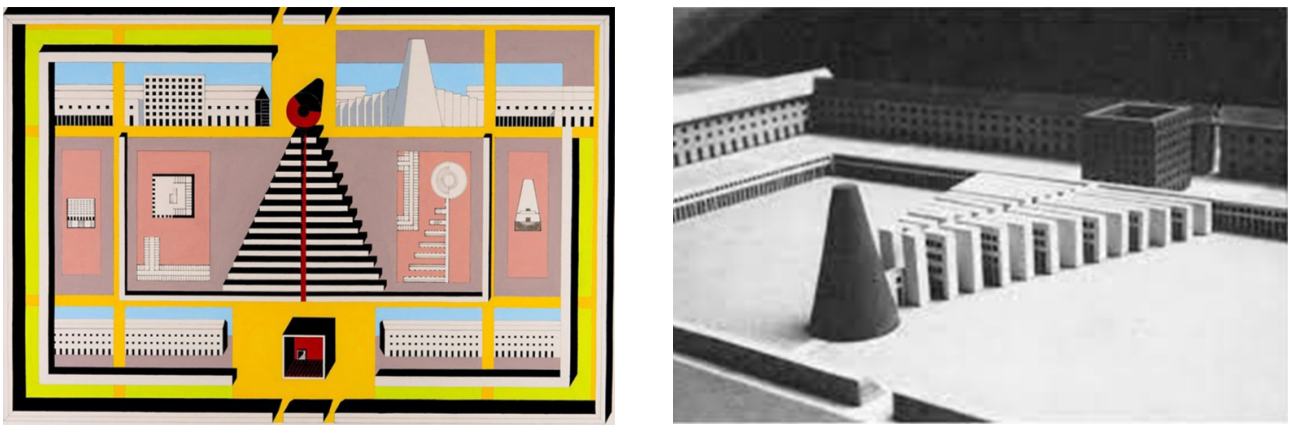

Fig. 1. Aldo Rossi (1931–1997), composition with Modena Cemetery, 1979
(https://drawingmatter.org/peter-eisenman-on-aldo-rossi/)

language, the visual language of architecture has its own vocabulary and carries meanings intended for the recipient. Thus, the semiotics approach can be used to thoroughly study architecture. Meaning in architecture can be understood in different ways depending on a recipient due to their differences in cultures and experiences.

In his design for a cemetery in Modena, Italy, Rossi (1984) suggested abstract symbols with distant meanings. These symbols appeal to the memory of the observer, trying to evoke some feelings. In Rossi's theory, memory is an important component in the formation as well as reading of symbols and their architectural expressions.

The bounding wall with openings around the site symbolizes containment (Fig. 1). The "abandoned" house without a roof or windows indicates the other life. The huge cone reminds an idle factory. The general layout of the cemetery was based on the symbolic expression of a city plan. In other words, the cemetery is a city but of a different category and a different time.

Accordingly, the semiotics approach considers that architecture has a communicative function, and, thus, the architectural "sign" is studied in connection with that function, and architecture is addressed as an art or a means of preservation and valuable communication. According to Norberg-Schulz, the terms "sign" and "symbol" are synonymous (Collins, 1967).

The architectural symbol is devoid of any independence from the process of social symbolization; the sign is characterized by being shared and usable, and it is created through social interaction. For this reason, social upbringing is based on traditions that include the entire complex of signs, systems, and symbols. Hence, a symbol has content. A denoted sign gives a direct, uncomplicated message to be understood. First-level significations (denotations) act as a basis for second-level significations (connotations). Implicit meanings, or "second-order meanings", are cultural. Thus, first-level semantics serves as a basis for second-level semantics (Collinge, 2019).

No element or form is abstract from the meaning; a form must be associated with a meaning behind it. Besides, there is no intellectual or moral content without being linked in some way. The human brain seeks to assimilate these symbols by reading the shapes (Cassirer, 1953).

Architecture is a form of non-verbal communication, so its function is associated with the message of religious beliefs and holiness, and those encrypted messages are understood as a real language. It does not contain any letters or paragraphs, but their synonyms are tangible in spaces and interfaces that differ in terms of shapes, dimensions, and colors. Therefore, through its semantic dimension and its objects, architecture represents a means of communication with its writing system, and a building can be considered a language of its speech, a language of architecture. According to Eco (1986), architecture has two functions: denotative and connotative. The denotative aspect is related to functional uses, while the connotative aspect is related to broader social (or systemic) uses of the object. He also stated that although we tend to associate semantic functions with things, semantics (understood as their social and cultural meanings) are just as important (Broadbent et al., 1980; Eco, 1986).

Semiotic understanding contributes to the realization of the meanings and connotations contained in the artistic aesthetics of Islamic architecture from a different angle to the study of architectural forms and their changes through the history of Islamic arts. For instance, the mosque as a religious building has invisible symbolic connotations, different from its physical characteristics based on the style of the building and architectural elements. Our vision of the mosque through the lens of aesthetic values makes it possible to discover the semiotics of cultural and ideological symbols, i.e., the integration of the structural body with the architectural elements and geometric motifs. It generates an integrated vision of the mosque, highlights the aesthetic aspect, clarifies the philosophy of its structure, and ensures the realization of its meanings and connotations.

Architecture is the noblest but also one of the most mysterious and contradictory arts, and that is evident in the architects' attempts to harmonize buildings (which constitute the basic physical framework for our daily activities and interests) considering the aesthetic and expressive value. Hence, two basic and complementary tasks of architecture can be distinguished: the functional value of a building and the formal expression that refers to the implicit meaning. These two tasks, i.e., the utilitarian function and expressive function, are contradictory. The utilitarian function of a particular building is that it is an institution based on technical knowledge, and its evaluation depends on the criteria of functional efficiency. The formal expression is, on the contrary, a fruit of artistic creativity, and its evaluation is based on technical criteria as well as connotations and cultural contexts of the building. Thus, symbolism in architecture makes a turn different from other arts, and the shape of a building is not formed only according to a need for some benefit or functional, material, and economic influences, but it also works together with it affecting the social heritage of architecture, and so symbolism in architecture is not a goal but a result. According to Ball, "designs are embodied in ways that go beyond their function or even symbolism, and comically or critically reflect cultural meaning" (Saidi, 2019).

