

Explaining Spatiality in Sacred Buildings of Iran, a View of the Internal and External Environment of Contemporary Mosque; Case Study: Al-Reza Mosque and Al-Ghadir Mosque in Tehran, Iran

Ali Mashhadi^{a*}

^a Assistant Professor of Architecture Department, Branch of Art and Architecture, University of Science and Culture (Corresponding Author).

Received 11 April 2022; Revised 21 September 2022; Accepted 18 November 2022; Available Online 26 August 2023

ABSTRACT

Sacred art is hidden at the heart of traditional art and is directly related to the truth and divine encryption while linking the body of holy architecture to the covert essence. Hence, this study aims to explain spatiality in contemporary mosques of Iran based on the material elements of sensory perceptions available in the setting to find the quality of the external environment or exterior of the contemporary mosques. For this purpose, a hypothesis is designed indicating a direct relationship exists between spatiality and sensory perceptions, and physical elements in the external environment of contemporary mosques in Iran shape this spatiality. Using qualitative research methods, philosophical approach, and inductive reasoning as library and field methods for data collecting, the present study concluded that spatiality in Al-Ghadir and Al-Reza Mosques in Tehran is in line and in size of embodying the material affair based on the physical elements located in the external environment, symbols, form, and human presence in this space, and is created regarding the movement and dynamism in the environment along with sensory perceptions. In Al-Ghadir Mosque of Tehran, the pilgrim is involved in a limited space and does not feel any new experience of moving in the space at any moment when moving in the space. In the Al-Reza Mosque of Tehran, the form and materials used in the external environment of this mosque indicate that it has not been constructed to improve pilgrims' sensory perceptions of the external environment and help them to travel to the world of mysticism. Hence, this mosque does not represent a mystical environment for pilgrims as much as the setting provided by Al-Ghadir Mosque. In Al-Ghadir and Al-Reza Mosques, therefore, geometry and volumetricity (cubism) are more important than Qibla for the spatial arrangement of the external environment; hence, the concept of eternity is not conveyed to the pilgrims when attending these mosques.

Keywords: Spatiality, Sacred Building, Sensory Perceptions, Al-Ghadir Mosque in Tehran, Al-Reza Mosque in Tehran.

* E_mail: ali.mashhadi@usc.ac.ir

1. INTRODUCTION

Sacred architecture and the construction of spiritual space in Iran face numerous challenges in the contemporary era, and what is constructed is not consistent with the most prominent characteristics of Iran's architecture over history since this construction has lost its continuity in the present era. Hence, it is necessary to address the solutions and approaches to understand that tradition and find the principles for the reconstruction of that space. The prospect of the sacred art of architecture considers some values, including metacognition in the design of place and space, justice, honoring the material as if the material talks, and construction based on a timeless case covering ethical concepts along with spirituality (Ardalan and Bakhtiar 2017). In architecture, sacred art features allow one to express the meanings and belief in the divine world through abstract art (form, decorations or ornaments, etc.) (Nasr 2017), and this man-guiding factor changes from the ego stage to the placeless and timeless intuitive stage; therefore, sacred architecture improves the path of human growth and development in the created space because this sacred case and holy art express the metaphysic affairs metaphorically and subtly (Razavipour, Zakeri, and Ejbari 2012). Mosques are the main sacred buildings (Beheshti 2010). Hence, architects have used their thoughts and beliefs in the construction of mosques; hence, influenced by the beliefs and religious frameworks in line with the thinking system of architects, mosques tend to convey the same notions to the audiences and make these settings meaningful (Mehdinejad 2018). This architecture case that does not manifest the mental images in the tangible matter is one of the most important platforms for spatiality, which is revealed through the latent meanings in the appearance (Dadfar, Karimifard, and Dolatabadi 2020). Spatiality is also shaped through this presence in the mosque and is a specific spatial feature that conveys a matter to the mind of the audience that is different from objective and intuitive reality. Hence, spatiality is a meaning of space that appears based on the audience's sensory perception of space. many factors affect the process of precepting and evaluating the meanings, especially the mystical concepts of some spaces. Some of these effective factors include physical features and material elements available in the space, space function, the moral mood of the space audience, and the space audience's expectations when entering and facing the space (Alavimehr 2014). On the other hand, mosques have numerous signs and meanings that must be understood by pilgrims through supreme hierarchies of space perception. A perception that helps to receive the truth and meaning of mysticism; however, tangible affairs are conveyed to rationalities and evidence throughout the mental perception. In this way, the pilgrim experiences the spaces step by step and makes a relationship with

meanings and signs when attending the space of the mosque and moving in it (Dori and Talischi 2018). Therefore, the concept of space and spatiality, which is the opposite part of sensory perceptions, in the architecture of mosques must be received. To explain and determine this issue, the present study explains spatiality in the contemporary mosques of Iran based on the physical elements and sensory perceptions to find the spatial quality in the external environment of the mosques of this era. In this lieu, this study is based on the hypothesis indicating that a direct relationship exists between spatiality and sensory perception, and physical elements in the external environment of contemporary mosques of Iran shape the spatiality. Now, the following questions are asked: 1. how the spatiality in the external environment of contemporary mosques of Iran has influenced the sensory perceptions of pilgrims? 2. What are the factors affecting the spatiality in Al-Ghadir and Al-Reza Mosques?

2. BACKGROUND

The most important studies conducted on this topic are as follows: Abdollahi Molaei (2015) carried out a study titled "A survey on Islamic architecture ornaments (Case Study: Goharshad Mosque of Mashhad)" and pointed out that the art of Iranian Muslim architect has been reflected in expressing the beliefs of holy Islam religion in sacred ornaments, and this case is obviously seen in richness of Goharshad Mosque's decorations. Soltani et al. (2012) conducted a study titled "Comparing the Role of Pattern and Experience-based Concepts in Architectural Space" and found that the worry of creating desired quality in the architectural space has directed the attention of architects and researchers toward the concepts and methods that rely on the human experiences and identity sequence of man achievements with previous generations. Mohammadi and Firouzi Majandeh (2016) conducted a study titled "Spatial Analysis of the mosque in Ardebil City in the Contemporary Era" using statistical techniques and found a positive significant relationship between population density, historical bases of city, and spatial distribution of mosques. It was concluded that the spatial distribution of mosques is heterogeneous in neighborhoods of Ardabil. Finally, some recommendations were proposed for suitable locations of mosques based on the findings. Golestani et al. (2017) carried out a study titled "A survey on spatial integration and the process of evolution in the Iranian mosque" using the logical reasoning method and found that after the formation of four-porch mosques in the 5th century, the spatial continuity- that is called with "visual continuity," "structural continuity," and "structural-visual continuity" in this research- is trackable within a growing trend. Sayyad et al. (2019) carried out a study titled "Spaciousness and Body Awareness:

Rereading the Concept of Space in Architectural Experience” using qualitative research method with the philosophical approach of hermeneutic phenomenology, and found that phenomenal reading of spatial perception experience can be categorized into three levels of complete perception, dynamic perception of space through senses, and space as a medium for perceiving. According to a review of previous studies related to our topic, no study has been conducted on spatiality in the external environment of sacred buildings of Iran's contemporary era in line with sensory perceptions of pilgrims in rereading the external environment of these mosques, so this is one of the first studies in this context.