Different buildings have different forms and perform different functions that serve to meet human needs. The relationship between the form

and the function is not a direct but rather a dialectical relationship that depends on the linking element between these two concepts, which is the human being.

The form has two states. One of them is form as a material. It represents physical properties, which are the sum of the formations, such as shape, color, structure, and texture, that can be directly perceived. It represents the state of translating the materials used and organizing them in a stable state, in an entity that has a space of existence and is aware of the human sense.

Another one, form as a signifier, represents a deeper perceptual level, visual expression characteristics. If we consider architecture a language, its elements are a vocabulary and can be linked to form a sentence. These characteristics are represented by mass, space, and other aspects with a deeper perceptual level, such as proportions and measurements. In their comprehensive sense, characteristics represent a system based on the relationships between the parts of the same substance, while the form is generally arranged in terms of aesthetic and utilitarian aspects.

Here it becomes clear that the symbolic form is everything that transforms the material into a signifier, and it works together with the material to form a support for the sign. Architectural forms act as symbols and signs of cultural or social functions, connotations, or any other meanings. Some researchers noted the semiotic character of a city in its entire being and defined the city as a typical sign that consists of a signifier and signified (Jansson, 2004; Leach, 1997; Martin-Jordache, 2002).

These symbols help a person to treat the site in the appropriate cultural and social manner, according to what is dictated by their culture and education. Symbols inside a building also help a person understand whether it is a religious building, a hospital, or a museum.

2. Modern methodologies for the implicit critique of Islamic architectural text

2.1. Symbolism approach to the connotations of Islamic architecture

The important question that we ask in the beginning in this context is: Are there symbols specific to Islamic architecture that have conclusive and exclusive indications? How did they acquire their symbolic character? Is it a form or function? What is the theoretical philosophical framework that places these shapes in connotations specific to this culture, or negates their affiliation with the global human culture, if this assumption is possible and correct?

The concept of symbolism in the context of Islamic architecture will be studied from a philosophical point of view regarding its repercussions related to culture and civilization within the framework of the philosophy of urbanism. In general, in the field of contemporary Islamic architecture, this raises an important question regarding the legitimacy and control over historical metaphors, “abstracting”, re-reading, and interpreting them.

Besides, it is an important topic that requires a conscious philosophical interpretation of the idea of symbols in Islamic architecture, the associated connotations and signals that emanate from the forms used, and the relationship between the art form and the function, especially in cases of function transformation over time, required by the current stage, cultural and civilizational conditions, and humanistic needs. Many scholars and thinkers addressing the symbolism of Islamic architecture, including, for example, Oleg Grabar, claim that Islamic architecture is full of meanings, symbols, and connotations hidden in the frequently used forms. In his article “Symbols and Signs in Islamic Architecture”, Grabar (1980) mentioned that no one had tried to identify an Islamic visual sign-symbol system in any serious way. Despite this, we found some studies presented by Ardalan and Bakhtiar (1973) in their book “The Sense of Unity: the Sufi Tradition in Persian Architecture” and others, which touched on the geometric system in Islamic architecture. Without going into deep analysis of the implications of the form and symbol, they linked the geometric shapes used in mosques and the content carried by the use of those shapes and provided corresponding examples. For instance, cubic shapes are repeatedly used in mosques as a symbol of balance and perfection in terms of engineering, while in terms of content and symbolism they refer to the shape of the honorable Kaaba; octagonal shapes are used by Muslims to connect a spherical or hemispherical shape — a dome — with a cube to reflect the throne of God as the latter is known to be based on eight ribs, where the dome symbolizes the vault of heaven. Some architects applied these concepts to the design of mosques like, for example, the Italian architect Paolo Portoghesi did with the Islamic Cultural Center and its mosque in Rome.

In his paper, Grabar (1980) pointed out the following basic idea: there are semantic connotations related to forms, especially in Islamic architecture. He also clarified the basic difference between a symbol and a sign. For Grabar, a sign indicates something or refers to a certain impression while a symbol defines something and connotes it but does not circumscribe it as does a sign or an image. Many studies deal with the formal and artistic aspects of the mosque elements, individually or as a whole, such as a minaret, the symbol of Islam. For instance, Jonathan Bloom reviewed the historical origins of minarets and their connection with the structure of mosques and considered them a symbol of Islam and Muslims in terms of content (Williams, 1992).

This trend led many architects to study the formal and artistic aspects of Islamic architecture, and thus they linked the formal and artistic dimensions of the

architectural mosque elements with the spiritual content. For example, in its form and meaning, the minaret is linked to the concept of guidance and reasoning. It is also a symbol of access to the mosque, which, in spiritual terms, guides people to the right track and keeps them away from misguidance through prayer. Architects also see that many of the forms of architectural elements used in mosque buildings deviate from their formal framework to their symbolic framework. Let us consider the following example: the central dome in a mosque refers to the rotation of a square shape, which symbolizes the four directions and physical components of the universe (water, earth, fire, and air).

To clarify Grabar's theoretical approach, we will adopt three geometric shapes for buildings that are considered to be related to Islamic architecture for an unclear reason (it is not clear if the form or the function is directly related to it). For the sake of argument, let us suppose that we do not know anything about these three shapes and what they symbolize. The first one is a huge cubic building located in Mecca, the second one is a building in Jerusalem topped with a hemispherical gilded dome, and the third one is a domed edifice surrounded by four vertical towers that rises above a terrace in India. The question is: What are the indications that make us realize that these monumental buildings belong to Islamic architecture?

In other words: What makes us understand that the first one is the Kaaba (Fig. 2A), one of the most important symbols in Islamic architecture, that the second one is the Dome of the Rock, which some critics consider the jewel of Islamic architecture, and that the third one is the Taj Mahal in India? What are the connotations or meanings that these buildings impart — if we exclude Quranic verses or writings — that classify these forms as pertaining to Islamic architecture? Do these forms have an Islamic connotation? If so, what is the connection between the cube and Islam or the hemispherical shape of the dome and Islamic architecture? Is the connection the "function"? If so, what is the function of the hollow cube, and what makes it Islamic? Does it have other cultural or theological connotations? It raises questions about its significance from a functional point of view, which makes its connection with Islam urgent and necessary.