3. THEORETICAL FOUNDATIONS

This part of the study expands the concept of space, quality of perceptible space, and spatiality dimensions based on the model of theoretical foundations proposed based on the triple nexus between physical components, sacred space, and users' feelings and emotions. The sacred art and patterns of creating sacred space are then described.

3.1. Spatiality and Architect's Experience

- **Space concept:** “Space concept” is one of the most basic notions in architecture. From the viewpoint of Aristotle, space refers to a set of places and is considered a container for all objects (Zarghami and Behrouz 2014). Manifestation of the term “space” in architecture began in the late 19th century in Germany followed by expressed aesthetics prospects and presented in Gideon's thoughts (Bokharayi 2015). The term “space” is defined as a concept that its quality is influenced by two human factors that perceive the space and the body existing in the space. Architects and scholars of the architecture world have presented various definitions for space from the past until now. Among available theorists, the definition of space that comprises humans and their surrounding environment is more acceptable. In this sense, space is shaped based on the interaction between the environment and humans or the interaction between existence objectivity, and subjectivity (Sayad, Gharibpour, and Delsahd Siahkali 2019). Hence, such a concept of space is considered in this study.

- **Quality of perceptible space:** Space is classified into two categories “based on essence and uniformity and influenced by its inner elements” following Arnheim's theory and classic era (Merleau Ponty 2004, 50). In total, the perceptual concept of humans does not mean an innate nature-dependent human without theory. Shortage and lack of theorization of the space concept by humans indeed indicate any theoretical framework for analysis of human perception as the external affair arising from modern perception. Also, it is worth noting that space in the first speech has the notion of informed perception of the environment

and the formation of that environment by humans consciously or unconsciously. Hence, human attempts that are subject to presence in space before anything remove the public space from the initial physical and human-less state but transform humans from external functional reactions to spatial agents by involving them in space through communication platforms (Casey 2012, 38).

- **Spatiality:** The experience in the conscious sense is being the subject of a situation or condition or being consciously influenced by an event. Moreover, experience is the act of living through observation of events and also refers to education knowledge, and subsequently obtained skills. In this case, the concept of the event is interconnected with the experience. The popular theorist, architect, and coach, Bernard Tschumi believe that there is no architect without event. He expresses that spatial experience not only is about space, form, and performance but also includes events and activities (Tschumi 2012, 63). In this lieu, David Letterborough (2005) explains that when we perceive an unexpected quality of an experience then we call it an event. Anderson believes that “the stronger the interaction between individuals, context, and activity type, the higher the quality of experience caused by the space” (Anderson 2001, 42). Hence, a comparison between Anderson's discussions and the argument of Bernard Tschumi based on David Letterborough's debates about spatial experiences, event concepts, and their connection with the unexpected quality of experience have similar aspects so that the underlying components of Anderson are the same components used by Bernard Tschumi in creating spatial experience. In this case, activity is the most effective underlying component. According to the topics mentioned in spatial experience understanding, individuals, context, and activity are considered as the underlying factors in the environment then a spatial experience is defined as involved individuals in a specific activity in a context (Tschumi 2012, 66). Therefore, the term spatiality means attending to the space, space experience, and connection with it through building the body, feelings, and perceptions of audiences.

- **Spatiality's dimensions:** Although dimensions of spatiality do not increase the spatial experiences, they might be applied in architecture and spatial experiences (Shedroff 2009, 101). Hence, these dimensions are divided into six groups: duration is the first dimension that has four stages of confrontation, immersion, conclusion, and continuation (Diller et al. 2005, 39). The second dimension is terminological stimulus which is used to describe feelings, images, or experiences that create a harmful memory. Stimulus makes a person return to the harm and create a thing that someone feel upset and scared because it has been created to remember the evil that has occurred in the past (Farahvashi 2001). The third dimension is spaciousness, which means different ways to

Mashhadi, A.

experience a presentation that is linked to service, input-output (channel), security/safety, and access (Weinschenk 2011, 41). Importance is the fourth dimension of an experience that refers to identity, function, and meaning in a built environment. The fifth dimension of experience is interaction in different passive, active, and interactive types (Nodder 2013, 5). The last dimension of experience is intensity. In design, intensity is the measurement of the communication of an audience with that experience, and some words, including reflex, interaction and participation, persuasion, and coercion are considered synonyms of intensity (Shedroff 2009, 101).

3.2. Sacred art and Patterns for Creating Sacred Space

In sacred civilization, all activities are based on divine principles, so the same is seen in art; meanwhile, art is correlated with life necessities, and the spiritual journey of the artist and the moral needs of users are realized through art (Nasr 2015). Therefore, when art is called sacred art then it does not only mean common habits and traditions but the purpose is its spiritual and metaphysical paths (Avini 1991).

Sacred art is influenced by revelation and religious rituals, and has spiritual and religious origin, so that metaphysical manifestations are observable in all of its aspects (Mehrpouya 2008). According to sacred worldview, a meaning is hidden and covert in any object and each external face is completed with a reality that shapes its hidden and inner essence (Sattari 2014). Sacred architecture uses symbols when creating spiritual spaces. Symbols are some manifestations of absolute restrictions (Ardalan and Bakhtiar 2017). Sacred architecture is linked and connected to cosmology (Elyadeh 2014). In sacred architecture, the architect is not the creator but reveals the truth with his/her works that are similar to natural arts that are simultaneously effective and cosmic, mixed with determination origin, which seeks truth through a spiritual journey (Burckhardt 2017). In the architecture body, therefore, the best manifestation of architectural concepts and sacred space can be found in the existential essence of Iranian-Islamic mosques because Islamic mosques are prominent samples of symbolic forms integrated with profound beliefs indicating visual beauty (Ahmadi Maleki 2005).