The Dome of the Rock is a monumental building built by Abd al-Malik bin Marwan around a rock (Fig. 2B) in the place where the Prophet Muhammad (peace and blessings of God be upon him) ascended to the heavens on the night of Isra and Mi'raj. Thus, it does not have an Islamic function like, for example, a mosque intended for prayer, but rather it is a building linked to a historical event. The most controversial is the third building (Fig. 2C). What is the relationship between this building erected as a tomb to the wife of the Maharaja and Islamic architecture or Islam? The Taj Mahal was built by Emperor Shah Jahan in memory of his third wife who passed away while giving birth to their fourteenth child (Allen, 1988). In addition, some of these edifices almost contradict the teachings of Islam in their function. So, what makes these forms Islamic or associates them with Islamic culture and architecture? To answer this question, we will consider another important example, which is the minaret, despite the controversial issues it raises on the subject of symbolism. This example was given by Grabar (1980) in his paper "Symbols and Signs in Islamic Architecture". He believed that it is a sign suggesting a function, but it becomes a symbol when it reminds one of Islam, and it can become a symbol that has indications of a cultural product or a certain cultural identity as, for example, the minaret of the Samarra Mosque does when it reminds one of the city of Samarra. In more general philosophical terms, "while the sign attribute is fixed, the symbol attribute is a variable". When reviewing Grabar's work, we found that it is not sufficient to understand the dialectical relationship between the symbol and the function, especially when the function is changing or subject to a continuous transformation as is the case with most of the vocabulary, shapes, and architectural symbols in Islamic architecture. The most prominent of the examples is the minaret with its "contemporary" function, which has nothing to do with its "traditional" function established for it in the early days of Islam when it was the place for the

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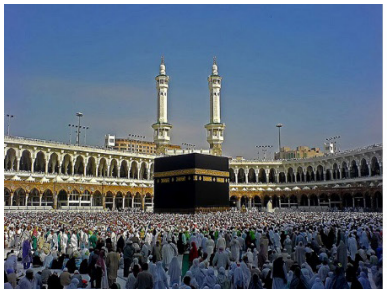

Fig. 2. A. Honorable Kaaba, Mecca (https://www.masrawe-b.com/2018/07/Photos-Kaaba.html)

B

B. Dome of the Rock, Old City of Jerusalem. (https://www.pikist.com/free-photo-vzacq)

C

C. Taj Mahal, Agra, India (https://www.pikist.com/free-photo-sofpi)

muezzin to announce the call to prayer.

There is another philosophical dilemma regarding the shape in the case of the minaret — especially in contrast to minarets in their traditional form — in such cities as Cairo, which is usually topped with a crescent. What gives the minaret of the Giralda in Seville, Spain, as a square vertical tower ascending to the sky the Islamic character (Fig. 3B)? Or the Savior (Spasskaya) Tower in Moscow (Fig. 3C) or even the Tower of Pisa (Fig. 3A) (as an abstraction of the idea of a minaret)? Here, it can be assumed that the minaret in its contemporary form, after changing its original function, could be represented by any vertical tower topped with a loudspeaker, and even the Savior Tower could be that building. Would then the Savior Tower acquire the Islamic character if a call to prayer was announced from it or if its shape was borrowed in the structure of a mosque? Along with the others, these examples represent an architectural and philosophical dilemma regarding the relationship between the form and the function, symbolic connotations, and the legitimacy of recognizing a symbol with a particular cultural significance, especially in the case of function transformation or even absence.

Perhaps, in our case, the minaret falls within the cultural and civilizational dimensions, which are greater than the issue of the relationship between the form and the function, and within the scope of issues related to culture, civilization, and identity. Therefore, the minaret — whatever its shape — has become a symbol of a certain identity of Islamic character, different from other cultures, as indicated by the building on which it is erected and not by its form or function. In other words, the symbolism of the form in Islamic architecture — e.g., that of the minaret — determines the tripartite relationship between the form, the function, and the third and most important element, which is the content (the cultural, social, and historical content imposed by the nature of the relationship between these three determinants).

These three determinants do not dictate a “fixed” pattern. It is rather that their output is subject to the nature of the interaction between the form, the function, and the identity content. It would be wrong to attribute the form to culture or identity. Its significance is rather determined by its relationship with the tripartite system in the cultural framework, which gives it its symbolism within the particular culture. Hence, the minaret is more than just a functional relationship implemented through the call to prayer via loudspeakers, and it is not related to the shape or height (whether it is an abstraction or an actual architectural transfer of traditional models into Islamic architecture). We are rather talking about an issue rooted in the cultural dimension of identity, which defines the characteristics of the symbol and what the minaret symbolizes.

The repetition of many elements in architecture throughout history has led to the consolidation of these forms in the Muslim mind, i.e., a perceptual system is formed, which operates as an electronic brain that utilizes many sources of information, and then makes a choice, combines, divides, and compares them, and also gets them duplicated as needed. In the eyes of many, the mosque has become a building that includes such specific elements as, for example, a minaret, a dome, and arches. These forms shifted from the formal to the symbolic concept in the mentality of Muslims and became for them a formal and moral language of

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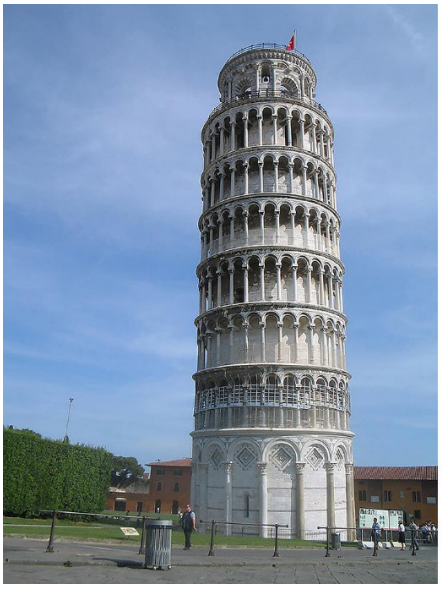