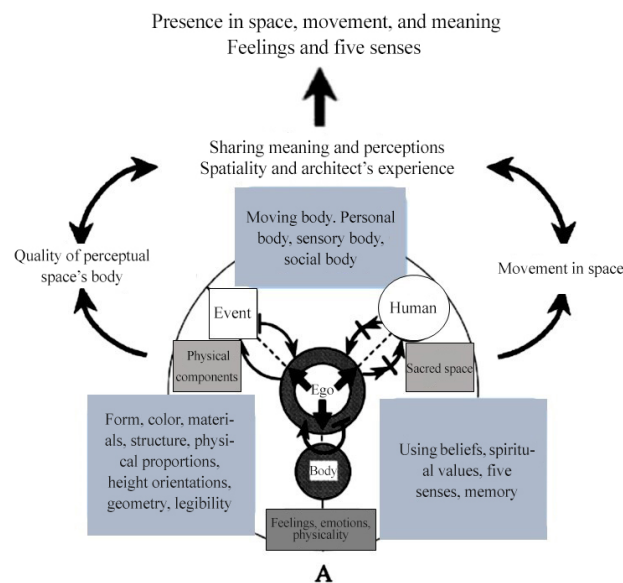


Fig. 1. Model of Theoretical Foundations

4. METHOD

This study is qualitative with a philosophical approach in terms of nature and is interpretive in terms of objective. Hence, its results are pure and research logic is inductive reasoning. The philosophical approach has been used because "the orientation of study is based on all perceptions of spiritual and cultural phenomena and a final and non-interpretive understanding of the text is not possible; so, the perception of text is ended" (Nowrouz Borazjani and Javadi 2016). Moreover, the researcher interoperates

the meanings available in the symbols. Since this study is associated with the perception field, it is preferred to use unconscious extraction. Furthermore, library study and field methods are used for data collection. Library studies were done to achieve the theoretical foundations of this study and field studies were conducted to find the effect of physical elements and Al-Ghadir and Al-Reza Mosques in Tehran on pilgrims, as well as photography and analysis based on the logical reasonings of researchers. To assess the research validity, the authenticated books and

papers about spatiality in sacred buildings published by scholars are applied. Moreover, two strategies of

rich and in-depth description in writing and pluralism among different references are used.

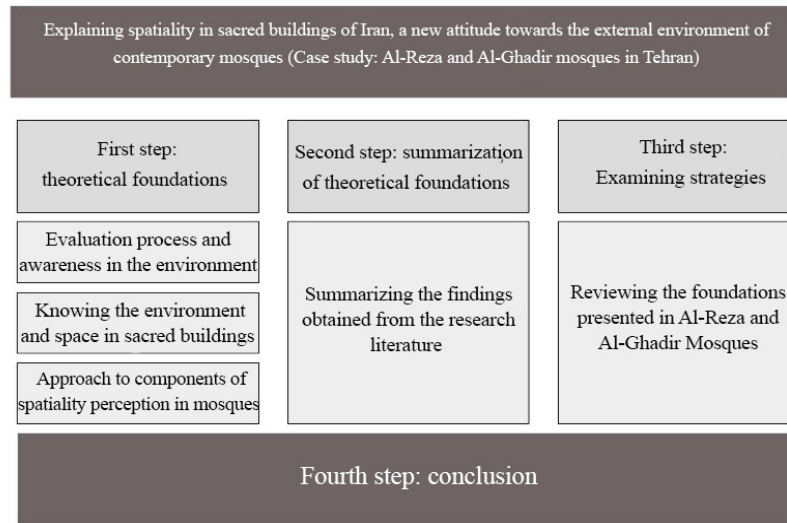


Fig. 2. The General Structure of Research

Because the expressed experience of pilgrims and scholars is conveyed through the "spatiality of the external environment," the important principle here is that architecture perception and its revitalization is done not as a body without the spirit of materials but as a context for creating interaction and easing the human perception of a space involved in its experience voluntarily or forcedly. Without human and human perception and understanding of it, architecture is just an occupied space without another thing in its borders. Therefore, the analytical and philosophical exploration of authors in spatiality process in the external environment of these mosques and perception of its environment has been derived from the pilgrims' experiences. In qualitative research, understanding and perception of phenomena are based on the behavior and speech of audiences that have experienced the space directly and share their perceptions with the researcher. The reason is that the audience converts the space to meaning after entering the space and then leaves the meaning as a memory in mind. In this lieu, it must be mentioned that the lived experience expressed by audiences of Al-Reza and Al-Ghadir Mosques indicates some parts of their social life on a larger platform.

5. INTRODUCTION AND ASSESSMENT OF THE CASE STUDY

This study tries to represent the concept of spatiality in sacred buildings (especially contemporary mosques in Tehran) based on the mental perceptions, interoperations, and definitions presented for this concept as an inspiration source to redefine the architectural sacred space in environmental spatiality.

For this purpose, Al-Reza and Al-Ghadir Mosques in Tehran are chosen and data analysis is done through conventional thematic analysis technique.

5.1. Al-Ghadir Mosque

Designed by Jahangir Mazlum Yazdi from 1976 to 1977, the Al-Ghadir Mosque is constructed in a rectangular site with 55*15.2m in size (Fig. 3). Some factors, including site compactness and surrounding buildings, made the architect design the dome towards the south and Mirdamad Boulevard, and public spaces towards the north. The main volume of the mosque does not have a considerable setback from the main southern street and is distinguished from surrounding buildings in the shape of a 1side prism with a height of 20m. However, the three-story façade of the building from the north side has been designed as similar to the surrounding buildings. The main spaces of the Mosque on the underground floor are a conference hall, service spaces, and ablution space, while the first and second floors include office spaces, a library, and balconies overlooking the dome. The main elements of the plan include a dome (Gonbadkhaneh), underground space (Shabestan), and a covered courtyard designed on the ground floor. Among the mentioned main elements, the dome was considerably distinguished from other spaces due to its area, height, and ornaments. The selection of the polygon's lowest side similar to the circle in the dome has created a space without direction. This spatial quality differs from the backgrounds of domes in historical mosques. This space mainly reminds the spaces between roads or rest spaces in Iran's architecture. The 12-side volume of the dome has become a 24-side space at higher levels of interior

Mashhadi, A.

space and elongated vaults with chevron arches have been created on half of its sides (Fig. 4). The dome altar is also located inside one of Chevron's arches and smaller sides of elongated and narrow vaults have surrounded it. The dome ceiling in the interior space

is made of six layers on the wall of each, inscription in Kufic script on the brick and tile, and horizontal levels beneath the layers are covered with inscription seals covered by tile and brick (Fig. 5).

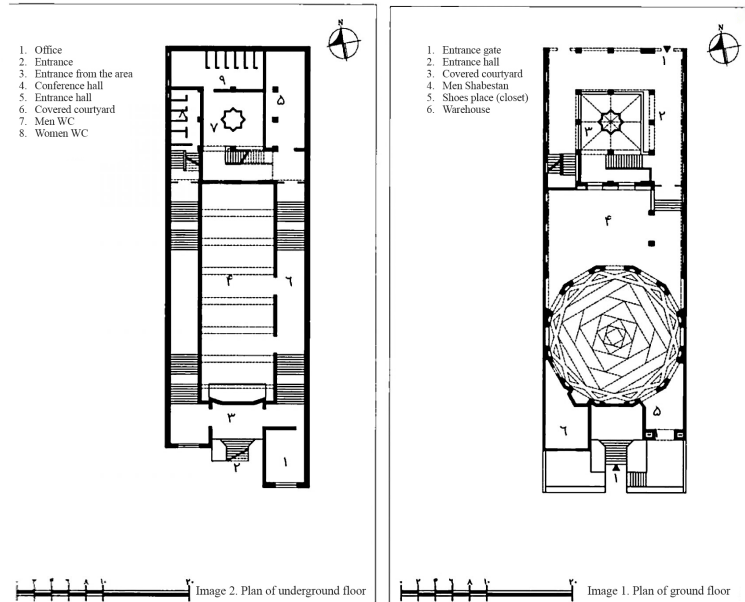


Fig. 3. Plan of Al-Ghadir Mosque in Tehran

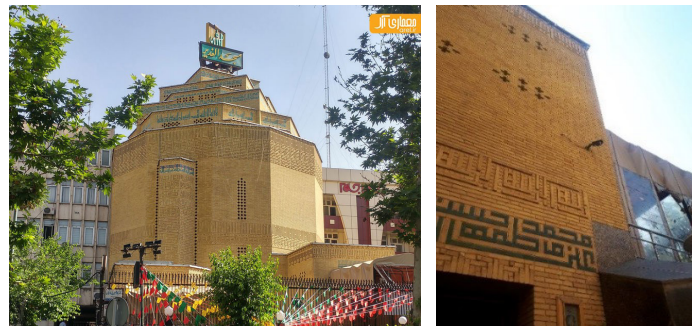


Fig. 4. Image of Al-Ghadir Mosque in Tehran

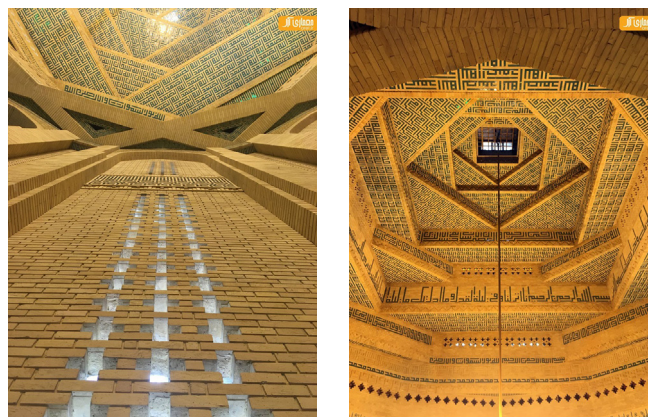


Fig. 5. Dome Ceiling in Interior Space of Al-Ghadir Mosque in Tehran

5.2. Al-Reza Mosque in Tehran

Al-Reza Mosque is one of the largest mosques in Tehran, It is an active and popular mosque that holds many cultural and religious programs and activities. Al-Reza Mosque has been designed based on

contemporary architecture and the building or spaces located in it, within a homogenous interaction with the environment, have shaped a whole as a religious-cultural and recreational complex so the spaces of this mosque seem different (Fig.s 6 & 7).



Fig. 6. Plan of Ground and First Floors of Al-Reza Mosque in Tehran

(www.Arel.ir)



Fig. 7. Al-Reza Mosque in Tehran

(www.Arel.ir)

Table 1. Classification of Forms of Al-Reza and Al-Ghadir Mosques in Tehran

Formalism	Al-Reza Mosque
Using abstract and unconventional forms, the importance of volume and relative detachment between inside and outside spaces	↓
Geometry Proportions Coordination between Internal and External Spaces	Lack of Minaret
Lack of use of architectural elements of traditional mosques such as minaret and dome, modern form, having rhythm, motion, and dynamism	↑
	Al-Ghadir Mosque

6. SPATIALITY IN AL-GHADIR AND AL-REZA MOSQUES

When a pilgrim in Al-Ghadir and Al-Reza Mosques talks about his/her experience of attending this sacred place as "a platform for achieving peace and spiritual perception of the environment," it must be explained that the mentioned components are missed in his/her social life before expressing the type of their perception of mosque space. The reason is that people enter such spaces while having many social lived experiences under the influence of religious, cultural, political, and economic factors that affect the quality of space perception. Since perception and spatiality of the external environment in mosques, through humans, has two subjective-internal and physical-external parts, this study examined the spatiality through the physical perception of humans regarding the moving body (under the effect of physical information), sensory body (under the effect of five senses of human), personal body (under the effect of individual experiences), and social body (under the effect of spiritual and cultural and social values). The process of perception in mosques and the occurrence of environmental perceptions and spatiality in the pilgrims are firstly influenced by many spiritual, historical, and social factors.

The process of perception is a historically dynamic process depending on the lived experience, which is constantly changing in the spaces of the Al-Ghadir Mosque. The element called body and its significant role in perception and spatiality of the external environment indicates this underlying principle that this intermediary is a spiritual phenomenon that appeared in the external environment of this mosque through form and ornaments with Quran texts and verses written on the external façade of the mosque.