Fig. 3. A. Tower of Pisa. (https://www.pikist.com/free-photo-iazog)

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B. Giralda Tower, Seville. (https://www.pikist.com/free-photo-iialt)

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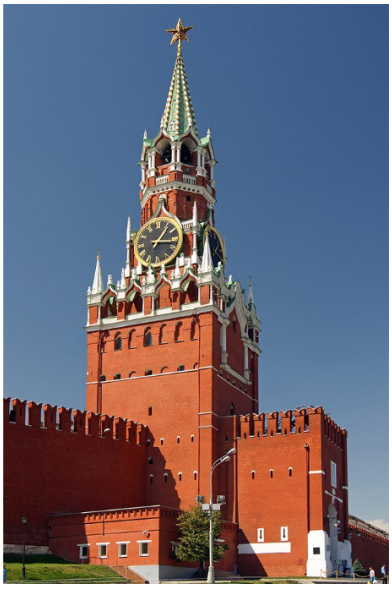

C. Savior (Spasskaya) Tower, Moscow (https://pixabay.com/ photos/ moscow-the-red-square-4572132/)

communication. In terms of form, it is an indication of a building for prayer, and in terms of meaning, it is related to Islam as an identity of the Islamic community at the general level.

The association of some architectural forms with the structure of the mosque, and their repetition transformed the concept in the Muslim mind into intellectual meanings and connotations related to the building of the mosque. Thus, sometimes it is difficult to introduce changes in these forms, especially as they relate to a religious establishment. The majority believes that they are "fixed" elements and the mosque takes its architectural identity from them.

2.2. Abstraction approach to the connotations of Islamic architecture

Abstraction and symbolism are among the most important features of Islamic arts. The Muslim artists did not care about the details of the things they depicted or drew. They were more connected to their essence, to what they referred to or symbolized, trying not to use perspective or embodied images and moving toward complete flatness in order to move away from the idea of representing what God created. According to Islam, all living creatures with the ability to move fall within God's domain and should not be replicated in any way including arts (Akkach, 2012).

Abstraction in Islamic arts is a fruit of a spiritual vision of the world or reality beyond the universe, and this can only be achieved by taking Islamic arts out of the world of perspective to the world of symbols and intuition, moving away from simulation and embodiment. If we look at abstraction in Islamic architecture, we will find that it represents its general feature, stemming from the Islamic concept of existence, which appeals to the absolute value who is God Almighty, who is the creator of this universe and is free from imagination or representation. Thus, the reference and value framework in the Islamic perception transcends the nature perceived by the senses, and this is because it is based on the concept of revelation from God to the Messenger, may God bless him. Therefore, the constants are paradoxical to the world of matter because they are unseen. The concept of abstraction in the Islamic artistic plane is a result of aesthetic and scientific spiritual thought, transcending the issue of depth and emptiness, which is one of the meanings of abstraction, to deal with the artistic visual plane as an artistic plane replete with connotations, signals as well as geometric, ornamental, calligraphy, and chromaticity signs behind every visual element, including story and significance, whether spiritual, aesthetic, cultural, or social. The Islamic architects pegged their creativity on evoking their inner beliefs through the use of abstract forms that produced magnificent works of art (Ghasemzadeh et al., 2013). The Muslim artists excelled by condensing and reducing it in Islamic arts into pure abstract visual signs and signals according to the Islamic and not Western perspective of abstraction. Based on the above, we can establish the reason for the generality of the abstraction approach in Islamic arts where the use of perceptible visual forms in a work of art has an invisible message, and that is due to moving away from the simulated approach. The simulated approach, born in Greek civilization and revived during the Renaissance, is intended for representing and imitating what is natural and perceptive, from man and nature to all other creatures, thus focusing on the apparent tangible part only, without hinting at the unseen motive power.

Perhaps Hegel's statement serves as an explanation for the motive of this mimicry approach among the followers, which did not find acceptance in Islamic civilization. As for the embodied or unembodied image in previous civilizations, the goal was to, first of all, defend against death since death is the demise of the body and the annihilation of the human trace from existence. Therefore, the ancient men resorted to the image in its various forms (statues, inscriptions on tombs, and other common manifestations) so that they could cling to life. The goals of abstraction have varied and include visual, spiritual, and aesthetic. Despite the agreement between most of the models that adopted abstraction, this is a way to ostracize classic fine visual simulation entirely or in part. Various artistic styles and means have been dealing with abstraction, e.g., by recording it in the semi-abstract symbolic form as in the arts of the Byzantine era and the Middle Ages. Although they adhered to the pictorial representation of religious stories, preserving flat depth, dimensions, and anatomical proportions, the artists neglected shadow and light in their depictions in harmony with the teachings of Christian theology (Fig. 4A) or reduced the details of visual elements, deconstructing such elements and preserving the pure essence of their components as in the case of Islamic abstract art. Those abstract components are reshaped again in an abstract plane where the dimensions are flattened, and the spatial image and its narrative meaning are destroyed. Thus, the components of the Islamic visual text in the Islamic abstraction approach, whether they are geometric, calligraphy, or botanical, are transformed into signs and obtain reduced functions (Figs. 4A, 4C). Their connotations vary between what is symbolic and pure contemplative aesthetics since these connotations and signs reduced with all their meanings are intended to revive hearts, brighten eyes, and nurture conscience. The Muslim artists expressed these meanings without the need to use the spatial image and replaced it by creating new visual solutions making it possible to achieve the goal. Besides, the interweaving of geometric and botanical elements as well as inscriptions is one of the prominent ways of Islamic abstract surface formation, in addition to the