On the other hand, physical perception in this mosque is affected by the design platform's features, and also the type of form and volume of this building has not been successful in creating an implicit connection between conscious and unconscious moods of human because human receives and perceives the environment features through the physical elements and understands them through mental processes, such as beliefs, spiritual and cultural values, five senses, memory, and illustration. In this way, mental processes in the external environment of this mosque do not increase the significant interactions between man and environment, so the perception of the environment concept is not done based on the human body movement in the space. This can be explained by the small size of the courtyard (Sahn) and outdoor yard of this mosque that have not used the spatial patterns commonly used in the external environment of Islamic mosques. This building has made itself similar to the mosque by using some patterns (e.g., wide and large courtyard, porch, portico, entrance gate (Daraygah)) through the intermediary element

(a pond in the shape of Persian Star) because water presence in the mosque courtyard serves as a heaven and pure element that purifies the sins of man. Hence, the pilgrim's presence in the mosque space represents the physical structure of space with a balanced quality of significant patterns and signs of spatiality in the outdoor space regarding the journey to the divine world and the creation of peace sense in the pilgrim has not occurred. This case has been intensified due to the lack of prominent patterns in Iranian mosques such as domes and minarets in this mosque.

In the external environment of this mosque, the material elements are not superior to each other since they have shaped a whole to provide a peaceful world for the pilgrims making them ready to enter a spiritual path when entering the mosque at the first step of presence in the space. It is worth noting that the architect of the Al-Ghadir Mosque in Tehran has created a situation in its eternal perspective of time that reflects the eternality location in the mind of the pilgrim. Al-Ghadir Mosque is located in a place where the outcome of cosmic forces and stability of natural structures provides a small world, so reducing the time dimension and organizing everything around it draws attention to itself. Moreover, because the mosque is a stationary place for peace, the volumetric rotation of this mosque has eliminated this case. Meanwhile, this mosque has created a poetic parable of a sky-land connection through a wise and artistic combination of tilework in turquoise blue color and brick in the external façade. This allegory expresses the pilgrim's soul connected to the world of mysticism and behavior raising them from earth to heaven.

In this mosque, spatiality is necessarily multisensory. The body of this mosque (the form, particularly) has been created and designed in a way that involves all five sensations of pilgrims. The visual sense in Al-Ghadir Mosque is dynamic regarding the material elements available in the space, and is looking for exploration in its dynamic essence, so that any element and detail of this mosque catches the eyes of pilgrims making them understand the covert notion of it. In Al-Ghadir Mosque of Tehran, physical proportions have prevented the creation of human and humble space, and in the external environment of this mosque, human perceives the spatiality of this mosque based on its physical elements by attending there and walking in the space because humans perceive the world based on its structure and physical presence. Hence, the empirical world becomes meaningful, defined, and organized based on the body. The empirical world of humans indeed has two simultaneous focuses: the body of surrounding space and human mentalities. The architect of Al-Ghadir Mosque in Tehran considers the simplicity and single color of this building as a symbol of Islam religion; hence, the architect has used this feature in the external environment of the mosque allowing the pilgrim to pay attention only to God and ornaments cannot

distract them in external space. The lack of material diversity in this mosque and male confrontation from the entrance gate to the courtyard and from the yard to the entrance of the internal space would improve the sensory-environmental perceptions of pilgrims about the mosque and its spatiality. In an analysis of this mosque, spatiality perceptions, the presence of pilgrims in the mosque space, and smelling the adoring of water while the wind is blowing in line with sensory perceptions of the courtyard space have created an incredibly imaginative world. However, the external environment of this mosque does not have an improved quality regarding the travel to the mysticism world due to physical elements (form, height orientation, and materials), so this area does not represent a mystical space for pilgrims. When passing through the courtyard of this mosque that has no plant, a strong connection between knowledge and prayers with cosmic understanding is improved, while the perception of mysticism sense is more when entering porches and underground spaces of this mosque where this sense reaches the highest level when passing from light to darkness due to height orientation. Since the spatiality of the external environment of Al-Ghadir mosque is mainly a sensory event including movement, passing through the environments of the space would induce the sense of various spaces to the pilgrims. Regarding the manifestation of the movement concept and space perception through it in this mosque, these perceptions do not occur due to the lack of elongated geometry in the Qibla direction that makes the mosque dynamic and forces the audience to do physical movement and walk in this trajectory helping them, to convert the dynamics components of physical movement to visual movement while moving in the external environment of the mosque. In this case, pilgrims perform ablution in the pond, if required, and then enter the internal space. Hence, perceptions of the external environment that are the main component in the spatiality of mosques do not occur for pilgrims in this mosque.

In Al-Reza Mosque of Tehran, some factors such as building simplicity, lack of submission, lack of minaret and dome, brickworks, modern volumes, and brick-made structures used in the mosque have ruined the religious identity of this building compared to simple and minimal walls of adjacent buildings. In the Al-Reza Mosque, hence, you cannot rapidly understand that this building is a mosque. Two main parts are distinguishable in the architecture of traditional mosques: one part includes a prayer place or Musalla and another one is the courtyard or open space of the mosque. Although these areas exist as usual composites in Al-Reza Mosque, the form combination and their structures do not reflect a continuous collection but both spaces have kept their purity as modern composites. Height difference, type of movement and rhythm, materials, form, and size all intensify the abstraction and purity of forms.

Moreover, the use of double-glazed glass and sloped ceilings around the courtyard not only represents a different meaning of the connection between the mosque courtyard and outside, but it approaches the spatial imagination of this place as a modern integrated space. Moreover, this mosque does not have a dome and minaret, so it could not make a relationship with pilgrims' perceptions. The reason is that the first connection between sacred buildings especially mosques with pilgrims is created through prominent signs, such as dome and minaret. The pilgrims then create a connection between their five sensations and the environment based on their mental backgrounds about the spiritual values and beliefs evaluating the environmental quality and shaping their mental processes. Accordingly, mental processes in the external environment of Al-Reza Mosque does not create a significant relationship between human and the environment just due to the lack of a dome and minaret in this mosque.

Like Al-Ghadir Mosque, pilgrim presence has not occurred in the external environment of this mosque that represents the physical structure of space along with a balanced quality of significant patterns and signs of spatiality in the external environment regarding the journey to the divine world and creating a sense of peace in the pilgrim. This case has been intensified regarding the lack of prominent signs in Iranian mosques, such as domes and minarets in this mosque. In this mosque, the wise and artistic combination of brick and glass in the external façade has destroyed the connection between heaven and earth representing the connection of the pilgrim's soul to the heaven world in sacred buildings. It is worth noting that the body of this mosque (form and materials) has involved the five sensations of pilgrims. Visual sensation in Al-Reza Mosque is dynamic due to the material elements available in the space, so the dynamic nature of this sense is for exploration, and any element or detail of this mosque catches the eyes of pilgrims to perceive the latent concepts of it. In this mosque, physical proportions have prevented creating a human and humble environment, and human attending and walking in the external space of this mosque would perceive the spatiality of this mosque around its physical element because human perceives the world based on its construction and physical existence. Hence, the empirical world is defined and becomes meaningful based on its body. In an analysis of this mosque based on the spatiality perceptions, the presence of pilgrims in the mosque and smelling the adoring of water moisture while the wind is blowing in line with sensory perceptions from the space of the mosque courtyard have created an imaginative incredible space. Pilgrims are made to do physical movement and walk in this mosque due to its type of geometry that brings dynamism to the mosque, as well as the various visual and physical elements existing in the space of the courtyard of

the mosque. While moving in external spaces of the mosque, pilgrims convert the dynamic components of

physical movement to visual movement, so spatiality perceptions of the external environment are shaped.

Table 2. Spatiality in External Environment of Al-Ghadir and Al-Reza Mosques in Tehran

	Principles	Al-Ghadir Mosque	Al-Reza Mosque
Spatiality in the External and Internal Environment of Selected Mosques	Muslim Architect	*	*
	Simplicity and being Outstanding	*	-
	Innovation and Initiative	*	*
	Legibility	*	*
	Lack of Use of Foreign Forms and Signs	*	*
	Plurality and Unity	*	*
	Invitation	-	*
	Justice in Space Valuating	-	-
	Groundwork for Thinking	-	-
	Stillness	-	-
	Directionality	-	-
	Travel from Appearance to Conscience	-	-
	Unity	-	-

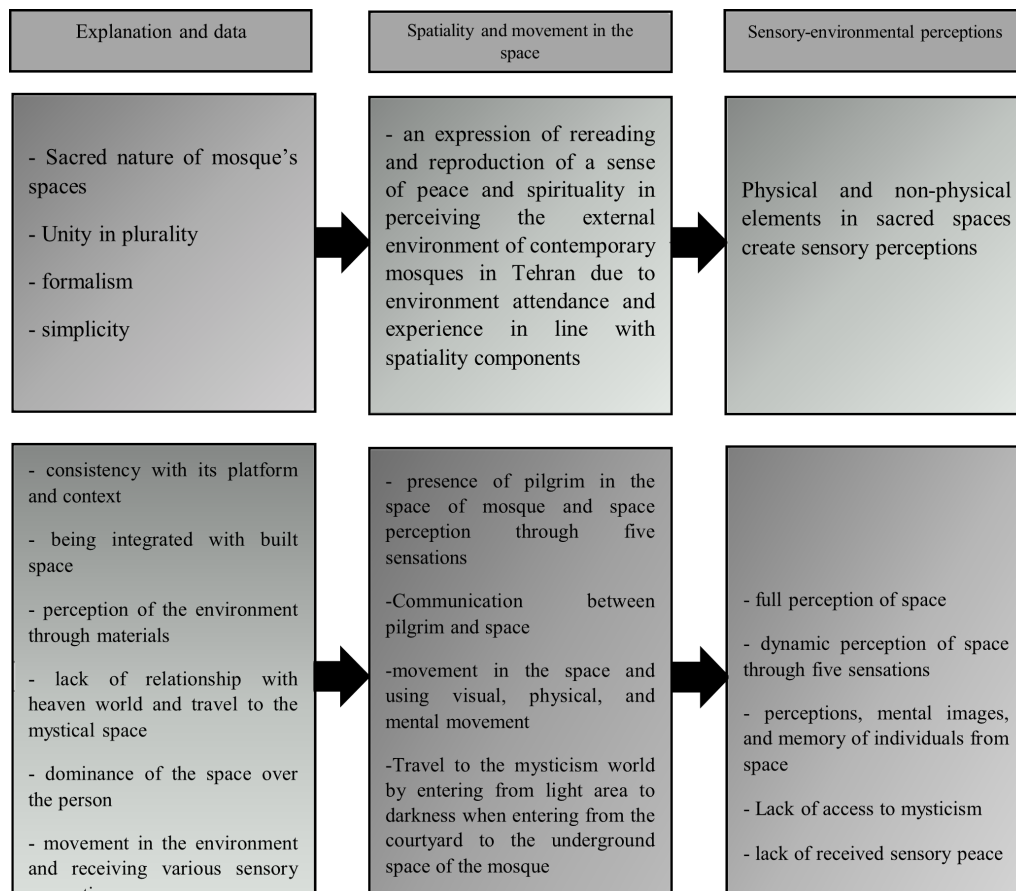


Fig. 8. The Conceptual Model Derived from Common Perceptions of Pilgrims in Al-Ghadir and Al-Reza Mosques in Tehran

7. CONCLUSIONS

The main worry of committed architects in the contemporary era is how to create a sacred place like what was created in the past, so architects tend to achieve this goal in line with spatiality and perceptions of the external environment of sacred spaces due to their material elements. Hence, it should be noted that mosques are the major sacred buildings in Iran that can change the sensory perceptions of the pilgrims through their physical and body elements.

Spatiality in Al-Ghadir and Al-Reza Mosques in Tehran is based on the physical elements available in the external and internal environments, symbols, form, and human presence in this space in line and size of embodying the material issue. This spatiality is created based on the movement and dynamics in the environment along with sensory perceptions. Hence, this process in Al-Ghadir Mosque is influenced by environmental and social factors as physical-mental perceptions. The spatiality of the external environment of Al-Ghadir Mosque in Tehran is created based on the movement in the environment, so pilgrims experience various perceptions when passing through different spaces of this mosque. Therefore, the movement of the pilgrims in the spaces of this mosque and their perceptions leads to a lack of physical movement of pilgrims in the spaces regarding the polygonal geometry and their location that is not in line with the Qibla. Hence, pilgrims cannot convert their physical movement to the visual motion. When we enter the Al-Ghadir Mosque, we face a bright space at the first step so the travel from darkness towards light- that occurred in historical mosques as entering the mosque- does not occur. In Al-Ghadir Mosque, the pilgrim is involved in a limited space in which, movement is not done around the sacred focus or Qibla, so the pilgrim does not feel a new experience of movement in the space in none of the movements in the space. Hence, this mosque does not resemble the historical mosques of Iran due to its chaotic form regarding its lack of a dome and minaret and the type of audience perceptions from the external environment.