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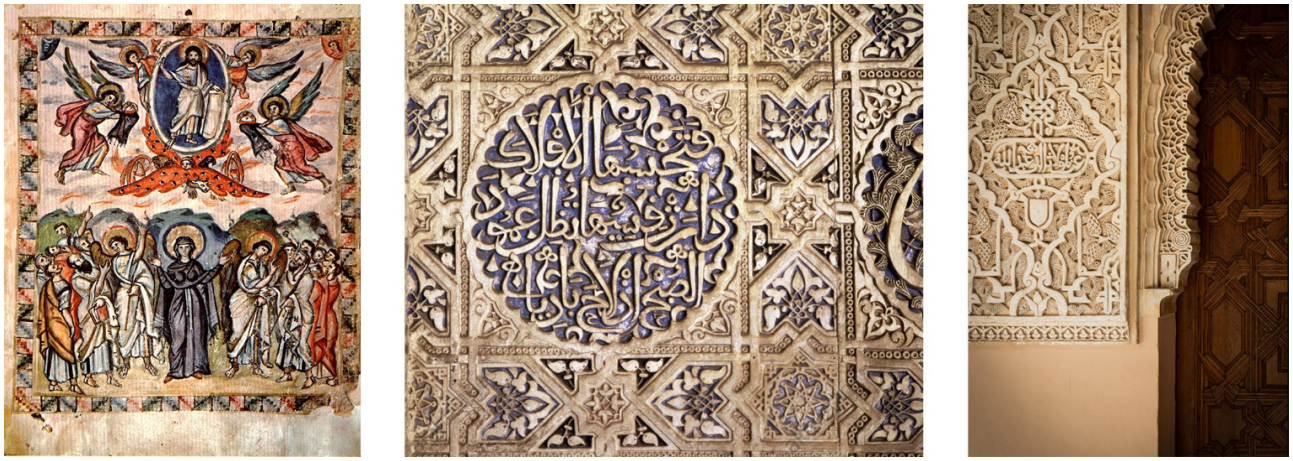

Fig. 4. A. Ascension, from the Rabbula Gospels. The most abstract and symbolic nature of Byzantine art (https://thevcs.org/ascension)
B. Islamic Art, 14th century, Alhambra. (https://www.akg-images.com/archive/-2UMDHUYGOPH6.html)
C. Arabesque at the Alhambra, Granada. (https://www.flickr.com/photos/alex-david/5316969135)

diversity and repetition in the distribution of visual elements. The Muslim artists were keen to keep these components coherent and interconnected in the eyes of the viewer (Fig. 4B, 4C). There is no doubt that these signs of visual entanglement hide behind them indications related to the idea of the nation's cohesion and solidarity, including the good of society

It is necessary to mention here an important factor that reinforced the position of the Muslim artist moving away from embodiment, and it is related to the goals of art, stemming from a deep understanding of Islam. Unlike other religious and non-religious arts, Islamic arts did not seek to express religious and secular stories such as those pertaining to the lives of prophets and saints, the glorification of conquests, and the heroism of politicians, which, for example, the Egyptians had to express in a narrative way using embodied images. Hence, it is important to understand the philosophy of abstraction in Islamic arts, which sought to delve deeper into the contents, and distance away from the superficial literal understanding of certain orientalists and others, especially since we are facing an art that considers the understanding of religion by man and the world. This understanding is translated into an aesthetic philosophy that has spiritual, intellectual, and aesthetic components reduced to pure abstract visual signs, functions, and connotations. Hence, the decorative and ornamental aspects of Islamic art emerge, which, as Burckhardt (2009) pointed out, do not contradict the privacy of thought.

The use of abstraction in Islamic arts was based on how the religion viewed nature and the goals of its imitation, which was far from the philosophy and goals of Western abstraction, completely different from its Islamic counterpart in terms of the form and substance; the difference between them is that the source of abstraction in Western arts is sensual, realistic, and visible, while the source of abstraction in Islamic arts is unreal and invisible.

In other words, Islamic abstraction does not seek to express the physical concept of the visible origin as it is in the natural reality that Western arts preserve, no matter how severe abstraction is. It rather seeks to express the pure reduced invisible components within nature. This means that Islamic abstraction expresses its connotations from within the visual text itself. The use of abstraction in Islamic arts resulted from the spiritual, scientific, philosophical, and intellectual richness of the Muslim artists, inspired their faith and deep understanding of religion, creed, monotheism, worship, values, and behavior. This understanding was translated and represented artistically — by the inspiration of faith — with a purely aesthetic vision, and artistic abstraction at a distance from any reaction, or exclusion of other aesthetics; the goal was to create new aesthetics and visual solutions going beyond the spatial image with its expressive and aesthetic concepts, especially since embodied images — from the Islamic point of view — do not serve the concepts of goodness, benefit, and beauty, and do not reveal the aesthetics of cosmic geometry and the inventiveness of creation. There was no need to use scenic representation in the classical and Renaissance manner to narrate the cosmic aesthetics, although Islamic arts (unlike other religious arts) never had a religious function, but attempted — through the social and intellectual role — to transcend the self and reality and reveal the aesthetics of cosmic geometry and the inventiveness of creation without resorting to this type of representation, which was replaced by Islamic abstraction with reduced visual signs and connotations inspired by the components of nature and the universe, such as the stars, the shapes of plants, etc., and that serves as a basis for the Muslim artists in accurate analysis based on thorough calculations, in an effort to move toward the

hidden meanings.

To express the spiritual content of faith in the form of visual values, the Muslim artists needed mathematics as a method to achieve the goal of art, and since the content and idea were targeted, the artwork was not just decorative. Muslims excelled the most in four areas of arts: interlaced decoration, architecture, painting, and calligraphy. Interlaced decoration (Fig. 5) — an amazing authentic Arab art — is called arabesque by Westerners.

As mentioned above, Islamic architecture relied on the principle of abstraction with all its numerous symbols since it addressed both the mind and the conscience. The Muslim architects found that the content of the means they used to achieve abstraction included connotations representing the divine order, and metaphysical values, and thus, geometric shapes with a symbolic content appeared, emanating from the culture of society or inspired by previous arts in line with the Islamic faith, or emerging through formal and aesthetic structures, and that content expressed the values of rhythm and abstraction.