In the Al-Reza Mosque of Tehran, the form and materials have been organized in a way that involves all five sensations of the pilgrims. visual sense in this mosque is dynamic and changing for pilgrims based on the body and materials of the internal and external environment that itself looks for sacred meanings and themes. In this mosque, all components and elements lead to the visual movement of pilgrims regarding the perceptions of mystical meanings. The physical proportions of this mosque remain in spatial formation with human scale and having the humble human mode. In the external space of this mosque, however, pilgrims have perceived the spatiality based on the physical elements, such as materials, color, light, etc. being present and walking in the space. In

this mosque, the diversity of materials and human confrontation from the entrance gate to the courtyard and then from the yard to the entrance gate of internal space would improve the pilgrims' sensory-environmental perceptions of the mosque and its spatiality. Due to the type of form and materials used in the external environment of this mosque, this space does not improve the pilgrims' perceptions of the external environment traveling to the mysticism world. Hence, this mosque does not represent the mystical environment for the pilgrim as much as the Al-Ghadir Mosque of Tehran does. In Al-Ghadir and Al-Reza Mosques in Tehran, therefore, geometry and volumetric orientation are more important than Qibla for spatial arrangement of the external environment; hence, the concept of eternity is not conveyed for the pilgrims attending these mosques. According to the mentioned points, it can be stated that Al-Ghadir and Al-Reza Mosques cannot provide peace of mind for pilgrims as much as the historical mosques did. This shortcoming is rooted in physical elements in the external environment and the spatiality of these mosques.

Therefore, the following operational strategies are provided for spatiality in sacred buildings (mosques) of Iran based on the Iranian-Islamic values and worldview in the current era:

1. Creating attainable situations on a human scale provides the field for the presence of people in the space and forms memories in their minds. This case leads to a sense of unity with the space among individuals and shapes their identities. This quality has been ignored in contemporary projects.
2. Paying attention to the symbolic role of elements and sacred components in the space either in terms of purification or as significant elements in the space that can involve five sensations of pilgrims exalting their mentalities towards the place.
3. Creating a hierarchy of attendance situations as the journey requirements, so that in each step, internal and external spaces of mosques narrate a unique story and occupy the minds of individuals. In this field, a principle that has been always considered in the sacred building is attention to horizontal and vertical axes of the connection with the building and sky.
4. Avoid superficial, formal, and apparent perceptions of architectural elements in modern designs.
5. Paying attention to spiritual and moral values of the signs available in all spaces of the sacred buildings in the past period of Iran.
6. Using the meaning-oriented sacred and mystical view to crystalize the covert notions available in the physical elements of Iran's sacred buildings.
7. Using the historical identity of Iranian architecture in contemporary sacred buildings with reproduction of past architecture in a modern context,
8. Symbols reflect the meanings beyond themselves in the world of sensations; these meanings can be understood if perceptual conditions are provided for

the audience, which are ignored in contemporary buildings.

9. Using diverse attendability of natural elements in spaces would lead to an evolutionary process influenced by the sacred view of the space; this principle has also been ignored in contemporary

buildings.

10. Creating hierarchical order in the arrangement of the functional and operational elements of the external and internal spaces of sacred buildings to improve and present diversity in the perceptual quality of spaces for humans.

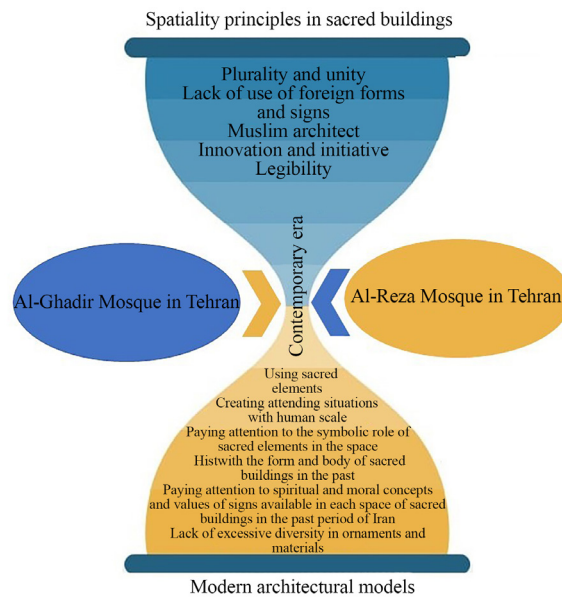


Fig. 9. The Model derived from the Extracted Results

ACKNOWLEDGMENTS

This article wasn't supported by any financial or spiritual sponsors.

CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

REFERENCES

- Abdollahi Molaei, Shahrokh. 2015. A survey of Islamic architectural decorations (case study: Goharshad Mosque of Mashhad). *Iranian-Islamic Architecture and Urban Planning National Conference*. Rasht, Payam Nour University, Gilan Province. https://doi.org/NCIIAU01_279 [in Persian]
- Ahmadi Maleki, Rahman. 2005. *Symbolic forms and roles in mosques of Iran, art and architecture of the mosque, by the efforts of the Secretariat of the Supreme Headquarters for Coordination and Supervision of Cultural and Artistic Centers of Mosques*. Tehran: Publishing House. [in Persian]
- Anderson, Stephen. 2001. *Seductive Interaction Design: Creating Playful, Fun, and Effective User Experiences*. Berkeley, CA: New Riders.
- Ardalan, Nader, and Laleh Bakhtiar. 2017. *A sense of unity: a mystical tradition in Iranian architecture*. Translated by Shahrokh, 6th edition, Isfahan Publications: Khak. [in Persian]
- Avini, Seyed Mohammad. 1991. *Immortality and Art*. first edition. Bargh Publications. [in Persian]
- Beheshti, Seyed Mohammad. 2010. *Iranian mosque, the place of ascension of believers*. Tehran: Rozeneh. [in Persian]
- Bokharayi, Saleheh. 2015. Spatiality: aspects, limits and influencing factors. *Journal of Sofa* 25(69): 5-18. <https://doi.org/20.1001.1.1683870.1394.25.2.1.9> [in Persian]
- Burckhardt, Titus. 2017. *The sacred art of principles and methods*. Translated by: Jalal Sattari. Tehran: Soroush. [in Persian]
- Casey, Edward. 2012. *Remembering: A Phenomenological Study*. Bloomington: Indiana University Press.
- Dadfar, Payam, Leili Karimifard, and Fariborz Dolatabadi. 2020. Explaining the effect of the spatial experience of mosques on psychological recovery (case study of Goharshad mosque). *Journal of Great Khorasan* (38): 1-16. <https://doi.org/20.1001.1.22516131.1399.10.38.1.1> [in Persian]
- Diller, Steve, Nathan Shedroff, and Darrel Rhea. 2005. *Making Meaning: How Successful Businesses Deliver Meaningful Customer Experiences*. Berkeley, CA: New Riders.
- Dori, Ali, and Gholamreza Talischi. 2018. The limitlessness and infinity of the spatial structure of Islamic architecture in Iran in Safavid era mosques (case study: Mosque of Sheikh Lotfolah and Imam of Isfahan). *Journal of Islamic Architecture Research* 6(19): 19-38. <http://jria.iušt.ac.ir/article-1-1009-fa.html> [in Persian]
- Elyadeh, Mohsen. 2014. *Symbolization of sacredness and arts*. Translated by Mani Salehi Allameh. 1st edition. Tehran: Niloufer Publications. [in Persian]
- Faghfuri, Robab, and Hassan Bolkhari Ghahi. 2015. A comparative study of the theme of Goharshad Mosque inscriptions and Shia religious foundations in the Timurid and Safavid periods. *Journal of Nagareh* (35): 4-17. <https://doi.org/10.22070/NEGAREH.2015.251> [in Persian]
- Farahvashi, Bahman. 2001. Neglect of space in architecture. *Journal of The Architect* (5): 71-82. [in Persian]
- Goleštani, Saeed, Eisa Hojat, and Mahdi Sadvandi. 2017. A research on the concept of continuity of space and the process of its evolution in mosques of Iran. *Fine arts magazine* 22(4): 29-44. <https://doi.org/10.22059/JFAUP.2018.65695> [in Persian]
- Mehdi Nejad, Jamalodin, and Partners. 2018. Comparative study of the pathology of mosque design criteria based on spatial organization (case example: contemporary, modern traditional mosques). *Journal of Iranian Islamic City* (31): 63-74. [in Persian]
- Mehrpouya, Hassan. 2008. The distinction between religious art and sacred art in the opinions of thinkers. *Journal of The path of art* (Pre-number 6). [in Persian]
- Mohammadi, Alireza, and Ebrahim Firouzi Majandeh. 2016. Spatial analysis of the mosque in Ardabil city in the contemporary period. *Journal of Urban Studies* (17): 55-66. https://urbstudies.uok.ac.ir/article_16024.html [in Persian]
- Nasr, Seyed Hassan. 2015. *Islamic art and spirituality*. Translated by Rahim Ghasemian. Third edition. Tehran: Office of Religious Studies. [in Persian]
- Nodder, Chris. 2013. *Evil by Design: Interaction Design to Lead Us into Temptation*. John Wiley & Sons, Indianapolis.
- Norman, Don. 1989. *The psychology of Everyday Things*. New York: Basic.
- Nowrouz Borazjani, Vida. 2018. *Qualitative research methodology*. Tehran: Yadavaran. [in Persian]
- Razavipour, Maryam Sadat, Mohammad Mehdi Zakeri, and Ehsan Ejbari. 2012. Iranian-Islamic identity of Tehran over time. *Journal of National Studies* 13(3): 133-147. <https://ensani.ir/fa/article/482295/> [in Persian]
- Sattari, Jalal. 2015. *Myth and code in the thought of Mircha Eliadeh*. Translated by Jalal Sattari. fifth edition. Tehran: Neshr markaz. [in Persian]
- Sayad, Amirhossein, Afra Gharibpour, and Mahsa Delshad Siahkali. 2019. Spatiality and the body of conscious-

Mashhadi, A.

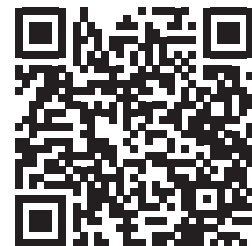
- ness: Rereading the concept of space in the architectural experience, a case study: Tehran Museum of Contemporary Arts. *Journal of Bagh Nazar* 16(75): 71-82. <https://doi.org/10.22034/BAGH.2019.190727.4172> [in Persian]
- Shedroff, Nathan. 2009. *Experience Design 1.1: a Manifesto for the Design of Experiences*. New Riders, Indianapolis
 - Sohangir, Sara, and Mohammadreza Nasir Salami, 2014. Patterns of space creation in architecture based on post-modern theoretical paradigm. *Journal of Bagh Nazar* 11(28): 65-78. https://www.bagh-sj.com/article_4866.html [in Persian]
 - Soltani, Mehrdad, Seyed Amir Mansouri and Ahmad Ali Farzin. 2012. Adapting the role of pattern and experience based concepts in architectural space. *Journal of Bagh Nazar* 9(21): 3-14. https://www.bagh-sj.com/article_1698.html [in Persian]
 - Tschumi, Bernard. 2012. *Events: The Turning Point in Architecture Concepts: Red is Not a Color*. New York: Rizzoli.
 - Weinschenk, Susan. 2011. *100 Things Every Designer Needs to Know about People*. Berkeley, CA: New Riders.
 - Zarghami, Esmaeil, and Seyed Mohammad Behrouz. 2015. The role and concept of "space" in re-creating the theory of architecture and social sciences. *Journal of Interdisciplinary Studies in Humanities* 7(2): 81-99. <https://ensani.ir/fa/article/366223> [in Persian]

HOW TO CITE THIS ARTICLE

Mashhadi, Ali. 2023. Explaining Spatiality in Sacred Buildings of Iran, a View of the Internal and External Environment of Contemporary Mosques. *Armanshahr Architecture & Urban Development Journal* 16(43): 119-132.

DOI: 10.22034/AAUD.2023.337109.2648

URL: https://www.armanshahrjournal.com/article_177082.html



COPYRIGHTS

Copyright for this article is retained by the author(s), with publication rights granted to the Armanshahr Architecture & Urban Development Journal. This is an open- access article distributed under the terms and conditions of the Creative Commons Attribution License.

<http://creativecommons.org/licenses/by/4.0/>