The equivalence of geometric heights is a visual sign that is evident in most Islamic abstract formations (Fig. 5), whether they are geometric, botanical, or in the form of inscriptions. Behind this visual sign, social and spiritual connotations with aesthetic motives are hidden, which the Muslim artists tried to convey to the viewer without the use of embodied images, expressing the ideas of justice and equality in direct pictorial mimicry. For instance, they were used by religious iconographers in Byzantine and medieval art. The characters of the saints and apostles were embodied in figurative icons and carved in sculptures so that the characters would have equal size and height to express the concepts of justice and equality between human beings, which are an integral part of the concepts of truth, goodness, benefit, and beauty, shared by all monotheistic religions.

Fig. 5. Great Mosque of Cordoba. The equivalence of geometric heights (https://books.openedition.org/pup/3601?lang=it)

2.3. Visual approach to the connotations of Islamic architecture

Islamic arts are in contrast to the arts of the Christian Middle Ages, which tended to enclose the visual text inside churches and Christian architecture in general, by using closed frames and determinants. Through incarnate symbolic visual representation, they would attract the viewer's attention to a specific central icon inside the church or an architectural place using a specific visual direction.

This requires space enclosing to focus on Christ, peace be upon him, and the religious stories told, whether they are in the images with individual frames and icons isolated from outside influences, or in the secular and religious architectural space. Designs are usually performed in a geometric style that isolates the inner space from the outer space; and that keeps the viewer's gaze confined within it, in harmony with the spiritual and theological philosophy that the visual discourse of those periods sought to express. Perhaps this justifies the small size of interior windows in this architecture, not allowing natural light to enter the place and replacing it with artificial lights and candles creating shadows, which have become necessary to visually embody a statue of Christ according to the Christian aesthetic and spiritual perception.

Meanwhile, Islamic architecture is characterized by removing the frame and keeping the visual text open on various types of abstract surfaces (so that the viewer's gaze would not be confined to the interior only), by distributing the visual signs in the text in all directions. The viewer's gaze is also distributed in multiple directions going beyond the boundaries of the drawn surface. Perhaps employing this in the Islamic abstract surface indicates particular significance related to the liberation of Muslims, their conscience, mind, and feelings, from the limitations of the physical place toward an open mental vision, clearly reflecting their rejection of rigidity and closure in their spiritual, moral, and social behavior. Maybe one of the most prominent creative solutions devised by the Muslim architects was to transfer their vision from inside the building to the outside, in all directions, and not to enclose it in the architectural space, by expanding and inclining the windows to become open to the sky so that natural light could enter and glow on all surfaces. The associated message and architectural visual discourse indicate the importance of the believer's insight into the face and light of God in every place and in every direction.

From the Islamic point of view, God Almighty is not confined to a specific place or space. The One Creator is present in every place and time, and this can be seen in the abstract formations (decorative, geometric, epigraphic) on the surface of the interior walls of a building. Its visual elements attract the gaze of the viewer and cause it to wander around the

surface and follow its multiple directions, especially to the outer space with harmonious visual rhythms. According to Kress and van Leeuwen (2020), visual semiotic concepts are used to examine what an image represents and the nature of this representation. It gives a deep meaning, represented in the expression of the secular meeting the spiritual and the earth meeting the sky, and thus, the aesthetic discourse mixes with the spirit and social aspects through this openness.

3. Symbolic connotations of shapes and elements in Islamic architecture

From the perspective of Islamic thought, symbolism is a method of moving from the realm of reality to the world of post-reality, i.e., from life to the afterlife, or transition from the realistic physical image to the spiritual image. Therefore, the light symbolizes God Almighty, the Creator of the universe as He described Himself. The symbolic thought was adopted in Islamic architecture through abstraction to allude to and distance from the statement, and the architects intended to emphasize some meanings such as the contact with the sky, the principle of monotheism, and the belief in the oneness of the Creator, by designing the inner courtyard open to the sky, and using minarets and a parapet, referring to an attempt to connect the earth with the sky.

Symbolism appeared in most spaces of buildings oriented in two directions, a horizontal plane linking it to the Kaaba in Mecca through the mihrab and the crescent, and a vertical plane with domes, minarets, and a parapet. Throughout history, Islamic arts used basic geometric shapes as symbols in religious buildings. Thus, pyramidal, cylindrical, cubic, spherical, and hemispherical shapes appeared in the formations of religious architecture. Islamic architecture can be analyzed in terms of the following aspects.

3.1. Connotations of geometric shapes

The individual point expresses the unity of the Creator, extending to the universe and life.

The straight line is a symbol that indicates straight thinking and uprightness in religion and behavior.

The square, with its equal sides, symbolizes justice, stability, perfection, and constancy, and represents the four cardinal directions or the four elements of nature.

The circle, inspired by the sun, the full moon, and the vault of the sky, is a representation of cosmic laws such as the rotation of night and day, death and resurrection. Some art theorists link the circle as a form with a religious dimension, the circumambulation around the Kaaba. The circle generates spiral shapes that indicate the movement of celestial bodies, and these shapes are also present in Islamic architecture (e.g., they can be found in the minarets of the Samarra Mosque and the Mosque of ibn Tulun).

The octagon symbolizes the divine throne carried by eight angels. The shape generated by the overlapping of two squares, as in the horizontal projection of the necks of domes in many mosques, indicates a religious and spiritual meaning. The eight-pointed stars consisting of two squares also represent the universe composed of a square symbolizing the four cardinal directions (east, west, north, and south) and a square symbolizing the four elements of nature (water, air, fire, and earth).

The triangle is also associated with religious meanings since it indicates the close relationship between the sky and the earth and refers to the relationship between the soul and the prayer that ascends to the sky (base-down triangle) or indicates divine mercy (base-up triangle). The six-pointed star expresses the merging of two shapes representing the sky and the earth through the overlapping of two triangles, where the base-down triangle represents the earth, and the base-up triangle represents the sky.

3.2. Connotations of architectural elements

Islamic artistic and architectural elements often have more than one function (in addition to the symbolic goal under the influence of Islamic faith and thought). Below we present an analytical and philosophical interpretation of some Islamic architectural elements, where we mention the goal of each element and its symbolic connotations.

- **Minaret**

The minaret expresses spirituality and transition from the material to the spiritual with the use of a visual image as the eyes travel from the bottom of the minaret to its top, which makes it a symbol of the earth meeting the sky through the gradient in height. It is also a symbol and sign of the mosque's presence. The use of two identical minarets in the same mosque symbolizes the arms extended to God in prayer, trying to get close to Him (Fig. 6).

- **Domes**

The dome is one of the best types of ceiling covering large square areas, ensuring enough light and ventilation inside the building. Its shape makes it possible to have windows both in the neck and the body of the dome.

It is a symbol of the vault of the sky and the spiritual realm. Its spherical shape symbolizes the universe, and its orientation toward the sky shows where the believer's heart and mind must be directed. Besides, it is related to the movement of the universe through its infinite rotation as if it was a circumambulation and a heavenly quest, an infinite circle to reach God. Currently, electric lights of various colors are used to highlight the aesthetics of the domes and attract attention (Al-Ubaidi, 2021).

- **Pendants**

Pendants (also called muqarnas) are architectural ornaments resembling beehives, that can be seen in the Arab Islamic buildings, hanging in layers on

Fig. 6. Use of two identical minarets in the same mosque
(https://almashhadalaraby.com/news/287785) (https://www/ensonhaber.com/yasam/dua-ederken-nelere-dikkat-edilmeli)

top of each other. They are used for architectural decoration (Al-Ubaidi, 2021). They represent a complex series of arches and reversed pyramids in continuous rows. By employing such pendants, the Muslim architects intended to emphasize repetition, succession, spread, and continuity in creation despite that it is due to one source.

- **Arches and vaults**

Arches and vaults are used extensively for architectural and aesthetic purposes inside and outside buildings, above windows, doors, entrances, and niches. They symbolize the welcome and the invitation to enter the spiritual world and leave the materialistic world, separating the sacred and the secular. Currently, they serve as a symbol of distinguished architecture.

- **Pillars**

Pillars are one of the significant elements in Islamic architecture. They performed an important function in ancient buildings, where floral and geometric ornaments were used in the crown, indicating growth and ascent to the top in contrast to earth's gravity, and this was a reference to the absolute. If the architects attempted to impart an artistic touch, the crowns could be in the form of a truncated or inverted pyramid.

- **Courtyard**

Courtyards are open or exposed spaces and semi-exposed hallways helping protect the building against the sunlight in summer and the rain in winter and regulate air currents in the whole building. They refer to the inward orientation of life as well as purity and stillness.

- **Ornaments**

Ornaments are a spiritual expression of the idea of monotheism, represented by geometric shapes that have no beginning or end and originate from a single central point. The use of ornaments with vertical lines symbolizes the Muslim cap. The ornament design is based on vegetal shapes and shows the dynamism that can exist in floral patterns (Hillenbrand, 2003).

- **Parapet**

The parapet symbolizes unity and equality through repetition. It also reminds those praying as they stand in a row (Fig. 7).

- **Crescent**

The crescent is one of the architectural elements that top the walls of a mosque. It indicates the qibla and Islamic calendar. Crescents are always placed on the top of domes and minarets.

4. Privacy and identity of symbolic connotations in contemporary Islamic architectural design

The interest in studying the formal aspect of the elements of architectural buildings as well as the symbolism and meanings of these elements clearly emerged after the industrial revolution when architectural patterns underwent changes since the construction industry and architecture started using machinery. Contemporary technologies and modern manufacturing methods imposed new architectural forms and solutions, which in some cases conform to traditional forms and in other cases break from them. Based on those changes and the formal interest in architecture, particular trends emerged with regard to the forms and their concept.

For the arts to be distinguished, there must be signs, connotations, and symbols that distinguish the origin of one type of art and its features in a particular place from the other, with account for the difference in time as well as historical and cultural transformations. The Islamic heritage enjoys distinctive privacy and identity that have their own impact on contemporary arts, literature, and sciences. Privacy and identity are quite concentrated in terms of the humanity in Islamic thought, the principles of monotheism and the greatness of God, and so the Muslim artists (especially the Arab and non-Arab contemporary designers) in general were

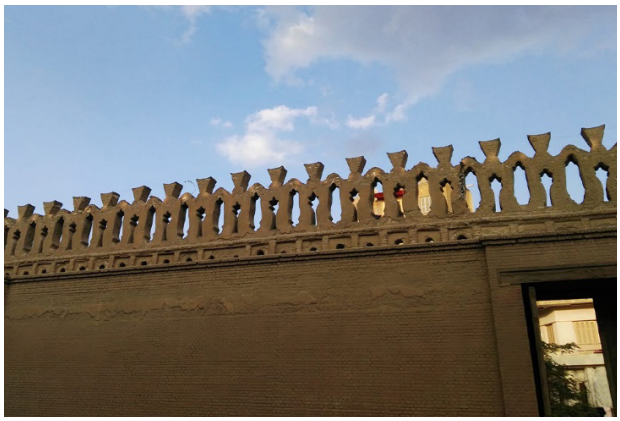

Fig. 7. A part of the parapet symbolizing the physical and moral aspects, the body and the soul
(https://egymonuments.gov.eg/monuments/ibn-tulun-mosque) (https://mugtama.com/theme-showcase/item/72760-2018-05-29-11-39-53.html)

affected by those limitations.

Therefore, controversy emerged over the possibility of benefiting from these Islamic heritage elements in creating a contemporary design trend that would reflect the cultural identity. To address architectural forms in design, or the so-called modularity and change, three design trends appeared in the Arab and Islamic world.

4.1. Direct copying of traditional elements

Some architects adopted a commitment to traditional heritage architecture and convey its symbolic connotations in terms of using traditional construction techniques and methods as well as the direct use of traditional architectural forms and elements (see, for example, the Mosque in Amman, Jordan (Fig. 8) so that it would give people confidence in their culture. These forms are a language of their own just like other types of folk arts (the clothes, the tools used, etc.).

For an architectural work to have symbolic implications, it is important to consider history or adapt historical values and their uses in architecture. The architect Robert Venturi preferred the visual aspect to the form, where in the confirmation of the visual image the architectural identity is highlighted since, for Venturi, architecture is a shelter with symbolic connotations (Venturi and Brown, 1986).

According to Cassirer (1953), copying a symbol completely distances the element from the symbol, and no new value is created.

Copying architectural patterns from the past is not the best solution. Contemporary technology should be properly used, and the resulting architectural forms should be in line with the identity of the community when a contemporary structure is designed. Hence, the designer must focus on the importance of studying the social environment before designing and identifying the meanings and symbols associated with them when trying to change the architectural patterns.

4.2. Contemporary trend

This contemporary trend is a call for change and consolidation of Arab-Islamic architecture features, with new meanings in terms of the form and the content, as was seen by the pioneers of contemporary architecture at the beginning of the 20th century. Those pioneers had an absolute belief in the futility of the traditional method of design and the need to create architecture representing the zeitgeist. The events of that period reflected ideological and political changes. This trend resulted in architecture with symbolic connotations, which is also quite new (to the point of trying to find the features of contemporary international architecture).

The dissatisfaction with the functional approach in architecture provoked several attempts to use architectural symbols borrowed from ancient buildings in the design of modern buildings for various purposes. This trend sparked a great debate about the relationship between the form and the function. While the belief was that the function should give a certain identity to the volume, and the volume should express the function, the issue of the moral significance of architectural elements appeared as a product of other natural factors. The architectural writer Alan Colquhoun mentioned that the fundamental dialectic no longer seemed to be that between the form and the function but rather that between the form and other entity (Hays, 2000).

The neo-architectural movement led to the emergence of buildings that lacked expressive and recognizable symbolic connotations as can be seen in the Mosque in Rijeka, Croatia (Fig. 9) as an example of contemporary design. The trend resulted in a high number of people complaining about their architectural surroundings. During that period, the designer focused on the natural function, and the economic and technical considerations pertaining to the building, while the symbolic connotations were neglected.

As for the local architectural identity, the architects tried to reject it on the pretext that it did not meet the demands of modern life. Many residential and administrative buildings in fact refer to technical progress in construction and

Fig. 8. Mosque in Amman, Jordan
(https://umroh.com/blog/inilah-masjid-king-hussein-bin-talal-di-amman-yordania/)

Fig. 9. Mosque in Rijeka, Croatia
(https://ilmfeed.com/mosque-croatia-world/)

contemporary management methods rather than a living environment with specific customs, traditions, and culture.

4.3. Distinguishing and innovating new design elements based on traditional symbolic connotations

This trend is based on systematic research (with its various means of induction, analysis, and inference) addressing local conditions, and contemporary cultural and religious data of the time, including the role of the traditional form in the creation of a modern form. The traditional form can be used as one of the appropriate solutions to develop or discover a modern form and then the old form can be fused with the new form. The Kul Sharif Mosque in Kazan, Russia, is a great example of a new design that preserves Islamic traditional symbolic connotations (Fig. 10).

Fig. 10. Kul Sharif Mosque, Kazan, Russia
(https://www.pikist.com/free-photo-xvaeg)

Thus, compatibility between heritage and contemporary authenticity is achieved in design by revealing heritage aesthetic values, their philosophical and artistic features, and their connection to the Islamic faith as resources for design.

A local design should be brought in line with particular concepts and traditions and should preserve the culture and privacy of the local environment. This creative and innovative trend depends on development through understanding the content of Islamic heritage and corresponding engineering systems and borrowing its elements and ornaments, followed by re-building, formulating, and employing them in an innovative way with modern materials and techniques while exploiting modern technology such as computers. Therefore, it can be noted that, despite certain differences, controversy is focused on the need to enrich the architectural work by providing designs with a moral value and civilized connotations. This is what the architects Robert Venturi and Aldo Rossi advocated for, despite their different styles.

In his writings, Robert Venturi emphasized the importance of local values in architectural work. He believed that architectural work should act as a symbol in the space and not merely a form without meaning as was the case in the works of his contemporaries, which, according to Venturi's opinion, were just a translation of functional programs and construction requirements (Venturi et al., 1977).

Here it is necessary to confirm the presence of privacy and Islamic identity in contemporary design by deducing Islamic symbols in design and the possibility of achieving an Islamic identity in contemporary design.

Conclusion

This research was based on semiotics as a tool of modern criticism via a deep implicit analysis of symbols and their connotations in Islamic architecture through content, abstraction, and visual text. The results show that the tools for reading the visual text from the Western point of view are not compatible with Islamic peculiarities and the view of this form of art on the universe and the Creator.

Perhaps one of the cognitive factors related to Islamic architecture is the large number of scholastic approaches that to a greater extent are based on historical narratives and to a lesser extent are based on the religious description. These approaches rarely use modern critical methods such as semiotics, which today is almost the most attractive method for studying Islamic arts as a pristine creative space in critical studies, amenable to further analysis and theorizing.

Hence, our critical attempt was based on observing the superficial and deep structural relations between the visual functions of Islamic arts and their symbolic implications in the semiotic field. The results of this critical approach manifested clearly in the conscious implicit interpretation of each symbol in Islamic architecture, the associated connotations and signals that emanate from the

forms used, the relationship between the art form and the function, and the expression of the spiritual content of faith, especially in cases of function transformation over time, required by the current stage, cultural and civilizational conditions, and humanistic needs.

We presented three contemporary design models and showed that there is a great discrepancy in the application of the symbolic elements of buildings as a result of discrepancies in the philosophical thinking of the modern Muslim designers, which resulted in defects and loss of the identity and privacy of the features of architectural buildings. Therefore, it was necessary to highlight the need for returning to cultural and architectural artistic heritage and benefiting from it in finding new and contemporary design solutions using modern digital technical means in order to keep pace with contemporary thought and strive toward development as well as renewal and achieve cultural communication. This modest study of the semiotics of Islamic architecture is more like a recommendation or a call for more sophisticated critical approaches in modern methodologies going beyond the superficial concept of Islamic artistic creativity and its abstract aesthetics to its deep cognitive layers full of meanings, connotations as well religious, philosophical, and scientific concepts.

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